

Quality status of rice seed saved by farmers in Bihar

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ABSTRACT

To assess the quality status of farmer's saved rice seeds 180 seed samples were collected from the farmers of 7 districts of Bihar over three years (1993 to 1995). Farmers generally store their saved seeds in gunny bags and Bhuskar without any seed treatment. These samples were subjected to physical purity analysis, germination test and grow out test (GOT) in field. The results clearly indicated that only 23.33 per cent seed samples met the minimum seed certification standard (MSCS) for purity and inert matter; however, these samples were free from other crop seeds and weed seeds. Only 62.78 per cent seed samples had 80 per cent seed germination. In grow out test, only 26.32 per cent seed samples had less than 0.2 percent off types. Out of 180 farmers, 34 farmers were unaware of the variety they were cultivating and 63.16 per cent seed samples were not true to the type. Thus, the quality of farmers saved rice seed in Bihar was very much substandard.

Key words: Seed, farmers saved, quality

Good quality seeds of high yielding varieties has been regarded as one of the critical inputs for higher agricultural production and growth. At present there is a wide gap between the actual seed requirement and the seed replacement. Seed replacement rate on national basis for rice is only about 14 per cent. Thus, a large area is still sown with farmers own saved seed. Keeping these facts in view the present investigation was undertaken to study the quality status of farmers saved rice seed.

The present investigation was conducted for three years from 1993 to 1995 through survey and collection of farmers saved seed samples of rice varieties from different districts of Bihar. During sample collection the information about holding size, method of storage and name of varieties were collected from the farmers. A total of 180 farmers' saved rice seed samples were collected during these years from the districts of Vaishali (41), Patna (38), Muzaffarpur (29), Samastipur (22), East Champaran (20), West Champaran (16), Darbhanga (16). These samples were collected in polythene bags and tested for physical purity and germination according to the standard procedure and rules for testing (ISTA, 93) and compared with minimum standards prescribed by the Government of India (Tunwar, N.S. and Singh,

S.V., 1988). Fifty seven seed samples were also tested for their genetic purity comparing with standard sample of the variety through grow out test over three years.

Farmers mainly store their rice seed in gunny bags and Bhuskar (a bamboo structure used to store straw) followed by clay Kothi, paddy straw structure, PVC bags and Tin-bins. Rice varieties IR 36, and Sita are mainly cultivated in these districts followed by Rajshree, Pankaj, Jaya, Sujata, Saket-4, Mahsuri, Radha and Kanak and some local varieties. However, a large number of farmers (34) were unaware of the varieties they were cultivating.

Physical purity test conducted on 180 seed samples over three years (Table 1) revealed that on an average only 23.33 per cent seed samples met the minimum seed certification standard (MSCS) for pure seed and inert matter. The kind of inert matter found were empty glumes and other extraneous matters such as soil clots/stone, chaff, broken pieces of stems and leaves. However, the farmers' saved rice seed samples were free from other crop seeds and weed seeds. Most of the samples met the MSCS standards.

It could be revealed from Table 1 that farmers' saved rice seeds were poor in germination and over the years, only 62.78 per cent seed samples could met

Table 1. Purity analysis, germination and grow out test of farmer's saved rice seed samples

Factors	Number of samples with				Average over three years (%)
	1993 (60)*	1994(60)	1995(60)	Total (180)	
98% purity	None	5	37	42	23.33
<2% inter matter	None	5	37	42	23.33
Other crop seed (<20 kg)	60	58	60	178	98.89
Total weed seed (<20/kg)	60	60	60	180	100.00
Germination % (\geq 80%)	35	33	45	113	62.78
GOT	(17)	(20)	(20)	(57)	
<0.2% off types	3	12	None	15	26.32
<0.2% objectionable weed plants	13	15	20	48	84.42
Not true to the type	14	2	5	21	36.84

* Values in parenthesis indicate number of samples analysed/tested.

the MSCS (80%) requirement for germination. The results thus indicated that the farmers lack awareness of using certified seeds and their sources of availability. In India, about 80 per cent farmers use their own saved seeds and it is been concluded that farmers' saved seeds are generally substandard. Similar, results have also been reported in rice by other workers (Huda, 1990, Prasad *et al*, and Reddy *et al*, 2000). Lack of knowledge of prescribed method of seed production, poor storage, rough handling etc. seem to be the cause of the poor seed quality of these samples as envisaged by Katiyar and Vaish (1998) who reported that seed quality was found to be invariably poor for physical purity, germination and genetic purity.

A total of 57 farmer's saved rice seed samples out of 180 were subject to grow out test (GOT) over three years of experimentation. The results (Table 1) indicated that only 15 seed samples (26.22%) were having less than 0.2 percent of types, the MSCS requirement for certified seed. It clearly indicated that most of the farmer's saved rice seed samples (74.68%) were mixed with other variety seed of rice. However, there was less problem of objectionable weed plants and 84.42 percent seed samples met the requirement or MSCS (<0.2%). Out of total 57 seed samples tested in GOT 21 seed samples were not true to the variety.

There is an urgent need to educate the farmers about the importance and advantage of using good quality certified seeds of HYV in rice.

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