

Dr Yeshwant Laxman Nene

The Story of a Luminary Agricultural Scientist



Celebrating
80th
Birth Anniversary

*Dr Yeshwant Laxman Nene:
The Story of a Luminary Agricultural Scientist*



Dr YL Nene
80th Birth
Anniversary

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Preface

I am delighted to know that Dr Yeshwant Laxman (YL) Nene, presently the Chairman Emeritus of the Asian Agri-History Foundation, turned 80 on 24 November 2016. He has thus completed 56 years of a very successful professional career in agriculture that began as Assistant Professor of Plant Science in 1960 in UP Agricultural University (now GB Pant University of Agriculture and Technology), Pantnagar, Dist. Nainital, Uttar Pradesh (now Dist. Udham Singh Nagar, Uttarakhand), then as Head of Plant Pathology at Pantnagar, then as Dy Director General of ICRISAT, Patancheru in Telangana, and ended in 2016 as the Founder Chairman of the Asian Agri-History Foundation that he founded in 1994. During his 14-year tenure at Pantnagar, Nene's work on "Khaira Disease of Paddy" was recognized internationally because the cause of disease was established to be zinc deficiency in field rice, which was the first such report in the world. Nene received "International Rice Year 1966 Prize" from the Food and Agriculture Organization of the United Nations. Also, Nene's work on viral diseases of pulse crops was recognized internationally as evidenced by citations of his publications received from all over the world.

At ICRISAT, Nene's landmark contribution was resolving the vexing problem of the "wilt complex" of chickpea. He determined that the wilt complex was in fact a group of different distinct diseases that included wilt and several other root rots. A coloured pictorial information bulletin "Diagnosis of Some Wilt-like

Disorders of Chickpea" is widely used by researchers in India and chickpea-growing countries. He developed simple diseases-resistance screening laboratory-, greenhouse- and field-screening techniques as well as multiple-disease field-screening systems for major chickpea and pigeon pea diseases, which are today widely used by researchers internationally. The most outstanding contributions of the Pulses and later Legume Programmes that he led during 1980-89, are the development of high-yielding pigeon peas, wilt-resistant chickpeas, and high-yielding, disease-resistant groundnut varieties.

Post-ICRISAT (from 1996-2016), he devoted fulltime to the work of the Asian Agri-History Foundation that he founded in 1994 to unearth and disseminate information on the history of Asian agriculture. As its Founder Chairman, his major achievements have been in contributing to the publication of 11 technical bulletins on Asian agriculture and starting a quarterly journal of Asian Agri-History.

The long 56 years of his professional career indeed has been exemplary for all his students, colleagues, and others to know and follow. He excelled in teaching, research, and administration during his active professional career till 1996, and then in digging out enormous documentary information on the agricultural heritage of Asia. Nene deserves special credit for his dedication and hard work to

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unearth ancient knowledge and bring it to the notice of modern scientists

I have been fortunate to know Nene before most of you knew him. I am also proud that he is from Gwalior, where he was an undergraduate student in Agriculture College, Gwalior (1951-55) where I was teaching chemistry. He was one of the top and bright students in my class, very keen to learn, and hungry for knowledge. He was one of the few students who used to come to my house, after the class, to get additional coaching and resolve any difficulties he may have. Even at that time I could see that he was different from other students in his extraordinary learning desire and ability. I knew then that he had a bright future. He should serve as role model to all of us.

Dr Nene was greatly inspired and encouraged by Dr J S Kanwar, Deputy Director General - Emiratus of ICRISAT.



Dr Y L Nene and Dr J S Kanwar

I know some of the students and colleagues of Nene who have known him since 1960 and had an opportunity to closely interact with him and watch him function as teacher, researcher, guide, leader, and academic advisor. They unanimously rate Nene as a very strict but a very caring, excellent and likable teacher, an inquisitive and disciplined scientist, an able administrator, leader, guide, and a source of inspiration to many a young students and colleagues not at Pantnagar and ICRISAT, but also to many others who came in his contact. His 56 years of scientific journey from Pantnagar to ICRISAT and during the post-ICRISAT retirement has been very successful, rewarding, fulfilling, and in my opinion an exemplary one.

I am very happy to know that Nene's students and colleagues are bringing out a Souvenir publication on the occasion of his 80th birth anniversary. It is a noble venture and I am confident that the younger generation in agriculture would receive tremendous inspiration for their professional career after reading this publication.

I wish Nene a very healthy, happy, and fulfilling "post-80" life.

Prof Prabhakar M Tamboli

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Acknowledgement

As a person who agreed to compile the information presented in this souvenir publication would like to acknowledge the assistance and support that I received from a number of undergraduate and post-graduate students and colleagues of Dr YL Nene.

I am grateful to Prof Prabhakar Tamboli, for writing the Preface for this publication. He has known Dr Nene since 1952 when the former joined Agriculture College at Gwalior. Prof Tamboli taught him the subject of Chemistry. He is very proud of Dr Nene's achievements as a teacher, researcher, research manager and administrator, and a successful researcher of the agricultural history and heritage of Asia, especially India.

A number of Dr Nene's undergraduate and post-graduate students have shared their views and opinions on their great teacher. It is heartening to see their views on how they regard their teacher even today after so many years of their association with him. These are presented under the Section: Tributes to Dr Nene. Here, I must make a special mention of Dr SJ Kolte, who was Dr Nene's first PhD student at Pantnagar, for sharing some important information on Dr Nene.

Thanks also to Dr Badrinarayan Barwale, Chairman of Maharashtra Hybrid Seeds Company (Mahyco) and Mr Salil M Singhal, Emeritus

Chairman of Singhal Foundation, both of whom have been corporate donors and great supporters of the Asian Agri-History foundation (AAHF) activities, for sharing their views and opinion on Dr Nene. My special thanks to Dr RS Paroda, Ex-Director General of the Indian Council of Agricultural Research (ICAR) and Secretary, Department of Agricultural Research and Education (DARE) and presently the President of the Trust for Advancement of Agricultural Science (TAAS), and a member of the International Advisory Board of AAHF, who has known Dr Nene and his professional work in different capacities for a long time, for sharing his views and opinions on Dr Nene. He has been familiar with the AAHF activities since its beginning and was Chairman of the Inaugural Function of the AAHF held in the India International Centre, New Delhi in 1996. These views are presented in the Section on Tributes to Dr Nene.

My fellow Trustees of AAHF have been a great support to Dr Nene as its Chairman since 1994 for its establishment and activities. I am grateful to them for sharing their views and opinions on Dr Nene. Likewise, views and comments from the Chapters of AAHF are also presented in the Section on Tributes to Dr Nene.

I am grateful to Dr Nene for sharing some information on the early years of his life and

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education. I also thank him for sharing most of the photographs that are presented in the book as they came from his personal collection.

Thanks to Dr SL Choudhary, the present Chairman of AAHF, for his help and support in the preparation of this publication. Similarly, my thanks are also due to Mr. SK Sinha, a retired Publications Manager at ICRISAT and an Honorary Publications Advisor to AAHF for his much-desired technical assistance in the preparation of this publication.



I must say a special “Thank you” to Dr Nene for all his guidance to me throughout my professional career starting as his MSc student in 1964. I am very proud to admit that he has always been my tremendous source of inspiration and in fact my mentor.

SPS Beniwal, PhD

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Introduction

As the students and colleagues of Dr YL Nene, we would like to tell the story of a scientist who proved himself as a very dedicated plant pathologist and agriculturist in India and lead very successful 56 years of a professional journey. The story is being shared with the students of agriculture, young scientists and agriculture community and others on the occasion of his 80th birth anniversary. The story is told by his students and colleagues from his Pantnagar days (1960-74), colleagues in ICRISAT (International Crops Research Institute for the Semi-Arid Tropics, Hyderabad) (1974-96), and in AAHF at Secunderabad. As his students and colleagues, we had an opportunity to closely interact with him and watch him work and function as a teacher, researcher, academic advisor, guide, guardian and administrator. His 56 years of scientific journey from 1960 at Pantnagar to 1996 at ICRISAT and during the post-ICRISAT retirement from 1996-2016 has been very successful, rewarding, fulfilling and exemplary. This has truly been a story of a highly dedicated, in fact luminary, plant pathologist and agriculturist that we all can be inspired from.

We are also very proud of his very successful professional career and its achievements. Dr Nene has been an excellent, very popular and admired teacher, an inquisitive and disciplined scientist, an

able administrator, leader, guide, and a source of inspiration to many a young students and colleagues not only at Pantnagar and ICRISAT but also to many who came in contact with him. For this, he has always been held in very high esteem as he always set very high standards in solving the plant disease problems or whatever he did, and inspired many a young men and women to follow the same path. He can undoubtedly be referred to as one of the very few leading plant pathologists and agriculturist of India as he worked extremely hard to finding solutions to some very economically important disease problems in the country and establish high standards of plant pathology research in India. Thus, proving himself as truly a trend-setter.

Thus, as a token of our appreciation and to pay our tributes to him for his invaluable findings, teachings and contributions, we decided to bring out this souvenir publication on the occasion of his 80th birth anniversary to tell his story as a dedicated and successful plant pathologist and an agricultural scientist to highlight and recognize his enormous professional contributions in plant pathology and in agricultural science including teaching, research, technology transfer and agricultural heritage of Asia. Here, we present our views and opinions about him as seen and experienced by us ourselves on his life

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time's achievement in this souvenir publication titled "Dr Yeshwant Laxman Nene: The Story of a Luminary Agricultural Scientist". Also, views and opinions of some others who have been associated with him professionally are included. We certainly hope that this souvenir publication will serve a very useful purpose to the young students and scientific community in agriculture, and will be a source of inspiration to them.



Early Life and Education

Birth in Gwalior city

Yeshwant, the son of Mr Laxman Ganesh and Mrs Laxmi Nene, (YLN) was born on 24 November 1936 at Gwalior, the historically and educationally highly reputed city in the state of Madhya Pradesh in India. He was named Yeshwant Laxman Nene. He was the second child of his parents with one elder brother and four sisters. His father, who was an officer in the education department of the State of Gwalior and later in Madhya Pradesh, infused into him good values including the importance of education. Dr Nene completed his high school education in Gwalior city in 1951.



YL Nene in 1943



*Mr Laxman Ganesh and
Mrs Laxmi (Parents of YL Nene)*

Undergraduate education, an inspiring period

Yeshwant Nene decided to pursue his undergraduate education in agriculture at the Agriculture College, Gwalior (affiliated to Agra University). It is there in his first year in the Botany subject when he made up his mind to study very hard to secure very high marks. According to him, he got poor marks in the half-yearly examination (only 23 out of 50) in Botany subject taught by Mr DVK Tripathi. Realizing that he received low marks he went to Mr Tripathi to request him to increase his marks on one answer. Mr Tripathi, annoyed by his request, told him “Do not beg for more marks but instead work hard to learn the subject well, which will certainly fetch you more marks”. It was then that Nene decided to work very hard and not to beg for marks anymore. As a result, he got 46 out of 50 marks in the final examination, which was highest in the university. He did equally well in Zoology, Chemistry, Plant Pathology and in all other subjects. It proved a turning point in the life of young Yeshwant Nene. Thereafter, he never looked back. Thus, it was during the first year of his BSc (Ag) degree programme that Nene rediscovered himself as an inspired and energized young man. He went on to obtain his BSc (Ag) degree in 1955 with a Gold Medal of the College and Chancellor’s Medal of Agra University because of his excellent academic performance.

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YL Nene after receiving BSc Ag. Degree



Agra Univ



Gwalior



ISPRD



Kanpur

Models received during student life



Dr L K Joshi



Nene and DP Motiramani

Dr YL Nene in 1955 after receiving his B.Sc. agriculture degree at Agriculture College, Gwalior.

Master's degree in plant pathology

He later in 1955 moved to Government Agriculture College, Kanpur (affiliated to Agra University) and earned his MSc (Ag) degree in Plant Pathology in 1957. Under the guidance of Dr Babu Singh, he



Nene in MSc Ag. Labs

worked for his Master's thesis on "Studies on the Leafspot of *Achras sapota*". Dr HK Saksena inspired Nene during his studies in Kanpur. He received a Gold Medal of the College for his excellent performance during Master's degree programme.



H K Saksena

Doctoral degree

In 1957 he travelled to USA for higher studies in Plant Pathology after receiving university fellowship for the doctoral degree course programme at the University of Illinois, Urbana, USA, and earned the PhD degree in Plant Pathology with specialization in Plant Viruses in 1960 under the guidance of Prof HH Thornberry. The thesis topic was "Studies on the Mechanism of Inhibition of Tobacco-Mosaic Viral Infection by Enzymes".



YL Nene at Airport, proceeding for PhD to USA



Prof. HH and Martha Thornberry

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Why did he choose to become a plant pathologist?

The answer to this question lies in his career as a student of Agriculture College, Gwalior where he felt under the influence of two enthusiastic teachers during his B.Sc. degree course curriculum: one in Botany (Mr DVK Tripathi) and the other in Plant Pathology (Dr LK Joshi). Dr Joshi particularly, we were told, was a wonderful teacher whose contagious enthusiasm influenced Nene and his “susceptibility received the haustoria of passion for plant pathology” at the post-graduate level, and persisted throughout his professional life.

Appointment at Pantnagar

As the legend goes, the first agricultural university established in India based on the Land Grant Pattern of the United States of America, GB Pant University of Agriculture and Technology (GBPUAT), Pantnagar (formerly Uttar Pradesh Agricultural University), invited Dr Nene in 1960, immediately after completion of his doctoral degree in Plant Pathology from the University of Illinois, Urbana (USA), to join as an Assistant Professor of Plant Sciences. This action by the GBPUAT was of great significance and turned out as one of the best decisions that the university took in faculty appointments as was later demonstrated by Dr Nene by his disciplined and committed teaching, research and leadership.

Marriage in 1962

Dr Nene got married in 1962 with Ms Prabha Krishna Ranade. Their marriage has been a very successful one and has been a good example for many others in Pantnagar. One of us, Dr Beniwal who was more closely associated with them in Pantnagar and later in ICRISAT says “The credit for the professional achievements of Dr Nene must also be shared by Mrs

Prabha Nene for being a very cooperative wife in the sense that she probably never complained for Dr Nene’s overindulgence in teaching and research and thus devoting lots of extra time including on Sundays for his official work. In a way, she



Dr YL and Mrs Prabha Nene in Pantnagar - 1965

must have missed her husband’s company when she found that most husbands in Pantnagar spent more time with their families. In my opinion, she has been an exemplary life partner for Dr Nene and one of the best ladies that I have met in my life”. They are blessed with two children, a son (Sudhanshu) and a daughter (Purnima), who are also doing well as well.



Sudhanshu Nene



Purnima (Nene) Raste

Appointment and Professional Life at Pantnagar University

Dr Nene's professional life at Pantnagar started as an Assistant Professor of Plant Science in 1960. He was promoted to the position of Associate Professor in 1966, and Professor and Head, Plant Pathology in 1969. Starting as Assistant Professor, he devoted himself to teaching and research on the serious plant (crop) disease problems then confronted by the Uttar Pradesh State farmers, and to the building a Department of Plant Pathology under the new

experimental American Land Grant Pattern system of agricultural education in India in collaboration with the University of Illinois, USA. He was successful in fulfilling all the professional tasks that he undertook at Pantnagar and enjoyed an excellent reputation as a teacher, researcher, administrator, and a farmers' friend. His professional achievements are described in the following pages.



Arial view of College of Agriculture, Pantnagar, prior to 1975

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Accomplishments as a Teacher

He established the Department of Plant Pathology at Pantnagar

As the first Assistant Professor of Plant Sciences at Pantnagar, Dr Nene developed the first Introductory Plant Pathology course for the Undergraduate Studies at Pantnagar in 1960 and taught it 25 times from 1961 to 1974. He is credited with establishing the Department of Plant Pathology at GB Pant University of Agriculture and Technology at Pantnagar in 1961, the first plant pathology department in an agricultural university in India. He recognized the urgent need for education, understanding and communication under conditions for less opportune than today. The standards he set for himself and his staff and students were high and his goal revealed remarkable vision. However, his greatest contribution was in understanding people and help building their careers with qualities of working with colleagues, and extending recognition of the individual staff member or student. He believed that the Department is like one family working together towards a common mission, which is solving problems of farmers.

It was due to his foresight that he single-handedly developed the post-graduate curriculum for Master's programme in plant pathology and then initiated it in 1963. And it was due to his future vision and sincere efforts that a doctoral program was started in Pantnagar in 1967. His excellent performance as Assistant Professor led to the appointment as Associate Professor of Plant Pathology in 1966, and Professor and Head of Plant Pathology Department in 1969. He provided effective leadership to the Department at Pantnagar till 1974 when he left Pantnagar to join the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad as the Principal Plant Pathologist in Pulses Improvement Program. It

was under his effective leadership of 14 years that the plant pathology department at Pantnagar flourished and was well-known in the country for its excellent research, teaching, and technology transfer activities.



US Ambassador to India, Prof. J K Gailbraith, visiting Pantnagar Ag. University

A skilled plant pathology teacher at the undergraduate and post-graduate levels

Had a passion for teaching. As stated earlier, Dr Nene had developed a passion for plant pathology in his undergraduate programme at Gwalior and it was due to this that he did so well in his Master's and PhD programmes. So, he was full of passion for plant pathology when he joined Pantnagar in 1960.

Dr Nene developed the undergraduate course on Introductory Plant Pathology, taught it first time in 1961 and continued to teach it for 25 times till he left Pantnagar in 1974. His commitment and style of teaching made his course a very popular among the first students that they all looked forward to attend it. The overall objective of his course was for students to learn basic plant pathology and to acquire



critical thinking skills in areas across disciplines. He achieved this goal by having students to read a mix of popular scientific books, articles and topics that included diseases of plants. He earned the respect of virtually every student who took his course. He got the admiration almost to the point of idolization by a majority of students, who were stimulated to think critically and creatively. His instructions in the class were thought-provoking to solve disease challenges and he was identified as a teacher that made students not to miss his class.

Had an unusual grasp of plant sciences and plant pathology. Since Dr Nene had been a good student himself in his undergraduate and post-graduate studies as also during his PhD program at the University of Illinois, he had good understanding of basic plant sciences and principles of plant pathology. He also developed critical ways of looking at research problems and solving them due to his ability for keen observations. He also learnt a lot from his major professor at Illinois, Prof HH Thornberry (HHT), as we were told, that HHT himself was a very disciplined and methodical teacher and scientist. Thus, by the time he earned his doctorate at Illinois, he had a thorough grasp of the basic subjects of plant sciences and plant pathology. And this was evident throughout his professional teaching and research career. At the same time, he had also developed the art of critical analysis to apply the theoretical knowledge across disciplines with practice for solving problems in plant pathology.

Believed in discipline inside and outside classrooms. Dr. Nene was himself much disciplined and exhibited it all the time in his dealings with students and colleagues. He thus expected every student to be disciplined in the classroom. He was able to keep a perfect control over his students in the classroom,

a phenomenon which has become very rare in the present-day class rooms. He was very organized and devout in teaching and thus expected good discipline and attention from students. This also enabled him to explain the subject matter well without any interruption.

Proved himself as a very effective teacher. This was basically because of his good knowledge of plant sciences and plant pathology, thorough preparedness for the topics before his lectures, and developing a good outline of his lecture that he would teach the class on a particular day. He was also successful in attracting the attention of his students to his lecture through his loud, clear, emphatic, magnetic and effective voice. He believed in eye to eye contact with the students, and thus, he was successful in attracting the attention of students and making them understand the subject matter that he was teaching. He always ensured that students in the class itself picked up the major points of his lecture.

He aspired to develop critical thinking among post-graduate students. Dr. Nene strongly believed that post-graduate students must develop the habit of a critical thinking in order to solve agricultural problems. For this, he believed that the knowledge of the basic principles of plant pathology and also of other relevant agricultural sciences was important so that one could use them in solving challenging agricultural problems. He further emphasized that the post-graduate students must learn to apply theoretical knowledge in problem solving situations. He was intensely interested in total education of students. Current “buzz words” in higher education i.e. critical thinking, ability, communication skills, and international perspectives have always been parts of his teaching.



Teaching undergraduate students

He cared for student thesis work and its writing.

He was very serious about the thesis preparation of his post-graduate students, an essential activity of Masters' and doctoral programmes in the university, and paid personal attention to this important part of the post-graduate curriculum. He did not believe in spoon-feeding to his students and inculcated in them the habit of critical thinking. Thus, he normally did not suggest thesis topics to his doctoral students and instead expected that they themselves would think and pick up their thesis research topics. This was again with the objective to inculcate the habit of independent critical thinking. Here it is appropriate to cite the example of Dr SJ Kolte, the first PhD student of Dr Nene. Dr Kolte writes that "when I was registered for my PhD I decided to investigate the cause of a disease of unknown etiology - the urd bean leaf crinkle. Since I was not yet able to reach to certain clue on the cause of the leaf crinkle of urd bean until the beginning of the third year of my studies towards PhD thesis work, I requested my supervisor Dr Nene to change the topic. He never agreed to change my thesis topic from the leaf crinkle of urd bean to some other problem of routine nature. He insisted and encouraged me to continue with the leaf crinkle in providing etiological

explanation of that disease beyond any doubt so that even 10 pages of the findings could be justified for the award of a PhD degree. Finally, with simple change of pH of potassium phosphate buffer I could prove transmissibility of the cause of the leaf crinkle disease of urd bean and the cause proved to be the virus. This was a very rewarding and scintillating experience, though not of much technological advancement, but I learned from this very simple evidence how one can enjoy the joy of discovery. He would always closely follow the thesis work in progress and would check the experiments personally and ask a number of "why and how" questions to ensure that his student knew of "what, how and why" he was doing. Thus, he would visit experiments of his students in the laboratory, greenhouse and fields. At times, he would himself take some photography of the ongoing trials for use in the thesis. It is good to tell that Dr Nene always had time for his students. He had an excellent ability to challenge students and colleagues to critically examine research ideas and results.

A strict disciplinarian, leader and an administrator

Fair and justified judgments on difficult issues, impartiality in decision making and great capacity for reconciling divergent opinions were characteristics of his 14-year tenure as Head of the Department at the GBPUAT, Pantnagar. Punctuality became his hallmark, and nobody dared to come late not only to his class but also to the staff meetings. The department staff was very punctual to come to the department every day; in fact, both the students and staff used to reach the visit spot/location at least 10 minutes before Dr Nene's arrival. Strict invigilation duty during examination hours, disciplinary action as the first and foremost step against any wrong deeds not only by students but also by the faculty member was in place. Considering this, he was the first to be called

on by Dean of Agriculture Dr NK Anant Rao and the Vice-chancellor Dr Dhyan Pal Singh for any problem-solving exercise(s) related to not only academic matters but also related to food in the university hotel cafeterias and university sports/tournaments, etc. Above all, he proved his leadership by demanding excellence in all the activities of the department. As a member of different types committees in the University, he was involved in policy-making process on the campus and in the faculty and academic council meetings. Notwithstanding an extremely demanding schedule, he continued to teach the basic undergraduate course in Plant Pathology for all through his 14 years at Pantnagar, indicating a strong commitment to teaching.



*Dr NK Anant Rao
(first dean of Pantnagar
Agriculture College)*

*Dr DP Singh,
Most succesfull
Vice Chancellor of
Pantnagar University
(1966 - 75)*



Nene's Postgraduate students at farewell dinner - 1974

A major professor and guide of 26 MSc and PhD students

Dr Nene guided 26 MSc and PhD students, who did their thesis work under his direct supervision since 1963. All of them rigorously pursued their professional career and have done well in their respective areas. Some of them are still pursuing their professional career although most of them have now retired from active jobs.

Research Accomplishments At Pantnagar Agricultural University

Khaira disease of rice as a first challenge in research

The first disease that Dr Nene encountered as a researcher at Pantnagar was khaira disease of paddy (rice), probably indigenous in the Nainital Tarai region of the then Uttar Pradesh State (now Uttarakhand), but which had been known since long before the establishment of the University as a serious disease of paddy. The problem of khaira (a name farmers coined because of the colour of the affected paddy leaves which resembled to catechu, which is locally called as khair in Hindi) disease in paddy was getting progressively worsening when he joined the College of Agriculture at Pantnagar in 1960. The attention of Dr Nene's to khaira disease was first brought in 1962 during the first Farmers' Day in the university. On the farmers' day, there were around 100 farmers in a hall

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asking questions to the few university staff including Dr Nene. One gentleman, the late Colonel Lal Singh, asked Dr Nene about the control of “khaira” disease in paddy. Dr Nene replied, “This is probably a physiological problem. We do not know the cause yet, but we will research on it once we get our laboratories fully set up.” Colonel Lal Singh was not satisfied with the answer and said, “Look Dr Nene, you have been in this University for about two years now. So, what have you been doing all this time? We are unable to take paddy crop because of this disease”. The tone of the comment was a challenging one. Dr Nene kept quiet at that time, but accepted the challenge of finding the cause and solution of khaira disease and applied his mind seriously to the problem. His task was to determine as to why the paddy plants were stunted and come up with a solution to the problem.

The problem was not to be solved so easily and early and moreover imbalance in farmers’ economy was becoming a hard fact because of this disease. Further, it could cause some differences of opinions amongst plant pathologists attached to paddy disease research, as it was harder to ascertain the exact cause of the disease. The solution could be worked out only after getting to the causal factor.

The question was how Dr Nene, who was trained in plant virology during his Ph.D. degree, would be able to solve the problem? However, Dr Nene could easily approach the solution with his incredible all round experiences as a plant scientist, who was involved in teaching allied branches of agricultural sciences such as agronomy, Introductory Soil Science, and above all teaching Introductory Plant Pathology, a dynamic subject which he knew was difficult to delimit from all the basic and applied branches of sciences. The concept of understanding the subject of plant pathology and keeping it in mind as a central core

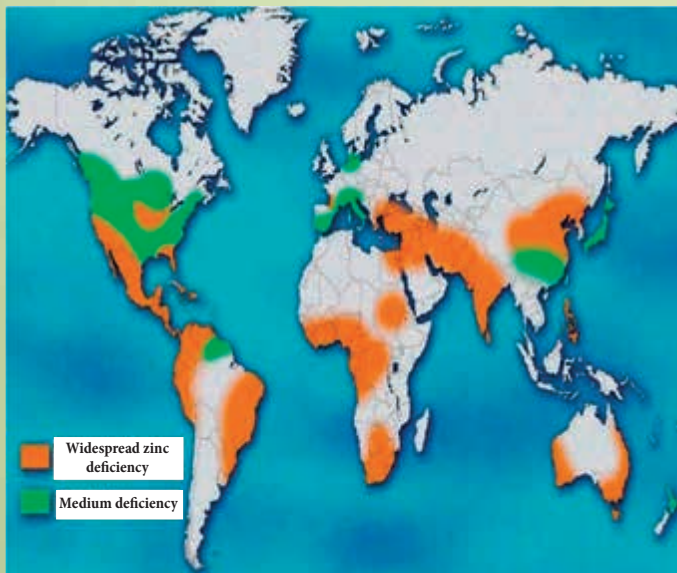
of investigatory work, Dr Nene applied the scientific method in both the laboratory and the field to solve the khaira disease problem.

