

Original Research Article

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Impact of KVK Activities on Production and Productivity of Selected Villages in Ahmednagar District of Maharashtra

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ABSTRACT

Keywords

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Sri Marutrao Ghule Patil Shikshan Sanstha's Krishi Vigyan Kendra, Dahigaon ne Talika-Shevgaon, Ahmednagar Maharashtra conducted its mandatory activities viz. on farm testing, front line demonstration, trainings programmes, and other extension activities i.e. farmers fair, field day, scientist- farmers interaction, group discussion, animal health and vaccination camps, delivering crops, weather, market etc. based technical advisories through mkisan portal as per requirement of farmers besides that also supplied inputs like seed, chicks, planting material, bio pesticides, etc. in the selected villages during 2012-2019. These extension efforts of KVK resulted in change in cropping pattern, cropping intensity, increase in productivity of crops and live stock. The use of farm machineries is also increased as a result of continuous activities of Krishi Vigyan Kendra under the guidance of ICAR.

Introduction

Sri Marutrao Ghule Patil Shikshan Sanstha's Krishi Vigyan Kendra, Dahigaon ne Talika-Shevgaon, Ahmednagar Maharashtra is working in the district since 2012-13. As per the concept of Indian Council of Agricultural Research, New Delhi Krishi Vigyan Kendra had selected five villages i.e. Bhaigaon, Mohajdevede, ManjleShahar, Babhukheda and PravaraSangam. In these villages KVK

organized the On farm testing, front line demonstration, cluster front line demonstration on oilseed and pulses, training programme, scientist farmers interaction, field days and other extension activities- group discussion, method demonstration, CD shows etc. KVK scientists organized programme to promote insitu conservation in sorghum and pulse crops, seed replacement in sugarcane, wheat, sorghum, pulse and oilseed crops, onion and pomegranate, farm mechanization

through broad bed and furrow sowing method in pulse and oilseed crops, crop diversification through livestock up gradation, promotion of horticultural crops and ICT application in agriculture through mobile app, WhatsApp, KMS in the crops, weather, market & other enterprises covering sorghum, wheat, green gram, black gram, pigeon pea, chick pea and soybean, dairy, goatery, poultry. Cluster front line demonstration (CFLD) conducted on pulses and oilseeds covering green gram, black gram, pigeon pea, chick pea and soybean. In sorghum panchsutri (Five point's technology) technology recommended by MPKV, Rahuri and in wheat beside the variety i.e. PhuleSamadhan, foliar application of water soluble fertilizers at critical crop growth stages was done.

The trails were conducted on cash crops i.e. sugarcane and cotton. In cotton integrated weed control and in sugarcane Sustainable Sugarcane Initiative (SSI) technology was popularized among farmers. Horticultural crops covered under study were onion and pomegranate. In the same way in onion crop to reduce the cost of cultivation integrated weed management and in pomegranate to protect the fruits from sun scorching PP Non woven bag technology was demonstrated at farmer's field. Under implements broad bed and furrow (BBF), sugarcane Mulcher and ratoon management through ratoon sugarcane manager was tested.

Materials and Methods

Sri Marutrao Ghule Patil Shikshan Sanstha's Krishi Vigyan Kendra, Dahigaon ne organized various activities mandated by Indian Council of Agricultural Research (ICAR), New Delhi viz. On farm testing (OFT) were organized on specific problem identified ex. Planting spacing in sugarcane, integrated weed management in onion, integrated white grub management in

sugarcane, integrated pink boll worm management in cotton, introduction of new varieties in wheat- PhuleSamadhan and PhuleSuchitra in sorghum. Besides that in horticultural crops pomegranate variety- PhuleBhagwa was promoted.

To establish the yield potential of particular technology and enterprises front line demonstration (FLD) were laid out in these villages. Ministry of agriculture Govt. of India under department of agriculture and cooperation the National Mission on oilseed and pulses scheme is operational in all over India and cluster front line demonstration (CFLD) on oilseed on soybean and pulses on pigeon pea, chick pea, black gram and green were conducted. Besides that skill and vocational oriented training programmes imparted to practicing farmers/ farm women, rural youth and extension functionaries as per their needs. To reach to the unreached different extension activities viz. pre kharif and pre rabi scientist farmers interaction, field days on successful technologies were organized in the villages by involving NGO's, department of agriculture and allied with huge number of farmers from the same village and nearby villages. And other extension activities- group discussion, method demonstration, CD shows etc. The details are given as follows:-

Trainings and extension activities

Training on different technologies were conducted under different disciplines, the prime objectives of training was to impart knowledge, skill about particular new technology and change behavior and attitude of farmers toward technology for increasing yield of crops and livestock. Extension activities were conducted to transfer of technologies towards large masses of farmers and from one village to other villages in these selected villages.

