

Rediscovering Tapovan Basmati

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In 1999, when we interacted with the farmers of village Seola-Majra, Dehradun, Uttaranchal, India, which is the home of the famous Dehradun Basmati, few farmers told us to go to the village Tapovan to look for best quality Basmati. Tapovan (district Tehri, Uttaranchal) is a small village, located on the slope of the hilly ridge between 700 and 1000 m altitude, just above the Lakshman Jhoola in Rishikesh, Uttaranchal. Agricultural lands of the village are on slopes as terraces. Farmers grow a reddish-brown husk Basmati called Tapovan Basmati on these terraces. This variety is confined to the village Tapovan.

Shopkeepers at Rishikesh and Tapovan and farmers at Tapovan tell rosy stories about taste and aroma of this variety (Singh *et al.*, 2000). However, recently its cultivation has declined and according to farmers, it is left with little scent and taste. While visiting the field it was found that the variety had become an admixture. Villagers told that earlier as per decree of King of Tehri, only Tapovan Basmati was cultivated in the entire village for consumption by the royal family. Later ownership of land was shifted to *Mahant* (Head Priest) of Bharat Mandir at Rishikesh. Then entire Basmati rice of the village was used for *bhog* (offering) at the temple. When poor farmers of the village became owners of these lands their financial problems forced them to shift from single to multiple cropping system resulting in decline in fertility of land. In absence of any seed production program farmers are using their own seed since ages which has resulted in seed admixtures leading to decline in grain quality, yield, and area under cultivation of Tapovan Basmati. Marginal landholdings, fragmentation of land, and inability of farmers to use fertilizers due to poor financial status have further deteriorated the situation. All these factors led to near extinction due to poor financial status of the famous Tapovan Basmati.

Methodology

Twenty-three germplasm lines of Tapovan Basmati were collected from the village Tapovan, purified, and characterized for their morpho-physiological, agronomic, and grain quality traits under a joint project of the G B Pant University of Agriculture and Technology (GBPUAT), Pantnagar, Uttaranchal and the International Rice Research Institute (IRRI), Philippines. Grain quality characteristics were estimated by following standard procedures as described by Dela Cruz and Khush (2000). Field evaluation was done at the village Tapovan and also at Seola-Majra (Dehradun) and Niagina, Bijnore, Uttar Pradesh.

Results and discussion

Characteristics of 6 selections of Tapovan Basmati are given in Table 1. Most of the reddish-brown husk germplasm were of poor grain quality. However, two germplasm lines (Tapovan Basmati 5010 and Tapovan Basmati 5013) were of exceptionally high grain quality (Table 1; Fig. 1). One of these is probably the famous Tapovan Basmati of the past. It is the only Basmati rice known which can surpass Basmati 370 in cooking quality traits.

Table 1. Quality characteristics of six selections of Tapovan Basmati.

Sample code	Rice		Cooked rice		Elongation ratio	Sensory score ¹
	Length (mm)	Breadth (mm)	Length (mm)	Breadth (mm)		
5000	5.6	2.3	10.5	3.0	1.87	6.04
5007	6.4	2.0	13.0	2.7	2.03	6.55
5009	5.5	2.3	8.5	2.8	1.54	6.45
5010	6.8	2.1	15.0	2.6	2.20	7.06
5013	7.9	2.2	15.2	2.8	1.92	7.18
5016	6.3	2.0	13.2	2.9	2.09	6.83
Basmati 370	6.5	1.73	10.1	2.33	1.56	7.0