In 1963, Dr Nene repeatedly investigated possibilities of fungal, bacterial, viral, and nematode infections as cause of khaira, but found no clues. Then, he observed something interesting. Farmers used to say that they see some long worms attached to the root system of diseased plants. He brought diseased plants with long, slender worms attached to roots and transferred these plants in glass jars containing tap water. He wanted to observe how those worms behaved. When he looked at these plants after a long weekend, he was surprised to see new emerging green leaves, something that rarely happened under field conditions. The worms were identified as a saprobic oligochaete. Emergence of green leaves (i.e., recovery of plants) indicated that something was wrong in the soil. And with that clue, Dr Nene started looking at the soil. Dr Bray’s soil fertility course at the University of Illinois that Dr Nene had credited proved useful. He looked at the soil pH. The pH was almost always around 8.5 in the plots where khaira occurred and around 7.0 in plots where it did not. Thus, there was a clear difference in the soil pH. With his soil fertility knowledge, he knew that some of the micronutrients could be less available at alkaline pH. When he searched the literature, he found that iron, manganese, zinc, or boron could be deficient in soil. Preliminary soil analysis revealed possibility of either zinc or manganese deficiency. That information was enough. Dr Nene tried zinc and manganese applications on diseased plants. Two foliar sprays of zinc sulphate (0.5%) and lime (0.25%), which had been recommended for citrus orchards in California, gave excellent recovery of plants within two weeks. No response was found in the case of manganese sprays.

These results indicated that khaira disease could be due to zinc deficiency. It was amazing how quickly farmers came to know about zinc deficiency. The results were obtained in 1965 and in 1966 the farmers were already buying chemical grade zinc sulphate for their use because no commercial grade zinc sulphate was available in markets.



Dr Nene explaining khaira work to a group of farmers 1966



After Dr Nene's discovery on khaira, zinc deficiency was noted world over



Visitors to Pantnagar looking at field trial of the effect of zinc sprays



Dr Nene in a khaira recovered rice plot

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Khaira control by zinc sprays

Dr Nene published papers on this work and his full paper, published in 1966, has been widely cited in the world literature. Drs Tanaka and Yoshida published “Nutritional Disorders of the Rice Plant in Asia” as IRRI Technical Bulletin 10 in 1970 in which they described Dr Nene’s pioneering work at Pantnagar. Likewise, many others have credited him for his work.

His work on diseases of pulse crops (food legumes)

After solving the mystery of khaira disease, Dr Nene paid attention to the diseases of pulse crops, which include warm-weather/rainy season/kharif pulses of mung bean, urd bean, cowpea and pigeon pea, and rabi (cool-weather/winter) crops of chickpea, lentil and field pea. He is recognized worldwide for his very significantly contributions to the viral and fungal diseases of these crops first at Pantnagar (1966-1974), and then of pigeon pea and chickpea at ICRISAT (1974-1996).

His pioneering work on the viral diseases of warm-weather (kharif) pulses. He did detailed work on yellow mosaic of urd and mung beans caused by Mung Bean Yellow Mosaic Virus (MYMV). Due to his keen

observations, he distinguished two types of symptoms in urd bean; one, where the whole leaf would turn yellow, and two, where the yellow spots would be limited and would become necrotic (necrotic type). The plants affected with the latter type would provide almost normal pods and yield. Later, large numbers of urd bean germplasm and varieties were screened under field conditions and two selections from cvs T-9 (UPU-1) and D6-7 (UPU-2), which showed such types of necrotic symptoms, were selected and identified for release for cultivation by farmers. No such types were observed in mung bean.

Through further studies, cotton whitefly (*Bemisia abaci*) was confirmed as an efficient vector to transmit the causal virus under field conditions. Although the vector could transmit the virus for several days after acquisition but the virus did not go through the insect from one generation to another. The MYMV, in addition to mung and urd bean was able to affect several cultivated (pigeon pea, field bean) and other wild hosts. He further confirmed that yellow mosaic was neither transmitted through seed or sap, and its spread in the field was only by the whitefly vector.

He also carried out work on some other diseases of kharif pulses. Among them were leaf crinkle of urd bean and mung bean, mosaic mottle and leaf curl of urd bean and mung bean, sterility mosaic and yellow mosaic of pigeon pea, and cowpea mosaic. Detailed studies on some of these diseases were carried out. Because of his pioneering work on the viral diseases of pulses, he was invited as a Visiting Professor for 6 months at the University of Nebraska, Lincoln, USA in 1969/70.

Worked on some winter (rabi) pulses. Considering the importance of wilt disease in lentil, disease symptoms in detail were studied. Also, work on

the causal fungus and its physiologic races of the causal fungus and control was carried. Greenhouse and field techniques were developed to screen lentil germplasm and breeding material against the disease. Good sources of resistance were identified and lentil varieties resistant to wilt were developed, namely, Pant L 406. Some of these varieties are still cultivated by farmers. He also paid attention to the wilt disease in chickpea and other root rots, the work which he pursued rigorously at ICRISAT. But through screening in a wilt/root rot sick plot, some resistant varieties were developed, identified and recommended for farmers' use.

Worked on wheat diseases. It had become Dr Nene's hallmark to pay attention to and provide solutions to important disease problems faced by the farmers. With this in mind, he addressed to some wheat disease problems. One of them was the black point of popular cultivar Sonalika in 1967/68 which became a great concern to the wheat seed producing companies in Tarai region. Through his work, he concluded that such symptoms had no pathogenic value and thus no consequence. He also did useful work on the control of brown rust of wheat. For his useful work on wheat diseases, he was awarded a silver medal in 1971 for his work on wheat improvement by Drs Norman Borlaug and Glenn Anderson of CIMMYT (Internal Centre for Wheat and Maize) in Mexico.

Developed interest for work on fungicides. Dr Nene developed special interest in fungicides basically to help improve emergence of different crops and provide alternative control for some specific crop diseases through the use of fungicidal seed treatments. These included: improvement of emergence in sugarcane, chickpea, sorghum, oats, peas and okra. He also studied control of crop some diseases

through fungicides. This included control of stem gall of coriander, rust of peas, brown rust of wheat and brown stripe downy mildew of maize. Interaction of micro-nutrients, insecticides and herbicides on the efficacy of fungicides against the leaf blight of maize was also studied. He also developed a post-graduate course on fungicides and taught it himself. He thus developed a good interest and expertise in fungicides.

A great enthusiast of technology transfer and friend of farmers

As a scientist Dr Nene always believed in addressing to farmers' crop health problems. Additionally, he has always been a great enthusiast of transfer of the newly found solutions and technology to farmers. Because of this, he became farmers' best friend and guide while he was at Pantnagar. Consequently, students, extension personnel and farmers took advantage of every opportunity to get him out into the field. Farmers would come to him inviting him with great honour to visit their crop fields as family doctors keep visiting human patients for medical check-up. Tarai Farmers in the then Uttar Pradesh State (now Uttarakhand) designated him with a title statement "the man who can work out the most difficult problems". On several occasions during late 1960s and early 1970s, the practice of visiting farmers' fields not only around Pantnagar University but also at distant places (100-250 km) was adopted as a policy under Dr Nene's leadership as Head of the Department of Plant Pathology covering mandated crops by respective Project Leaders of the concerned Crops. He would often say to students that "even if a single farmer is benefited by your work you must feel satisfied that you have served the farmers interest and hence the country as such".



Speaking to farmers in Pantnagar

Considered a distinguished faculty member at Pantnagar

His professional work at Pantnagar was highlighted by his contributions as a highly successful, valued and respected faculty member in the College of Agriculture. He enjoyed excellent reputation not only in the College of Agriculture but in the whole university, a rare reputation, only enjoyed by him in the university. It was at Pantnagar that he distinguished himself as an excellent teacher, and excelled in research as well. He is also credited with the pioneering systematic research on viral diseases of pulses and developing disease-resistant varieties of pulses. It was during his tenure in Pantnagar that Dr Nene was recognized internationally for his scientific contributions. Among these are: International Rice Research Prize in 1967 by FAO for his ground-breaking and leading work on khaira of paddy, and a silver medal in 1971 for his work on wheat

improvement from Drs Norman Borlaug and Glenn Anderson of CIMMYT in Mexico.

His contributions as a faculty member to Pantnagar would always be remembered by the university. And it is this reason that the honorary degree of Doctor of Science was conferred on him by the GB Pant University of Agriculture and Technology, Pantnagar in 1991 in recognition of the “singular contribution to the cause of agricultural research, education, and development”. A building in College of Agriculture Complex has been named as “Dr. YL Nene Examination Hall” for his memorable work that he did at Pantnagar.



Dr YL Nane Examination Complex of Pantnagar

Helped the university in extra-curricular activities

Besides academic activities of teaching and research, Dr Nene was assigned non-academic activities by the university administration. This was because of the reputation as a disciplined and fair faculty member that he had earned the respect of the administration, students and staff of the university. Such assignments included member of selection committees, discipline committees, and cafeteria committees to straighten out problems in the hostel cafeterias. Because of his interest in games and sports,

he was councillor of the university sports clubs like cricket. It was because of his special qualities that everyone recognized in the university and trusted him and valued his judgements. Thus, he was a rare combination of a faculty member with so many desirable qualities that any institution would dream of employing. And for these reasons, he was regarded as a source of inspiration by students and colleagues.

Appointment and Professional Achievements at ICRISAT



Research and Leadership Challenges at ICRISAT

In 1974, Dr Nene joined ICRISAT, located at Patancheru (near Hyderabad), Andhra Pradesh, India, as the Principal Plant Pathologist in the Pulses Improvement Programme. In 1980, he was appointed as the Leader of the Pulses Improvement Program, and in 1986 as the Director of Legumes Program in the institute. Because of his excellent performance, he was appointed in 1989 as the Deputy Director General (DDG) of ICRISAT. While at ICRISAT, he went to the University of Illinois, Urbana, USA, as a Visiting Professor for a year in 1982/83.



*YL Nene with Sri YB Chavan, Dy. Prime Minister of India
visiting ICRISAT*

His first challenges at ICRISAT

His first challenge was to set a priority on the pulses pathology work on the two ICRISAT-mandated crops

of chickpea and pigeon pea as he was first Principal Plant Pathologist appointed at ICRISAT. Since he was already familiar with the diseases of these two crops from his Pantnagar work he could, in consultation with his pulses pathology and breeding colleagues identify the priority areas of research in chickpea and pigeonpea pathology. The priority diseases that were identified included: wilt/root complex in chickpea, and wilt and sterility mosaic in pigeon pea.

And then, he took up the task of establishing the basic facilities for conducting pulses pathology research on these two crops in the temporary building facilities in Hyderabad city as the main campus building at Patancheru came up only in 1979.

He solved the mystery of “wilt complex”. Dr Nene took up the challenge to sort out the mystery of “wilt complex” in 1974 after joining ICRISAT. After many critical observations of symptoms, hundreds of isolations of fungi in pure cultures, pathogenicity tests, and visits to many research stations and farmers’ fields in India and other chickpea-growing countries, he concluded that what has generally been referred to as the “wilt complex” was actually a number of distinct diagnosable diseases. These distinct diagnosable symptoms are of wilt produced by *Fusarium oxysporum* f. sp. *ciceri*, dry root rot caused by *Rhizoctonia bataticola*, root rot caused by *Rhizoctonia solani*, collar rot caused by *Sclerotium*

rolfsii, stem rot caused by *Sclerotinia sclerotiorum*, foot rot caused by *Operculella padwickii*, and root rot caused by *Fusarium solani*. In order to assist chickpea workers to identify the main disorders of chickpea, a pictorial information bulletin with coloured plates “Diagnosis of Some Wilt-like Disorders of Chickpea” was prepared in 1978 (also translated into Spanish). It is widely used by researchers in India and other chickpea-growing countries. The demand for this handbook necessitated the publication of “Field Diagnosis of Chickpea Diseases and their Control” published in 1991. This was aimed to serve as a successful key to diagnose the common, but confusing disorders of chickpea. The work received wide appreciation and was considered very useful by the chickpea workers and even some progressive farmers in India and abroad.

Because of his wide experience, Dr Nene was specially invited by the governments Bangladesh and Pakistan for help in the diagnosis of chickpea diseases. He also assisted pathologists in several other countries including USA in correctly diagnosing chickpea diseases, some of which were diagnosed for the first time in these countries.

Developed integrated management of wilt and root rots of chickpea. Special emphasis was placed on developing resistance breeding programme for which effective screening techniques in greenhouse as well as field conditions were developed. As a result, chickpea varieties with combined resistance to wilt and root rots were identified. However, it was realized that only an integrated management system can effectively control root pathogens. Therefore, an integrated control to prevent disease epidemic of wilt and root rots was developed with the aim of reducing the initial inoculum density, the survival and dispersal of inoculum, the rate of infection and the time the crop is exposed to infection.



Chickpea wilt sick plot

Paid attention to fusarium wilt, sterility mosaic and phytophthora blight of pigeon pea. For disease control of these three important diseases, he placed emphasis on host plant resistance. Simple techniques to screen pigeon pea for all three diseases were developed both for pots and field conditions. Techniques to multiply the fungus inoculum in case of fusarium wilt and phytophthora blight were developed. For field screening, wilt-sick plots in Alfisols were developed by incorporating stubbles from diseased plants into soil and by growing wilt-susceptible pigeon pea variety in them. Similarly, for large-scale field screening for phytophthora blight, a diseased-debris inoculation technique in Alfisol fields was developed. A technique for screening for host resistance in pot conditions by drench inoculation technique was also developed. For sterility mosaic, also, both field and pot screening techniques were developed. The Infector-hedge field inoculation technique was developed for field screening. Also, developed the spreader-row inoculation method where several rows of a susceptible cultivar are planted 4 months in advance of the test crop. A simple leaf stapling technique for use in both field and pot screening was developed in

which diseased leaves with mites were stapled onto the leaf of the test plants.



Pigeonpea wilt screening at ICRISAT

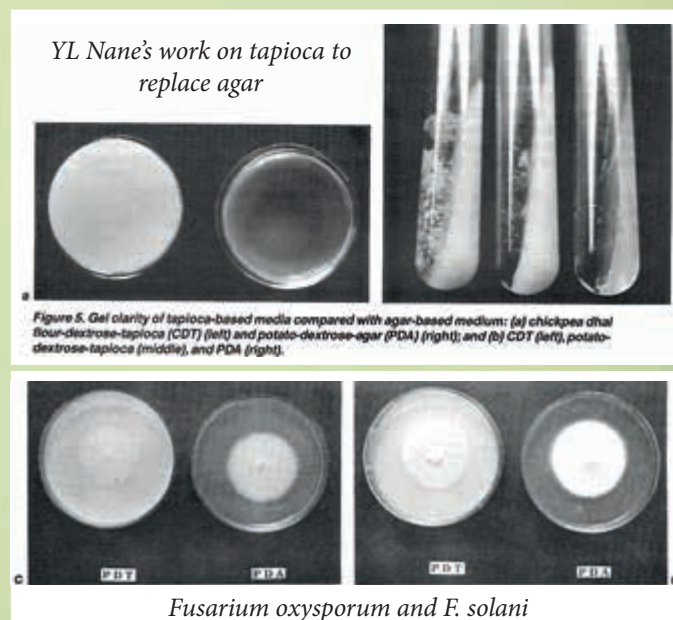
It was possible to identify pigeonpea lines with broad-based resistance to individual diseases. Cultural practices were also exploited to control the wilt disease by reducing soil population of the causal fungus. These included mixed cropping with sorghum and by sowing susceptible cultivars in the post-rainy season as it resulted in much lower disease incidence than when the same cultivars were planted earlier in the year.

Successfully developed multiple disease-resistant varieties of pigeon pea. Through combining the effective field techniques described above, it was possible to simultaneously screen for resistance to the three important diseases of pigeon pea, viz., wilt, sterility mosaic and phytophthora blight. Numbers of resistant germplasm accessions were identified as resistant, and thus varieties resistant to the three diseases were developed.

The techniques developed at ICRISAT are being used routinely by researchers in South and Southeast Asian countries, East African countries, the Middle East, in some European countries, and in the United States. He also contributed significantly to developing multiple-disease resistance-screening techniques and developing disease-resistant varieties of pulses.

Extended his diagnostic research to nematodes. Dr Nene extended his diagnostic research on fungal and virus diseases to similar research on nematodes. He contributed to research on identification of the important nematode pathogens of chickpea and pigeon pea, resistance-screening methods, identification of resistant/tolerant sources, interaction of nematodes and fusarium wilt pathogens, and effects of soil solarisation on nematode populations.

Found a cheaper substitute for agar. In place of expensive agar used in making culture media, Dr Nene identified tapioca pearls for use as a cheaper and easily available substitute and for developing inexpensive microbiological and tissue culture media.



Leader in legumes research and technology transfer

The most outstanding contributions of the Pulses and later Legumes Programmes that Dr Nene led at ICRISAT during 1980-89, are the development of high-yielding pigeon peas (short-duration, pest-and disease-tolerant, determinate types; dwarfs; vegetable types; and hybrids), short-duration, wilt-resistant chickpeas; and high-yielding, disease-resistant groundnut varieties. Thirty-four ICRISAT lines of the three crops were released during this period for commercial farming in Australia, Bangladesh, Ethiopia, Fiji, Ghana, India, Indonesia, Jamaica, Kenya, Malawi, Myanmar, Nepal, Pakistan, Republic of Korea, and USA. In addition, 18 Kabuli chickpea lines developed through ICRISAT/ICARDA cooperative research were released during 1984-89 in 14 countries of Asia, Africa, and Europe.



Dr Nene's shake hand with General Võ Nguyên Giáp of Vietnam at ICRISAT

Along with a multidisciplinary team of scientists, Dr Nene generated new and useful information on the effects of soil solarisation on pests (including fungi and nematodes), nodulation, growth, and yield of pigeon pea and chickpea. The soil solarisation



Dr Nene's hand shake with Sir Edmund Percival "Ed" Hillary who was the first to climb Mt. Everest in 1953



Dr Nene in Zimbabwe



Dr Nene and Paliwal with the Governor of Uttar Pradesh

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Dr Nene explaining to the Queen Elizabeth II, Head of the Commonwealth visited ICRISAT in 1983

technology has been used in experimental plots of chickpea, pigeonpea, groundnut, and other crops at ICRISAT and other agricultural research stations to alleviate some biotic stresses.

At ICRISAT, Dr Nene was responsible for establishing the Asian Grain Legume Network (AGLN), now known as Cereals and Legumes Asia Network (CLAN), which has 11 South and Southeast Asian countries as members. In response to the request of India, Ministry of Agriculture to ICRISAT, Dr Nene led a multidisciplinary team of scientists and succeeded in demonstrating high yields of groundnut, pigeon pea, and chickpea in many Indian states. He was the driving force behind this project work, which was acclaimed as an excellent example of on-farm adaptive research and transfer of technology. This activity led to the adoption of components of the improved production technology of the three

legumes by farmers in several states in India thus enhancing grain production in the country. These demonstrations attracted the attention of Indian officials, research workers, and farmers as well as officials of international agencies such as UNDP, and Asian Development Bank, which offered funds to ICRISAT for similar technology transfer activities in South and Southeast Asia. Dr Nene coordinated the cereals and grain legumes on-farm, adaptive research in Asia.

Dr Nene is recognized internationally as a leader in grain legumes research, and an authority in pulses pathology, and on international agriculture. Considering this, he was invited to be a member of the International Advisory Board or Steering Committee for the International Food Legume Research Conferences held in Pullman, Washington, USA in July 1986, and in Cairo, Egypt in April 1992.

Recipient of Awards and Honours

Because of his excellent research efforts and work Dr Nene received several awards and honours. The four awards that he received included: (i) International Rice Research Prize in 1967 in a world-wide rice research competition organized by FAO as a part of the International Rice Year (1966) celebrations, (ii) Third Jeersannidhi Award of the Indian Phytopathological Society for outstanding contributions to Indian Plant Pathology (1985), (iii) Shri Om Prakash Bhasin Foundation Award for Science and Technology in the field of Agriculture and Allied Sciences (1991), and (iv) Indian Society of Pulses Research and Development Award (1994). Dr Nene was elected Fellow of the American Phytopathological Society (APS) at the 1990 Annual Meeting in Grand Rapids, Michigan, USA; the only second Indian to be accorded this honour ever since it was instituted by the APS in 1965. Election as a Fellow is a reflection of the high esteem in which a member is held by his or her colleagues. The award is given in “recognition of outstanding contributions in extension, research, teaching, or other activity related to the science of plant pathology, to the profession, or to the Society”.

Dr. Nene was conferred the honorary degree of Doctor of Science by the GB Pant University of Agriculture and Technology (GBPUA&T), Pantnagar in 1991 in recognition of the “singular contribution to the cause of agricultural research, education and development”.



Dr Nene receiving Shri Om Prakash Bhasin Award from Shri PV Narasimhan, the Hon. Prime Minister of India



Dr Nene receiving ISPR Award from Minister of Agriculture, India

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A Good Communicator of his Research Results, Writer and an Effective Speaker

Dr Nene has always been a good communicator and always published his research results well and in time and his publications to scientific literature are noteworthy. He has thus authored, edited, or co-authored a total of 440 publications. The research articles are published in 52 journals.

Based on his interest and research expertise in the area of fungicides, Dr Nene wrote the book “Fungicides in Plant Disease Control” in 1971. The book has been very popular in Indian universities and in many tropical countries. Several agricultural universities in India introduced courses on fungicides and have been using this book as a text book. A Hindi edition was published in 1976. In co-authorship with a former student and colleague, Dr PN Thapliyal, he published a second edition in 1979 and the third edition in 1993. He is the main editor of the book “The Pigeon pea” published in 1990, which is an invaluable contribution to pigeon pea research and advances in grain legume research. He is also a co-author of a book on “Revitalizing Higher Agricultural Education in India: Journey towards Excellence” by Prof PM Tamboli and Dr YL Nene published in 2011.

Because of his good and effective speaking ability, he was always a preferred invitee to deliver invited lectures in symposia and seminars. Thus, he delivered several invited lectures, the most significant being the Second Dr NK Anant Rao Lecture, the Second Glenn Anderson Lecture on Sustainable Agriculture, and Dr N Prasad Memorial Lecture.



**Revitalizing Higher
Agricultural Education in India**
Journey towards Excellence

Prof. P M Tamboli
and
Prof. Y L Nene

Dr YL Nene
80th Birth
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The Pigeonpea

Edited by

Y L Nene, Susan D Hall, and V K Sheila



C·A·B International



International Crops Research Institute
for the Semi-Arid Tropics



FUNGICIDES IN PLANT DISEASE CONTROL

Third Edition

Y L Nene
P N Thapliyal

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Affiliation with and Service to Professional Societies

The noteworthy aspect of Dr Nene's career is outstanding record of service to professional societies like Indian Phytopathological Society (IPS), Indian Society of Mycology and Plant Pathology (IMPP), and Plant Protection Society (Association). He served these societies as President improving the standard of their journals. He has also served as the first Editor of the ISMPP Newsletter launched in 1995 communicating transparency of publication of research papers and standard of publication of research journals and recognition of young budding plant pathologists. Zonalization of the IPS, i.e., Zonal Presidents and Councillors and holding zonal meetings and symposia for greater participation of young plant pathologists has been Dr Nene's idea and decision as President of the IPS to check formation of any newer plant pathological societies in India.

Post-ICRISAT Activities on Agricultural Heritage of Asia

An Idea to Study History of Indian Agriculture Born in Dr Nene's Mind

The idea of studying the history of Indian agriculture was born in Dr Nene's mind while he was in the USA as a PhD student. One of the professors at the University of Illinois commented rudely in a discussion with him on lack of originality of scientific basis of agricultural methodologies in Asian countries including India. On the contrary Mr YL Nene was well aware that the South and Southeast Asia regions had generally provided food security to its population for several millennia with only occasional famines in a few limited drought-prone pockets. Farmers in these parts of the world otherwise had evolved some of the most sustainable agricultural management technologies suitable for different agro-ecosystems. So, he kept this in mind at that time but decided to pursue it at some point of his life.

Dr Nene also harboured this idea during his Pantnagar days and had developed some interest in the history of Indian agriculture as indicated by an article on "Emperor Jahangir on plant disorders" that he published in 1973 in *Current Science* 42:294, a year before leaving Pantnagar for ICRISAT in 1974.

He continued this interest alive during his tenure in ICRISAT. He wondered about the fate of South and Southeast Asia regions which still were sufferers and

were projected as food-deficient regions where mass-scale starvation could occur in the future despite the fact that modern technologies have been adopted over larger areas. Therefore, there was a question that he posed to himself: How can we make the agriculture in South and Southeast Asia sustainable? Thus, the idea of establishing a foundation was born in his mind to study the information on agriculture in ancient South and Southeast Asia and to know the techniques that they were using during those times.

Sought Early Retirement from ICRISAT to Pursue his Cherished Dream

While as the DDG of ICRISAT, he voluntarily opted to retire at the age of 60 in 1996 five years before the mandatory retirement age of 65 to devote all his time and energy to fulfil his cherished dream to unearth and disseminate the information on the ancient and medieval history of Asian agriculture.

He established the Asian Agri-History Foundation (AAHF). Thus, AAHF was founded and established and registered as a non-profit trust on 30 December 1994 in cooperation with a group of like-minded well-known group of agricultural scientists SN Nigam, PM Tamboli, RL Paliwal, SPS Beniwal and Mrs Sheila Vijayakumar as trustees. Finances were raised with personal contributions of trustees and many donors to facilitate unearthing and dissemination

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of information on agricultural history to promote research on sustainable agriculture in the South and Southeast Asia regions. AAHF believes that there is a great deal to be learned from the traditional wisdom, and the indigenous, time-tested technologies with modern agricultural practices would ensure long-term sustainability of agriculture in Asia. He expected that this will provide clues for (i) understanding how farmers adjusted to changing environment in the past, and (ii) industries.