Use of ICT

Farmers of the selected villages were educated about innovative and digital approaches like world web, WhatsApp, mkisan portal and mobile based apps like oostantra, dalimbtantra, kapustantra, etc. which is being developed by KVK to make aware about latest and updated information available on fingertip of farmers for adoption and implementation of technical knowledge at grass root level on the farmers bunds.

Inputs availability

The different inputs are being produced and sold to the farmers to make convenience for using adapting new technology, the products like seeds of various crops, new breeds of poultry, Goat, sheep and bio products like bio fertilizers, bio pesticides, Plant based products like neem powder and dasparni etc. Also Soil testing and plant health clinics facilities are also provided with basic knowledge to farmers to make judicious use of fertilizers and pesticides.

Results and Discussion

Various KVK activities: e.g. On farm testing, front line demonstrations, cluster front line demonstration, skill oriented training programme, other extension activities viz. farmers fair, field days, scientist farmers interactions, group discussion, CD show, ICT application etc resulted in change in employment generation, cropping pattern, cropping intensity, productivity and over all income of the villagers. Before intervention of the KVK the area of groundnut, pearl millet and sugarcane was 350, 160 and 596 ha respectively and area of pigeon pea, chick pea, sorghum, wheat, soybean, onion and pomegranate was 260, 240, 325, 140, 35, 150 and 35 ha respectively in these selected villages but after intervention the area of groundnut, pearl millet and sugarcane reduced 46.19, 31.43 and 21.30 % respectively Whereas the area of pigeon pea, chick pea, sorghum, wheat, soybean, onion and pomegranate was increased 22.40, 20.17, 23.18, 26.12, 35.42, 45.36 and 22.31% respectively (Table 1 and 2).

Table.1 OFT and FLD: Activities undertaken during 2012-2019 in the selected villages on various crops/ enterprises

| S.No. | Crop | On farm testing conducted | | Front line demonstration conducted | |
|-------|-------------|---------------------------|----------------------|------------------------------------|----------------------|
| | | Area covered (ha/No.) | No. of beneficiaries | Area covered (ha/No.) | No. of beneficiaries |
| 01. | Sorghum | 08 | 20 | 12.40 | 31 |
| 02. | Wheat | 04 | 10 | 19.2 | 58 |
| 03. | Red gram | - | - | 103.2 | 247 |
| 04. | Chick pea | - | - | 111 | 274 |
| 05. | Soybean | - | - | 58.02 | 108 |
| 06. | Cotton | 16 | 40 | 31.04 | 55 |
| 07. | Sugarcane | 16 | 40 | 72.4 | 152 |
| 08. | Onion | 16 | 40 | 32 | 80 |
| 09. | Pomegranate | 04 | 30 | 16 | 31 |
| 10. | Goat | 21 | 21 | 270 | 17 |
| 11. | Poultry | 60 | 1500 | 1550 | 50 |

Table.2 Year wise details of training programmes and extension activities

| S.No. | Year | No. of Training programme | No. of beneficiaries | No. of extension activities | No. of beneficiaries |
|-------|--------------|---------------------------|----------------------|-----------------------------|----------------------|
| 01. | 2012-13 | 85 | 2998 | 399 | 9388 |
| 02. | 2013-14 | 86 | 3171 | 887 | 7104 |
| 03. | 2014-15 | 77 | 2320 | 1190 | 15791 |
| 04. | 2015-16 | 79 | 2594 | 660 | 13200 |
| 05. | 2016-17 | 83 | 2324 | 478 | 18122 |
| 06. | 2017-18 | 94 | 3089 | 431 | 15597 |
| 06. | 2018-19 | 97 | 3203 | 520 | 16554 |
| | Total | 601 | 19799 | 3666 | 73829 |

