

9. Krishi Vigyan Kendra

Training Achievements

Ninety short duration (1 to 3 days) on-campus and off-campus training courses were conducted in different disciplines by SMS and Program Assistants for practicing farmers, rural youth and extension functionaries. In all 2648 participants including 770 SC/ST participants were benefited.

In addition to the above trainings twelve sponsored training courses were organized in Crop Production, Horticulture, Plant Protection, Veterinary Science and Home Science for farmers and extension functionaries, deputed by State Agriculture Department of Maharashtra, ATMA, CIPMC, Nagpur, RCF, MAFSU Nagpur, MCED & ICDS Nagpur, NGOs. In all 622 participants attended these courses.

Front Line Demonstrations

Seven front line demonstrations on crops and seven FLDs on other than crops were demonstrated in the discipline of crop production, plant protection, horticulture, livestock production and home science on farmer's field of adopted villages of Nagpur district viz., Manori, Pipra, Thana, Navegaon (Sadhu), Ranmangli, Datala, Sukli, Boruzwada, Angewada, Patkakhedi, Tirkhura, Karhandla and Patansawangi. Several extension activities like field day, field visit of farmers to FLD, group discussions, and scientists-farmers meet etc. were conducted for effective implementation of FLDs. Data on important production parameters as well as feedback from farmers and visitors were recorded (Table 9.1).

Table: 9.1: Details of Assessment of technologies under Front Line Demonstrations

| Sr. No | Crop | Technology Demonstrated | No. of farmers | Area (ha) | Yield (q/ha) | | Increase over FP (%) |
|--------|----------------------------------|--|----------------|-----------|--------------|-------|----------------------|
| | | | | | FLD | FP | |
| 1 | Cotton | HDPS | 20 | 8.0 | 12.75 | 10.50 | 17.65 |
| 2 | Linseed | NL 260 | 12 | 2.4 | 8.0 | 6.5 | 18.75 |
| 3 | Nagpur Mandarin | Rejuvenation of moderate decline of trees | 10 | 4.0 | 66.00 | 47.00 | 47.00 |
| 4 | Nagpur Mandarin | Management of pre-harvest fruit drop | 10 | 4.0 | 63.01 | 52.00 | 21.34 |
| 5 | Chillies (Dry) | Nursery management and production technology | 10 | 04 | 13.50 | 11.65 | 15.85 |
| 6 | Okra | Varietal demonstration of Akola bahar | 10 | 04 | 48.56 | 41.30 | 17.57 |
| 7 | Onion | Varietal demonstration of Akola safed | 10 | 04 | 86.18 | 72.00 | 19.69 |
| 8 | Bt-cotton (FLD) | Sucking pest management | 20 | 8.0 | 22.00 | 18.00 | 22.22 |
| 9 | Redgram (FLD) | Production technology | 30 | 12.0 | 17.11 | 13.40 | 27.69 |
| 10 | Chickpea (FLD) | Production technology | 30 | 12.0 | 16.33 | 12.42 | 31.48 |
| 11 | Nagpur Mandarin (FLD) | Gummosis management | 08 | 3.2 | 56.50 | 42.15 | 30.04 |
| 12 | Soybean (OFT-Assessment) | Biocontrol of semiloopers | 06 | 2.4 | 17.50 | 15.92 | 9.92 |
| 13 | Nagpur Mandarin (OFT-Assessment) | Thrips & mites management | 06 | 2.4 | 58.50 | 51.00 | 14.71 |



Onlon (Akola safed)



Chilli (Tejas)



Rejuvenated tree of Nagpur Mandarin



Okra (Akola bahar)



