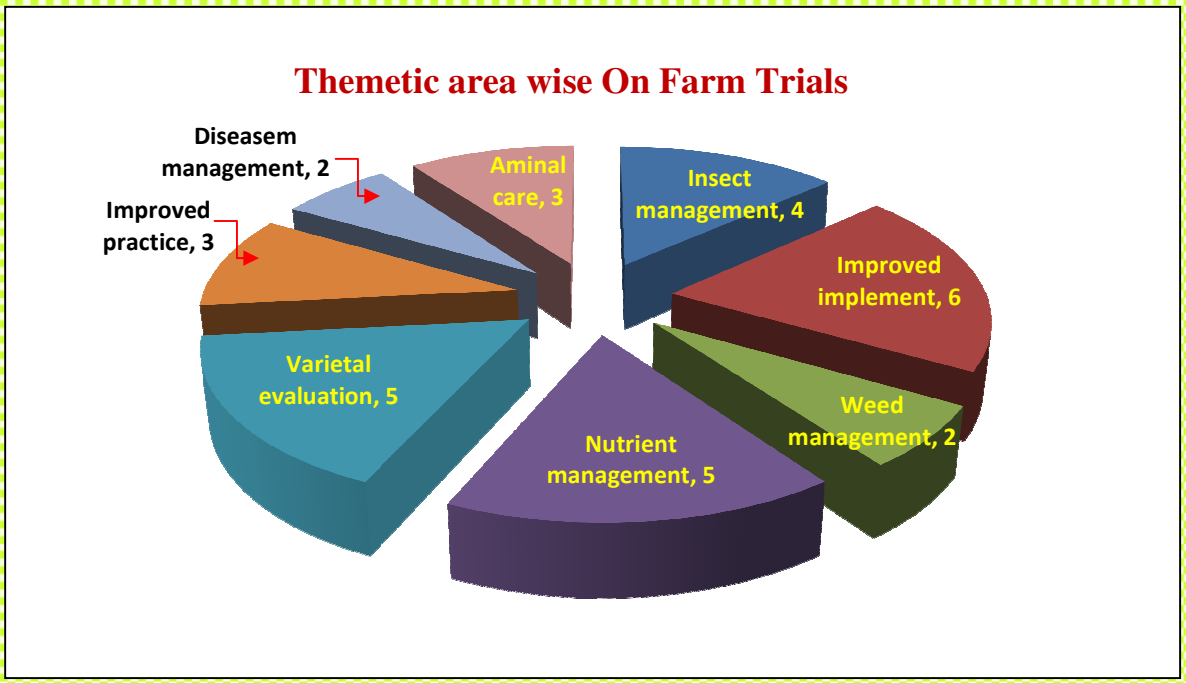
Technology assessment and refinement through

On Farm Trials

This activity is under taken to identify technologies in term of location specific sustainable land use system. On the basis of problems and thrust area identified 30 On Farm Trials were conducted during assessment period on various thematic area.



1. Assessment of rice variety Bamleshwari

Rice is the main kharif crop grown in Kanker district on 181000 ha area. The major problem identifies in existing variety swarna in blast disease susceptible, which finally causing low yield in Rice.

Improved variety of rice – Bamleshwari

To tackle this problem KVK has introduced Bamleshwari, which is blast resistant released by IGKVV Raipur. The trials were conducted for two years during 2012-13 in comparison with existing variety Swarna. The result indicate that variety Bamleshwari yielded 54.5q/ha and variety Swarna yielded 47.25q/ha. This shows that there is 15.34% increase in yield over existing variety Swarna. Similarly blast percentage was negligible. After two year, the variety was introduced for conducting FLD in major operational area of KVK Kanker.

2. Use of Maize Planter

Maize is the second main crop of the district and on and average productivity of crop in kharif 25.6q/ha where as in rabi 35.25q/ha. Cost of cultivation is very high due to all the operations (sowing, weeding, harvesting etc) was performed by manual labour. Availability of labour at sowing time is a major problem. To overcome this problem partial mechanization of maize with application of maize planter for sowing operation as per recommendation of Central Research Institute for Dryland Agriculture Hyderabad.

