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Quality-seed Production Through Effective and Viable Farmer's Associations

Muhammad Asif*, Mohammad Rasheed, Muhammad Aslam, Waqas Ahmad Bhutta*

*Farm Water Management, Faisalabad, Pakistan
Agriculture Department (Ext.), Government of the Panjab.

Abstract

A study was conducted for quality seed production for cotton wheat and barley by organizing effective and viable farmer's association. Purity of the seed produced by these groups was 1 percent higher than certified and 2.10 percent higher than basic seed standards fixed by Federal Seed Certification Department. Farmer's of these associations were able to increase their income by 41 percent through increased the yield about 0.21 t ha⁻¹ or 16 percent in case of cotton and 0.85 t ha⁻¹, (7 to 24%) in case of wheat and barley.

Introduction

The quality of seed is generally poor in Pakistan. Most farmers recognized that good seed is the essential beginning of good crop, but getting good seed has not always been easy for their. By the time it comes is lowered (Anonymous, 1992a).

Since plays a basic role in enhancing crop yields, thus, a consistent and adequate supply of high quality seed is essential for an efficient and productive agriculture, over the years a large number of high yielding crop varieties have been imported or developed in Pakistan. However, proper rate of multiplication of these could not be attained. Assuming no change in existing cultural practices or other farming inputs, the use of quality seed has resulted in 15 and 12 percent increase in cotton and wheat yields, respectively (Anonymous, 1992b). Viable and vigorous seed contributes greatly to yield between 15-20 percent (Anonymous, 1996). A seed grown over a long period of time under ordinary farming conditions deteriorates in quality and production which necessitate the replacement of old seed at regular intervals. Adequate availability of improved and quality seed is a pre-requisite for obtaining higher yields from other physical inputs. The availabilities of certified seed of (Izuno, 1996) cotton is 40 percent of total seed requirement. This means that about 60 percent of the area has to be sown with seed either kept by the farmer's themselves from their previous crop or by seed purchased from the open market. This seed was usually found to be poor quality and farmer's were uncertain about their germination rate and seed potential, Therefore, Command Water Management Project, a component of On Farm Water Management launched an effort to initiate a programme for the production of quality seed for cotton, wheat and barley by the farmer's institutions in the shortest possible time with the following objectives:

1. To enhance timely availability of good quality seed in the project area.
2. To develop sustainable seed multiplication groups in the remote areas of project.

3. To develop small agri business firms owned and operated by groups of farmers.

Materials and Methods

Seed multiplication for cotton was launched during kharif 1992 and 1993, on two water courses, 93, 94/ 6R, 6-R-Hakra sub projects of Command Water Management. Assistant Agronomist and Water User's Specialist organized the seed producer groups on the two water courses. A basic cotton seed of NIAB-78 was procured from seed corporation and distributed to 24 farmer's. An area of 17.80 hectare was sown under the basic seed by these farmers. Farmers were assisted by technical assistant team CWMP through field inspection and series of activities i.e. rouging, pest control, picking, ginning, packing and storage. Field inspection by representatives of federal seed certification department, Sahiwal were conducted from August to Oct., 1992 and August-Oct., 1993.

Out of 17.80 hectares, 2.6 hectares were approved for seed multiplication. Due to small holdings the cotton output was not sufficient to arrange a big cotton ginnery. Therefore, small ginning machine available at the nearby village were used for this purpose. To further ensure high quality seed, the first and last pickings were excluded from use for seed multiplication. Seed samples from the produce of these seed growers were collected by standard procedure of sampling and analyzed from the federal seed certification department Sahiwal. This programme was started with five groups of farmers on the two water courses. After field inspection and discussion with farmers, they were reorganized into three seed multiplication groups. The approved seeds will then be packed and sold to the other farmers in the area.

On the same lines, a pilot seed multiplication programme for wheat, barley and rice was initiated in 6-R-Ghakra, Pak Patten, Shahkot and Niaz Bieg sub-projects of command water management during rabi-1992-93.

Table 1: Comparison of quality cotton seed produced by farmers associations in 6-R- Hakra with federal seed certification standards

	Quality of seed procured (two years average) by the farmers (FSC standards)										Certified seed	Basic seed
	1992	1993	1992	1993	1992	1993	1992	1993	1992	1993		
Purity	99.01	99.07	99.16	99.08	96.47	97.0	97.87	99.06	99.46	98.07	98.0	98.0
Other varieties	0.52	0.20	0.70	0.36	1.23	0.25	0.73	0.2	0.38	0.2	0.2	98.0
Inter matter	0.41	0.65	0.12	0.50	0.51	0.8	1.29	0.28	0.16	0.8	2.0	2.0
Desi	Nil	Nil	Nil	Nil	0.29	Nil	0.1	Nil	Nil	Nil	-	-
Germination rate	82.0	88.0	85.0	86.0	77.0	85.0	83.0	87.0	78.0	90.81	75.0	80.0

Source: Results of analysis from Federal seed certification office, Sahiwal

Results and discussion

Farmer's seed quality parameters compared with Federal Seed Certification Standards are presented in Table 1. Purity of seed produced by farmers was almost 1 percent higher than the standards fixed by the Federal seed certification department. Germination rate of seed produced by farmer's group was, 2 to 10 percent higher than the certified seed and 2 to 5 percent higher than the basic seed standards fixed by the Federal seed certification Department. During the following years, purity was 1.01 percent higher, germination rate was 7 to 15 percent higher than the certified and 2-10 percent higher than basic seed standards. Higher standards of seed produced by farmer's association was attributed to the greater care taken in production, handling and storage of seed on small scale as compared with bulk production by FSC.

