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Autonomy in paddy seed through seed village programme

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ABSTRACT

Krishi Vigyan Kendra ,Vyara is located in the Tapi district, the southeastern part and the tribal belt of Gujarat. Small and marginal farmers are often at an inconvenient position in captivating the agricultural technology related to genetic enhancement of production potential of agricultural crops. Though the organized sector is able to produce a large quantity of seeds, the supply chain is unable to cope with the huge demand for seeds across the length and breadth of the country. Thus, the farming community depends to a large degree on external sources for important inputs such as seeds. Seed village programme provides an alternative to this problem and help farmers to become self reliant. Efforts towards up scaling seed village programme under Krishi Vigyan Kendra, Vyara in the Tapi district resulted in encouraging learning outcomes and demonstrated the viability of seed village with suitable technical backstopping by KVK scientists and empowerment of the community members. The seed village concept not only ensures good quality seeds for enhancing productivity but also in generating income for the community members resulting in improved livelihood. The self sufficiency in the seed is a great impact in the area like Tribal dominated district of Tapi. The consciousness of the farmers regarding quality seed materials have been increased drastically. The seed village concept of the farmers have been cultivated in the mind of orthodox tribal farmers to shift their age old seed through recently released high yielding paddy varieties. It was really a big achievement in the field of agriculture to run on sustainability and profitability super high way.

INTRODUCTION

Krishi Vigyan Kendra Vyara is located in the Tapi district – the southeastern part and the tribal belt of Gujarat. The district shares it borders with Surat, Navsari and Dang district in North-west, South and East, respectively with Maharashtra state in East .The geographical area of the district is 7.79 lac ha. The noticeable features of the district are undulating topography with steep slopes and heavy rainfall. The average annual Rainfall of the district is about 80 –100 inches per annum. The distribution is erratic and thus, causing damage to the crops like Pulses, Paddy and other cereals. The district is composed largely of tribal communities. This, communities depend primarily on agriculture for their livelihood supplemented by income from seasonal employment in nearest industrial town. Soils of the district in general can be classified as medium black to heavy black, Red murrum and rocky with low innate fertility. Agriculturally, about 60 per cent of the cultivated area is undersigned crop during monsoon. The main crops of the district are – Paddy, Sorghum, Groundnut, Pulses, Sugarcane, Gram and vegetables-Brinjal,Okra. Paddy is the staple foods of the tribal communities of the district. Among Vegetable crops Okra is main crop for export quality.To mitigate the problems of good quality paddy seed, KVK, Tapi has started the seed village programmes in the adopted villages. To find out the impact of the programme said study was undertaken.

Genesis of the Krishi Vigyan Kendra, Vyara :

KVK, Vyara is working under the auspices of Navsari Agricultural University. It has started its activities since September,2000. Kendra has undertaken Seed multiplication programme of paddy since 2000-01.

Genesis of programme:

To ascertain the constraints encountered by paddy growers of this area, a benchmark survey was carried out by multidisciplinary team of scientists of KVK, Vyara during the year 2009-10. The results of the survey revealed that :

– Large majority of the tribal farmers are cultivating conventional varieties (Tichun native –1, Sathi and Kada) of paddy.

– Conventional varieties are early maturing, having coarse grain with dull husk colour, and highly susceptible to water logging as the rains coincide with maturity of paddy in later stage.

– Paddy growers are using higher seed rate *i.e.* 30 – 40 kg for transplanting 1 acre of land as they produce seed of their own.

– They were planting 10-12 seedlings / hill resulting in to over plant population and lower yield. It also increases the cost of cultivation because harvesting takes much time.

– Farmers were using impure seed, as they produce it on their farm without taking much care.

– Average yield of paddy (conventional varieties) is about 2500 kg./ha under good management practices.

– Market value of the conventional varieties is less ranging between Rs. 5 –6 /kg. because of coarse grain and unpleasant colour of husk.

– Tribal farmers are not satisfied with yield status of conventional varieties of paddy.

– The farmers having assured irrigation facilities or low land kyari expressed their desired to have high yielding variety with late maturity to avoid damage by rains to crop at the maturity time.