Dr BR Barwale



Sri PP Singhal



Donors and supporters

Thus, the AAHF was established with the objectives to (i) disseminate information on the history and heritage of agriculture in the South and Southeast Asia regions, (ii) stimulate research on the history and heritage of agriculture in Asia with a special focus on South and Southeast Asia, and (iii) promote environment-friendly, sustainable agriculture (including organic agriculture) based on the knowledge of sustainable agricultural practices gathered in heritage publications on agriculture. The following activities were envisaged for AAHF:

- Regular publication of Asian Agri-History, an international quarterly journal

- Translation of heritage manuscripts/publications on agriculture into English and other languages and their publication.
- Encouragement and support to research on traditional agriculture through fellowships in universities and other institutions.
- Promotion of Asian Agri-history in education.
- Conduct of seminars, conferences, and lectures to promote exchange of information on agricultural heritage and sustainable agriculture and collaboration among interested scholars.

A function to formally inaugurate the AAHF was held on 19 November 1996 at the India International Centre, New Delhi in conjunction with the International Crop Science Congress. Dr RS Paroda, then the Director General, Indian Council of Agricultural Research (ICAR) was the chief Guest. Dr RL Paliwal, then the Director of Maize Programme at CIMMYT in Mexico and Trustee of AAHF, chaired the function. Foundation's first publication, a Bulletin entitled "Surapala's Vrikshayurveda" (The Science of Plant Life by Surapala) was formally released.



Inauguration of AAHF on 19 December 1996 at New Delhi

The AAHF now has three Regional Chapters, namely, Rajasthan, West Bengal and Uttarakhand Chapters. This was done to increase activities of the Foundation on a regional basis.

The Foundation Office

The activities of the Foundation were carried out from its Headquarters located in an annexe to the residence of Dr Nene at 47, ICRISAT Colony-1, Brig. Sayeed road, Secunderabad 500 009, Andhra Pradesh (now Telangana), India. The Headquarters of the Foundation were shifted to Udaipur (105, Vidhya Nagar, Hiran Magri, Sec.4, Udaipur 313002), Rajasthan, India, in early 2016 with Dr SL Choudhary as its new Chairman. Dr Nene was honoured with the title of Emeritus Chairman and continues to operate from his residence in Secunderabad, Telangana.

Trustees of AAHF Trust (AAHFT). Dr Nene was the first trustee of the AAHFT and in the beginning, there were 11 trustees of AAHFT with Dr Nene as its Chairman. Presently also, there are 11 trustees of the AAHF Trust which include: SL Choudhary (Chairman), YL Nene (Chairman Emeritus), BL Agrawal, SPS Beniwal, Gajendra Singh, CL Laxmipathi Gowda, SN Nigam, MC Saxena, MVK Sivakumar, PM Tamboli, and RP Thakur.

The AAHFT developed a Corpus Fund for which trustees donated money. Dr Nene had donated Re 15,00,000 (15 lacs) and each trustee an amount of Re 1,00,000 (one lac). Also, donations were received from individual donors and corporate donors with each donor contributing Re 30,000.

Trustees normally meet once a year but they communicate with the AAHF Chairman among themselves through e-mails.

Advisors to the Foundation

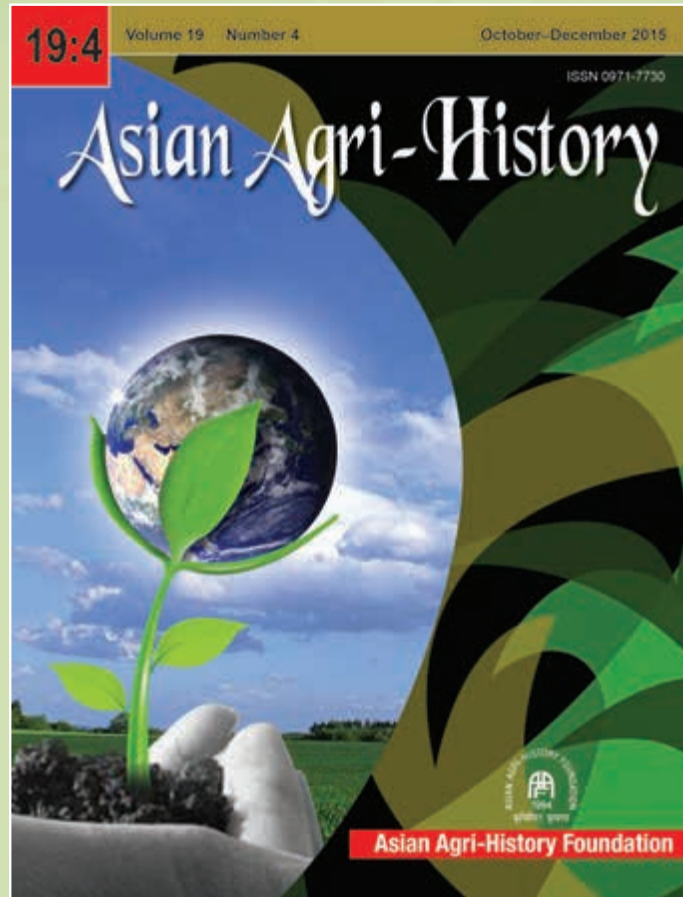
The AAHF has voluntary and honorary advisors, who regularly advise/provide information to the Foundation in fields of their specialization. They are Mr K Narayan Murthy (Finance) and Mr SM Sinha (Art and printing). In addition, there are international advisors to manage the quarterly international journal published by the Foundation.

Foundation Website

A website of the Foundation (www.agri-history.org) was developed, which is being visited a large number of Internet browsers from India and many other countries. The website has now been completely redesigned.

Discovering Agricultural Information and Heritage of Asia through Different Publications

The AAHF has published a number of different publications. Among them are (i) Asian Agri-History, a quarterly international journal, (ii) Classic Bulletins (11 in number), (iii) AAHF Books (five in number), (iv) AAHF National and International Conference Proceedings (seven in number), (v) AAHF Summer School Proceedings (one), (vi) AAHF Conference Souvenir and Abstracts (one), and (vii) AAHF Report (one). These publications of AAHF have received appreciation throughout the world. World literature in agriculture is now enriched with hitherto little known contributions made by Indian scholars and farmers through millennia. The following pages contain information on the important publications of AAHF and its Rajasthan Chapter (established in 2000) located at Udaipur, India from 1996 to 2016.

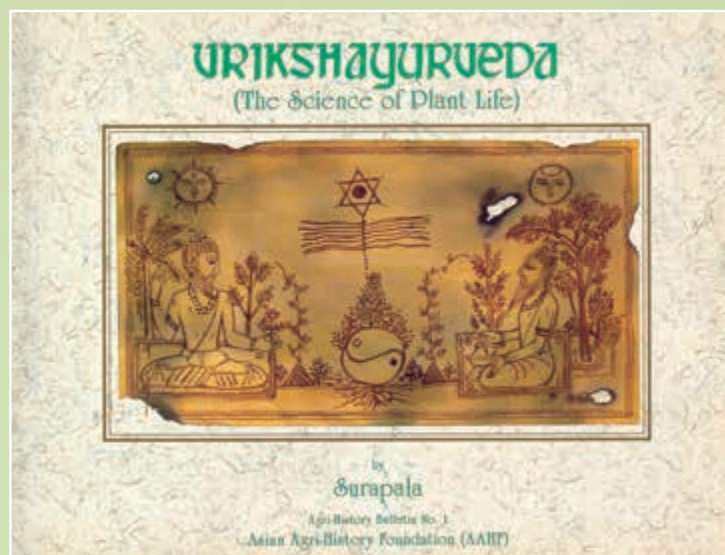


Asian Agri-History

Asian Agri-History is published as a quarterly journal by the Asian Agri-History Foundation. The first issue was published in March 1997. Since then 19 volumes have been completed. These volumes contained articles on agricultural history covering aspects such as Economics and Sociology, Engineering Education, Agroclimatology, Agroforestry, Agrogeography, Crop diversity, Origin and spread of crops, Intercropping, Animal husbandry including fisheries, Irrigation, Plant Protection, Seed, Soil, Systems, Women, and other topics.

Asian Agri-History will include contributions to promote the understanding of all historical aspects of the development of agriculture in South and Southeast Asia.

We take pride in the quality and timeliness of publication of Asian Agri-History all these years.



Vrikshayurveda

(The Science of Plant Life)

Vrikshayurveda by Surapala (c. 1000 AD), an ancient Sanskrit text on the science of plant life was a mere name until few years ago. The AAHF procured a microfiche of the manuscript of Vrikshayurveda of Surapala from the Bodleian Library, Oxford, UK. The text is an independent, full-fledged work on the subject of Vrikshayurveda.

Vrikshayurveda, which means “The Science of Plant Life”, mainly deals with various species of trees and their healthy growth and productivity. The text mentions about 170 species of plants, including herbs, shrubs, and trees. There are 325 systematically arranged verses, beginning with a salutation to Lord Ganesha, followed by glorification of trees, and composition on tree planting and production. Various chapters deal with the raising of orchards, agri-horticulture, and tree planting near houses. Special references are made to procuring, preserving, and treatment of seeds and planting materials; preparation of pits for planting; selection of land (soil); methods of irrigation and ways to locate groundwater; nourishment and fertilizers; diseases of plants and plant protection; laying out of gardens and orchards; creation of agricultural/horticultural wonders; use of plant species as indicators of crop and animal production; and description of sacred plants. Several botanicals (herbs) and other materials had been identified and recommended for application on ailing plants. We know today that many of the herbs recommended by Surapala possess biocidal properties. Surapala describes a unique liquid fertilizer-cum-plant protection material called Kunapajala, which is prepared from animal wastes subjected to fermentation.

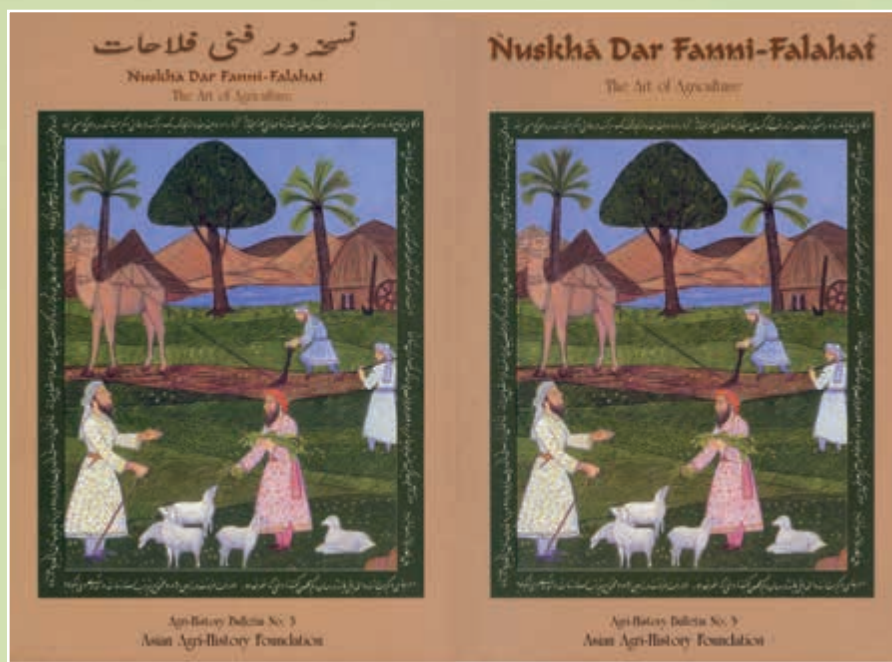


Krishi-Parashara (Agriculture by Parashara)

Krishi-Parashara (c. 400 BC) probably is the first-ever 'textbook' on agriculture in which the information is logically organized in chapters. Here are some highlights from Krishi-Parashara. The detailed description of agricultural implements, especially the plow, along with measurements of the various parts is a noteworthy feature of the text. Different parts of the plow are first identified by names, and measurements of each one of them are then prescribed. Emphasis is laid on the quality and strength of the implements.

Parashara has mentioned not one but several methods for predicting rainfall in the whole year or part of the year, and sudden showers. For annual rainfall prediction, he has given methods based on the 'ruling planet' and the 'minister planet' of the year, transition of the Sun in Aries with reference to nakshatras (is the term for lunar mansion in Hindu astrology; their names are related to the most prominent asterisms in the respective sectors) and some other methods. Even today in the 21st century, a very large majority of farmers in rural areas of India speaks in terms of planets and stars in relation to not only the rainfall prediction but also many other farm operations.

Parashara has highlighted the importance of good management in farming, using examples relevant to his time. We must remember that sustainable agriculture without good management cannot be achieved. The message of Parashara will hold true as long as agriculture exists. Cattle were an important resource for food and farm power. Management of cattle is emphasized. Cattle sanitation, health, and nutrition are stressed. The seed has to be dried well, cleaned from weed seeds, and kept securely in small pouches. Emphasis on uniformity of seed clearly points to the existing knowledge that varietal characteristics are inherited and the desired traits in grain can be obtained through visibly similar seeds. Storing the seed is mentioned; this reveals an excellent understanding about the importance of good seed. It is believed that Parashara must have written the manuscript prior to Kautilya's Artha-sastra, i.e., prior to 4th century BC. Parashara most likely lived in Taxila, now in Pakistan.



Nuskha Dar Fanni-Falahat

(The Art of Agriculture)

The text, written in Persian, was copied from a compendium, Ganj-e-Badawar, compiled around 1650 AD by the Mughal prince Dara Shikoh, son of Shah Jahan. This text briefly describes the “art” of growing about 100 economic plant species. These include trees (fresh fruit, dry fruit, avenue, and timber), shrubs of ornamental significance, vegetables, cereals, legumes, oilseeds, and aromatics. One of the most interesting sections of the text is “transplanting big trees”. Such a procedure has not been described in any other available ancient or medieval texts of India. The recommendations made indicate considerable experience in successfully transplanting large trees. The idea of keeping “two water-filled pitchers with small holes at the bottom” to provide water-drip to the root system is most interesting and practical even today for orchardists having limited resources.

Nitre as a fertilizer was new to the Indian agriculture as no document before the present one mentioned use of nitre as a manure. This must be therefore one of the first inorganic fertilizers used in India. The recommendation to sprinkle nitre on vines must have been based on observing beneficial effects on growth of vines. A statement on baqla (*Vicia faba*) is noteworthy. It is mentioned that roots, branches, and leaves of baqla “have the qualities of manure and it increases the strength of the manure” and that is why it is grown as an intercrop. This is a very significant statement pointing to the beneficial effects of legumes, which we know so well today.



Kashyapiyakrishisukti

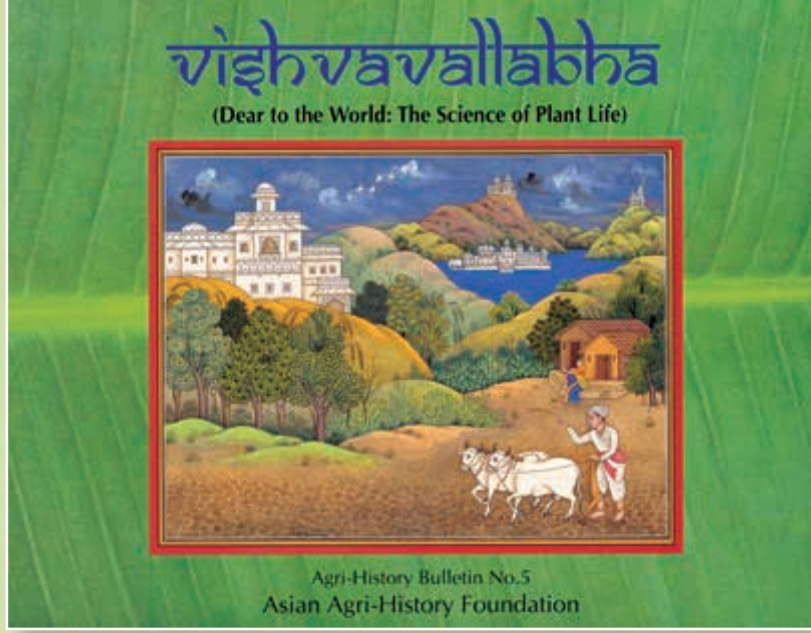
(A Treatise on Agriculture by Kashyapa)

A copy of the manuscript (No.38J8) in Devanagari script exists in the Adyar Library, Chennai, India. Being a work on an applied science such as agriculture, Kashyapiyakrishisukti has on the whole succeeded in systematically instructing the agriculturist on various issues of farming in a simple language. The present text (c. 800 AD) is a detailed one covering not only irrigated rice production in India but also other aspects such as stressing strong support to agriculture from the ruler, stressing participation of people of all castes in farm-related activities, cattle management, describing soil properties, growing pulses on uplands, growing vegetables, fruits, spice crops, and ornamental plants, growing trees, laying out gardens, marketing, and even mining. It is indeed an excellent text on agriculture.

Two verses explain clearly what Kashyapa thought about the soils. It is stated in verse 27 of Section I that “land is intended to receive excellence in every age” and in verse 55 of the same section, “A good quality land yields good results to everyone, confers good health on the entire family, and causes growth of money, cattle, and grain.” Thus the importance of a good soil can never be overemphasized. A modern soil scientist studies physical properties including the texture of the soil. The procedure described in verses 51 through 54 of Section I is very similar to what is done today. Kashyapa has given details about where and how water reservoirs should be constructed (l. 61–110). He stressed construction of a reservoir near farmers’ fields, ensuring source of water for the reservoir, making strong causeways and thus taking steps to avoid flooding of inhabited areas, and regularly inspecting and repairing the reservoirs, especially during the rainy season. From the description of cows and bullocks given by Kashyapa, it is likely that he was referring to the breed known today by the name Ongole, which is predominant in Guntur and Nellore in Andhra Pradesh. Kashyapa advised that changes in technologies will occur with changes in time and the king must assist in introducing such changes. The main focus of Kashyapa was the agriculture of the high rainfall area of Central-East India.

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International English Edition*



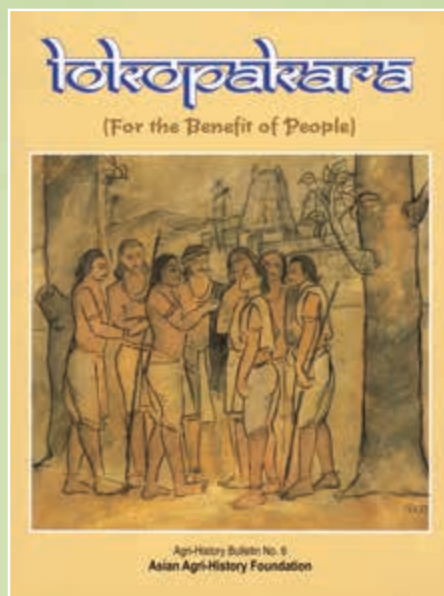
Vishvavallabha

(Dear to the World: The Science of Plant Life)

A Sanskrit classic on agriculture, Vishvavallabha (Dear to the World: The Science of Plant Life) was found in the library of the Rajasthan Prachya Vidya Pratishthan, Jodhpur, Rajasthan. Vishvavallabha was compiled by a scholar Sri Chakrapani Mishra, around 1577 AD. Chakrapani worked under the patronage of the towering personality of Maharana Pratap (1540–1597) of Mewar in Rajasthan.

The text contains a wealth of information on detection of groundwater, construction of water reservoirs, planting, disorders and treatments, and plantations inside a fort. Since water is scarce in the Mewar and Marwar regions of Rajasthan, Chakrapani has given in detail the indicators for the presence of groundwater. Also for the same reason, methods to harvest rain water and to construct reservoirs are given in detail. Information on growing horticultural crops and management of their disorders is more advanced than given in Surapala's Vrikshayurveda (1000 AD). Chakrapani has claimed that all techniques described in Vishvavallabha were successfully tried by him.

Dr YL Nene
80th Birth
Anniversary

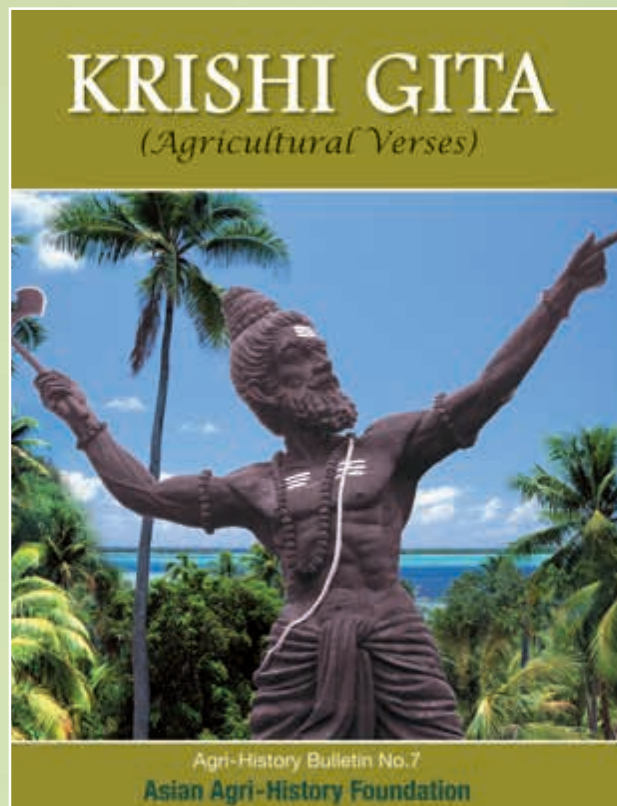


Lokopakara

(For the Benefit of People)

The Lokopakara, which meant “for the benefit of common people”, is a vade mecum of everyday life for commoners and describes topics such as astrology, portents, vastu (architecture), water divining, vrikshayurveda (the science of plant life), perfumery, cookery, veterinary medicine, etc. In this bulletin, we have selected those topics that are of interest to farmers residing in rural areas. The Western Chalukya Kings, with their capital at Kalyani (near Bidar, Karnataka, India) had a tradition of supporting scholarship and Chavundaraya II was one such poet-scholar in the court of Jaisimha II (1015–1042 AD). Chavundaraya has summarized the subject of detection of groundwater in 40 verses. Criteria for detecting groundwater are: (i) the presence of trees as bioindicators, (ii) termitoria, (iii) colored rocks, (iv) fauna such as frogs, (v) grasses, and (vi) emergence of smoke from the ground. All these are relevant. As expected, presence of certain trees and termitoria was the most common indicators.

The chapter on Vrikshayurveda relates to health management of trees, bushes, creepers, etc. Chavundaraya has put the contents, relevant to southern India, in 60 verses in contrast to 300 verses that Surapala had compiled. Verse 11 contains a key recommendation for insect pest control. The base used is cow urine, for one-week fermentation, in which anti-insect herbals, such as asafetida, sweet flag, atis (*Aconitum heterophyllum*) root, black pepper, vidanga (*Embelia ribes*), marking-nut (*Semecarpus anacardium*) seed, indrayan (*Cucumis pseudo-colocynthis*), and black mustard were used. Kunapajala, the liquid manure based on fermenting flesh in water, after boiling, also figures in Chavundaraya’s text. He describes variants of kunapa in several verses. These variants offer considerable flexibility to farmers in preparing kunapajala.

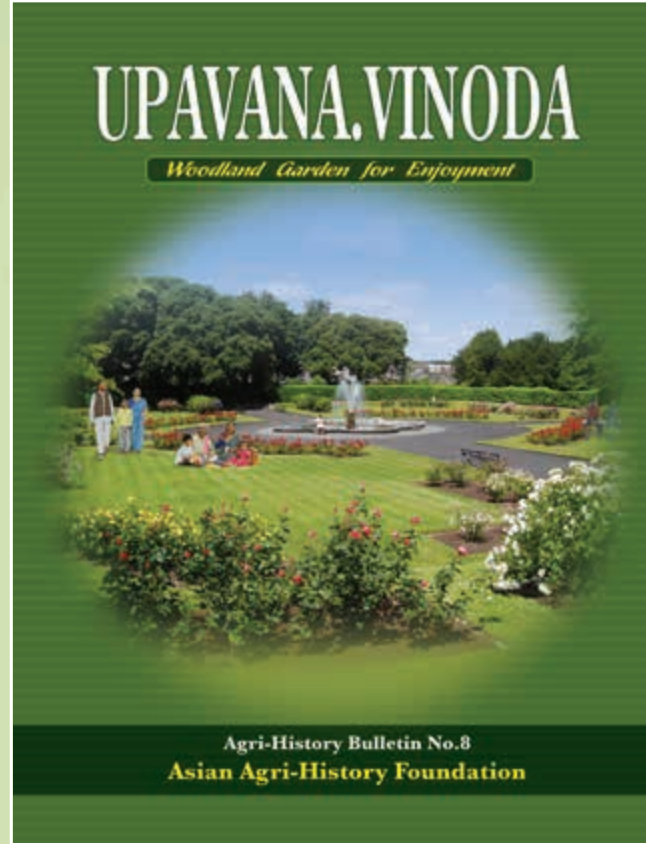


Krishi Gita

(Agricultural Verses)

The Malayalam printed text was procured from Adyar Library, Chennai, India. It is edited by Vidwan C Govinda Warriar. Krishi Gita is a treatise on indigenous farming practices of Kerala (Malayalam desam) in South India. This text refers to cultivation of coastal region crops prior to introductions by Arabs and Portuguese. Soil management involved tillage, manuring, and avoiding water stagnation and iron toxicity. Agronomy covered optimum seed rate, time of planting, depth of planting, and spacing between plants and rows.

A large number of rice varieties (124 varieties) for different areas are recommended, indicating availability of genetic variation. Other crops (1 to 19 varieties) discussed are arecanut, amaranth, ash gourd, banana/plantain, chickpea, betel leaf, bitter gourd, brinjal (eggplant), chili, coconut, cotton, cowpea, elephant foot-yam, fenugreek, yam (*Dioscorea* spp), cocoyam, beans (*Dolichos lablab*), ivy gourd, lime (*Citrus* spp), maize, oriental pickling melon, pigeonpea, sesame, snake gourd, sugarcane, taro, tobacco, turmeric, and watermelon.