Table.3 Change in cropping pattern and productivity due to KVK's Intervention

| Name of technology | Name of the villages | Prior to KVK | | Post KVK Activities | | % deviation (+/-) |
|--------------------|----------------------|--------------|---------------------|---------------------|---------------------|-------------------|
| | | Area (ha) | Productivity (q/ha) | Area (ha) | Productivity (q/ha) | |
| Pegion pea | Bhaigaon, | 260 | 13.3 | 318.2 | 16.77 | 22.4 |
| Chick pea | Majleshahar, | 240 | 13.2 | 289.7 | 16.97 | 20.17 |
| Sorghum | Babhulkheda, | 325 | 14.7 | 402.4 | 19.70 | 23.18 |
| Wheat | PravraSangam, | 140 | 20.8 | 176.5 | 26.09 | 26.12 |
| Soybean | Mohajdevde | 35 | 17.2 | 47.39 | 22.25 | 35.42 |
| Cotton | | 1150 | 16.5 | 1150 | 22.13 | 100 |
| Sugarcane | | 596 | 849 | 469 | 987.0 | -21.30 |
| Onion | | 150 | 206 | 218.4 | 225.78 | 45.36 |
| Pomegranate | | 35 | 111 | 42.81 | 129.86 | 22.31 |
| Pearl Millet | | 350 | 9.6 | 240 | 11.04 | -31.43 |
| Groundnut | | 160 | 6.3 | 86.1 | 8.80 | -46.19 |

Table.4 Change in farmers crops and enterprises income due to KVK's Intervention

| S. No. | Crops/Enterprises | Before KVK intervention (Income Rs./ha) | After KVK intervention (Income Rs./ha) | % Change in income |
|--------|-------------------|---|--|--------------------|
| 01. | Pepion pea | 42614.49 | 57691.00 | 35.38 |
| 02. | Chick pea | 27465.00 | 38125.00 | 38.81 |
| 03. | Sorghum | 26359.50 | 37394.71 | 41.86 |
| 04. | Wheat | 15182.00 | 21350.00 | 40.63 |
| 05. | Soybean | 22431.00 | 34007.00 | 51.61 |
| 06. | Cotton | 49252.24 | 75540.25 | 53.37 |
| 07. | Sugarcane | 107184.22 | 127965.00 | 19.39 |
| 08. | Onion | 135190.00 | 149051.80 | 10.25 |
| 09. | Pomegranate | 119023.00 | 142680.00 | 19.88 |



The reason of increase in area was most of these crops were damaged by wild animals and also non lucrative in comparison of crops introduced were profitable. The findings are collaborative with Kumar et al (2006). The cropping intensity of these villages also increased due to introduction of short duration crops and varieties like green gram-, black gram, pigeon pea- BDN -711 instead of Khadka were introduced. And hence the cropping intensity of Bhaigaon, MajleShahar, Mohazdevde, Babhulkheda, PravaraSangam increased from 94 to 110, 115 to 125, 90 to 125, 110 to 135 and 120 to 140 % respectively. The similar findings were observed by KadliVeeresh and S.B. Hosmani (2017). Savita Singhal and LalitaVatta (2017) also revealed the similar findings that all these interventions finally resulted in increase in productivity of these crops by 26.19, 28.37, 29.59, 25.43, 34.01, 34.45 under field crops and 11.13, 12.98 and 16.58 in cash crops i.e. sugarcane, onion and pomegranate. Socio economic status of the farmers was also enhanced by KVK’s interventions which are depicted in table-3.

It can be concluded that the effective implementation of KVK’s mandated activities in integration and there after proper adoption of these latest and innovative technologies by farmers resulted in increase in change in cropping pattern, increase in seed replacement

ratio, crop diversification, increase in production and productivity of crops and horticultural crops besides that mechanization could also be promoted on account of upliftment of socio economic status of the villagers. The percent change in production and productivity of various crops pigeon pea, chick pea and soybean, wheat, sorghum were 31.98 and 146.66%, 25.88 and 134.91%, 26.13 and 135.37%, 27.96 and 138.81%, 29.50 and 141.81%, 25.40 and 140.62%, 34.04 and 151.06% respectively. In cash crops i.e. Sugarcane and cotton were 16.24 and 119.36% and 34.58 and 153.87%. In horticultural crops onion and pomegranate was 9.30 and 110.25%, and 16.50 and 119.87%.

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