FLD on drudgery reduction of farm women by use of Gujarat Serrated sickle



Production technology FLD on Redgram in Village Sukdi, Taluka- Hingna



OFT on 'Swarnadhara breed' under BYP



Food cooked through Bio-Briquettes under OFT

Table 9.2 : FLD's on Livestock Enterprises

| Enterprise | No. of animals, poultry birds etc. | Performance parameters / indicators | Data on parameter in relation to technology demonstrated | | % change in the parameter |
|---|------------------------------------|---|--|-------------|---------------------------|
| | | | Demon | Local check | |
| Dairy (Vitamin-mineral @30g/day feed supplementation and Deworming-repeated after 2 weeks in Jersey Crossbred cows) | 20 | a) Avg. Milk yield (lit/cow/day) | 9.80 | 8.20 | 19.51 |
| | | b) No. of heifers in anoestrus at the end of trial | 1 | 4 | 75.00 |
| | | c) Conception rate | 90% | 60% | 30.00 |
| | | d) Avg. No of days required for onset of oestrus in treated heifers | 17 | -- | -- |
| | | e) BC Ratio | 2.70 | 2.20 | -- |
| Dairy (Detection of mastitis in Jersey cross bred cows) | 40 | Avg. milk yield lit/cow/day | 8.60 | 5.00 | 41.86 |
| Dairy (Chelated mineral feeding in CB Jersey Cow) | 20 | a) Avg. milk yield (lit/cow/day) | 12.7 | 11.0 | 15.45 |
| | | b) Milk fat (%) | 4.0 | 3.85 | 3.90 |
| | | c) BC Ratio | 2.80 | 2.10 | |

Table 9.3: Performance of FLD during (2012-13) Home Science

No of farmers selected for demonstration of each technology: 16

| Name of Technology | Crop | Performance of technology on different parameters. | | | | | | | | Result increase in Out put (%) | Percent reduction in drudgery |
|-----------------------------|---------|--|-------------|--------------------------|-------------|--------------------------------|-------------|--------------------------|-------------|--------------------------------|-------------------------------|
| | | Δ HR beats min ⁻¹ | | Strokesmin ⁻¹ | | Area covered m ² /h | | Output m ² /h | | | |
| | | Demo | Local check | Demo | Local check | Demo | Local check | Local check | Local check | | |
| Gujarat sickle | Soybean | 17 | 15 | 38 | 34 | Nil | Nil | 34 | 35 | 34 | 13 |
| Gujarat sickle | Rice | 11 | 13.9 | 43 | 39 | Nil | Nil | 39 | 28 | 08 | 16 |
| Improved cotton picking bag | Cotton | 11 | 16.1 | Nil | Nil | 42.9 | 35.2 | 5.2 | 4.0 | 30 | 30 |
| Bhendi plucker | Bhendi | 17 | 15 | Nil | Nil | Nil | Nil | 21 | 18 | 17 | 15 |

Establishment of Fruit Cafeteria

Krishi Vigyan Kendra, CICR, Nagpur has established a Fruit Cafeteria on about 6 acre of land at KVK farm with the objectives to disseminate and assess the performance of varieties of fruit crops such as Pomegranate (Bhagva), Guava (L-49), Orange (Nagpur

mandarin) and Sweet Orange (Katol Gold) so that the performances of these crops can be conveyed to the farmers .The fruit crops were planted in the month of July 2012 and all fruit crops are well established. Fruit cafeteria is also developed under the able guidance of Director CICR.

Construction of goat shed

A model goat shed of size 16m x 6 m having capacity to rear 50 goats is constructed at Technology Park to strengthen Osmanabadi goat unit which was established 15 years at KVK. This goat unit is being utilized to conduct demonstrations and trainings for clientele farmers, rural youth, farmwomen and members of Mahila Bachat Guts of Nagpur district.

Kisan Mobile Advisory Services (KMAS)

KVK, Nagpur has launched Kisan Mobile Advisory Services (KMAS) for the benefit of the farmers of Nagpur district. Advisory messages on agriculture and allied technologies on the mobiles of the farmers who are registered with KVK, are regularly being sent. Fifty one advisory messages were sent to 431 registered farmers during 2012-13.

Exposure visits

Dr. Vinita Gotmare and Sh. Harish Kumbhalkar arranged a Exposure Visit of 14 Extension Officers of Chandrapur district to wild species garden of CICR on 15.12.2012.