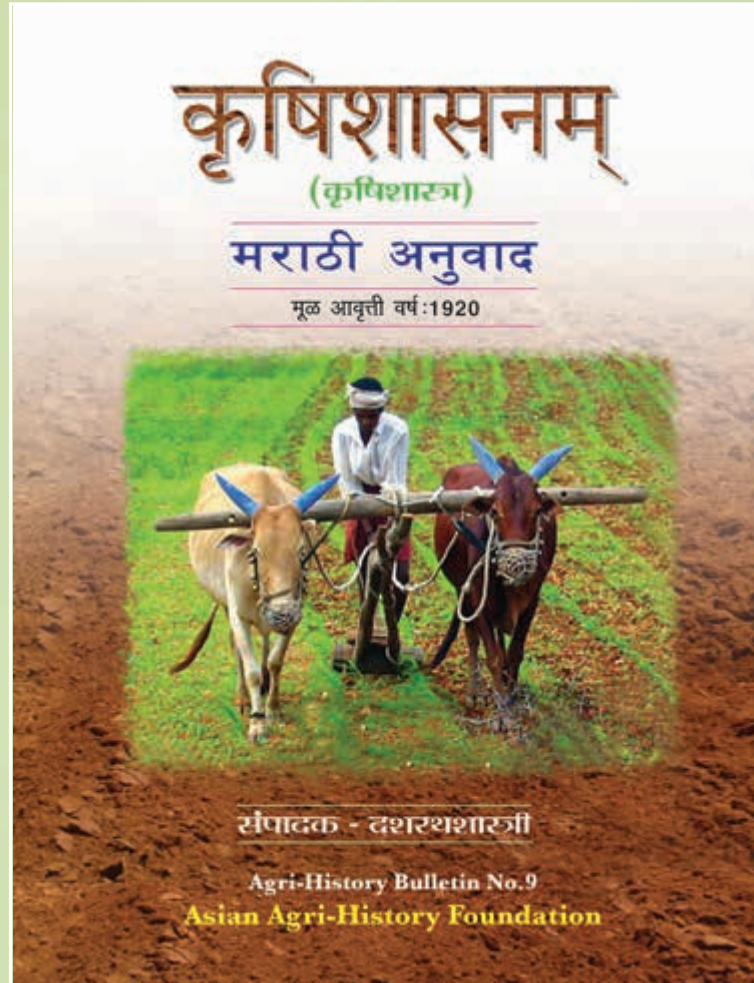
UPAVANA, VINODA

Woodland Garden for Enjoyment

The 13th century Sanskrit text Sarangadhara –Paddhati (2 volumes) has been known for almost 125 years. This text, a Sanskrit anthology was first published in print without translation in any language in 1888 by Peter Peterson, Professor of Sanskrit, Elphinstone college, Bombay (Mumbai). It was published by the Department of public Instructions, government Central Book Depot, Bombay (Mumbai) under “Bombay Sanskrit Series (No.XXXVII). Volume I of the text contained 163 chapters, of which the chapter 82 was titled – “Vrikshayurveda:- Upavanavinoda”. We sponsored writing of the chapter 82 in Sanskrit by hand for this bulletin.

The editor, Peter Peterson, has dedicated the text to Mahrao Raja Ram Singh, Rao of Bundi, Rajasthan. It is implied in the dedication that the Rao of Bundi was genealogically related to King Hammira (1283–1301 AD) of Shakambhari-desha (Bundelkhand-Rajasthan region). Sarangadhara was a courtier, probably the Chief Minister, of King Hammira, who was a powerful monarch, a great patron of learning, and himself a writer.

Alauddin attacked Ranthambore and killed Hammira (1301 CE).

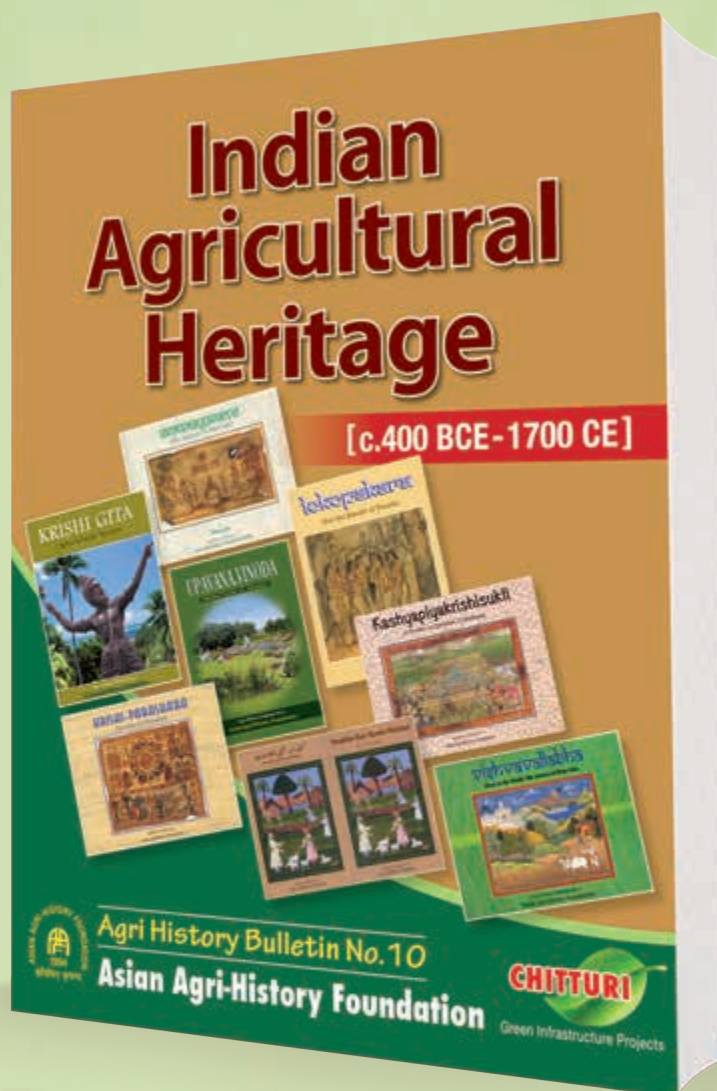


Krushishasanam

(Agriculture Discipline)

Sri Dashrath Shastri of Savner village near Nagpur, India, published Krushishasanam both in Sanskrit and Hindi in 1920. The text refers to ancient farm practices including those by Parashara (c. 400 BCE), copies of the original book are no more available. Dr Rahudkar, (translator) had a hand written copy in Hindi which was used for this publication.

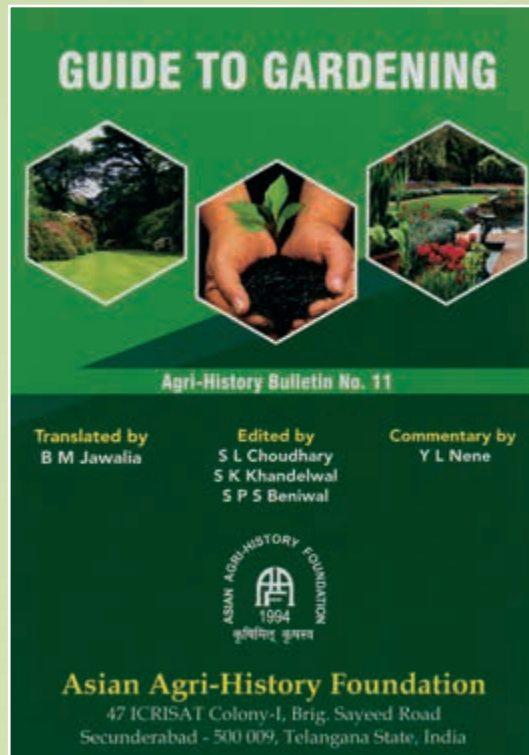
Dr YL Nene
80th Birth
Anniversary



Indian Agricultural Heritage

(c. 400 BCE - 1700 CE)

Specially compiled for the benefit of
Agri-indologists and Agri-businessmen

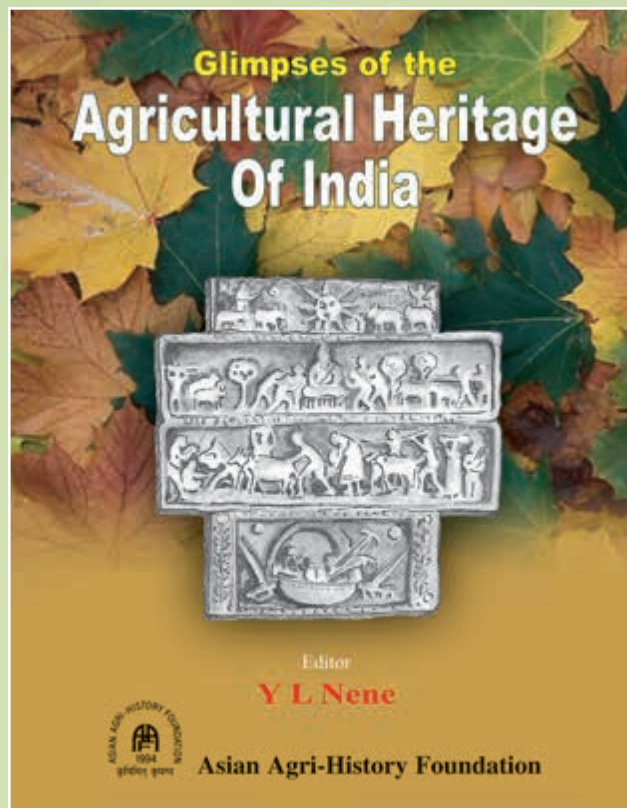


Guide to Gardening

More than 400 years ago, a book was composed by an unknown gardener and presented to the Ruler (Jadeja dynasty?) of the time in Kutch (Gujarat). As per chronicles of Kutch Gurjar Kshatriyas - many clans of their community, especially , Gohil, Bhatti, Jethwa, Solanki, Rathod clans and also Visavaria Brahmins shifted to Mandavi in between 15th to 16th Century AD, from Dhaneti in Bhuj . The establishment of Mandavi town dates back to the late 16th century (1581 AD) and is attributed to the first Jadeja ruler of kachchh, Rao Khengarji I. The 400- year old text was written in verse form in old Saurashtri script (possibly a mixture of Gujarati, Sindi, and Arabic); one ancient script was called Khojki. It was this text that shri Raghunath Ray, ex- Assistant Revenue Superintendant of Development, Jodhpur in 1935, almost 80 years ago.?

English translation of a 400-year old Manuscript “Vatika Tatva Prakas” from Kutch Gujarat.

The text is remarkably simple to understand. In fact , any educated farmer can understand the description follow the recommendations of even a crop that he (farmer) had not raised himself before. Easy for educated farmers to understand. Some old practices can be adopted. Copies should be in all Krishi Vikas Kendras .



Glimpses of the Agricultural Heritage of India

The first book on Indian Agricultural Heritage bringing enormous information based on recent discoveries

Highlights

- Content-wise, a unique book
- The only book to give so much qualitative and quantitative information on Indian agricultural past
- Ideal textbook and resource book for students and teachers of agriculture
- Contents provide new ideas for innovative research
- Anthropologists, environmentalists, economists, historians, meteorologists, indologists, and others will find the book most interesting and useful
- Book that should be in libraries of the world
- Eighty-four chapters written by over 80 internationally eminent scientists



Mriga·pakshi·shastra (The Science of Animals and Birds)

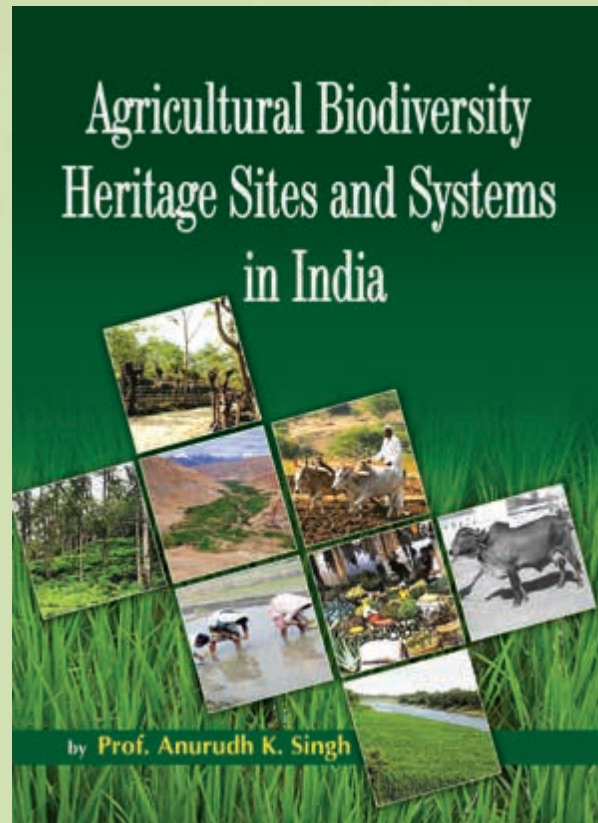
Text of Mriga.pakshi.shastra first came to our notice in the form of a printed book by Chitampalli and Bhatkhande (1993). This book contained the text along with translation by the learned scholars in Marathi. As the book did not give any clue to the original source of the text and considering the importance of the subject that deserved a wider dissemination, AAHF commenced a search for the original source. This ended successfully with the procurement of a transcript (Accession No. 13516) by Nalini Sadhale from the Oriental Institute, MS University, Baroda (Vadodara) in Gujarat. This was copied by an epigraphist of Tirupati, V Vijayaragavacharya from the original. The transcript mentions 4th July 1930 as the date and Tirupati as the place of its completion.

How the original text of Mriga.pakshi.shastra was saved for posterity is described in the foreword (note) written by T Srinivasaraghavacharlu, a litterateur from Bezwada (Vijayawada, Andhra Pradesh). It is stated, “In the 13th century AD, Zoology or the Science of animals and birds was first composed, so extensively, in India by the famous Jain poet, Hamsadeva in Sanskrit language comprising nearly 1700 Slokas in Anushtup metre.”

“I think it is not out of place and exaggeration if I am permitted to say that a few authors of the Western countries, Messrs A.D. Imms, M.A., D.Sc., and Alexander Macalister, M.D., and others, have fully described the natural qualities etc., of lions and a few other animals, but none of them have given age limit of animals and birds. It is, therefore, very gratifying to say that Hamsadeva has given age limit to all animals and birds even to hen and other smaller birds. It is also complimentary to note with unbounded joy that this Zoology is an asset to India – in which country this work and myself are born – nay, it is a gem to be adorned by the other parts of the world.”

“The original work was about to disappear from this world, when Pandit Sreeman Vijayaraghavachariar (Epigraphist), who has the broad mindedness to see its translation and original text published and broad-cast in India and other parts of the world, saved it from its death and supplied copies of the original text (in manuscript) to His Highness The Maharaja of Travancore for the use of the State Museum and to Dr. Caseywood of McGill University of Montreal city (in N America).”

The Book describes 22 animals (123 variants or breeds) and 28 birds (95 variants or subspecies). The color plates add to the readability of this outstanding ancient text.



Agricultural Biodiversity Heritage Sites and Systems in India

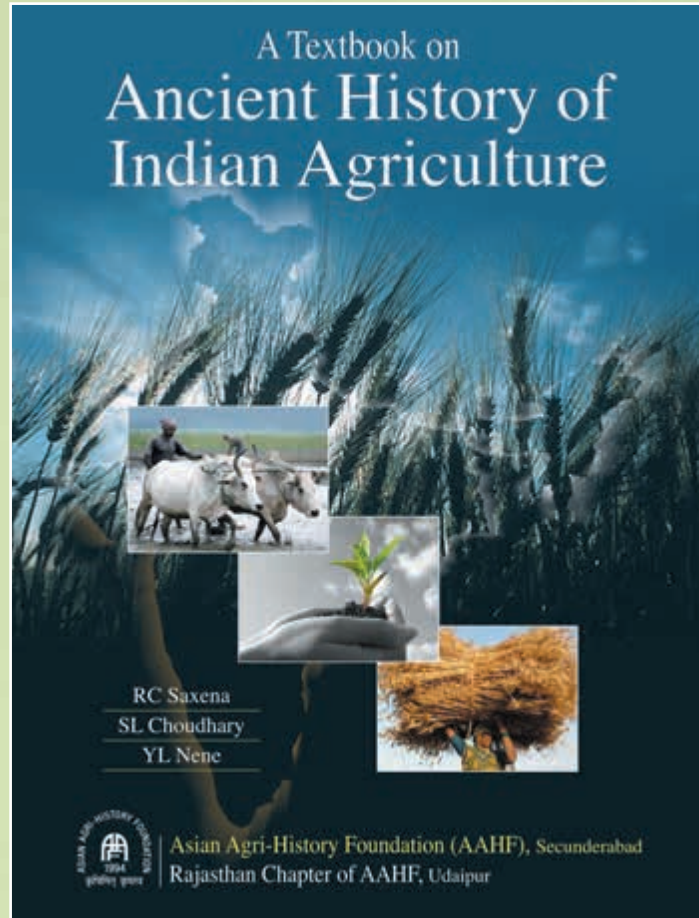
Highlights

First book on India's agricultural biodiversity

Describes 21 biodiversity heritage sites and systems all over India

A reference book for researchers to investigate how farming systems suited to all heritage sites were worked out by indigenous farming communities

Contents will stimulate biodiversity researchers to conserve resources and ensure sustainable agriculture

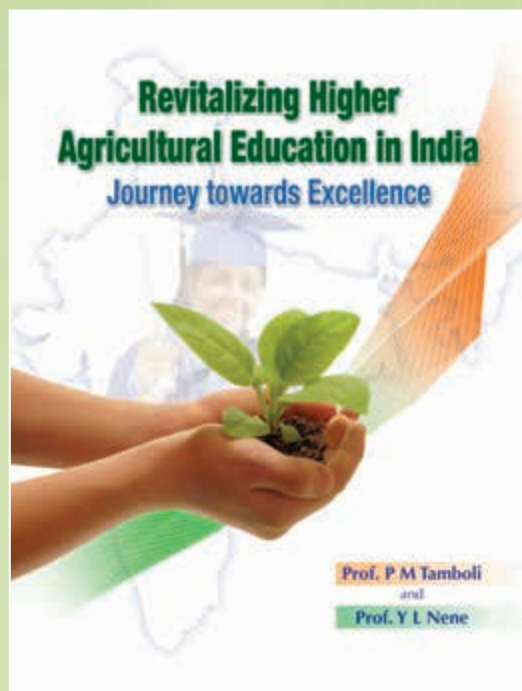


A Textbook on Ancient History of Indian Agriculture

Introductory textbook for students of Agriculture and
related disciplines

Highlights

- Contents very easy to understand and remember
- Nineteen chapters covering a wide range of topics (Development of human culture, Sindhu–Saraswati civilization, Beginning of agriculture, Role of women, Crop domestication and diffusion, Animal husbandry, Fishery, Agriculture in Kautilya's Artha-sastra, Prediction of monsoon, Soil classification, Implements, Water management, Fruit crops, Ornamentals, Plant protection, Kunapajala, Famines and famine-food, Festivals, Pioneers, and Chronology)
- Sample test questions after each chapter

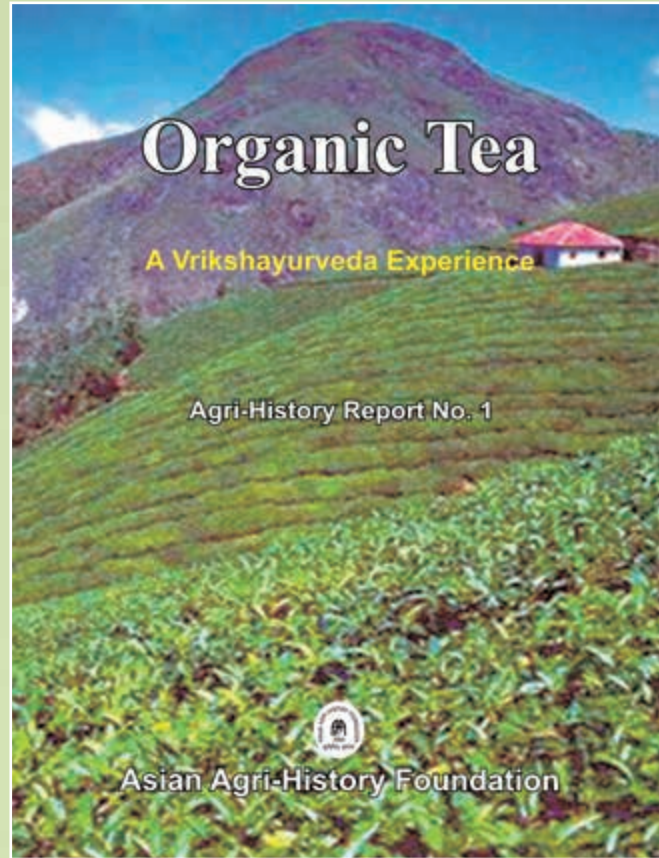


Revitalizing Higher Agricultural Education in India

Journey towards Excellence

Highlights

- A Historical Perspective of Higher Agricultural Education In India
- Agricultural Universities : Location and Description
- The role of Indian Council of Agricultural Research (ICAR) in Supporting Higher Education: Need for Structural Change
- Centre State Relations and Relations between the State Universities and the State Departments of Agriculture
- The Role of Bilateral and Multinational Donors in Supporting Higher Education in Agricultural Universities
- How a Typical Land Grant University Works in USA: Comparison between the US and India's State Agricultural Universities
- Current Status of Agricultural Universities: Issues and Constraints : Suggestions for Addressing these Constraints
- Outlook for the Future: Need for Change. What it takes to establish a World - Class University
- Conclusions and Recommendations



Organic Tea

A Vrikshayurveda Experience

Valmiki Sreenivasa Ayangarya (Valmikiji) was provided freedom and facilities by the Abali Tea Estate, Roing, Arunachal Pradesh, India, to carry out work to produce organic tea using methods described in Surapala's Vrikshayurveda, a manuscript written about a thousand years ago. Valmikiji was able to develop organic pesticides. This Report describes the work done by Valmikiji in Abali Tea Estate.

Contents

- Sasyagavya
- Dhanyagavya, Chimmigavya
- Kunapa, Sarshapa kunapa
- Mathsya kunapa
- Indsafari, other preparations and use

The AAHF Support for Research



To encourage experiments on Vedic concepts in agriculture and find out technologies for the benefit of the farmers and the society as a whole, the AAHF has provided limited financial assistance but liberal technical know-how to a number of scientists in India. We feel strongly that there is a tremendous scope for taking up detailed model validation trials by different crop improvement projects of the ICAR. This is one way of encouraging young scientists to take up lead in this direction. Financial assistance was provided to Mr Manoj K Tiwari, National Council of Development Communications, Varanasi for his PhD thesis on “Cattle management practices in ancient India and its rationality in modern context: A critical study”. Two fellowships were also provided to students in Pantnagar University for their thesis work.

Promoting Inclusion of Agri-History in the Curriculum of Agricultural Universities in India

Since the initiation of the activities of AAHF, attempts have been made by Dr Nene to promote inclusion of Agri-History in the undergraduate curriculum of agricultural universities in India. Finally, it was in 2003 that the ICAR approved inclusion of a course on

“Agricultural heritage of India” in the undergraduate curriculum of agricultural universities with effect from the 2004/05 academic session. As a follow-up of the recommendation, an orientation workshop was held at the National Academy of Agricultural Research Management (NAARM), Hyderabad on 1-2 December 2003 for the prospective teachers of the course in agricultural universities. Twenty-eight teachers from 18 agricultural universities/institutions attended this workshop. Presently, this course is being offered by several universities/institutions in India.

Honouring Good Work

The AAHF has honoured certain individuals for their dedication and contributions to the Foundation. The first person that the Foundation honoured was Dr Nalini Sadhale, who was awarded the AAHF Gold Medal in 2002 for her very significant contributions to the activities of AAHF pertaining to the translation of old Sanskrit manuscripts into English. The second person was Dr SL Choudhary who was awarded a Silver Medal for his extraordinary dedication to the AAHF activities especially in Rajasthan.

Post-AAHF Chairmanship Activities

It was in 2016 due to some health concerns that Dr Nene voluntarily decided to pass on the AAHF baton to one of its trustees, Dr SL Choudhary, as its new Chairman. The Headquarters of AAHF were also shifted to Udaipur, Rajasthan in early 2016.

Dr Nene still continues to pursue his quest for ancient and medieval agriculture

Dr Nene continues to work with good enthusiasm

and guide the Foundation, which is so close to his heart. He is now concentrating on some specific topic(s) of his interest on agricultural heritage and plans to prepare articles to share his work with agricultural scientists. It is due to his great vision, interest, planning, dedicated efforts and hard work that the AAHF is already recognized as “A landmark in the annals of Indian agriculture”.

Our Words of Gratitude to Dr YL Nene

We consider Dr YL Nene as a very rare and extraordinary plant pathologist and agriculturist of modern India. Throughout his professional life of 56 years, he faced and accepted many challenges in plant pathology and agriculture and solved them with his perseverant, systematic and scientific approaches. His contributions to the ancient and medieval knowledge of agriculture of Asia especially India is novel and immensely useful and will be remembered for all time

to come. In our opinion, the story of his professional life has been extraordinary and, in fact luminary, for all of us and many others not only in India but many other countries as well. For all his very valuable contributions, we, his students, colleagues and admirers, express our gratitude to him and would like to say “Thank you Dr Nene” and enjoy the best of health and happiness in your future life. We also wish you well in your future endeavours.

Dr YL Nene
80th Birth
Anniversary

Tributes to Dr YL Nene



Many students including undergraduates and post-graduates and young scientists came in contact with Dr Nene during 56-year span of his professional career in Pantnagar University from 1960 to 1974, in ICRISAT (International Crops Research Institute for the Semi-Arid Tropics) from 1974 to 1996, and finally in Asian Agri-History Foundation (AAHF) from 1996 to 2016. Similarly, a number of other colleagues interacted with Dr Nene in one way or the other. Here we present tributes from some his undergraduate, post-graduate and colleagues. Reference to undergraduate students mean that they attended only his undergraduate course at Pantnagar and did not pursue their post-graduation with him in plant pathology. Whereas the post-graduate students mean that the students pursued their Master's or doctoral degree with Dr Nene. Colleagues mean that they worked with Dr Nene as colleagues in Pantnagar, ICRISAT and/or AAHF.