Sowing by Tractor drawn maize planter

Bullock drawn single row inclined plate planter and tractor drawn five row planter (cup feed type) with 20 kg/ha seed rate were assessed during 2013-2014 and 2014-15 respectively. The comparison was made with farmers practice. The bullock and tractor drawn maize planter reduced the cost of sowing which was around Rs. 1200/ha. Maize yield was also increase from 18% - 22% compared with farmers practice. The average yield obtained in the bullock and tractor drawn planter was 64 q/ha and 68 q/ha respectively where as in farmers practice yield was 54 q/ha.

3. Use of Bamboo Floor for Goat

Average annual rainfall of the district 1492 mm. In rainy season and Katchha floor shade in rural areas favour the chances of infection specially in wetable floor, so the prevention of diseases is necessary. To prevent goat from diseases, bamboo floor shade for goat design and fabricated at 10 farmers. Due to bamboo floor dry and comfort condition provided to goat for suitable to outreach of wet mud floor and stagnated water. Also easily drain urine and faecal material, which prevent from various infectious diseases and enhance the growth rate of goat.

Bamboo floor for goat

4. Zero till seed cum fertilizer drill for chickpea

Chick pea is the major rabi pulse crop of the district having productivity 815kg/ha. Due to lack of irrigation facility the area under chickpea is decreasing from year 2010-11 area is 4500 ha and in 2013-14 area is 3279 ha. To increase area under chickpea and efficient use of residual moisture KVK use zero till seed cum fertilizer drill for chickpea. In the year 2013-14 trials were conducted in the farmer's fields. The results revealed that the chickpea yield 10 to 12 q/ha using residual moisture, whereas in farmers practice yield is 8-9 q/ha.

Chickpea sowing with Zero till seed cum fertilizer drill

5. Assessment of IPM Modul against Stem Borer in transplanted rice.

Rice crop damage by insect pest is one of the major constraints in rice production. In additional, quality aspects such as pest free and residue tree agriculture products are becoming increasingly important, conventional pest control means use of chemical pesticides, however, their excessive and inappropriate use in our agro system in the last two decades or so has resulted in degradation of our environment while our pest problem like development of resistance and resurgence.

The On Farm Testing about assessment of IPM module against stem borer in transplanted rice were conducted in 5 farmer's rice field at village Kulgaon and Tarasgaon during 2014-15. The result showed that IPM module comprised Application of cartop hydrochloride 50% SP @50-200 ml/acre. Monitoring of stem borer with scented rice planting resulted in significant reduction of stem borer 1.28% infestation as compared to farmers practices 9.33%. It has recorded highest grain yield 42.8q/ha

Trails and observation recording in OFT

6. Paddy drum seeder in puddled field.

Uttar Bastar Kanker is tribal dominated area with less resource availability in sense of agricultural enterprises adoption & productivity. Erratic monsoon behavior also affects the grain production, especially in rainfed areas; the rainfall over last ten years was highly fluctuating. Due to continuous rains farmers unable to sow rice crop by seed cum fertilizer drill. In that situation farmers practiced lehi method (sprouted paddy seed broadcasted in puddled fields). Transplanting is another method of paddy cultivation but it is very costly and time consuming methods. Due to shortage of labourers during peak season paddy cultivation become costlier.

Sowing of rice by paddy drum seeder

To overcome this problem Krishi Vigyan Kendra, Kanker introduce the drum seeder for sowing paddy in line. The farmers shown greater interest in adopting direct paddy seeding technology due to shortage of labours during peak season. The 8 row paddy seeder was demonstrated in Aurod, Kotela and Bhaisakatta, District Kanker for direct sowing paddy in kharif season of 2013-14. The direct sown paddy through drum seeder has attracted all categories of farmers due to easy operation, less weight, line sowing with less seed rate (38 kg / ha) more tillers, etc., apart from savings in transplanting cost. The line sowing of paddy has also helped the farmers to utilize ambika weeder for weeding. The results indicated that line sowing of rice with yielded average 48.4 q/ha, whereas in farmers practice yield was 35.8 q/ha. This shows that 35.2% increase in yield over farmers practice.

7. Use of poly mulch in vegetable.

Weed is the major problem in the vegetable crop, which consume about 30-40% labour cost. It also reduces quality and production about 20-30%. The use of improper technology by farmers for growing vegetable was resulting in to poor quality fruits and low yield. To overcome these problems KVK introduce plastic mulching for weeds and quality of fruits. The silver black colour polythene mulching of 30 micron thickness were use for vegetable chilli, farmer's practice i.e. planting chilli without mulching.