Soil Testing Activities

Two hundred thirty six soil samples were collected from Umrer, Bhivapur, Katol, Kalmeshwar, Saoner, Ramtek and Parshivani blocks of the Nagpur district. These samples were analyzed for different soil testing parameters and 210 soil health cards depicting soil test based fertilizer recommendation for different crops were distributed to the beneficiaries. Under Human Development Programme one mobile soil testing van was received from SAO, Nagpur to carry out test on physico-chemical properties of soils from different blocks of Nagpur district.



Delivering Soil Health Card to beneficiaries

KVK monitored CROP-SAP Programme in Nagpur District

Dr. R.R. Gupta SMS (Plant Protection) monitored Crop Pests Surveillance and Advisory Programme on soybean, cotton and paddy during *kharif* and on chickpea during *rabi* season in six tehsils of Nagpur District of Maharashtra.

Chief minister Shri Prithviraj Chauhan visited KVK ,Nagpur stall

Shri Prithviraj Chauhan, Chief Minister of Maharashtra visited KVK, Nagpur stall on 31, May, 2012, which was organized by Dr. P.D.K.V. Akola at Akola in which Tulsii Mahila Bachat Gat, Kamptee explained training and in-depth knowledge received from KVK, CICR on soybean processing unit. This training has helped them generate monthly net income at Rs. 12000 - 20,000/month thus making them self reliant. Shri Prithviraj Chauhan, Chief Minister appreciated this effort. On Cotton production technology aspects Shri Tajaswi Zade, Saoner, who was motivated by KVK and provided technical inputs, harvested seed cotton yield of 36.8 q/ acre under drip with fertigation. His efforts were also appreciated by dignitaries. More than 350 farmers, dignitaries visited the stall.



Sh. Prithviraj Chauhan, Chief Minister, Maharashtra visited KVK's stall during Innovative farmers meet

Participation in exhibitions

KVK, CICR Nagpur participated in the following events to display various research findings of CICR for the benefit of farmers, farm women, students, entrepreneurs, bureaucrats, line department officials during the report period. During exhibition large number of visitors interacted with KVK and CICR officials on various issues related to cotton.

- 1) On event of "Dharmachakra Pravartan Din" at Deekshabhoomi, Nagpur 23-25 October, 2012.
- 2) 'Agro One Expo - 2012' a National exhibition

organized by SAKAL Group at Pune 1- 5 December 2012.

- 3) Agro-Tech-2012' a State Level Exhibition organized by Dr. PDKV at Akola 27-29 Dec., 2012.
- 4) Agro-Vision Exhibition" held at Reshimbagh, Nagpur 24 to 27 January, 2013.
- 5) 12th Rashtriya Kisan Mela on citrus held at NRCC, Nagpur 22-23rd February 2013.

Success story of an Innovative Cotton Farmer

Name of the farmer : Shri Tejaswi Shivram Zade; Village: Boruzwada; Taluka: Saoner, Distt. Nagpur

Total land holding = 1.62 ha; Soil type : light calcareous

Bt. Hybrids grown: Mallika-207Bt., Ajit-155Bt.

Yield of seed cotton Kharif = 92 q/ha.

Gross Income = Rs. 3,68,000/- per ha.

Expenditure = Rs. 1,08,000/- per ha.

Net Income = Rs. 2,60,000/- per ha.

The raised bed system of 15 inch height and 24 inch width was followed by him and drip lateral was placed on raised bed . Plant spacing : 150 cm x 30 cm; no. of plants : 22,222 /ha.

Seed Treatment: Wonder ST (germinator) @ 5 ml/2.5 kg seed and liquid PSB + Azotobactor + potassium mobilizing bacteria @ 100 ml each /5 kg seed.

Weed Management : Soil application of Pendimethalin before sowing + hand weeding - twice.