Impressions of Dr Nene from some of the important agricultural scientists/agriculturists who have interacted with him during his professional career are also presented on further pages.



From Undergraduate Students:

Ramendra Singh

A researcher and an academician is a student throughout his life. This is a lesson learned hard way for some but I was fortunate this was the path shown to me right in my formative days by my learned, selfless and inspiring teacher Dr YL Nene. The destiny had planned it for me to meet him at Pantnagar more than five decades ago.

It was a fortunate chance that I landed in UP Agricultural University (UPAU now GB Pant University of Agriculture and Technology), Pantnagar in 1961 for doing BSc (Hons) Agri. & AH. My father, who had learned about this first Land Grant University in India from the newspaper reports, simply directed me to go to Pantnagar and seek admission in the university. Based on the newspaper reports, my father explained me the virtues of Land Grant Universities of America on which the UPAU had been established in collaboration with the University of Illinois, Urbana, Illinois, USA.

It was in hot and humid month of July 1961 that I landed in Pantnagar situated in Tarai area of Uttar Pradesh. Known for its incessant rains and hot humid climate, I found the area lush green with tall trees and grasses very intimidating. And yet the brand-new buildings of colleges and hostels dotting the area were inviting to the prospective students. Completing the formalities of admission, I returned back home to tell

my parents what the students of first batch had told me about the education system based solely on internal academic evaluation. A system run by dedicated and committed professors. Most impressive was that some of the courses were taught by American professors along with Indian professors who had received education in American Universities. And then there was a chance to earn and learn together.

Professor Dr YL Nene: My Best Teacher Ever

Our classes began right earnestly in July itself. The students of our batch (1961) were assigned to different academic programmes depending on their educational background. Our programme advisor was Professor Dr YL Nene. He was to guide students individually and collectively. To begin with the students were collectively advised by Professor Nene as to what courses we would be offered in each of the three trimesters of the first year. My first impression was that Dr Nene was eloquent but intimidating in his style. My impression was reinforced by the seniors telling us that he was a strict disciplinarian and a no nonsense teacher. But our seniors also told us many instances of his soft side. So, it was obvious to all the students that Dr Nene was a strict teacher where it mattered most that it academics but had a soft heart when a helping hand was needed to the students.



In the work programme I had the choice to either tender the lawn in front of the College of Agriculture or work in one of the college laboratory for its upkeep. Prospect of earning rupees twenty per month for the work done as per norm was really a great incentive. And when I opted for the Lab upkeep work, I was fortunate to be assigned to Dr Nene's Plant Pathology Lab. This is where I started to have first personal contacts with Dr Nene. I learned two soft skills i.e. punctuality and dedication to job besides technical aspects of upkeep of a plant pathology lab.

The next experience of Dr Nene was as a teacher when in the first year I took his course in Plant Pathology. The seniors had told us that it was very a tough course and very difficult to make even a passing grade. It was simply fascinating to me how a difficult course was made interesting by Dr Nene. He was just superb in teaching the subject so called difficult by our seniors. At one point of time I even thought of taking plant pathology as my major subject for specialization.

The best part of my experience was yet to come when I was in the second year. It was towards the end of second trimester, that I had to go home to participate in the marriage ceremony of my sister. But the dates were clashing with final examinations of two courses. Having done well so far in the courses it was worrying to me the idea of repeating the courses for only missing the final exam. Not knowing what to do, I went to seek guidance from Prof. Nene. He immediately took me to Dean College of Agriculture and then to the Vice Chancellor explaining my predicament whether an exception to rule could be made based on the merits of my academic

performance throughout. Yes, indeed an exception was made and I was allowed to appear in the final exams of the two courses on my return soonest from home. This was the soft side of great teacher Dr Nene and he was like that to all the students.

The breed of teachers like Prof Nene is rare. But when they are there they are change agents. Prof. Nene guided a whole generation of students who in turn assumed such responsibilities. For me Prof Nene's teachings remained my guiding force throughout. I can say a good professor is one who not only teaches well his students but also one who is their mentor. Prof Nene has had combination of these unique virtues.

Last year I met Prof Nene after a long time at his residence in Hyderabad. And I had the privilege of interaction with him. I found how active Prof Nene has remained post-retirement and profoundly contributed to Asian Agri-History Foundation. Not only Prof Nene has contributed in the international Journal published by the Foundation but also how he has inspired fellow scientists and researchers to publish in it.

As an immensely inspired and ardent student of Prof Nene, I wish him many more years of healthy and active life.

Dr Ramendra Singh, Ex Senior Advisor R&D Council, Coromandel International Limited, Secunderabad; Ex-Scientific Advisor to Tata Chemicals Limited; Ex-Scientific Advisor to Cargill International; Ex-Soil Fertility Specialist, IICA-EMBRAPA-World Bank in Brazil; Ex-Chief Agronomist FAI, New Delhi.

Present address: House No. 1010, Sector-17B, Gurugram, Haryana.

Dr Dharam Pal Singh

I have known Dr Y L Nene since July 1961 when I was the first-year student of BSc Ag (Hons) Ag & AH at UPAU Pantnagar. The university was at infant stage on the pattern of the Land Grant University Pattern of the USA, and most of us were from Hindi speaking regions. The English medium was a new phenomenon. Most of the students used to shout and talk with each other in the class and also after the class was over. It was really hell shouting when some teacher was absent or late (though it was uncommon). Most of us used to attend our classes in hall/ room number 26 B. Under such incidences, we used to find Dr Nene, while passing through, to enter the hall and give a befitting scolding to students. He was very disciplined himself and wanted to inculcate this habit in students. Though there were a few more disciplined teachers like Dr N K Anant Rao (Dean), Mr K A P Stevenson (Vice Chancellor), Mr E N Rao (English Teacher) and some others, it was Dr Nene whose impact was felt the maximum. He tried to bring high discipline in the University irrespective of whether it was Agriculture or Veterinary College. In fact, not only students but other teachers also were aware of his disciplined behaviour and respected him in this regard. No one could take indiscipline for granted, be it anywhere or anybody's class.

Another important quality of Dr Nene was that he used to teach the basic course like Introductory Plant Pathology/Principles of Plant Pathology himself, although he was the Head of the Department, unlike some other teachers used to believe that such courses may be taught by some junior teachers or even post-graduate students.

Dr Nene maintained his dignity as a Teacher throughout his career at Pantnagar and later at ICRISAT Hyderabad. This is the reason he is highly respected even today by Pantnagarians and others wherever they are.

I am very happy to know him so closely and for getting the opportunity to mention some of events related to him at Pantnagar at this point. I wish him a long and healthy life.

Dr DP Singh (ID 341) was a student of B Sc Ag. & AH at Pantnagar during 1961-64. He did his Master's and PhD degrees from the Indian Institute of Agricultural Research, New Delhi. Ex-ADG, Vegetable Crops and National Coordinator for National Technological Project (NATP), ICAR, New Delhi.

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From Post-Graduate Students:

Dr Gary Gairola

It is my great pleasure to write for Dr Nene's souvenir publication on the occasion of his 80th birthday. My association with Dr Nene started back in the early 1960s when I was an undergraduate student in agriculture at the GB Pant University of Agriculture and Technology (then called U.P. Agricultural University) at Pantnagar. The University had recently opened and it was the first time I had left home to live independently on a college campus. It was also Dr Nene's first job after completing his Ph.D. degree at the University of Illinois and returning to India. I took my first plant pathology course from Dr Nene in the 1960-61 academic session. Right from the beginning, I was greatly impressed with his lectures not only because of the clarity and highly organized nature of his presentations but also because of his enthusiastic and thought-provoking style of teaching. He encouraged us to come to see him and to ask questions we might have. I often went to his office with a question or two. Before answering, he would always try to extract the answer out of me. The idea was to make us think -- no spoon feeding. Luckily, in those days he had spare time to indulge us students in discussing our problems. The more I interacted with him the more I started to think about a career in plant pathology.

I finished my undergraduate degree in 1963 and managed to obtain a graduate fellowship to

pursue my Master's degree in Dr Nene's laboratory. During that period, the khaira disease of paddy was a major issue in the Tarai region of UP. As I recall, the government pathologists had consistently failed to accurately identify the cause of the disease and the problem had remained unsolved for many years. In fact, it had become so acute that the farmers had begun abandoning rice farming altogether. So, when Dr Nene was approached by the extension folks with this problem he initiated a systematic study of khaira disease. It became part of my Master's thesis topic as I was his first and the only graduate student at the time. He patiently taught me the 'whys' and 'hows' of planning and performing scientific experiments and guided me through many studies to identify the cause of the disease. That was my first introduction to scientific inquiry. More importantly, I learned from him how to research scientific problems in a systematic fashion.

In addition to performing research experiments, one of my duties was to assist Dr Nene in teaching functions. This included monitoring student exams, distribution and collection of exam papers, etc. Dr Nene excelled in teaching and expected all students to do well but detested dishonesty. He took extra precautions to make sure that the students did not engage in cheating during exams. Desks were placed farther apart so the students could not peek

into each other's answer books. Some students were devious and resorted to other 'jugads', like writing notes on desktops in advance of exams so that they could copy from the notes. One of my jobs was to check the desktops for any writings. Whenever Dr Nene suspected any cheating he would immediately get into his Sherlock Holmes mode and start a full investigation. This would involve a thorough examination of hand writing on the desktop and its comparison to that in suspect's answer book. If the hand writings showed any resemblance, all the evidence was collected and preserved for later review with suspect. In those days, smart phones were not available for photographic documentation of evidence and therefore the whole desk had to be saved in a secure place until interrogation. The suspects were questioned and grilled with supporting evidence. Most guilty students readily confessed under Dr Nene's intense evidence-based interrogation and were disciplined. As the news of Dr Nene's detection and interrogation techniques leaked out, many students started referring to him as Perry Mason. Since I was assisting him in these operations some folks started calling me Della Street which I did not appreciate at all. Anyway, the final outcome was that the incidence of cheating during Dr Nene's exams was either significantly reduced or became nonexistent.

Although Dr Nene presented a stern disciplinarian image, he was a decent and nice man on a personal level. This I am writing because he had a genuine concern for students and would very much like to help them. In one instance, he gave Amarjit, my undergraduate class fellow, a fungicide spraying job. Also, according to Amarjit, "Dr Nene always dressed well and looked great riding his motorbike".

I completed my Master's degree in 1965. My years at Pantnagar working closely with Dr Nene were

most important to me in deciding my future. He was everything one could ask for in a good mentor. He shaped my thinking and always emphasized the value of objective thinking, hard work, and dedication. The knowledge and wisdom he imparted upon me has been a great asset throughout my career. He was truly an inspiration to me. I consider myself fortunate to have him as a mentor at a critical period in my life and remain inspired by the wisdom he imparted. He groomed all of his students into sound professionals and guided them on a path forward. We all owe him a ton of gratitude. His achievements and outstanding leadership qualities are worthy of emulation.

I left Pantnagar in late 1965 to pursue a PhD program in plant pathology at the University of Illinois. At my farewell meeting, Dr Nene gave me valuable advice on how to conduct myself and what a PhD degree is all about. I vividly recall him telling me to remember that the PhD is a degree in philosophy which trains one to think in a logical fashion irrespective of the subject matter. That advice stayed with me and was of immense help later on when I changed my field from plant pathology to toxicology. A change from working with plants to mice and rats was inconvenient to say the least, but the basic principles ingrained in me during my training under Dr Nene made my transition easier. His mentorship has been invaluable to me all thru my life.

I have stayed in touch with Dr Nene and have kept up with his activities. He rose to great heights in his career and has made numerous significant contributions to research, education and development in International and Indian agriculture. I will mention only a few since most will be covered in detail elsewhere in this book. In the early part of his career, discovering a control for the khaira disease of paddy, that revived dying rice farming in



Tarai region, was one of his major accomplishments in agricultural research. Another important contribution was the launch of the journal of Asian Agri-History in late 1990s. This journal has been instrumental in providing international exposure and access to ancient agricultural heritage of India and has documented the evolution of various agricultural practices on the Asian subcontinent. He went on to make several other important contributions to legume research. I believe his perseverance, integrity, and leadership qualities have been exemplary. Above all, he has a remarkable moral compass that drives him to seek and disseminate truth and contribute to society.

I wish him all the best on his 80th birthday and hope to visit him on his 100th.

Dr CCN (Gary) Gairola was Dr Nene's MSc. student at Pantnagar, 1963-65 and had worked on khaira disease of rice for his Master's thesis. He is a retired Professor of Toxicology from the University of Kentucky, Lexington, and lives in Lexington, Kentucky.

Dr Y L Nene: The Man of Principles

Dr Prem D Kharbanda

I and my younger brother Subhash joined U.P. Agricultural University, Pantnagar (UPAU) in 1961. We had heard that many professors at UPAU were foreign trained and had returned to Pantnagar to join this new university that was based on the American Land Grant pattern of education. It was very perplexing why anybody would leave USA and come back here for so low paid job; so, my image of Dr Nene was an old person with white hair. Because we were kept so busy in our studies, as there used to be many surprise quizzes etc. that we did not pay much attention to the staff with whom we did not have any direct connection. Not until the third trimester when we took our first course in plant pathology. I used to sit near the front and waited for Dr Nene in our first lecture. Somehow, as soon as Dr Nene arrived, right on time, the whole class went silent and I saw very active looking young man with white shirt, stiff face and no smile. I got a little sense of fear and then a sense of security as I right away realized that this professor meant business and would not tolerate any non-sense from any of the boys who behaved liked bullies.

During the session, Dr Nene announced that every Monday there could be a quiz, so be prepared. The following Monday, I thought it had been only three classes and perhaps not enough material was covered to give us a test. I was wrong; right at the start of the

class he announced that there would be a quiz 10 mins before the end of the class. I think that was the first warning that Dr Nene was true to his words and we have to be ready always.

It was very hard to get words of praise out of Dr Nene; we always tried our best to get some nice words from him. On one of my hourly tests papers, he wrote "I am really impressed"! I am not sure whether he made similar statements on other students' papers, but for me, it generated a lot of respect for him and from then on, I was prepared to do anything that he would ask me to do. I saved that test paper as a souvenir for several years.

In one of the hourly tests, someone had written answers on the desk before the test. Somehow, Dr Nene after the test checked the room for clues of cheating and found this desk with written answers. He asked me to compare the hand writing on the desk with the writing on one of the earlier assignments that the students had submitted. I narrowed the search to three students, one of which seemed very probable. Dr Nene kept the identity of the student confidential, but he did tell me that one of the students had come to see him and admitted that he had written those notes on the desk. No wonder Dr Nene was nick named 'James Bond 007 of Tarai' in an underground newspaper that appeared at the campus and had

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assigned very derogatory remarks for many of the academic staff. Dr Nene took the title of 007 as a compliment.

Years later, I was on the receiving end of his strictness. One Friday, Dr Nene had asked me to plant a wheat experiment in wooden flat trays. I am not sure how many trays were to be seeded, perhaps about 16 or so, and for some reason, I planted half the trays and convinced myself that I would complete the rest the next day, a Saturday. I also thought Dr Nene would be happy that I came to work on a Saturday. I was totally wrong. The next day, Dr Nene was very upset. I had to redo the whole experiment all over again. That was a serious lesson; I do not think I ever gave him another chance to be upset about me again.

Dr Nene might look to someone very business type but he is very soft spoken and kind hearted and gave fatherly care to students in need. I often used to get severe blisters on my tongue which at times used to pain and thus take away a lot of my energy. Since there was no specialist physician at Pantnagar, Dr. Nene took me to his personal doctor, Dr Sabharwal in Rudrapur (now Udham Singh Nagar) on his own scooter. Dr Sabharwal prescribed Vitamin B complex which did help a lot and I used this remedy even after I moved to USA. However, the blisters used to reappear, due to stress (I think). Years later, I realized that doing undiluted Listerine mouth rinse keeps those blisters away. I think, Dr Nene's deep concern towards his students' wellbeing was very noble and that kept the students motivated in devoting their full efforts into whatever task Dr Nene assigned.

Dr Nene had given us the best education in plant pathology and we were well prepared to take on the challenge of future course work for PhD I loved his tests and exams. These used to be very thought-

provoking and challenging. One of the common chemical names of Ferbam fungicide is Iron-dimethyldithiocarbamate. In one of the quizzes, he asked whether it was Ferric form or Ferrous. In case someone did not pay attention to the chemical formula, just by the name Iron-dimethyldithiocarbamate, it is not possible to tell. I think that was my toughest test and I was one of the last student to hand in my paper trying to recall the structural formula of ferbam. He always wanted us to be thorough and understand the basics. His method of teaching was very stimulating.

During our MSc home assignments, he gave us a book to read and told us that he would examine what we had understood. He also wanted us to explore the answer to a question "How would you determine thermal inactivation temperature for viruses that are insect-transmitted; would you boil or heat the insects exposed to the particular virus?" I think that was one of the most interesting questions on which I spent days to find the correct answer. He made the subject of plant pathology so interesting!

Dr Nene always encouraged students to ask questions. We used to have regular student seminars; he made it mandatory for all participants to ask at least one question at the end of a seminar. I think that was one of the best methods to force everyone to not only listen but also analyze and comprehend the subject matter. I have carried that habit of asking questions up till now. It makes attending any talk so meaningful.

All this training, made the subject of plant pathology so exciting that when it was time to decide for the major department for MSc studies, and we were allowed to make three choices, first, second and third, in order of preference, I made only one choice: Plant Pathology. Some other faculty members

later asked me to join their department and told me that I had a better chance of going to USA with their department. However, I refused; I had enormous respect for Dr Nene and plant pathology was such a fascinating subject.

Dr Nene firmly believed that the main purpose of graduate program is to prepare scientist to think independently, interpret results and develop faculty to solve problem. For my MSc field experiment, Dr Nene gave me full freedom of designing and conducting the experiment. He did give me several treatments to be included. The experiment was conducted at the Vice-chancellor's vegetable garden next to the Vice-chancellor's house, where there was proper facility to irrigate the plots. The experiment was completed and a paper was also published in *Naturwissenschaften* but Dr Nene never mentioned about the success of the experiment. He surprised me when we met years later and he mentioned that that was one of the best experiments I had conducted. Actually, those remarks felt much sweeter because at the completion of experiments, when it was time to write thesis, I went to him for suggestions on how to write it and he gave a very stern answer: "This is your thesis, not mine!" I was in so much guilt, asking myself 'knowing Dr Nene, why did I ask him for help'. I think his complement years later lifted a lot of weight for my back when I realized that I did at least one thing good that he liked. Indeed, Dr Nene has his unique way of teaching his students.

Dr Nene taught us to be thorough and trained us to look after minor details. He was very particular about cleanliness. He mentioned one time that many of the imported equipment do not last long under our environment because of dust. Once some visitors were scheduled to visit our labs and the day before, we were asked to clean up the labs. After we were

satisfied that we had done a great job, a message was conveyed to Dr Nene. We all were so embarrassed when he checked the top of the shelves that were still full of dust. This trait of paying attention to minor details came very handy for me as reviewer for scientific papers.

After we graduated, and started the job of an instructor, we had to move to a staff hostel. The rules at the staff hostel were very different from those in students' hostel where the students had relatively more independence. The administration at the staff hostel issued some rules that were not particularly to my taste. I went to Dr Nene to complain and told him that I was going to write a nasty letter to the administration and was alerting Dr Nene in advance. I had a great sense of relief when Dr Nene told me not to retaliate in such situations. That was one of best advice which I used in many situations later in life and came out ahead as a winner.

I found Dr Nene very polite and would not interrupt while someone was speaking. At the staff meetings, he would not talk until asked to do so. He invited me to one of the staff meetings when I had just joined as an instructor at UPAU after completing M.Sc. (Late) Dean Dr NK Anant Rao was the chair. I remember at that staff meeting, Dr Nene sat quiet and listened to several other staff talk one after another and it seemed they were trying to impress Dr Anant Rao with ideas. A few minutes later Dr Anant Rao asked Dr Nene's opinion which turned out to be very different from what everybody else had proposed, and that was the end the discussion.

Before I left for USA for my PhD under the supervision of Late Dr HH Thornberry, who was Dr Nene's advisor for his PhD, Dr Nene warned me that Dr Thornberry was a very tough supervisor. I



assured Dr Nene that he had not to worry as I would be able to pass that test. Dr Nene was right and I could not survive much longer than about 18 months when I had to change my supervisor to Dr JB Sinclair.

After my PhD at Illinois, I moved to Canada in 1971, but I tried to keep in touch with Dr Nene. In 1986, when I learned that he was planning to come to the International Food Legume Research Conference (IFLRC) in Spokane, Washington, I invited him to come to the Alberta Environmental Centre (AEC), Vegreville, Alberta, for a seminar. I drove down to Spokane, and we travelled together along with my family for couple of days and crossed through Waterton-Glacier International Peace Park. I was so pleased that Dr Nene had agreed to visit Canada. We also stopped at Calgary, Alberta and later, after the seminar at AEC, we visited Banff and Jasper National Parks. That was when I realized that Dr Nene is not only a great plant pathologist but also has vast knowledge in many other fields and has answer to almost any question.

It was during that trip, that I saw his true sense of humour. One joke that our family still reminisces goes like this: Once a recent immigrant from India was invited to dinner at some one's house. Closer to the end of the dinner, the lady of the house asked this man if he would like to have more. At that the person replied: "No, thanks, I am Fed-up". Actually, several colleagues at Illinois still recall that at one Christmas party, when everyone was supposed to dress up

representing a plant disease, Dr Nene had dressed up like a pregnant lady representing a Bacterial tumour.

Since Dr Nene is well respected internationally, people like to do whatever he says. I found that very helpful in 2012, when I was given an assignment under Canadian Executive Service Organisation (CESO) which is partly funded through Canadian International Development Agency (CIDA), to assist growers in Cameroon. Dr Nene, upon my request, immediately put me in touch with scientists at the International Institute of Tropical Agriculture (IITA), Nigeria, who were thrilled that Dr. Nene has asked them to do something. The local agricultural staff at Cameroon are greatly benefitting from that input from IITA.

If I have to re-write synonyms for Dr Nene, I would say: perfectionist; punctual; thorough; clean; academician, researcher, sympathetic; friend; task master; teacher; tough.

Dr Nene has been a man of principles. I know I have not lived up to his expectations and now I am glad that I got this opportunity to express myself. I do owe my professional success to Dr Nene, and I am much grateful to him for taking me under his wings.

Dr Prem Kharbanda was Dr Nene's MSc student at Pantnagar, 1964-66. He retired from Alberta Agriculture Research Service, and presently a free-lance Consultant and lives at Albert, Canada.

Dr YL Nene: My Great Teacher, Guide and Mentor

Dr SPS Beniwal

It is not easy for me to write about Dr Nene, who has not only been my undergraduate (UG) and postgraduate (PG) teacher but also the one who shaped my professional career and brought the best out of me. Not only he taught me Introductory Plant Pathology in my undergraduate at UP Agricultural University (now GBPUA&T), Pantnagar and post-graduate courses but so many other things that proved immensely useful to me in both professional and personal life. I consider myself very fortunate that I got an opportunity to work with him for my Master's degree in Plant Pathology.

He was indeed a great teacher. It was in the third Trimester of 1961/62 academic session that Dr Nene was our undergraduate teacher of the Introductory Plant Pathology course. I distinctly remember that he entered the class right in time and in proper neat and clean attire and carried only the attendance register and a box of chalks with a duster in his hands. I also noted that he did not carry any notes for reference with him to the class as was done by teachers of other courses that I had attended by that time. This positively impressed me a lot as I thought that he knew his subject well and that is why he needed not to carry his notes with him. To me he looked like a smart but serious type of person with lots of confidence in himself. Interestingly, his reputation of being a strict teacher had reached us in advance and that is why

we were attentive, alert and disciplined in the class. He delivered his lecture well with his deep and loud voice. He came very well prepared for the class and instructed us on what he would like to do during the course and his expectations from us. He sure had penetrating eyes and asked us to look into his while he was lecturing to keep us attentive. At the end of the lecture, I was convinced that we had a good teacher for the course as I found him serious, disciplined and knowledgeable in the subject, reminding me of my own father.

As the trimester progressed we understood that he was himself a much disciplined person and wanted a strict discipline in the class. As in some other classes where we would be able to sit loose and carelessly and we could not dare do that in his class. The class atmosphere also used to be serious. I distinctly remember one incident which did deserved some laugh but we did not dare. One day a student came five minutes late to class. As he was entering, Dr Nene asked him: How come? The student without fully understanding the question replied: By bicycle sir! Some of us who fully understood the question and non-relevant answer wished to have a laugh but could only smile. Such was his discipline in the class.

During my UG and PG student days at Pantnagar I must say that I used to observe him closely but from

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a distance to mainly learn his qualities and strengths and also to see if he had any bad habits or manners. I got such an opportunity better during my Master's programme (1964-66) as he was my major professor. I was always utterly disappointed as he was loaded with only good qualities. I used to think that he must be first in the line when the almighty God was distributing good qualities to humans. In that way I always considered him a blessed person. However, I realized later that he picked these goodies from his parents, his teachers in college and his major professor at the University of Illinois, Prof Thornberry whom we were told was strict, disciplined and a hard task master. My analysis later was that with his basic intelligence, the other good traits that he harboured were picked up during his formal college and university education. He must have been inspired by his teachers at some stage which changed his thinking and created an inner desire to excel. And the result was Dr YL Nene as we knew him as an extremely motivated person. I am saying this based on my own case as I also got inspired during my Master's programme by my great teacher, Dr Nene.

Besides being a strict and disciplined person, Dr Nene very much cared and had tremendous concern for the upkeep and safety of the department property. I cannot forget an incident which not only amused me but also other UG students when we were taking his Introductory Plant Pathology course in the third trimester of 1961/62 session. During one of the practical classes of the course in late May, an ocular lens of a microscope was missing and could not be located. He was very upset, in fact angry, and asked us to immediately find it. We knew that he was to travel for his marriage the next day. After some searching we located the lens which had dropped into drain below the laboratory table. After the class, we were

wondering as to why our Sir was so concerned about a lens especially when he was to leave for his marriage the next day. But this is how he was and what made him special and a stand out teacher. This of course taught us a good lesson to always care for our official property.