Table 2a: Out put of cotton seed production associations, 6R Hakra under cornrAnand water management

Name of farmers	Raw cotton (t)	qty of seed (t)	qty of lint sold (t)	(Rs. t ⁻¹) of lint	Total amount of lint
M. Saleem Khan Mond.					
Bashir Ahmad					
Munir Ahmad					
Naseer Ahmed	5.88	3.92	1.66	18750	31125.0
M. Asghar Ali					
M. Boota					
G. Sarwar					
Akbar Ali					
Manzoor Ahmad					
Mohd Azeem	3.72	2.48	1.20	18750	22500.0
M. Sherif					
M. Ashraf					
M. Aslam					
M. Nawaz					
Noor Ahmed	2.46	1.64	1.14	18750	21375.0
	12.06	8.04	4.00		75.00

The gross income from marketing cotton before and after ginning and processing cotton for linted seed (Table 2a, b). The standard practice of cotton marketing in 6R Hakra sub-project, was to sold their output of 12.6 tons of raw cotton to the private sector or ginneries at the rate of Rs.8750 per ton. This would have generated a gross income

of Rs. 105525.00. Ginning of cotton for seed multiplication programme generated 8040 kg of seed and 4 ton of lint. Seed was sold at rate of Rs.10/kg and lint was sold at the rate of Rs.18750 per ton. This resulted in gross income of 155400. Ginning and processing costs paid by farmers was Rs. 6322.50. Thus farmqrs were able to increase their income by Rs. 43552 or 41 percent which confirms the findings of ARD/CWMP, Punjab, 1991 (CWMP., 1991).

Table 2b: Gross income from marketing cotton before and after ginning and processing cotton for linted seed

Income/marketing cost	Cotton for market	Cotton for seed
Sold before ginning		
Rs. 8750*12.06 =	105525.0	
Sold as lint Rs.		
18750*4.00 =		75000.0
Sold as seed Rs.		80400.0
10*12.06 =		155400.0
Cost of ginning Rs.		
225*12.06		2713.5
Cost of bags Rs.		3609.0
9*401 =		6322.5
Processing cost	105525.09	
Gross income less of processing		149077.6

The impact of seed multiplication can be better understood by comparing the yield obtained from the quality of basic seed against the seed purchased by the farmers from the open market. Yield data from seven out of 18 farmers has been collected and presented in Table 3. The results clearly indicate that average use of quality seed increases the yield by about 0.21 tones per hectare or 16 per cent and this is equivalent to the income of Rs.1402.60 per hectare.

Table 3: Yield comparison of basic seed with seed obtained from the market

Father's Name	Basic seed yield (t ha ⁻¹)	Seed procured from market yield (t ha ⁻¹)
Khadirn	2.19	1.93
Bashir	1.77	1.63
Khan Mohd.	1.62	1.03
Manzoor Ahmed	1.21	1.17
M. Nawaz	1.45	1.04
M. Aslam	0.70	0.69
Naseer Ahmad	1.74	1.68
	10.62	9.17
Avg./Hectare	1.52	1.31

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Table 4: Benefits derived by the farmers in 6R-Hakra, Pak Patten, Shahkot and Niaz Beig sub projects due to seed multiplication program

SPA	Crop	Yield obtained due to				Increase income		Total income
		Old seed	New seed	Kg/ha	%age	Seed	Price	
6R Hacka	Barley	3350	4223	673	19	1767	84	1851
Pak Patten	Barley	3843	4271	428	11	1391	321	1712
6R Hakra	Wheat	3500	3952	452	13	1695	339	2034
Pak Patten	Wheat	3750	3500	250	7	-	-	-
Shahkot	Wheat	3608	44655	857	24	3600	1028	4628
Niaz Bai	Wheat	4350	5038	688	16			

These findings are partially in conformity with those of Hussain *et al.* (1991) and Asif and Arshad (1992).

It is clear from the data Table 4 that increase in yield due to change of seed variety varied from 7 percent to 24 percent. These findings are in conformity with Izuno (1996). If we look at the monetary gains due to new seeds, total increase in the income vary from R.1851 to 8.4268 per hectare which is not a bad return by any means. The greater variation in income may be attributed to individual farmers efforts to raise seed crops and prevailing market rates. Thus it can be concluded from the above studies that farmers seed multiplication programme, the small groups of farmers can produce better quality seed due to greater care and handling with little assistance from Government agencies especially in the remote areas like 6-R Hakara where the average holdings of farmers are very small and the economic condition of farmers is not so sound. For seed farmers, seed multiplication programme can be very useful and effective for supplying quality seed and increase their income by processing and marketing their crops including both lint and quality seed. Further, the seed market directly by the farmers producers will minimize the adulteration and the uncertainty faced by purchasing farmers.

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