Nutrient Management

a. Soil application of fertilizers/ha: City- compost before bed formation - 463 kg; 10:26:26 – 154.32 kg (equivalent to N:P:K 15.43 : 40.12 : 40.12 kg/ha, respectively); ZnSO₄ – 9.26 kg; Humic Acid Gr. – 9.26 kg + MgSO₄ . 15.43 kg; Vizard (Sulphur) - 463g; Mycorrhiza (VAM)– 3.09 kg/ha each.

b. Fertigation : Since 1st week of Oct. to Nov. 2012- Urea 20.73 kg; 19:19:19 – 15.43 kg; 12:61:0 - 21.6 kg; 13:0:45 – 24.69 kg; White Potash – 30.86 kg, Sulphate of Potash – 12.35 kg, liquid Sulphur (20%) – 12.35 lit., 0:52:34-24.6 kg, urea-14.2 kg (equivalent to N:P:K 36.21 : 29.41 :44.52 kg/ha); humic acid – 9.88 lit./ha each

Use of growth Regulators & nutrients: Warranty–Tech(80% humic acid) 5 g + 19:19:19 N P K foliar spray at 20 DAS. At 50 DAS , Biozyme – 100 ml. At 100 DAS-Nitrobenzene @ 40 ml/15 Lit. + Lihocin @ 3 ml/15 lit + foliar application of micronutrients @ 50 ml/15 lit. At 125 DAS foliar spray of KNO₃ (13:0:45) + Ca(NO₃)₂ (20:12) @ 100 g/15 lit; foliar spray of GA-3.

Plant Protection : Foliar application of Thiomathoxam @ 10 g /15 lit at 50 DAS. At 80 DAS Healine(Parachlotrobin (20%) @ 30 g /15 lit. + Acetamiprid @ 5 g/15 lit; Propaconzol @ 1 ml/lit + Wonder (nitrobenzene)@ 10 g/15 lit; Diafenthuron (Polo) @ 20 g/15 lit.

List of publications

1. Behera, M.S., Mahapatra P K, Singandhupe R B, Verma O. P. and Kumar A. (2013). Effect of irrigation and fertility levels on yield, quality and economics of Japanese mint (*Mentha arvensis*) under drip irrigation system. Indian Journal of Agronomy 58 (1): 17-21 (March 2013). (NAAS score 5.0).
2. Behera, M.S., Mahapatra P.K., Singandhupe R B, Verma O.P. and Kumar A. (2012). Drip fertigation impact on yield and alkaloid content of Ashwagandha (*Withania somnifera* (L.). Medicinal Plant-International Journal of Phytomedicines & Related Industries. 4(3): 133-137. (NAAS score 3.6).
3. Behera, M.S Mahapatra P K, Singandhupe R B, Verma O. P. and Kumar A. (2013). Effect of fertigation on Stevia (*Stevia rebaudiana*) under drip irrigation. Indian Journal of Agronomy 58 (1): 72-79 (March 2013).(NAAS score 5.0).
4. Behera, M.S.. Mahapatra P.K., Verma O.P., Singandhupe R.B and .Kumar A. (2012). Productivity, quality and economics of Aswagandha (*Withania somifera*) as influenced by irrigation and fertility levels under drip irrigation system. Indian J. Agronomy . 57(2):195-199.(NAAS score 5.0).
5. Brahmanand, P.S., Kumar, A., Ghosh, S., Roy Chowdhury, S., Singandhupe, R.B., Singh, R., Nanda, P., Chakraborty, H.C., Srivastava, S.K. and Behera, M.S.(2013). Challenges to Food Security in India. Current Science, 107 (4): 841-845.(NAAS score 7.3)
6. Panda, D.K., Kumar A., Singandhupe R.B., Sahoo N. (2012). Hydroclimatic changes in climate sensitive tropical region. International Journal of Climatology. (Royal Meteorological Society, UK) DOI:1.1002/JOC.3538.(NAAS score 7.7)

Popular Articles

1. Chauhan, Sunita; Rokde, S.N. and Kranthi, K.R., (2012). Biomass Charcoal Briquetting(Marathi)
2. Galkate Ulhas (2012), 'Garmiyan me murgi palan mein prabandhan' (Management of poultry in summer), MARU KRISHI CHAYANIK(A special issue on livestock production)-2012, published by CAZRI (ICAR), Jodhpur