After my finishing my MSc degree in June 1966, I had to go home as we were asked to vacate the PG Hostel. So I left Pantnagar by train to Mathura, where my father was working as District Inspector of Schools and reached there in the morning. When I met my father after reaching home, he asked me why I had come back to home after finishing my MSc and instead asked me to go back to Pantnagar by the evening train the same evening. Since he knew Dr Nene he wrote a letter to him requesting him to engage me in some work with him in Pantnagar. I could see Dr Nene was in a fix as to what to do. There were no job openings of junior research staff at that time. He told me that he would let me know tomorrow. Next day, he told me that there were no jobs as such available as there were no research funds to support them. I insisted to him to please give me some work to do as I could not go back to my home. I also told him that I was prepared to work without any payment and that my father would pay my expenses. Then, he said that I could help him in some of his khaira field experiments and work with Mr Gairola but without payment. This is how I started working with Dr Nene after my MSc. It was a good starting point but a little tough as I realized that standing in paddy fields in water was not an easy job. This increased my appreciation for both Dr Nene and Mr Gairola.

The best thing that happened to me was when I got an opportunity to work with him in early 1967 for about a year and a half as his Senior Research Assistant

in his PL 480 project on viral diseases of warm-season pulse crops after my MSc degree in 1966 and after having gained some field experience for working in paddy fields and in a project on nematode diseases of vegetables. That was a good learning period for me. About two years of my association with him strengthened my concepts of plant pathology and I also picked up certain qualities from him which changed my way of thinking. I always found him much disciplined, punctual, thorough, perfectionist, honest with unbreakable integrity, perseverant, a hard task master but a man of principles and a very helping nature. I found him as a person who was always very dedicated to his work and his zeal of working was the same during all the six and a half days in a week that he worked in the department (he used to work half a day on Sundays). He had a good sense of foresight and vision, and dependability. Another quality that I observed in him was his ability for clear and critical thinking. He always stood against injustices whether done to him or for that matter to anybody. At times, I used to wonder as to how this person can work hard every day without fail and what he is made of. All these qualities certainly made him a good leader which he demonstrated through his precise planning and execution. Laziness which is so common in human beings was nowhere close to him and was sky-away from him. All these qualities in him indeed proved very inspirational to me and slowly I understood the importance of his values and perseverant nature.

He was serious about his students and ready to provide all the necessary help to his students and any student or anybody else who came to seek his help. I can now say with full confidence that Dr Nene had full commitment to and concern for all his students but especially for his graduate students. He would explain things very clearly and would ensure that we clearly

understood them. During my Master's program, he took a keen interest in my thesis work. He would ask me to write the materials, methods and results of my experiments. As I understood after completing my Master's degree that his sole purpose in asking me to do this so was to improve my English writing skills. This clearly showed his commitment to improving the skills of his students. He always believed that the graduate students should learn as much as possible by self-study and must develop critical thinking skills, which are essential for solving plant disease problems.

He has always been a reserved and a serious person by nature with his work as number one priority. I never saw him wasting his time and always found him busy in his work. He did not tolerate any nonsense from anybody. He did not hesitate to advise us on the value of discipline and time. I remember once he had called all the Masters' students of plant pathology to his office on a Monday morning. Somebody had informed him that we were wasting our time on Sunday mornings by playing friendly volleyball matches with other departments in the hotel. He advised us not to waste the valuable time like that and that we better devote this time for our studies and thesis work.

In my opinion, these qualities have provided tremendous confidence and inner strength to him. These are the qualities that made him a man of courage, a dependable and caring person. He certainly is a man of courage and always stood against the known injustice(s). These are the reasons that people always came to seek his advice related to their profession and personal problems.

I have observed Dr Nene to be a very nationalistic Indian who is very proud of its heritage and that of Asia. This is exemplified by his decision to retire five years prior to ICRISAT's retirement age of 65 to pursue



the history and heritage of Asian agriculture through the historical books and literature of agriculture which seemed to contain a wealth of information on agriculture of ancient and medieval times. To fulfil this dream, he founded the Asian Agri-History Foundation, already considered by many as a novel and extremely useful endeavour.

I also have had the privilege of being his junior colleague at Pantnagar (1972-74) and at ICRISAT (1981-84). My association with him at ICRISAT provided me new insights into plant pathology that were very useful to me when I entered into an international job in the CGIAR system. He followed my professional career and always advised me for its betterment. It was then that I got a chance to know him not only as a great scientist but also as a great leader and human being. I have always considered Dr. Nene as my role model and for all his students and colleagues. He has had lots of good qualities to learn from and, thus, has served a good example for others to follow. Although I know some good ones similar to him (although not quite like him) but wish

that there were many more agricultural scientists like him in our country.

I would always be indebted to him for not only imparting good scientific knowledge and skills in me but also good values of life. At times, I wonder what and where I would have been had I not done my Master's degree in plant pathology with him. So, thank you Dr Nene for being my good teacher of plant pathology and imparting good values of life in me and being my mentor.

May the Almighty bless you and your family with the best of health and happiness in the coming years of your life.

Dr SPS Beniwal was Dr Nene's MSc student during 1964-66. He worked as Assistant and Associate Professor in Pantnagar and Senior Plant Pathologist in ICRISAT (1981-84). He had joined ICARDA in 1986 and is former Head, Program Facilitation Unit, CGIAR Program for Central Asia and the Caucasus and Regional Coordinator, ICARDA. Presently, he is a Trustee of AAHF.

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Dr SJ Kolte

It gives me an immense pleasure to write about Dr YL Nene, who was my PhD guide at Pantnagar (1967-70) and for whom I have a tremendous respect as a teacher and researcher of plant pathology and a research leader and administrator.

YL Nene is a plant pathologist who has spent 36 professional years; 14 years (1960-1974) initially at the first Agricultural University (GB Pant University of Agriculture and Technology) at Pantnagar, and then 22 years (1974-1996) at ICRISAT, Patancheru (near Hyderabad), Andhra Pradesh (now Telangana) India, from where he retired as Deputy Director General in 1996. Post-retirement from ICRISAT, he has spent 20 years at Hyderabad pursuing successfully the history and agricultural heritage of Asia especially India.

I have been fortunate enough to have an opportunity to have worked for my PhD thesis with him. I recognize him as a very devoted and disciplined teacher who was always committed to imparting to his students the best education and all that he knew. Dr Nene not only taught the subject in a very interesting and lucid manner but also fostered collaborative activities including disease diagnosis with students. He advocated to us to work productively as a part of a team. He genuinely cared about getting the students to understand the subject matter and to use it in the real world.

Dr Nene has the most unusual grasp of the science of plant pathology and has been a skilled teacher

who consistently tried to challenge his students. His approach to teaching was student-centred and he strived to teach students how to become independent learners and to apply their knowledge in problem solving situations. The overall objective of his courses has been for students to acquire critical thinking skills in areas across disciplines. He achieved his goal by having students to read a mix of contemporary popular scientific books, articles and on topics that include diseases of plants. He had a very effective, emphatic and magnetic voice and other enjoyed skills of oratory. His instructions in the class were thought-provoking and he was identified as a teacher that made students not to miss his class. He has an excellent ability to challenge students and colleagues to critically examine research ideas and results.

Dr Nene was intensely interested in total education of students. He wished to inculcate in his students the good habits of critical thinking ability, communication skills, and farmers' and national perspectives have been parts of his teaching. He was very strict in matters of discipline and wished everyone would behave in a disciplined way both inside and outside the class. At the same time he came to their help as often as needed. He did not like students or any one associated with him chewing betel, smoking or loitering.

Dr Nene is best known for diagnosing and discovering zinc deficiency of paddy (khaira

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disease) widely prevalent in most parts of North and Northeastern parts of India particularly in the Tarai region of Uttarakhand (formerly Uttar Pradesh). He advocated control of khaira disease of paddy by a spray of a mixture of zinc sulphate (0.5%) and lime (0.25%) which was widely adopted by farmers as a routine essential practice for paddy crop production that brought recognition to Dr Nene. This discovery then turned Tarai into rice bowl of India fulfilling the goal of establishment of the first Agricultural University in India in service of the farmers for which he was honoured with an International (FAO) prize.

Dr Nene became farmers' best friend and guide while he was at Pantnagar particularly when demonstration trials on control of khaira disease of paddy were conducted at farmers' fields with most convincing practically adoptable methodology using simple spray of zinc sulphate + lime mixture. He introduced for the first time a course "Plant Disease Diagnosis" 5 years after the discovery of the cause of khaira disease of paddy. Standing in a field he would start probing the cause of a plant abnormality very systematically simultaneously putting logical questions to students and derive conclusions on the diagnosis with a phenomenal memory and extremely keen observational power. Such exercises as tools to prove the cause of plant diseases were very rewarding events for research students and especially for me. Farmers would come to invite him to visit their crop fields as family doctors keep visiting human patients for medical check-up. Thus, the practice of visiting farmers' fields became very common not only around Pantnagar University but also at distant places (100-250 km). Dr Nene believed that it was our duty to help farmers as agricultural scientists.

His later studies at the ICRISAT brought him recognition world over for identification of multiple-

disease resistant genotypes in chickpea and pigeon pea, and facilitating the crop improvement work by breeding disease-resistant cultivars. I am happy to write that his contributions to plant pathology have been numerous and varied and brought him various awards later in his career. To his colleagues, he served as a disciplined administrator, devoted teacher, genius researcher, mentor and friend. After his retirement in 1996, he established the Asian Agri-History Foundation to facilitate ancient agricultural know-how among all concerned - scientists, farmers, students and policy makers.

As a PhD guide, Dr Nene placed lots of emphasis on his students' theses work and their writing. He advised us to improve our English and writing skills. He also advocated to us the value of writing the results of our research work, and as a result I immensely benefitted from his advice and encouragement. He encouraged us to learn writing of research articles as it was important for communicating the results of our research work. He believed in excellence of quality and this is what advised us to learn.

I must admit that as his PhD student, I learnt a lot of plant pathology from him. In addition, I tried to learn his other good qualities also that made him such an exemplary teacher. I, thus, owe him a lot. Thank you, Dr Nene for being such a good teacher, colleague and educator.

Finally, I wish him many more years of very healthy and happy and professionally productive life.

Dr SJ Kolte was Dr Nene's first PhD student at Pantnagar, 1967-70. He is a retired Professor, Department of Plant Pathology, GB Pant University of Agriculture and Technology, Pantnagar District Udham Singh Nagar, Uttarakhand.

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Dr Y L NENE: My Teacher and Mentor

V K Agarwal

It is my great privilege to pay my respect and gratitude to my teacher and mentor Dr YL Nene on the eve of his felicitation by the Asian Agri-History Foundation on his 80th birthday.

Dr Nene taught introductory plant pathology since the establishment of the G.B. Pant University of Agriculture and Technology, Pantnagar in 1960 to undergraduate students, and I studied this course in 1963. He was so much attached with the subject that he continued teaching this subject during his stay even as Professor and Head Plant Pathology until he shifted to ICRISAT. As a teacher, he was a very strict and strong-discipline teacher. He never missed a class, and at the same time, he was always on time for the class. Likewise, he expected students not to be late in the class. He will not tolerate students coming late in class. He was very much concerned about his eye to eye contact with the students during teaching. He as a teacher influenced many students to choose Plant Pathology as a career. In the University, he was considered as a noble teacher. The university allotted him undisciplined and academically poor students under the advisory system of the university. I opted plant pathology as my post-graduate degree programme under his guidance as advisor in 1965. The teaching at post-graduate level was mainly to encourage to students to prepare them as a scientist for a career later. His post-graduate level teaching

was highlighted by more of a personal touch and discussions. He always guided students to be more disciplined in future life.

After my Master's degree, I joined the Department of Plant Pathology in 1967 as a Senior Research Assistant in a project under the guidance of Dr Nene on problems pertaining to seed health as green revolution was on. During my Master's degree programme I had conducted an experiment on the influence of fungicides on the germination of pea seeds. Before any conclusion, he replicated the field trial in the kitchen garden of his house. Even he used to look after this field trial at his home. It so happened that wheat seeds of most the popular cultivar Sonalika in 1967-68 showed symptoms of black point which was a great concern to of most of wheat seed producing agencies. Dr Nene guided me to work on this problem. Based on the work, we concluded that such symptoms have no pathogenic value. This work was presented during the 7th All India Wheat Worker Workshop held in Pantnagar in 1968 emphasizing that black point has no significance in wheat or its seed production and its symptoms are like black mole on the face of a beautiful woman. I continued to work under his guidance for my PhD degree programme as a staff candidate till he shifted to ICRISAT in 1974. Even afterwards, I continued to seek his guidance throughout my professional career.

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Sometimes, he used to call his staff and students on Sundays (forenoons only) in the field. During one of such visits while returning from the field on his bicycle, he told me not to ever get panicky in life. Many a times during such visits, he was so much concerned about the work to be done and the available time which is so short. He wished a day was of 16 hours instead of 8 hours. He is one of those rare individuals who pursue their interests to the fullest and thus create history. Dr Nene has been a trend setter throughout his career, as a teacher, scientist and research administrator. As a human, he is deeply proud of Indian heritage in general and never thought of leaving the nation as a true nationalist. He is a very generous, kind and pious

person. I consider it my good fortune to have such a noble person as him as my teacher, advisor and guide. It will not be an exaggeration to conclude that his life is a message in itself as the great Mahatma Gandhi once said “My life is my message”.

I wish him good health and happiness in his post-80-year life.

Dr VK Agarwal did his PhD Dr Nene as a staff candidate from 1967-72. Retired Professor Plant Pathology, GB Pant University of Agriculture and Technology, Pantnagar.

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A Tributes to Dr Y L Nene by his Admirers:

Dr Madan Joshi

I came to know Dr. Nene when I joined the Plant Pathology Department at UP Agricultural University after receiving my MSc (Ag) degree in mycology and plant pathology from Banaras Hindu University in 1969. It was then a relatively new but rapidly growing department. I worked under the supervision of Dr R S Singh on his PL-480 project to develop selective media for isolation of *Fusarium* and *Rhizoctonia* from soil and strategies to control them. Dr Nene was then head of the department. Not only was he known among the students and staff members as an outstanding teacher and researcher but also as a strict disciplinarian. He didn't have to raise his voice or get angry to get one's attention. His piercing gaze was enough to put fear of God in the heart of a misbehaving student. Although demanding and strict, he was considerate and respectful to everyone. For example, he always addressed me as Mr Joshi when most of my colleagues and faculty members simply called me Joshi or by my first name. He went out of his way to help students and staff members. One day when HS Chaube and I were working in our laboratory Dr Nene came in looking for Dr Singh and noticed that there was no desk or chair in the room. He asked "Mr Joshi and Mr Chaube, where do you sit to do your paperwork? I replied that "We sit on the stools and use the lab bench to write lab reports". He said "We need to get a desk and two chairs for you"

and left. A week later a desk and two chairs appeared in our laboratory.

Having come to UPAU from BHU where emphasis was on mycology research - in my case fungal physiology - I had no exposure to field experimentation. Also, I had not seen any of my professors at BHU conducting field work. At UPAU faculty members had projects that required not only laboratory research but also field testing to solve problems facing the farmers. Dr Nene's work to find the cause of khaira disease of rice and its control with zinc demonstrated to us how applied research can solve a real-life problem facing the farmer. He was awarded the United Nations Food and Agriculture Organization prize for khaira disease control in 1967. That was not only a great honour bestowed upon him but a source of pride for the members of our department.

I was very pleased when Dr Nene asked me to accompany him along with SJ Kolte and H S Chaube on a pulse disease survey in eastern UP We travelled by jeep and stopped often to check pigeon pea fields for fungal and viral diseases. I learned to recognize symptoms of many diseases. In late afternoon of our first day on the road we stopped at a roadside tea stall. After ordering tea for all of us Dr Nene noticed that the shopkeeper was frying samosas. He asked

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us if we wanted some but, being shy, everyone said “no”, hoping that he would ask again. Dr. Nene didn’t ask again and ordered two samosas for himself. Chaube said later that he really wanted some but was embarrassed to ask for them. Having learned the lesson, next time we all said “yes” in unison when he asked us if we wanted to eat something.

Even though I didn’t attend UPAU, I had particular attachment to the university because I grew up on Tarai State Farm, which later became a part of the university. Therefore, I was happy to get the opportunity to work in the Plant Pathology Department for three years. As a teacher, researcher and administrator Dr Nene

was a role model for every student and colleague who came in contact with him. The lessons I learned from him were valuable to me when I served as manager of DuPont Company’s Plant Disease Control Group for six years.

I wish Dr Nene continued good health and happiness as he enters the 81st year of his illustrious life.

Dr. Madan Joshi was a research staff in the Department of Plant Pathology from 1967-69 when Dr. Nene was its Head. He is a former Senior Research Officer at DuPont, Wilmington, Delaware. He is now retired and lives in Weaverville at 427 KY fields, North Carolina 28787, USA.

Dr RS Paroda

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Dr. R.S. Paroda
Founder Chairman

TAAS: 136

Date: 10-02-2017

Dear Dr. Chaudhary,

It is indeed a matter of great pleasure that you are proposing to bring out a Souvenir on the occasion of Dr. Y.L. Nene's 80th Birth Anniversary. While complimenting Asian Agri History Foundation for this initiative, I am pleased to pen down here some of my impressions of Dr. Y.L. Nene – a great agricultural scientist.

Dr. Y.L. Nene has made valuable contributions in the field of plant pathology and integrated disease management. Dr. Nene's contributions in the field of pulses research, specially towards resistance breeding and disease management are globally recognized. Dr. Nene is an accomplished teacher, researcher and able administrator having occupied several important positions during his active career. At GB Pant University of Agriculture and Technology, Pantnagar he not only led ably the plant pathology department but had made valuable contributions towards human resource development in the field of his specialisation. Subsequently, from 1989-1996, as Principle Plant Pathologist (Pulses); Leader, Pulses Program; Director, Legumes and finally the Deputy Director General at the International Crops Research Institute for Semi-Arid Tropics (ICRISAT), he demonstrated his great leadership quality and worked untirelessly for the overall agricultural development at international level.

I came in close contact with him while working at the Haryana Agricultural University in early 80s and later at the National Bureau of Plant Genetic Resources (NBPGR) as well as at the ICAR Headquarters. During this period, I was highly impressed with Dr. Nene being an intelligent researcher and an able research manager.

Subsequently, while serving on ICRISAT Board of Trustees, I became more familiar with his scientific achievements and indepth knowledge of problems of farmers in the Semi-Arid Tropics, especially in Asia and Sub Saharan Africa. Since then, I had always been admiring Dr. Nene's commitment to the cause of Indian farmers in particulars and global agriculture in general.

Dr. Nene is a man of head and heart and a true son of India. For excellence in science, Dr. Nene has received several honours and rewards. He became Fellow of the American Phytopathological Society, Indian Virological Society, Indian Society of Mycology and Plant Pathology, Indian Society of Plant Pathologists, Indian Phytopathological Society and

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Dr. R.S. Paroda
Founder Chairman

As a highly committed person, engaged in promoting agricultural science, Dr. Nene established a scientific Trust namely ASIAN AGRI-HISTORY FOUNDATION (AAHF) soon after his retirement from ICRISAT in 1996. Over these years, he has regularly published highly informative journal entitled "ASIAN AGRI-HISTORY". Many of his colleagues and friends, including myself, have been amazed with his vast knowledge of agri-history of Indian agriculture. Dr. Nene has indeed served the society tremendously by publishing valuable information relating to traditional practices in Indian agriculture. For this, we the scientists and farmers of India would ever remain grateful to him.

Personally for me, Dr. Nene had been a very close friend, philosopher and guide, whose counseling I have always valued and shall continue to cherish.

We all know that always there is a great person behind success of a man. In this context, I must acknowledge great support extended to him by Mrs. Nene throughout his life. It had always been a pleasure to enjoy her warm hospitality and enormous pleasant experiences on several occasions.

On his 80th Birthday, I wish him good health, all the happiness and long years of intellectually rewarding life so that we continue getting benefited from his vast knowledge, wisdom and advice concerning inclusive growth and development of agriculture in India.

With best regards,

Raj Paroda

Dr SL Choudhary
Chairman
Asian Agri-History Foundation
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Dr Y L Nene: A Pioneering Agricultural Scientist of Modern India

Dr Badrinarayan Barwale

I have the privilege of knowing Dr Yeshwant Nene and closely working with him for few decades now. I had heard about his name and reputation as one of best teachers and mentors from Rajendra, my son when he was a student of GB Pant University of Agriculture. There were many others in the agricultural fraternity of those years in 1960's and 1970's who spoke with reverence about the enthusiasm and contributions of young Dr Nene in building GBAUT, as a model for many more agricultural universities in the country to follow. If GB Pant University is amongst the top echelons of the Agricultural universities globally today, it is due to dedication and hard work of teachers like Dr Yeshwant.

I had the privilege of greater interactions with Dr Nene when he moved to new role in Hyderabad at ICRISAT. While he joined there in the role of Plant pathologist, he was soon given the responsibility of leading the programs of pulse improvements. These projects were of great importance to the nation, as we have always been in the situation of demand for vegetable proteins exceeding domestic supplies given our growing population, increasing economic standards, and predominant vegetarian diet. As we were also interested in these projects, it gave

an opportunity for us to work with Dr Nene more frequently. A great deal of scientific work put in by Dr Nene and his team of scientists at ICRISAT was very impressive, and helpful for the country to get many new varieties of pulses in the subsequent years. We as a country owe a lot to Dr Nene for his immense contributions in giving us pulse varieties which could combat many pathogens – wilt and viruses.

Dr Nene has been widely recognised for his illustrious work as a scientist. He has been an authority on plant pathology, and his body of work not only in pulses, but also in Rice and Wheat have attracted many accolades. While his scientific temperament is unparalleled, he combines this ability well with his interest in ancient agricultural practices. This unique combination led to his initiative of establishing Asian Agri-History Foundation (AAHF). This Foundation is one of its kinds in our part of the world, involved in knowledge accumulation through research particularly about historically best of agricultural practices. Such an initiative would be immensely beneficial to younger generation in particular, in the future.

I am glad that a souvenir is being brought about Dr Nene on this important life's milestone of eighty

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years' completion. On this occasion, I would like to wish him many more years of health and greater success, particularly opportunities to share his knowledge as he has wonderfully done for many decades now.



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Dr YL Nene: an outstanding Humanbeing

Salil Singhal

I am really pleased to learn that AAHF in collaboration with MPUAT and its Rajasthan Chapter are bringing out a souvenir publication to commemorate the 80th Birthday of Dr YL Nene which shall be presented at the National Symposium on “the Role of Vrikshayurveda and Traditional Practices in organic agriculture” to be held in Udaipur, 6-8 March 2017.

Dr Nene is a doyen in the area of crop protection sciences, and is one of the very few who has dedicated his entire life to the cause of Indian agriculture.

I am known Dr Nene since 1994 when we met at the Global Conference on Plant Disease Management, and learnt about his keen interest to revive the wealth of agriculture technology that is available from farmers of ancient India. He founded the Asian-Agri History Foundation at Secunderabad with his own resources having donated almost all his savings to this cause. He involved himself to get the original literature on agriculture available in Sanskrit to be translated into English. Given the fact that he retired as an ICRISAT scientist devoted to the cause of plant disease management, he motivated leading agricultural scientists from all around the world to join the Foundation and help him in this noble cause. He once again reiterated his nationalism and his commitment to the values of our ancient culture.

The Foundation now is well-recognised through its quarterly journal which was initiated by Dr Nene. Its various articles so vividly reflect the outcomes of research and the values available in agri –technology used in ancient India.

He has also edited a book entitled ‘Glimpses of the Agriculture Heritage of India’ perhaps a unique document on the subject, and would be useful to all and sundry, be they anthropologists, environmentalists, historians, agri scientists, economists or students.

Dr Nene has been the recipient of a number of awards and recognised both nationally and internationally. The International Rice Research Prize in 1967 by FAO, Jeersannidhi Award by the Indian Phytopathological Society, Shri Om Prakash Bhasin Award in Science and Technology, Indian Society of Pulses Research and Development Award in 1994 are some of them.

The GBPUAT, where he started his professional career as Asst. Professor in 1960, awarded him Honoris causa Doctorate degree in science for his singular contribution to the cause of agricultural research, education and development. He was elected the Fellow of several professional societies in India and abroad.

As an individual Dr Nene is an outstanding human

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being full of humility and a very pleasant disposition.

He is an excellent speaker and communicator and one of the few who can explain the complexities of science/agriculture in a very erudite way.

Surely his highlighting the agricultural sciences of ancient India would be of tremendous value to the scientists and farmers of India who face the challenge of feeding the growing population with nutritious food.

On behalf of all of us, and more on my personal behalf, I would like to convey our fondest greetings and congratulations to Dr Nene on his 80th Birthday and wish him all the very best of health, happiness, cheer and peace.

May he continue to be the leading light in the cause that he has so assiduously espoused.

Mr Salil Singhal is the Chairman Emeritus, PI Industries Ltd.

Grand Octogenarian Dr YL Nene

Professor Dr Lindsay Falvey

It gives me great pleasure to offer some words, inadequate as they are, in honour of the man who has reinstated the forgotten leg of the stool that supports feeding both human minds and bodies.

On this occasion of the National Symposium on the Role of Vrikshayurveda and Traditional Knowledge in Organic Agriculture, organized once again by the Asian Agri-History Foundation (AAHF) in collaboration with its Rajasthan Chapter and Maharana Pratap University of Agriculture and Technology in Udaipur, it is most fitting to acknowledge Dr YL Nene's leadership in revitalizing agricultural history. That it coincides with his 80th birth anniversary makes it doubly apposite that his important contribution to our understanding of agriculture as the mother of culture and civilization is hailed.

I have known Dr YL Nene primarily in his role as founder and leader of the Asian Agri-History Foundation. I know of his earlier roles as a teacher, as a crop and IPM researcher and as a research manager, but leave others to comment on his specific contributions in those arenas. For me, it is his pioneering work on agricultural heritage, particularly of India, but also embracing the region where India's historical interest has been so great, that leads me to commend his great spirit to all who come after.

As I wrote in an AAH Journal article *Musing on Agri-History*, 'even though most of history grows out of agriculture it is seldom considered as its centre. Nevertheless, it was agriculture that allowed the settled life that led to civilization, and its efficiencies in food security that allowed a leisured class to engage in writing and the codification of religions as part of creating agreed ethics and power bases. Histories that centre on rulers or states do not seem conscious that they are using a proxy for agricultural history, and so miss much that history has to offer the present. This alone makes agri-history important, but so do many other factors.' Dr YL Nene recognized these facts long before I did, and the vehicle of the AAHF has assisted in communicating this to a wider audience that is too often dulled by technological novelty divorced from agriculturally-informed value systems.