– On the contrary, farmers growing paddy under rainfed condition expressed their desire to have high yielding early mature variety.

– It was also noticed that most of the tribal farmers possessed small piece of land. Whatever they produced from the land during monsoon, they have to depend on it for their livelihood. They are striving hard for their food especially during August and September.

Features of the seed village programme:

The basic concept of seed village is to make the villagers self-sufficient for quality sees of their region.The seeds are produced of the appropriate varieties of various crops, locally. The following steps may be taken to ensure the effective implementation of seed village programme:

– As far as possible, seed village should be organized in a compact area with adequate irrigation facilities comprising of few adjacent villages.

– The area selected for seed village should produce enough seeds to meet the requirement of the particular area *i.e.* block or district for which seed village has been organized.

– The area entitled for seed village programme may not be changed every year but it should be kept permanent for 5-10 years.

– The selected farmers should be provided with training in seed production so that they are in a position to take all possible care for quality seed production.

– Adequate quantity of source seeds should be mobilised in advance.

– Adequate inputs should be made available in time.

– Integrated plant protection measures should be advocated.

– Seed processing facilities should be made available at the nearest destination.

– Proper planning should be made to distribute the seeds produced in time.

– The seed producers may attempt for successful implementation of seed village concept in their areas. It is always better to test the seeds or seed lots before sowing or offering for sale. To test the seeds a service sample should be drawn and submitted to the seed testing laboratory. Following should be borne in while drawing a service sample.

– Prescribed quantity of seed samples should be sent along with the sample slip.

– In the sample slip, the details of crop, variety, lot number should be indicated clearly.

– A fee of Rs.20 per sample should be paid for each service sample.

– If the moisture test is required, a separate sample should be sent in a polythene container with 70 gauge thickness.

– A regular training programme was conducted to the seed law enforcement officials on 15.6.2010 at KVK, Vyara about 50 officials participated in this training programme.

– The Subject Matter Specialists of Krishi Vigyan Kendra, Vyara inspected paddy seed production field in Tapi district on 28-9-2010 and guided the seed growers for successful seed production.

Seed grower through woman cooperative:

Seed is an important determinant of agricultural production and the efficacy of other agricultural inputs like labour, fertilizers depends on the quality of seed. Hence, the availability of the right seed material is very crucial. In Tapi district paddy is grown in an area of 114291 ha and the approximate seed requirement is around 6857t. In order to achieve higher seed requirement, a major effort is required to cover more area under seed production. The production and supply of quality seeds and enhancing the seed replacement rates of various crops are the important issues in seed sector. Hence, training on seed production to the farmers is needed to increase the production of quality seeds.

Krishi Vigyan Kendra intervention:

The farmers have purchased the seeds from private seed companies, government outlets and also used their own farm saved seeds. KVK scientists explained the uses and production of quality seeds. But, the resource poor farmers were unable to produce the seeds of their own due to lack of technical know-how. Then the Krishi Vigyan Kendra intervened and trained the farmers of Hangati Mahila trust, Mandal about the seed production technologies such as land selection, sources of seed, isolation distance, rouging, foliar nutrition, harvesting and post harvest handling of seeds in three stages under seed village training programme.

If we consider the success story of trained farmers of Hangati Mahila trust village in Tapi district is one of the progressive farmers in this village has shown impressive progress both as an early adopter and entrepreneur.

KVK intervention:

Two days training programme on 'Seed Production Technology' was imparted to the farmers on the basic aspects of seed production technology, improved technologies on Integrated nutrient management etc., at Krishi Vigyan Kendra, Vyara and field exposure visit was arranged in the "seed village scheme fields" at Vyara so as to acquire practical skill on the production technology. The farmers were supplied with resource materials on seed production technology.

The farmers had acquired modern technologies and skill. A very good impact has been created among the farmers and in turn they developed confidence in the seed production. The farmer prepared nursery in his land by ploughing followed by rotavator and finally prepared his nursery bed for paddy seedlings. He applied farm yard manure @ 15-20 t/ha during ploughing and incorporated in the land.

