

Seed spices - a better option for crop diversification in Nagaur district of Rajasthan

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Abstract

Crop diversification refers to a shift from traditionally grown less remunerative crops. There is a continuous surge for diversified agriculture in terms of crops, primarily on economic consideration. As the cost of cultivation is increasing and our resources are depleting, cultivation of high volume traditional crops like wheat and mustard is not proving economical to the farmers in western Rajasthan. Inclusion of high value crops like seed spices in cropping pattern will pay more economic returns and income to the farmer community in these areas.

Key words : Seed spices, crop, diversification

Crop diversification in India is generally viewed as a shift from traditionally grown less remunerative crops to more remunerative crops. This intended to give a wider choice in the production of a variety of crops in a given area so as to expand production related activities on various crops and also to lesson risk (kalaiselvi, 1). In this context, the seed spices have emerged as one of the important group of crops in India. The major growing area of seed spices lies in arid to semi arid regions mainly in states of Rajasthan and Gujarat. In Rajasthan, Pali, Jodhpur, Jaisalmer, Barmer, Nagaur and Bikaner districts contributes major area (Sahu,3). In these areas, Wheat, Barley and Mustard are major Rabi crops. With the passage of time, these traditional crops have started proving less economical due to stagnation in yield of cereals, poor quality of irrigation water and increasing cost of cultivation. Lots of technology have been generated and transferred to the farm community by NRCSS/SAU's including KVK's and Deptt. of Agriculture. KVK, Nagaur (Rajasthan) is actively engaged in promotion of improved varieties/package of seed spices particularly cumin, fennel and ajwain through trainings, FLD's and other extension activities. This has helped the farmers to adopt cultivation of seed spices as remunerative option in existing crop pattern.

Crop production, economic scenario & diversification

In Nagaur District, Rabi crops are grown an approx. 2.3 lac ha area. The soils are mostly sandy loom. The pH of irrigation water ranges 7.5 to 8.7 and Ece 3 to 4.8 dsm-1. The major crops grown are Wheat, Barley & Mustard. Though, tremendous progress has been made in agricultural sector over last 50 years. But, due to one or another reason, the productivity levels of these crops do

not compare very favorably with the yield obtained in neighboring states like Punjab, Haryana & U.P. (Vashishtha, 4) Therefore, there is continuous surge for diversified agriculture in terms of crops, primarily in economic consideration and other inter-related factors—

- a Resource related factors covering irrigation, rainfall and soil fertility.
- a Technology related factors covering not only seed, fertilizer and water technologies but also those related to marketing, storage and processing.

The economic factors play relatively stronger role influencing crop pattern. Inclusion of seed spices particularly cumin & fennel as crop diversification found most suitable in terms of economic returns (Malhotra, 2) in Nagaur (Rajasthan).

Role of KVK in Promotion of Seed Spices.

KVK, Nagaur is actively engaged in transfer of technology through trainings, FLD's and other extension activities. During last seven years, some improved varieties of seed spices has been introduced and popularized through FLD's. Some varietal demonstrations were also conducted in collaboration with NRCSS, Ajmer. The varieties introduced/popularized are given in Table – 1.

Table – 1 Variety Popularized/Introduced by KVK, Nagaur

Crop	Varieties
Cumin	RZ-209, RZ-223 & GC-4
Fennel	RF-125, RF-178 & AF-1
Ajwain	AA-1 & AA-2

Feed back by Farmers

- a Cumin varieties RZ-223 and GC-4 are relatively wilt tolerant. The variety GC-4 is better in terms of yield as compared to other cultivars and own seed.
- b Fennel varieties RF-125, RF-178 & AF-1 found superior over RF-101 and Local. The variety AF-1 develops robust plant and gives higher yield as compared to other varieties.
- c Ajwain varieties AA-1 and AA-2 found superior over traditional varieties of Ajwain.

crops produced in the district as well as by the aggregate level of spread or concentration. The pattern of crop diversification on the basis of crop wise area under various years is shown in Table – 2. The temporal picture of changing proportionate areas under traditional crops viz. Wheat, Mustard and Barley to alternative crops viz. Seed Spices reveals a very interesting picture. The area under Wheat & Mustard reduced in 2011-12 as compared to 2008-09 and increased in cumin & fennel. Seed spices replaced the traditional crop to a great extent in their cropping pattern. The area increased under Cumin and Fennel by 19.55 and 10.96 percent and reduced in Mustard and Wheat by 23.49 and 5.21 percent respectively in 2011-12 as compared to 2008-2009.

Pattern of crop diversification.

The intensity of diversity is reflected by the number of

Table – 2 Proportionate Area under crops and their changing Pattern in Nagaur (Rajasthan)

Crops	Crops Production of area under Rabi crops (year wise)				Change in proportion of area in 2011-12 over 2008-09
	2008-09	2009-10	2010-11	2011-12	
Wheat	29.46	34.83	30.80	24.25	-5.21
Barley	5.80	4.97	6.82	4.80	-1.00
Mustard	36.15	20.81	21.20	12.66	-23.49
Isabgol	16.96	22.62	15.90	14.84	-2.12
Cumin	4.46	7.24	13.20	24.01	+19.55
Fennel	3.88	5.43	9.60	18.84	+10.96
Ajwain	0.12	0.24	0.34	1.34	+1.22
Fenugreek	2.23	2.62	2.00	2.13	-0.10
Others	0.95	1.24	0.14	0.14	-

Table – 3 Crop Productivity (Average of last 4 years from 2008-09 to 2011-12) & Income

Crops	Av. Yield (Kg/ ha)	Sale price	Income (Rs/ ha)
Wheat	2531	1300	32890
Barley	2558	1100	28138
Mustard	1239	3300	40887
Isabgol	1030	5100	52530
Cumin	451	13000	58630
Fennel	990	5600	55440
Ajwain	855	5100	43605
Fenugreek	1150	5200	53560

This change has put positive effects on land/labour productivity and net farm income (Table – 3). Both the crops cumin and fennel are more remunerative and can tolerate moderate degree of alkalinity. Cumin being less water requiring crop, limits excessive use of water.

The results show that seed spices are good alternative crops in terms of economic returns for crop diversification in Naguar and western parts of Rajasthan. They fetch more price and increases farm income as compared to traditional crops.

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