While my own country of Australia is distant from India, our dawning awareness of the food production practices of our indigenous population prior to European settlement has begun to instil an understanding of the cultural meaning of landscape and food among the thinking population. This explains why people of my generation feel more 'at home' than perhaps our recent forebears – and in so feeling, we have developed an appreciation of ancient cultures closer to our home than the lands from which our

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forebears came. Such a realization led to an amalgam of experience from India and Australia via Southeast Asia in a book with Chantalakhana and Skunmun about folklore in Thailand that dealt exclusively with ancient sayings arising from agriculture. Without the AAHF, that book would be limited by its mainly Thai language and publication.

From such considerations, we moderns can begin to remember that unlike urban clocks, agricultural time is elastic, depending on when rains arrive and then being prepared to compress weeks of activity into days. While we seek to overcome such dependence on variable weather through ever new technologies, we can too easily forget that in the past, agriculture defined all aspects of life and its values, including truces in expansionist wars to allow soldiers to return home to harvest crops. Dr YL Nene's contribution has been to allow historians, agricultural scientists and scholars of various other fields to appreciate that food has always been central to the creation of kingdoms, nations and cities – and cities are in effect what we call civilization.

Returning to the above-mentioned paper, I wish to provide a context for the panoramic vision that Dr Y L Nene's innovation has provided. 'With agriculture providing the surplus that led to urbanization from at least 9500 years in South Asia and significant cities appearing about 5000 years ago, worldviews must have begun to diverge between sedentary and nomadic peoples. Confrontations between farmers and pastoralists passed down in religious stories and customs indicate differences, albeit written by the victors – agricultural cities. Power structures to defend cities will have required rituals and beliefs, which may well have been adapted from a past nomadic lifestyle, maybe even pre-Vedic hymns and rituals. Thus, some interaction

may have accompanied periodic conflict as farming sporadically took over pastoral lands. As pastoralists opened new well-watered grasslands farmers followed and thus also followed trade, wealth, sophistication in religions and the literature from which we glean glimpses of the past.' Without such a context, modern innovations can be counterproductive, and that is the brilliance of Dr YL Nene's adventure in relevant agricultural history.

India is the most appropriate home for this wonderful re-appreciation of agri-history. Not only is it ancient and varied, it supports an agriculture more people-intensive than the West alongside state-of-the-art technology. And it is home to diverse belief systems. I mention this because the Asian Agri-History Foundation has been far less shy of including religion in its dialogue than is common among Western agricultural scientists. This welcome approach is holistic because it is the means of protecting the most critical part of human wellbeing – food. Thus, protective actions and rituals that have long been codified into religions, found their way into most nations through the influence of Sanskrit on Latin to the west and the Indianized languages to the east. Trade, religion and technology flowed from India for centuries perhaps millennia, and now – thanks to Dr YL Nene – renewed understanding of agri-history is following those same routes.

My own experience is focussed more on the Indianized civilizations that expanded along trade routes in what is now Thailand, Malaysia and Indonesia and also extended to Cambodia through theocratic political systems that were to establish the basis for much of Southeast Asia cultures. Dr YL Nene has welcomed discussion of those influences into the Foundation and the Journal, and so the field of agri-history has extended geographically. It has

also extended politically as the centrality of food security through history is appreciated as an ongoing component of human self-understanding. And self-understanding is, in turn, at the heart of the great religions that emanated from India.

Today, modern society would do well to heed the lessons of agri-history and its integrity with self-understanding. Today agriculture is integrally mixed with power that it is often forgotten. 'Thus, we have some food-insecure nations paying inadequate attention to the need to secure food to maintain their licence to govern.' My worldview rests on the integrated nature of all things and recognizes that humans behave in certain ways that vary little over time – and that they search for meaning and stability.

Both of these are found in the pages of the legacy that Dr YL Nene has granted to his fellows.

It has been my privilege to know this great man, to benefit from his legacy and perhaps to have contributed to a small part of it in some meagre manner.

I join with my colleagues around the globe in celebrating Dr YL Nene's contribution to our profession, and to life, and congratulate this grand octogenarian.

Professor Dr Lindsay Falvey FAIAST FTSE

Chair of the Board, International Livestock Research Institute, CGIAR, Addis Ababa; former Dean and Chair of Agriculture, University of Melbourne; International Advisor, AAHF, Secunderabad, Telangana, India.



Tributes from AAHF Colleagues:

Dr Y L Nene: on the occasion of celebrating his 80th birthday

Dr Mohan C Saxena

The year of 1966 has been a significant one in my life because of my decision to leave an 'all research' professional life at the Bhaba Atomic Research Centre, Bombay, for the one that provided the opportunity to do agricultural teaching, research and extension by moving to the Pantnagar University of Agriculture and Technology in the foothills of Himalayas. Little did I know at that time that this move will bring me the good fortune of gaining a great colleague and friend, and, in several ways, a mentor, in the person of Dr Y.L. Nene. I had not known him before, but was made aware of his high professional standing and popularity in the University through the correspondence I had with the Dean College of Agriculture before joining the University.

It took only a few days for me to learn that Dr Nene was held in highest esteem not only by his colleagues and the student community but also by the then all-important 'trio' of the Dean of the Faculty of Agriculture (Late Dr NK Anant Rao), the Director of Research (Late Dr RL Paliwal) and the Vice Chancellor (Late Dr Dhyan Pal Singh). Soon, by personal experience, I learnt that this accomplishment was not an easy one as it came from his excellence

in professional expertise as teacher, researcher and extensionist, strong leadership in administration and student affairs, and full commitment and dedication to the cause and objectives of the University. Within a few months, he became an ideal for me - someone to emulate - a fact that I have never ever revealed to anybody before. Because of his kind collegial nature and care for newly arriving faculty members I was privileged to soon gain his friendship, which only grew stronger as time moved and we got increasing opportunities to work together.

For me -- the then bachelor next-door neighbour -- Dr and Mrs Nene and their two lovely children became a source of heavenly comfort and care as I tried to get adjusted to the new social environment of the newly established first Agricultural University in the country. And, when I got married and my wife Santosh arrived in the campus there was already a family with open arms to welcome her and help her get settled. Thus, our gratitude to Dr Nene and his family has an old and deep origin.

Dr Nene has been a passionate researcher. The Department of Plant Pathology of the University, headed by him, was one of the most reputed

departments for its research output relevant to the farming community that the University was mandated to serve. His systematic research that led to the identification of the cause of khaira disease of rice had already brought him wide recognition by the time I arrived at Pantnagar, as I learnt from his acceptance speech at the FAO award ceremony at the campus. It sounded a bit strange for me at that time that a pathologist would end up finding the cause of a disease in the deficiency of a micronutrient (Zinc). But it was the thoroughness of his research process -- eliminating various causes one by one and arriving at the right one – that enabled him to develop the control measure, which would benefit a multitude of farmers in the country.

Dr Nene's ability to lead interdisciplinary team of researchers came to a fore by the policy of the College of Agriculture and the Directorate of Research to form commodity-based 'Coordinated Research Programs' in the University, which would be responsible for developing relevant crop cultivars and production technologies for major crops of the region and which will also serve as a link to the 'All India Coordinated Research Programs' of the Indian Council of Agricultural Research. Dr Nene led the 'Pulses Research Program' of the University and I had the privilege of being his team member for agronomy, crop physiology and microbiology research. Under his research leadership, we met at least once every week to discuss research plans, review results, and jointly prepare program reports. With his effective leadership and collegial nature, he motivated the members and made them deliver their best. He encouraged them to prepare well to participate and present their work in the annual meetings of the All India Coordinated Pulses Research Program in a manner that will make a mark of the University in scientific excellence. As a

result, the Pantnagar Pulses Team was recognized as the most effective team of the All India Coordinated Pulses Research Program.

No matter where the national meeting of the All India Coordinated Pulses Research Program was held, Dr Nene ensured that the core team attended, irrespective of the arduousness of travel because of limited connectivity of Pantnagar to rest of the country at that time. Two interesting episodes in this regard are worth sharing. Once, a meeting was being held in Jabalpur, he decided that the most time and cost-effective mode of transport from Pantnagar would be the University vehicle. As we were half way in our journey, two tires of the vehicle got damaged beyond repair. He bought the tires with his own money, taking the risk that the complicated accounting procedure of the University might not permit reimbursement, and made us reach Jabalpur in time. At another occasion, when the meeting was being held in Bangalore, the team had to take a flight from Delhi to Bangalore via Hyderabad. As the fate would have it, we flew in in Hyderabad only to discover that the flight to Bangalore was not available. The National Coordination Meeting was to open within 20 hrs of our landing in Hyderabad. He decided to take an overnight journey by Taxi which indeed made us reach the auditorium just at the time when in his opening statement the National Coordinator Prof S Ramanujam was lamenting that the Pantnagar team was missing, but in the next sentence showing his rejoice that Pantnagar team had after all arrived and thus the meeting would be a success.

Dr Nene's personal research contribution in the field of pulses pathology was outstanding, contributing greatly to better understanding of the epidemiology of key diseases, developing effective control measures and helping breeders to produce



disease tolerant/resistant high-yielding cultivars. While his research was directly helping the farming community, Dr Nene did not neglect the academic side of his work and he extensively published in scholastic journals, earning for himself national and international recognition. I will revert back to this a bit later.

Introduction of soybean in India, developing high yielding cultivars and production technologies for different agro-ecological conditions, and devising diversified usage of this crop was a flagship program of Pantnagar, implemented in collaboration with University of Illinois, USA and the Jabalpur Agriculture University. The Pantnagar Coordinated Soybean Program was formed in the same style as the pulses program. Dr Nene provided the much-needed plant pathological research input in this program. As the early efforts, based on introduction of some improved cultivars from Illinois, failed there was a need for more systemic evaluation of the cultivars of different maturity groups available from USA. This in deed proved useful and two cultivars, 'Brag' and 'Clark-63', gave highly economic yields. Within three years of their cultivation, however, the problem of diseases surfaced, the most serious being the Yellow Mosaic Virus, robing massively the crop yield, Dr Nene developed measures for containing the disease, which were widely adopted by the University Farm and the progressive farmers of Tarai engaged in producing much needed seeds of soybean. A sustainable control, however, needed developing disease resistant/tolerant cultivars, which required access to a wide range of germplasm. Through the help of the USAID team, the University was able to import thousands of accessions of germplasm from the Gene bank of the Beltsville Genetic Research Centre of the ARS, USDA. Although the germplasm

came with valid phytosanitary certificate, it was stuck in the National Bureau of Plant Genetic Resources (NBPGR) in New Delhi because the plant quarantine section there wanted to check each accession for possible introduction of any seed borne disease and pest, a process necessitating use of almost half of the seeds of each accession and much time (both of which the University could not afford) and the technical resource to do the tests that the NBPGR did not have. Dr Nene convinced the Bureau, on technical grounds, to be satisfied with random sample checking and sent his own technical staff to New Delhi to expedite testing. As a result, our soybean breeder got fast access to the valuable germplasm for developing appropriate cultivars, which ultimately resulted in the spread of soybean cultivation in the country.

As mentioned earlier, the excellence of Dr Nene's research, particularly on the diseases of pulses, brought him wide recognition. He was, therefore, one of the only three Indian senior scientists/research managers who were selected by the newly established International Crop Research Institute for Semi-Arid Tropics (ICRISAT) in the cadre of internationally recruited senior scientists. Starting as an International Plant Pathologist in the Pulses Improvement Program at ICRISAT, he continued making his mark and moved up to become the Leader of the Pulses Improvement Program and ultimately the Deputy Director General of the Centre. A fair share of the recognition that ICRISAT has earned in its mandate region, during his tenure at the Centre, can be attributed to the research and research leadership of Dr. Nene. Because of the shared mandate for research on Kabuli Chickpea of ICRISAT and ICARDA, the Centre that I joined after leaving Pantnagar in 1977, I again had the good fortune of working together and managing the shared mandate with Dr Nene.

He provided full technical support to ICARDA for chickpea improvement by deputing excellent staff and his personal technical advice. We extensively travelled together in each other's mandate region to review joint work in the field, and wherever he went he left his mark on the national researchers and research managers. ICARDA's Directors General also held him in extremely high esteem. The success of the Kabuli Chickpea Improvement Program earned both the collaborating centres the much-coveted King Baudouin Award of the Consultative Group on International Agricultural Research (CGIAR).

Although truly international in his research endeavours, Dr Nene has been very nationalistic in his heart. I recall being told that he could not tolerate the comment made by one of his foreign colleagues that India had no History of Agriculture. Dr Nene seriously reflected on this assertion and felt sad that agriculture students in India had been taught history of agriculture as written by western authors with no mention of the history of Indian agriculture. He knew that there was a wealth of information on agricultural practices in ancient India and it was only a matter of discovering the information 'concealed' in the ancient literature written in Sanskrit and other languages which were not currently in common use. This must have motivated him to launch the Asian Agri-History Foundation and put a process in motion that would discover and document the richness of history of agriculture in ancient India. AAHF is his brainchild, and, as its Founder and Chairman, he has devoted himself religiously, almost full time, to speedily realize its objectives and fulfil its vision, particularly after his superannuation from ICRISAT. He has searched for old scripts far and wide, procured them, translated them /arranged translation in English and several vernacular languages, written scholastic

commentaries on them to enhance the usefulness of translations, and published and disseminated them. Almost all activities of the AAHF bear his mark. His efforts have accelerated the identification of old and traditional --nearly organic -- remedies of ailments of various crop plants and animals and encouraged their validation on the platform of modern science. He has also co-authored a textbook on history of Indian agriculture for use in the curriculums of agricultural universities.

I have witnessed Dr Nene brilliantly organizing several seminars, symposia and conferences of the AAHF, leading the process of developing relevant recommendations, and promoting their implementation for the larger good of the Asian agriculture. Having served the Foundation with full dedication since its establishment in 1994, making it a strong and highly useful institution, he can rightfully be proud of his accomplishment. As he crosses the landmark of 80 very fulfilling years of his illustrious life, his decision to pass on the baton of Chairmanship of AAHF to one of the younger colleagues reflects his passion for sustainability of the institution that he has so fondly founded. With enormous gratitude for his services, the Trustees of the Foundation, have accepted his request for this change but not without extracting an assurance that he will continue to guide the path of the foundation in the future as its 'Emeritus Chairman'. He continues to amaze us by the brilliance of his thought process in providing crucial pieces of advice to ensure that the Foundation moves on according to his vision.

Dear Dr Nene, on the occasion of celebrating your 80th birthday, I gratefully offer my respects to you for all that you have done for me as a colleague, friend and mentor during my professional life and for taking the AAHF from height to height and documenting in

golden words that we indeed have a rich heritage and history of agriculture in India and that knowledge could provide lasting solutions to the problem of achieving sustainability in agricultural production and protecting environment in the face of climate and other changes.

May the Almighty bless you Dr Nene with many more years of happiness and health and make us fortunate recipients of your continued friendship and guidance!

Dr M C Saxena was a colleague of Dr Nene at GBPUA&T, Pantnagar; a founder Trustee of AAHF and former Asst. Director General of International Centre for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria.

Present address: 22/7, DLF Phase I, Gurugram, Haryana.



Dr Yeshwant Laxman Nene as I know him

Dr S N Nigam

I joined the BSc (Hons.) Ag & AH program at Pantnagar University (the then UP Agricultural University) in 1965. In the College of Agriculture, as a new comer (fresh man), we heard a lot about Dr Nene – excellent teacher, strict disciplinarian and a good mentor. However, my direct interaction with him occurred in the first trimester of 1967/68, when I registered in course ‘Plant Pathology’ (APS 281, 4 credits). In his introduction in the very first lecture, he mentioned his ‘likes’ (to be followed by all students) and ‘dislikes’ in the class. One of his likes was that every student should look into his eyes when he was lecturing and the other, among many, was that if he did not show up in the class for five minutes, student should disperse and go to library for self-study. A couple of us, habitual back benchers (by the way ‘A’ graders as well), ignored his former like in the first lecture itself and were looking out of the window. He caught two of us and asked us to stand up and reminded us of his earlier instructions in the class. We kept quiet, and then he asked if we could repeat what he was talking about. We did that without any lapse. This made him cool down, but with a mild warning given to us. We both (late Dr L M Pant, the First Topper and Dr S N Nigam, Second Topper of the 1965 batch) scored an ‘A’ grade in the course. Once he did not show up in the class for five minutes. Contrary to his instructions, we continued to remain

in the class chitchatting with each other. Suddenly, he showed up and reminded us of his instructions given in the first lecture. We all dispersed quietly from the class. For my post- graduation (MSc), I had the option to join any subject because of my excellent academic performance, but I opted for Plant Breeding as strict disciplinary code followed in Plant Pathology Department was incompatible with my thinking and personality. He was an excellent Student Advisor and Mentor. The Dean of College of Agriculture, Late Dr N K Ananta Rao, would always assign students to him, who were academically poor and were on the verge of being dropped from the university. With enforcement of strict discipline on time management of such students, both in the college and hostel, he made sure they all came out of academic probation. Thus, he saved the career of many students who, otherwise, would have been dropped from the university.

Once, Dr Nene was assigned some role related to sports (I don’t remember the designation). In the evening, he would visit the hostel and join the game of cricket being played by the students. However, his overall impression on students, particularly in the College of Agriculture, was such that students would move away from the corridor if they saw him coming. Even if he made some joke/comment, he had to laugh himself alone as students were too scared to join him.

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Most of them were in awe of him (admiration, respect and fear, all combined together).

We were in the College of Agriculture in an era when the Green Revolution was ushering in in the country. The Pantnagar University was one of the major universities, which played a significant role in making the Green Revolution happen in the country. The 'terai' belt with its progressive farmers and intensive agriculture was the major food producing region of the country. The university would organize annual 'Kisan Mela', where farmers from all over U.P. and other states would participate. The farmers from the terai belt were very demanding and only the famous 'Extension Man' Dr Shiva Sagar Singh could handle them with folded hands. This was the time when a new disease appeared in rice, which was called 'Khaira' disease because of browning of the leaves. Farmers were restless and challenging the scientists of the university to identify the problem and find a solution to it so that their rice crop could be saved. This is where Dr Nene and his group provided the lead and identified the causal agent of the Khaira disease – deficiency of zinc. Zinc sulphate sprays restored the plant health. The terai rice farmers were so overwhelmed by this breakthrough in research that they all started calling him 'Dr Khaira'. His contribution was also recognised by the FAO and he was awarded a prize for the same. His and his students' research achievements are many and are well recognized by the agricultural scientific community around the world. His students occupied several important positions in research and academic institutions. He authored several books, which remained reference books for a long time.

I joined ICRISAT in 1974 as nationally recruited scientist in the then Farming Systems Program. Subsequently, I was transferred to newly created

Groundnut Program in 1976. Dr Nene joined ICRISAT in 1976 as Leader of the Pulse Pathology Unit as an internationally recruited staff. Due to Pantnagar connection, we all (there were many nationally recruited scientists, who graduated from Pantnagar University) had very good rapport with him and always sought his guidance when needed. In 1982, I was selected as an internationally recruited staff to start a Regional Groundnut Program in Malawi. Dr Nene had given a very positive report to the then Director General (Dr L D Swindale) on my suitability for the position. In 1986, I came back to ICRISAT Headquarters to head the Groundnut Breeding Unit. Later on, the Pulses Program and Groundnut Program were merged into Legumes Program and Dr Nene took over as Program Director. Now, I was directly reporting to him. At this stage, some misunderstanding and friction developed between us. Our styles of functioning were not very compatible. After one annual appraisal, I was asked by the Director General to sort out issues between us. Dr Nene and I had a long meeting and eventually misunderstanding between us was cleared. I assured him that I gave him the highest respect as my teacher and would carry out all his instructions provided he had listened to me and then overruled. ???After that, our relations were very cordial and grew stronger over time. Subsequently, he was selected as Deputy Director General and moved out of the Legumes Program. The ICRISAT management at that time was divided and it reflected in day to day functioning as well. I stood by the side of Dr Nene even at the risk of getting myself being side-lined in any consideration.

Dr Nene is a staunch nationalist. He always harboured a desire to educate the western agricultural community about the heritage of ancient Indian agriculture, which got masked over a period of

time. He took initiative including early retirement from ICRISAT to start AAHF (Asian Agri-History Foundation) to show the world communities of Indian heritage in agriculture. He motivated us to join him in this noble initiative. His commitment, sincerity and honesty of the purpose towards AAHF are unquestionable. Because of his untiring and selfless efforts, the Indian scientific community has become proud of our agricultural heritage, which they missed out because of our education system, which was corrupted by our colonial rulers. Even at his age (80 years), his passion to unearth the details of our ancient agriculture and bring them out in public remains unmatched. But for him, a lot of our treasure

of ancient agriculture would have remained buried in the annals of history.

In the end, I would like to pay my high tributes to Dr Nene for being what he is as we all have our own strengths and weaknesses, they are part of us. God bless him with many more years of healthy and productive life.

Dr SN Nigam was a student during Dr Nene's time at Pantnagar, then a colleague at ICRISAT, and then as a Trustee of AAHF.

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Dr Y L Nene: My Mentor and Role Model

CL Laxmipathi Gowda



My first encounter with Dr Y L Nene was when I joined for my MSc in Plant breeding at Pantnagar University in 1970. Since Plant Pathology Department was also on the first floor of the College of Agriculture, I would see him often walking to/from his department. Knowing from my seniors about him, I greeted him when I saw him for the first time (I do not remember whether it was Namaste or good morning). On the second day when I greeted him, he stopped and called me and enquired who I am and I introduced myself. Then he said that he knows me now and will reciprocate the greetings, as he wanted to know the people who greet him and hence reciprocate the respect given. That was my first lesson (among many) from Dr Nene: give respect and take respect, irrespective of the status of the people around you.

Dr Nene was one of those who considered everyday as an opportunity to learn something new. He was an eager student all the time. When he became the Director of the Legumes Program at ICRISAT, he called Dr L J Reddy (Pigeonpea breeder) and me (Chickpea breeder) and asked us to help him learn more about plant breeding now that he is no longer a Legumes Pathologist, but the Program Director. I am sure he must have asked others to help him learn other disciplines as well during his tenure.

During the time, I was Director of the Crop Improvement Program and later the Grain Legumes Program, many people (both scientific and administrative staff) would say that I resemble Dr Nene (some even said that I am a darker cousin of Dr Nene) and also administered the program the way Dr Nene did--as per the Institute regulations, without personal bias or favouritism. Dr Nene was known to be a stickler to rules and regulations, and I imbibed these traits during the time I was associated with him. A few staff (including those in senior administrative positions) were not happy with my way of administration because I followed his advice and administered as per the policies and procedures of the institute.

I received two major awards in 2012: The International Service in Crop Science Award, given by the Crop Science Society of America at its Annual Meetings in Cincinnati, USA; and the Doreen Mashler Award for Lifetime Achievement in Excellence in Science, given by ICRISAT, Hyderabad, India. During my acceptance speech of the Doreen Mashler Award during the Annual Day Function (where Dr MS Swaminathan was the Chief Guest), I dedicated both awards to the smallholder farmers of the dryland areas of the World, and thanked ICRISAT for providing me the excellent opportunity to work for the smallholder

farmers. In that speech, I specifically recognized the role played by Dr YL Nene as my Mentor and Role Model over the years, especially during my tenure with ICRSIAT starting in 1975. I singled out Dr Nene among my other mentors (Drs MS Swaminathan who was Director of IARI when I joined for my PhD; H K Jain who was my PhD dissertation guide; and P N Bahl with whom I worked on chickpea for my doctoral thesis) because of the immense influence he had on my career with ICRISAT. It was because of his guidance, encouragement and also unstinted support for me during the critical periods that I progressed in my career. His advice and guidance made me a better scientist, able Research Administrator, and also

a compassionate human being, and I retired from ICRISAT in 2015 as the Deputy Director General, the post that Dr Nene held when he retired from ICRSIAT.

Overall, Dr Nene stands out as a Role Model to many scientists and I am happy to be one of those blessed ones.

Dr Laxmipathi Gowda was a student during Dr Nene's time at Pantnagar, then a colleague at ICRISAT, and then as a Trustee of AAHF. He is former Deputy Director General of ICRISAT and presently Co-Founder, GRSV Consulting Services, a not-for-profit entity engaged in supporting Agriculture Research for Development.



Dr YL Nene: A Wonderful Example

Dr Babu Lal Agarwal

I am extremely happy to learn that Dr YL Nene, Chairman of the Asian History Foundation (AAHF), turned 80 in November 2016 and that a souvenir publication is being prepared to celebrate his 80th birthday during the “National Symposium on the Role of Vrikshayurveda and Traditional Practices in Organic Farming”, in Udaipur, 6-8 March 2017. First of all, I would like to congratulate Dr Nene on his 80th birthday.

I have had the privilege of knowing Dr Nene from my Pantnagar days where I completed my PhD degree in plant breeding. Although I was in plant breeding department, his excellence in teaching and research was well known not only across the departments in the College of Agriculture but in the whole university. He was already famous because of his work on solving the dreaded problem of khaira disease of paddy, for which he was recognized by FAO by awarding him first prize for the work, but also by the Tarai farmers who felt so indebted to him for solving the mystery of the disease, which was threatening to wipe out the cultivation of paddy crop from the Tarai region of then Uttar Pradesh (now Uttarakhand). Likewise, his pioneering work on the viral diseases of pulse crops was also recognized by the food legume scientists in India and abroad and earned him good name.

As a faculty member, he enjoyed the reputation of being a very strict and a disciplined individual but an

excellent teacher of undergraduate and post-graduate courses in plant pathology, and also an excellent research supervisor. I considered those students who were doing their PhD with him as lucky.

Later, I had a chance to see him work in ICRISAT first as Principal Pathologist in the Pulses Programme, then its Leader and then the Director of the Legumes Programme. As expected he proved himself an excellent pulses pathologist and developed an excellent pulses pathology sub-programme. I used to enjoy his presentations during the annual/biennial research reviews. At ICRISAT also, he proved himself as a good Leader of the Pulses Programme and later as the Director of the Legumes Programme.

Based on his excellent performance as the Director of the Legumes Programme, he was appointed as the Deputy Director General (DDG) of ICRISAT. He was known for his fairness and for following and enforcing the rules and regulations. He was easily accessible to us as the DDG of the institute.