Paddy seeds of Jaya and Gurjari, treated with thiram @ 3 g/ kg were sown in the second week of June 2010 with the suitable guidelines of the scientists. Irrigation and fertilizers were given in nursery after 23rd day of sowing. Transplanting of paddy was done with line planting recommended spacing, fertilizer and irrigation according to the prescribed schedule given by the scientists of KVK.

By the seed production technology, he could achieve uniform crop stand, limited weed problem and problems of pest and diseases.He has harvested the paddy crop during the third week of October 2010. He obtained yield of 6.5 t/ha.

A field day was conducted in the field of Hangati Mahila Trust farmers of Zarali, Jamkhadi, Bharadada, Amalgundi villages so as to create awareness among the other farmers on the achievement of higher yield in paddy by seed production technology. Most of the farmers had expressed the advantages of raising paddy for getting higher returns within a period of four months. It is imperative that seed production technology has to be scaled up over larger area in forthcoming years, thereby the farmers fetch higher yield and higher net return. In such attempts, the role of KVK is very vital and necessary.

Impact:

He is having 30 acres of wet land with good irrigation sources. Previously, he followed conventional system of rice cultivation for grain production. After few years he felt that this system would not have benefit in terms of both yield and soil fertility maintenance. Then, he planned to start seed production in rice as advised by scientists of Krishi Vigyan Kendra, Vyara. Previously he had undergone the training on the direct seeding technique with drum seeder and SRI technique in rice during 2009. He practiced these technique in seed production and he found that this technique required low seed rate (2-3 kg ha^{-1}), nitrogen (LCC based nitrogen management), water and labour requirement. Based on this experience, he extended to an area of 30 acres for seed production in rice. He was able to harvest higher seed yield of 6400 kg ha^{-1} with low cost of cultivation (Rs.12,500) when compared to conventional method. Now he became an Own Hangati Mahila trust seed entrepreneur and is marketing his seeds by this trust. Chauhan and Patel (2012) made some investigations on increasing area and productivity of paddy in tribal TOT efforts. Chauhan and Chauhan (2012) worked on

Table 1 : Seed village trainings to the farmers

Sr. No	Activity	No.	Participants
1.	On / Off campus training programme	17	270
2.	Field days	4	578

Sr. No.	Particulars and impact of the training	Production and income details
1.	Area	30 Acre
2.	Crops in which seed produced	Paddy, Pulse
3.	Unit production capacity	6.5 tonnes / ha –Paddy
4.	Seed supply	Krishi Vigyan Kendra, Vyara
5.	Net income	Rs.64,000 / ha –paddy
6.	Rural employment	2500 man days / year
7.	Estimated area coverage	25 ha.–paddy

the constraints faced and suggestions offered by the programme coordinators of KVK's of India

Summary:

Small and marginal farmers are often at a disadvantageous position in absorbing the agricultural technology related to genetic enhancement of production potential of agricultural crops. This is because of centralized production and distribution of improved seeds by a seed company. Though the organized sector is able to produces a large quantity of seeds, the supply chain is unable to cope with the huge demand for seeds across the length and breadth of the country. Thus, the farming community depends to a large extent on external sources for important inputs such as seeds. Seed village programme provides an alternative to this problem and help farmers to become self-reliant. This initiative needs both organized communities and scientific backstopping. Efforts towards up scaling seed village programme under Krishi Vigyan Kendra, Vyara in the Tapi district resulted in encouraging learning outcomes and demonstrated the viability of seed village with suitable technical backstopping by KVK scientists and empowerment of the community members. The seed village concept not only ensures good quality seeds for enhancing productivity but also in generating income for the community members resulting in improved livelihood. The self-sufficiency in the seed is a great impact in the area like Tribal dominated district of Tapi.

Implication:

The whole stocks of the seed materials have been sold by high remunerative rates at farmer's field only. The consciousness of the farmers regarding quality seed materials has been increased drastically. The cheating and looting by private seed traders have been reduced remarkably and the area under recommended cultivars of paddy has been developed in clusters and it lead towards value addition through need based paddy production for industrial use as well as for food grain purpose. The seed village concept of the farmers has been cultivated in the mind of orthodox tribal farmers to shift their age old seed through recently released high yielding paddy varieties. It was really a big achievement in the field of agriculture to run on sustainability and profitability super high way.

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