1. On a 9-point hedonic scale by a sensory panel of 5 members and comparison with Basmati 370 (at a hedonic scale of 7).

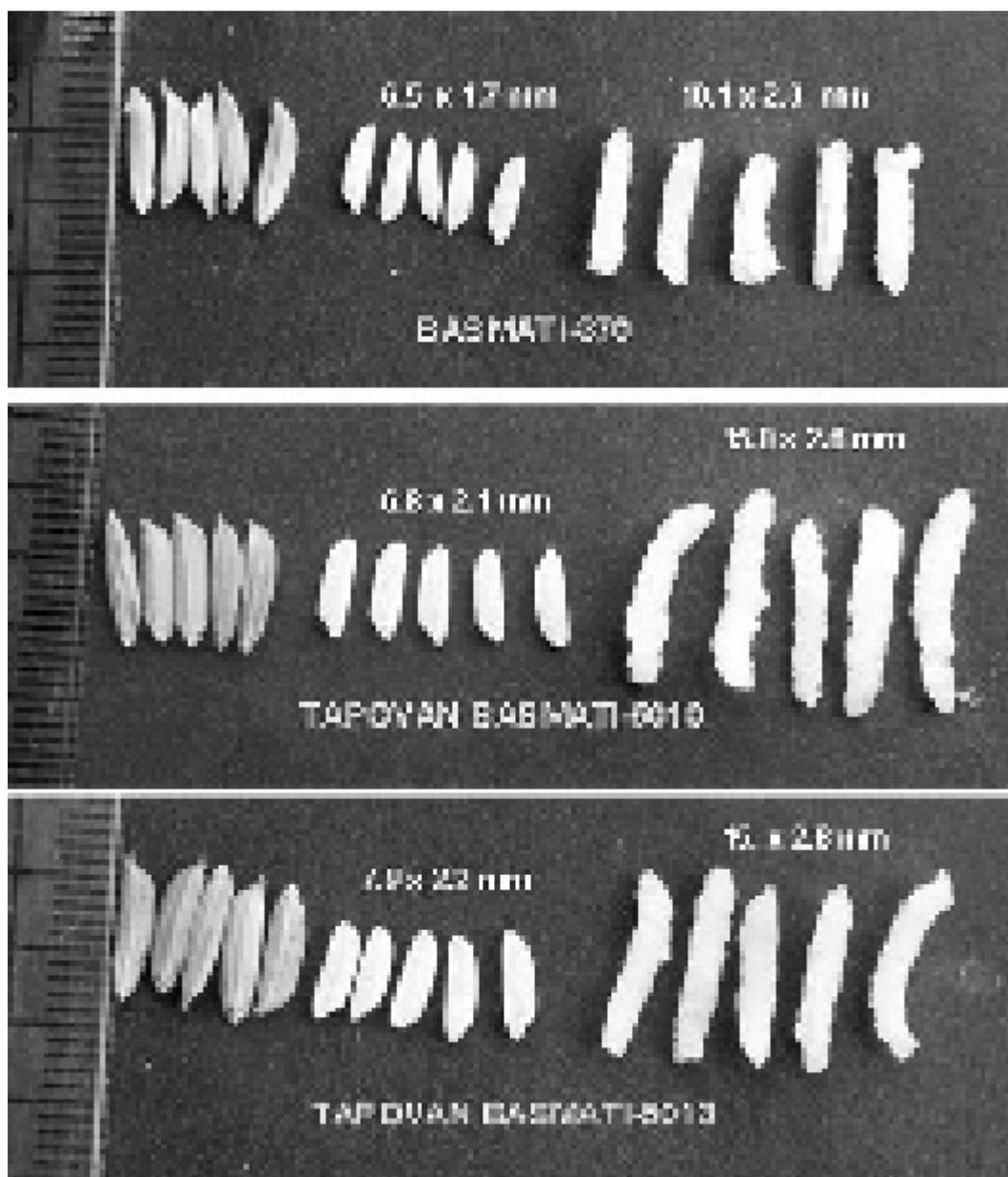


Figure 1. Paddy, uncooked kernel, and cooked kernel of Basmati 370, and Tapovan Basmati selections 5010 and 5013.

At village Tapovan, Tapovan Basmati 5010 and 5013 yielded 2.2 and 1.5 t ha⁻¹, respectively as against approx. 1.0 to 1.1 t ha⁻¹ yield of traditional Tapovan Basmati being cultivated by few farmers in the village Tapovan. Considering higher yield, Tapovan Basmati 5010 is being promoted for cultivation in village Tapovan. Alternative areas are being explored in Uttaranchal hills for its cultivation. In the plains of Dehardun and Hardwar, and Udham Singh Nagar (Uttaranchal) this variety is severely affected with sheath rot, sheath blight, and neck blast whereas it is totally free from any disease or insect pest at village Tapovan.

References

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