I remember that he resigned from his job as the DDG in 1996 to pursue his desire to dig out the agricultural information from manuscripts of Indian history of ancient and medieval times. For this, he established the Asian Agri-History Foundation (AAHF) and I felt proud when he invited me to join it as one its trustees, which I readily agreed. I very much

appreciate, in fact very proud of, his excellent work that he has done for the AAHF for the last 20 years. It is too bad that because of some health concerns decided to pass the responsibility of its chairmanship to another trustee, Dr SL Choudhary, to carry out forward the work of the AAHF.

I certainly would like to say “thank you Dr Nene” for being such a wonderful example of a teacher, researcher and administrator for many students and colleagues and especially for persons like me, and for doing such an exemplary work for the AAHF. Also, I wish him good health and happiness for many more years of his life.

Dr BL Agarwal was a PhD student during Dr Nene's tenure at Pantnagar. He was his colleague at ICRISAT, and then as a Trustee of AAHF. Presently, he is engaged in agri-business and his present address is: E-806, PurvaPanoram Apartment, Bannerghatta Main Road, Gottigere Village, Bengaluru 560 076, Karnataka, India (Email: blpratibha@gmail.com).



Dr YL Nene: Pioneering work on Agricultural Heritage of India

Prof Dr Gajendra Singh

I joined UPAU Pantnagar as a student for BSc Agricultural Engineering degree in July 1962. It was Sri Shankar Singh, then Deputy Director, Pantnagar Farm, who has brought me to study at Pantnagar. He was son of the Zamindar (Landlord) of my village in Bulandshahar District of Uttar Pradesh. During my stay of four years for studies he provided food and financial support whenever needed.

Dr Y L Nene lived in Phool Bagh right across the road from the residence of Sri Shankar Singh. I had heard about him from my friends in College of Agriculture. He was known for his very strict discipline and as an excellent teacher. One evening Sri Shankar Singh introduced me to Dr Nene. In the very brief meeting he told me to work hard to get good grades. Since that day, I considered Dr. Nene as my teacher. I did not have fortune to take any of his courses.

After completing my PhD in 1973 from the University of California at Davis, I joined GBPUAT Pantnagar as a faculty member in Agricultural Engineering Department of the College of Technology. I got married to Dr Vimlesh Singh (MBBS) from Gwalior. I learned that Dr Nene was also from Gwalior and graduated from there. The

youngest son of Sri Shankar Singh, Raj Kumar and Sudhanshu, son of Dr Nene used to play together. Many times, Vimlesh and I also joined the game like hide and seek. This brought us close to Sudhanshu and we both liked him very much. During my stay at Pantnagar up to 1975 I learned about his research work and teaching activities which were praised by all. His work on Khaira disease of rice made him known internationally and brought laurels only to him but to Pantnagar University and its community.

I returned to India in 1994 to join ICAR as DDG (Engineering) and was given responsibility of computerization. That time Dr. Nene was Deputy Director General at ICRISAT, a very good research administrator. He helped me in connecting with experts implementing and managing computerization, networking and internet connectivity, including modernization of library and database management at ICRISAT. The knowledge gained and information collected at ICRISAT, was used for developing systems to be implemented at ICAR. Dr Nene also helped me in organizing a training course for librarians of ICAR institutes at ICRISAT. During this period, I also learned about tremendous research work he has done on pulse crops and cereals, and integrated disease management. I resigned from ICAR at the end of

1997. During this period of my stay in India (1994-97) AAHF was established and it was mainly due to Dr Nene being its chairman, I joined it as a trustee.

Although I have not published any article in AAHF journal, I have learned a lot from the publications of AAHF. Due to his pioneering work on the agricultural heritage of India done through the AAHF, including work related to tools and implements for agriculture, Indian Society of Agricultural Engineers (ISAE) elected Dr Nene as honorary fellow of ISAE.

I have been fortunate to receive blessings and guidance from Dr Nene, throughout my life.

Prof Dr Gajendra Singh: Former Deputy Director General (Agricultural Engineering), ICAR and Former Vice- Chancellor, Doon University, Dehradun, Uttarakhand; 2005-2008; Currently, Adjunct Professor of Agricultural Engineering at the Indian Agricultural Research Institute (IARI), New Delhi; Chair: Science Committee of "Appropriate Scale Mechanization Consortium for Sustainable Intensification in Asian and African countries" funded by USAID. Members of Consortium are: University of Illinois at Urbana-Champaign, Michigan State University, Kansas State University and North Carolina A&T State University, 2015-2019.

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Dr Y L Nene: As I Know Him

Dr SL Choudhary

It was sometime in 1968 when I was a student of M.Sc. Ag in Plant pathology at SKN College of Agriculture Jobner, that my teacher late Dr R Prasad told us about Dr Nene who was doing an excellent job both in teaching and research at G B Pant University, Nainital. Dr R Prasad was himself a doyen in Plant Pathology. When he speaks about somebody in the field, it was natural to develop a curiosity to meet him personally. Almost twelve years later I got this opportunity at the Annual meeting of Indian Phytopathology Society at Udaipur in 1980. I was immediately impressed by his humble nature and the way he was encouraging the artists in the cultural program showing his deep interest in the cultural field besides being a teacher and researcher.

During 1990-1995, as a Secretary of Indian Society of Mycology and Plant Pathology (ISMPP) I organized a seminar in Haryana Agricultural University in 1991 in which one of the founders of ISMPP Dr R Prasad's 84th birth anniversary was celebrated. In those days, there were two plant pathology societies-ISMPP and IPS. It was generally an accepted fact that member of one society will not become member of the other society. I wanted Dr Nene to be member of ISMPP as well. Some people had doubt about it. As a secretary, I proposed to organize the Annual Meeting of ISMPP at Andhra Pradesh Agricultural University, Hyderabad in 1993. Dr M V Rao, Vice Chancellor of the University

accepted my request to host the meeting and a National conference. I requested and invited Dr Nene to deliver Dr N Prasad Memorial lecture (A regular feature of the society) in memory of Late Dr N Prasad, one of the founders of ISMPP. Dr Nene accepted the invitation surprising my colleagues. When all concerned asked me as to how I managed to have Dr Nene's acceptance, with gratitude I replied it has been possible due to continues encouragements of late Dr B P Chakravarti, a fellow colleague of Dr N Borlaug. This shows when it comes to scientific matters there are no borders in the heart of Dr Nene. He paid life membership of ISMPP before the inaugural function and his lecture. Rarely have I seen a person of such honesty and devotion to his duty and morality. I feel that this was the beginning of my future career and direction. After his lecture Dr Nene and Dr M V Rao joined us for a lunch. A young scientist approached Dr Nene and asked him what they should do, because they were not getting Agar in their laboratories due to its high cost. Can he suggest any substitute for it? Dr Nene looked at me and enquired the possibility of replacing it. It just struck me and I said whether we could try Ararot (*Manranta arundinaceae*) powder as it is commonly used as an adulterant in milk. This incidence was forgotten by me.

In 1993, we were to celebrate the Silver jubilee of ISMPP by organizing an International Conference

in the end of 1994 -1995. For Jubilee celebration, the society wanted to have as its president, a renowned pathologist and who could have been better than Dr. Nene himself for it. With the concurrence of Dr B P Chakravarty, I could persuade Dr. Nene to be the President of the ISMPP. I went to Hyderabad to seek his approval and guidance for organizing this International event. He appreciated the proposal to hold the international conference and suggested to think about the title of this event. He suggested that I consider naming it as the Global Conference instead of International and the theme may be Plant Diseases and their Management. After this meeting, in spite of a busy person, he took me to lunch and later to his chamber. This surprised me very much. He enquired whether I have done any work regarding the replacement of Agar. I said no. He informed me that he has done some work on it and have used Tapioca instead of Agar. He had prepared a paper on this to be published in some Journal. He felt sorry that my name could not be included as I was working at Udaipur. It was really great of him to take a problem seriously even though it was brought to his notice by a young scientist and remember that I had suggested Ararot as replacement. I was really overwhelmed by his courtesy and loyalty to work. I then requested him to kindly publish this paper in our journal (Indian Journal of Mycology and Plant pathology) as I know it will boost creditability of our society journal.

Next day, he gave me the manuscript for publication, at the same time advised me to improve the quality of printing of the journal. He also contributed a sum of Rs20, 000/- for this purpose. The paper was sent to the Chief Editor of the journal Dr R Jayarajan, Prof & Head of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore for needful. He returned the paper and requested that it be published on priority.

He also allowed me to travel by air to Hyderabad on Society's work to save time and travel expenses will be reimbursed by ICRISAT. For him time is money.

I was greatly handicapped in organizing a Global Conference, because I was only an Assistant Professor at that time. But with the help of Dr. Nene, some of my colleagues and students, and great encouragement from my teacher late Dr B P Chakravarti, the Conference could gather almost 352 scientists from 27 countries and was a great success. This was due to the glory of Dr Nene's name associated with the conference. One of the achievements of this conference was to honour teachers teaching Pathology. This was the idea of Dr Nene. According to him, most of the awards go to researchers but not to teachers who produce such researchers and one must give recognition to them as well. On raising question about funds for the award, Dr Nene immediately promised to contribute Rs one lakh with the request to confide his name for the award. Finally, this decision was approved 11 teachers were honoured during the 1st Global Conference of ISMPP in 1995 and is continuing till date. Later on, in the General Body Meeting of the ISMPP during this mega event, the members proposed that this award should be conferred in the name of Dr Nene, and one of the close student Dr SPS Beniwal offered another contribution of Rs one lac towards this award. This reflects that how much respects he has commanded from the students.

Fortunately, in 1996 Dr JM Lenne, Director (Research) ICRISAT, Patancheru, Hyderabad Invited me as Visiting Scientist to work in a project for six months. This gave me another opportunity to come in contact with Dr Nene. During my stay in ICRISAT, I received a letter from Dr Nene; the first sentence of the letter still I remember was on behalf of the trustees of Asian Agri-History Foundation



(AAHF) I humbly request you to kindly accept my request to be a Public Relation Advisor of the AAHF. That was a great surprise to me as the way in which he approached me for this pivotal position and providing me an opportunity to remain in close association with him. I consider it a new era of life as today I am the Chairman of this great organization (AAHF) of International repute. I consider him as a great mentor of my life. Besides an eminent scientist, teacher, he is a great administrator having a special quality of getting work done from his colleagues and workers.

Respectfully, on his 80th birth anniversary, I heartily pray for Dr Nene's healthy happy long life and seek his continued guidance and inspiration.

Dr S L Choudhary has had association with Dr Nene since 1994 through AAHF activities and then as a Trustee of AAHF. Now he is Chairman of AAHF.

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Dr YL Nene: A Teacher, Guide, and Philosopher

Dr R P Thakur

Writing a tribute to a person whom you have known for nearly five decades and especially to the one whom you consider as your Teacher, Guide and Philosopher is both an honour and a challenge. While writing about Dr Y L Nene, I will certainly be short of appropriate words, and limited not only by space and time, but also due to deep-felt awe and emotions to describe the immense contributions of a living Legend and an Icon of numerous students of Plant Pathology world over. Dr Nene, a world-renowned Plant Pathologist, has made immense contributions to both national and international agriculture during the span of nearly six decades.

I first met Dr Nene in August 1968 when I went for admission in M Sc at Uttar Pradesh Agricultural University Pantnagar (then) after my graduation from BHU. By then he had already become a very popular scientist among students of agriculture for receiving the prestigious FAO Award for his path-breaking research on Khaira disease of rice in Tarai region of Uttar Pradesh (now Uttarakhand). My very first meeting with him for few minutes in his office left a lasting impression on my mind and that is alive even today.

Dr Nene is well remembered as an excellent teacher both at undergraduate and post graduate levels. In his lectures and deliberations, there is always the clarity of expression and focus on the subject topic. Besides, he has excellent handwriting both on black

board and paper. That always reminds me of a quote by Mahatma Gandhi “A good hand-writing is an indication of perfect education”. He used to teach Introductory Plant Pathology at the undergraduate level with the idea of creating interest and promoting plant pathology with younger students, and this resulted in good number of students opting for the subject at PG level. He always believed that only the best teacher should take up undergraduate classes to inspire young minds. At the PG level, he taught us three courses, Principles of Plant Pathology, Fungicides and Plant Virology, which I along with others enjoyed thoroughly. It was during that time that he was preparing to write a book on Fungicides. He used to assign specific group of fungicide to each student to review the literature and prepare a write-up for the Term paper. This helped students to learn more about specific fungicides and to Dr Nene in collating the latest information on the subject, and the first book “Fungicides in Plant Disease Control” by YL Nene was published by Oxford IBH in 1971. This was the first book on Fungicides in India, and probably in Asia.

At GBPUAT Pantnagar, Dr Nene as Assistant Professor to Head of the Department contributed immensely as a teacher, researcher, and administrator. Under his active and committed Leadership the Department of Plant Pathology got all the modern research equipment, well established laboratories,

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world-class greenhouse and field facilities. As a researcher, he led a PL-480 project on “Survey of virus diseases of warm-weather pulse crops (mungbean, uradbean, pigeonpea and cowpea) in Uttar Pradesh, and supervised several other inter-disciplinary projects in various crops with rewarding results. He has been a strong advocate of extension and dissemination of research results to farmers’ fields. He has been well known for his strict administration, critical observations, and sharp memory - all embedded in a very charming and impressive personality.

At ICRISAT as Principal Plant Pathologist (IRS), Dr Nene had the responsibility of establishing the Pathology laboratories, greenhouse and field facilities for research on cereals (sorghum and pearl millet), legumes (chickpea, pigeon pea and groundnut), and Plant quarantine. Within few years, under his active guidance and leadership world-class facilities could be established. Under his untiring and creative leadership as Plant Pathologist, Director Legumes Program, and Deputy Director General at ICRISAT, Dr Nene made tremendous contributions to research and development both in Asia and Africa. While at ICRISAT, Dr Nene authored numerous publications, including research articles, reviews, information bulletins, and books.

Continuing his strong commitment and passion for agriculture in general and plant pathology in particular, Dr Nene established/created the Asian Agri-History Foundation (AAHF) in 1996 with its HQ at his residence in Secunderabad. Being a true nationalist he has strong belief and faith in Indian heritage and culture. Through AAHF he has been able to unearth the treasure of ancient knowledge and wisdom related to agriculture hidden in ancient literature - Vedas, Puranas, Upanishadas and others, translate these in to English and other Indian languages, and disseminate the knowledge and

information through publication as journal articles in “Asian Agri-History”, many books and bulletins. The AAHF has been instrumental in providing a befitting platform for seminars and symposia for the benefit of scientists and farmers of India and other Asian countries. His untiring and courageous journey of the past 20 years has been highly illuminative and beneficial for many others who have been closely associated with AAHF. He has also contributed immensely in promoting the professional Plant Pathological societies in India - IPS, ISMPP, PPAI by serving as Presidents of these societies, often for more than one term. He has also been a long-term member of American Phytopathological Society and a Fellow of the American Phytopathological Society (APS). In addition, he has been decorated and honoured with many other national and international awards. Being himself an excellent teacher he has special reverence for Teachers, which is well reflected in constitution of an award “YL Nene Best Teacher Award in Plant Pathology” given every year by ISMPP.

I consider Dr Nene as a great Teacher, Innovative and Creative Scientist, Visionary Leader, and a true Nationalist who has inspired many minds. He has been very kind, generous, humble, and overall a fine humane. On his 80th Birth Day felicitation by AAHF at the National Symposium on The Role of Vrikshayurveda and Traditional Practices in Organic Agriculture, 6-8 March 2017, MPUAT, Udaipur. I wish him very healthy and happy life and continued services to AAHF, and Asian and International agriculture for decades to come.

Dr RP Thakur was a post-graduate student in Dept. of Plant Pathology at Pantnagar during Dr Nene’s tenure; He retired as the IRS scientist (Principal Scientist in Plant Pathology) from ICRISAT; and now he lives in Hyderabad, Telangana.

Dr YL Nene: 'Baba' (Father) on your 80th Birth Anniversary

Purnima Raste

The world knows about the career achievements of my father. I would like to say a few words about Dr Yeshwant Nene as a "Father".

What I remember of him as a child in Pantnagar when we had a very simple living and I only saw my father working very hard. I remember attending one of his college lectures. There was pin drop silence and all students were concentrating on his lecture. The respect he got as a teacher was the first remembrance of the greatness of my father. I was only 5 years old then. But this is still afresh in my memory.

As a father, he made sure that we were always made comfortable. He stressed on not only education but also on extra-curricular activities. He noticed that I had a liking towards Indian classical dance. He searched for a good teacher and enrolled me for the dance classes. I then loved dancing and practiced for the next 15 years. My passion for dance is only due to my father's efforts.

Whether it was visits to the dentist or hospital, he was always there by my side. Even though family holidays were rare at that time, he ensured that we

went on family vacations, ensured that we experienced our first flight at a very tender age.

Discipline, punctuality, hard work, thoroughness is what defines my father.

He always helped the family in times of their needs and took very good care of all the elders.

I was with him in hospital during an illness, which he faced a few years ago, His positive attitude, a strong belief in Him and patience helped him face the situation boldly.

He believes that one should not have high expectations for results but should keep working hard as recognition and rewards will follow.

Now that he has turned 80, I wish him a healthy long life.

Purnima Raste is Dr Nene's daughter, a great supporter of her father's scientific activities and then as a Trustee of AAHF.

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Dr Y L Nene: Long and Fruitful Life

Dr Ardeshir (“Adi”) B Damania

I had heard of Dr Nene when I visited ICRISAT for the first time in 1976. It was a time when ICRISAT had no permanent buildings and was operating from tin roofed buildings. I also met Dr van der Maesen. After I left ICARDA in 1994 and joined UC Davis, I once again heard of Dr Nene and the setting up of his Agri-History Foundation in 1996 after his retirement. It was a very worthwhile enterprise. Someone had to step forward and record the ample and fast disappearing indigenous knowledge about Asian agricultural history. I tried to support the AAHF as much as I could from UC Davis in California by contributing articles, donations, and serving on the international advisory committee. I also attended one of the major conferences that Dr Nene organized in

Hyderabad and presented a paper on pomegranate. Thereafter, Dr Nene and I corresponded often on topics of mutual interest. I regret that I was unable to travel to India during some of the other conferences, such as the one in Udaipur coming up in March 2017. This is purely due to costs involved and lack of travel grants from my university. Thanks to Dr Nene’s efforts, ancient and medieval texts have been brought to the knowledge of the Indian public and the world. I wish Dr Nene a very happy second retirement and a long and fruitful life.

Dr A B Damania: Dept. of Plant Sciences, University of California at Davis, One Shields Avenue, Davis, CA 95616, USA. E-mail: abdmania@ucdavis.edu

Dr Y L Nene, the Founder of AAHF and my Impressions of a Living Legend

Vijay S Parmar

Any person who is a Principal Scientist and has a very lucrative job at one of the International Agricultural Research Centres of the world leaves his job in search of 'What has India Contributed to the World at large in the Agricultural sector' just because his students had once posed a question to which he had no answer and goes into deep research in quest of the subject has to be extraordinary has to be a great man and that is none other but, my Guru, philosopher and guide - Dr Y L Nene.

Many scientists and his students will write about his Pantnagar days, his books and thorough research work what he has contributed to not only the Indian Agriculture but, the world at large. His work on different crops which has helped in control of the diseases, pathogens and a better understanding of the plant pathology, but I would like to bring to light what great help he has been in the Organic Tea cultivation where there were no answers to the problems and the Organic Tea cultivation was on the verge of premature, natural death.

I was working in Darjeeling as Advisor to the largest Group with 13 Organic Tea Estates with more than 2600 ha under tea and was struggling to sustain the crop. We got in contact with Dr Nene, over the

phone way back in 2006. Dr Nene was not only kind enough to take our call but, immediately sent a team of scientists to study our problems.

Over the years with the help of the AAHF, we identified many herbs and weeds (Clerodendrum infortunatum), Vitex negundo, Polygonum hydropiper, Equisetum, etc.) growing on the Tea Estates for control of diseases, mites and insects which if not controlled may damage the crop as high as 50% of the total crop. These were identified on the basis of the ancient and medieval history texts made available by Dr Nene through the AAHF, and the most prominent being the Vrikshayurveda. The real challenge was the standardization of the concoctions made out of these herbs, weeds, tree leaves, and bark.

The importance of the desi/Indian humped cow and its bi-products mainly milk, cow dung and urine was understood by us and results of their use were very clearly visible. The moon cycle and its effect on the seed germination, movement of fluids in the vascular system of the bush and the related pest incidence due to the increased polyphenol levels during the moon cycle and how it attracts the pest was recorded.

Nutrition of the tea plant was a big issue and in the process of supplementing the nutrition issue we learnt

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the art of compost making. Other preparations from fish/animal waste such as Kunapajala and Indsafari and other organic nutrient supplements were learnt and applied to sustain and nourish the tea crop.

The moisture stress during the lean period was also addressed by application of rice starch, Tapioca starch in together with cow dung.

A great deal has been accomplished since we came in touch with Dr Nene and the team of scientists who helped us and continue to help us. Although the work is not yet over, it still continues under the guidance of Dr Nene and his team of scientific colleagues. One such project which is ongoing is the “Use of smoke” for pest control. We have identified the ingredients

but, validation and use of machines (Smoke Gun) is still under way.

I have been fortunate enough to spend a great deal of time with Dr Nene during the Annual scientific meetings of various Universities and Institutions for presenting papers every year since 2007. It has been a learning experience and I crave for more. Long live Dr Nene.

Jai Hind!

Mr Vijay S Parmar is associated with tea cultivation over the last 30 years and has known Dr Nene for the last over 10 years. He is the President of the West Bengal Chapter of the AAHF. Presently he is CEO of PCM Group, PCM Tower, Sevoke Road, 2nd Mile, Siliguri-734001.

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Dr Y L NENE: A Living Legend and Maestro for Millions

Dr J Kumar

Dr Y L Nene began his career in 1960 as Assistant Professor at G B Pant University of Agriculture & Technology (erstwhile U P Agricultural University, established in 1960), Pantnagar after doing his PhD in Plant Pathology from University of Illinois, USA. He was founder of the Department of Plant Pathology at Pantnagar and headed the Department from 1969-1974 before joining ICRSAT as Principal Plant Pathologist. The University recalls him for his seminal contribution as a magnificent teacher, a proficient researcher and a person with obsessive human values.

The University held its first Farmers' Day in 1962. On the day, there were around 100 farmers in a hall asking questions to the few university staff including Dr Nene. One gentleman, the late Col. Lal Singh, asked Dr Nene about the control of "khaira" disease in paddy to which Dr Nene replied that the cause of the problem was yet to be ascertained. Being unsatisfied with the reply, Col. Lal Singh questioned Dr Nene that he was with the university for more than two years and what he had been doing all through. The disease had been ravaging the rice crop grown all around Tarai (sub-montane) region affecting scores of farmers. The farmers were desperate to grow rice and have more income per unit area by selling the produce as seed

to the Tarai Development Corporation (TDC), which was established at Pantnagar also during sixties to supply quality seeds to the farmers of the country. Unfortunately, it did not happen as farmers lost their crops year after year until the mystery was resolved as "zinc deficiency" through the pioneering research of Dr Nene. It was through this discovery that Pantnagar University could establish its credibility with a big farming community in a short time through a research that addressed farmers' needs. Simultaneously TDC could justify its establishment as it was able to get quality rice seeds from the famous 'Tarai farmers'. Moreover, the scores of farmers who were brought to inhabit the reclaimed Tarai belt had a sigh of relief that their hard work and determination of converting a tract of land once inhabited by tigers and lethal mosquitoes into a productive land turned successful and they were to be amongst the richest farming community of the country through seed production of rice and wheat crops. The discovery of the cause and management of Khaira in rice by Dr Nene could easily be considered as the major discovery during the pre-green revolution period that influenced the agricultural production and human beings to such a large extent. This discovery had great relevance at the dawn of green revolution also since application of Zn

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became relevant to the high yielding rice and wheat varieties that are grown till today.

Beside Khaira disease, Dr Nene also solved the mystery associated with wilt complex of chickpea. He also conducted systematic research on viral diseases of pulses and developed multiple disease-resistance screening techniques and disease-resistant varieties of pulses. He was advisor for about 26 MSc and PhD students. His tenure at Pantnagar was intensely productive and exemplary that paved a way towards true professionalism in agricultural education and research. The fraternity of the University still recollects his simple, systematic, disciplined and immensely painstaking attitude through which he generated enormous esteem amongst students who revere him even today as a role model teacher. For his trend setting role during the establishment phase of the university, Dr Nene was bestowed with DSc (honoris causa) in 1991 during 14th convocation of the University. His monumental role has been cherished in the University by naming a building after him, Dr Y L Nene Examination Hall, in College of Agriculture.



His wisdom and insight makes Dr Nene unique as an agricultural scientist, a philosopher, a mentor and a human being. His mastery on ancient history of agriculture proved his immense capability to go beyond the visible science and to relate it with cultural roots, ethos and the heritage. His domination on Sanskrit and other languages makes him all the more versatile personality who extended and stretched himself to decipher the hidden wisdom of Indian ethos for common people. His contributions in modern agricultural sciences as well as in deciphering the Indian agricultural heritage is tremendous, which will serve as the foundation for future research for development in agriculture. The world will keep recalling him as saviour of humanity in upcoming years.

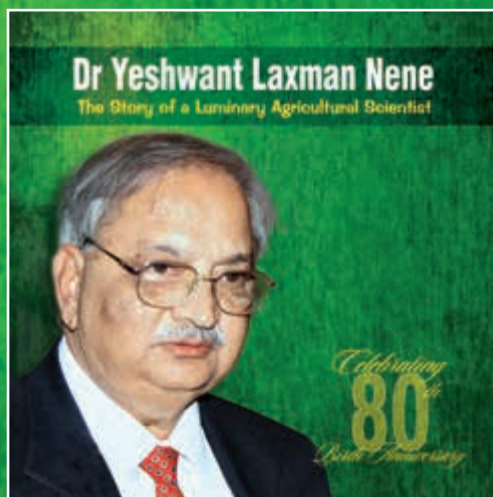
I wish him a healthy and long life.

Dr J Kumar was a student at Pantnagar after Dr Nene's departure in 1974; Former, Head Dept of Plant Pathology, Pantnagar. Currently Vice-Chancellor of GB Pant University of Agriculture and Technology, Pantnagar, Dist Udham Singh Nagar, Uttarakhand.

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