3. Galkate Ulhas (2012), 'Kami kara janavaratil tan' (Stress management in livestock), Agrowon daily published by Sakal on 19.05.2012 : P.P. 12.
4. Galkate Ulhas (2012), 'Navjat Vasranche Sangopan' (Care and management of newly born calf), Lokmangal Shetipratik Masik, Issue- May 2012, p. 44-45
5. Galkate Ulhas (2012), 'Parasbagetil kombdi palnasathi kontya jati nivdavaya?' (Selection of breeds for Back Yard Poultry), Agrowon daily published by Sakal on 03.05.2012 and 22.07.2012
6. Galkate Ulhas (2012), 'Shastriy vyavsthapanatun wadhava dudh utpadan' (Scientific dairy farming), Agrowon daily published by Sakal on 25.07.2012 : P.P. 12.
7. Gupta, R.R. (2012). Harbhara lagwadiche sudhantri tantra in Marathi (Improved technology for chickpea cultivation), published in Baliraja, Oct., 88-91 pp.
8. Gupta, R.R., Nagrare, Vishlesh., Tayade, A. S and Kranthi, K. R. (2012). Kapas mein mealy bug ka prakop aur iska prabandhan (in hindi) published by CICR, Nagpur
9. Kumbhalkar H.B. (2012). Seed classification and precaution while purchasing seed from market (Marathi). Daily Newspaper Lokshahi Warta.
10. Singh Gulbir and Kumbhalkar H.B (2013). Importance of micronutrients in fruit crops (Marathi) Daily Newspaper Lokshahi Warta
11. Singh Gulbir and Kumbhalkar H.B (2013). Improved vegetable varieties for higher production (Marathi) Daily Newspaper Lokshahi Warta.
12. Sunil Rokde, Deulkar Pundlik and Galkate Ulhas (2012), 'Welich olkha Janavaramadhil Vishbadha, Bhag - 1' (Common poisoning in livestock, Part-1), Adhunik Kisan Vol.6 , 15-21 March 2012, pp.36
13. Sunil Rokde, Deulkar Pundlik and Galkate Ulhas (2012), 'Welich olkha Janavaramadhil Vishbadha, Bhag - 2' (Common poisoning in livestock, Part-2), Adhunik Kisan Vol.7 , 22-28 March 2012, pp.40
14. Sunil Rokde, Deulkar Pundlik and Galkate Ulhas (2012), 'Welich olkha gaimadhil vanzpanachi samasya' (Tips to avoid infertility in cattle), Adhunik Kisan Vol. 9, 5-11 April 2012, pp. 28

Radio Talks

1. Delivered a radio talk on "Dugdhotpadan: Mahatwapurna tips" (Important tips for higher milk production) in Marathi programme "Maza ghar maza wavar" broadcasted by AIR, Nagpur on 13th April 2012 at 7.30 pm.
2. Answered queries of farmers in a live phone in programme 'Hallo Annadata – Pashuvishayak shanka samadhan' in a series 'Maza ghar maza wavar' on 06.11.2012, 13.11.2012 and 27.11.2012
3. Delivered a radio talk on "Aangdhun Mori Pani", which was broadcasted by AIR, Nagpur on 20.06.2012 at 6.20 pm in Marathi programme Otivar.
4. Delivered a radio talk on "Selection of good dairy breeds for milk production" on 13.08.2012 and broadcasted on 21.08.2012 at 7.30 pm on "Pashujagat programme" by AIR, Nagpur
5. Delivered a radio talk on "Milk fever in high yielding animals" on 01.12.2012 and broadcasted on 07.12.2012 at 7.30 pm on "Pashujagat programme" by AIR Nagpur.
6. Delivered a radio talk on "Integrated nutrient management for Kharif crops" on 04.07.2012 and broadcasted on 13.07.2012 at 7.30 pm on "Maza Ghar Maza Vavar" by AIR Nagpur.
7. Delivered a radio talk on "Processing Technology of Soybean Product", which was broadcasted by AIR, Nagpur on 17.08.2012 at 7.30-8.05 pm at 7.30-8.05 pm.in Marathi programme Maza Ghar Maza Vavar.