Chilli cultivation with polythene mulching

Due to this technology there is increase in yield reduction in labour cost as compare to farmers practice. It was also observed that the average yield in the trial plot was 110q/ha as compared to 90q/ha in farmers practices. This shows there was 22.2% increase in yield.

8. Assessment of anthelmentic against parasitic infestation in Kid (Goat)

The main allied agricultural activity in the operational area of KVK is rearing the goat. The major problem identified in goat is low weight gain due to parasitic infestation. to overcome this problem two treatments, 1st Use of albendazole @ 10mg/kg body weight once a month up to six month of age (T1) and 2nd treatment was feeding neem leaves @ 50 gm daily up to six weeks of duration (T2).

Treatment to goat

Recording observation

The result show supplementary feeding of albendazole @ 10 mg/kg body weight up to 6 weeks, and Neem leaves @ 50 gm per day per head 4 to 6 months of age group kid and, increased body weight by 1.35 kg (T1) and 0.96 kg (T2) respectively as compare to farmers practice(T3). The parasite egg count per gm of faecal sample find that the 1.7%, 2.3% and 5.3% in T1, T2 and T3 respectively

9. Assessment of Okra variety Arka Anamika

Okra is the main rabi vegetable crop of Kanker district but the productivity of the crop in the district is only 38 q/ha. The major problem identified is incidence of yellow vein mosaic (YVM) and use of whatever variety available in the market. To overcome this problem KVK has introduced Arka Anamika variety, which is YVM resistant and released by IIHR Bangalore. The trial was conducted for two years during 2012 and 2013 in comparison with existing variety. The results indicated that variety Arka Anamika yielded average 54.5 q/ha as compared to farmers variety which yielded 46.25q/ha

Improved variety of Okara Arka Anamika

Details of other OFTs from 8.1.10 to 30

S. N.	Specification of technology		No of trials	Year	Success %
	Title	Technology assessed			
10	Assessment of IPM module for pod borer in chickpea.	Bird perches + two chemical spray, 1st by propanophos and 2nd by chloropyriphos at 15 days after 1st spray @ 1500 ml/ha + pheromone trap @ 5/ha.	5	Rabi 2012	65%
11	Integrated management of stem borer in rice.	Pheroman trap@5/ha + application of Carbofuron @ 1.0 kg a.i./ha	5	Kharif 2012	90%
12	Weed management in direct seeded rice.	Application of Bispyrabic sodium @ 200 ml/ha at 20 DAS + One hand weeding at 40 DAS	10	Kharif 2012, 2013	85%
13	Assessment of triphar plough for biasi in paddy.	Use of triphar plough	5	Kharif 2012	90%
14	Nutrient management in transplanted rice	Application of recommended dose of NPK (100:60:40 kg/ha)	10	Kharif 2012, 2013	35%
15	Assessment of improved utera practice	Improved variety R-552 + application of 15% more P & K fertilizer to previous rice crop + broadcasting of seed at 20 days before harvesting of paddy + cutting of paddy upto ground level + application of 25 kg/ha urea at 8-10 days after harvesting of paddy	5	Rabi 2013	63%
16	Assessment of SRI method of paddy cultivation.	SRI method of paddy cultivation	5	Kharif 2012	20%
17	Assessment of ginger variety	Ginger variety Suprabha	5	Kharif 2013	35%
18	Assessment of hand hoe for drudgery reduction in vegetable	Hand hoe	5	Rabi 2013	85%
19	Assessment of IDM module against wilt in chickpea.	Seed treatment with thirum and bavestin in 2:1 @ 3g/kg + resistant variety JG 130	5	Rabi 2012	75%
20	Assessment of tomato varieties against wilt.	Use of resistant variety Laxmi and Nidhi compared with local.	5	Rabi 2013	75%
21	Nutrient management in semi-irrigated wheat.	Application of recommended dose of NPK (90:50:20 kg/ha) + 5 kg zinc/ha	5	Rabi 2014	55%
22	Assessment of balance feeding for milch animal	Vitamin mineral @ 30 g per cow/day + albandazole @ 5mg/kg body weight	5	Rabi 2013	65%
23	Assessment of Nutrient management in Maize	Application of Soil test based nutrient management	5	Rabi 2013	75%
24	Assessment of chemical weed control in maize	Atrazine @ 1 kg a.i./ha	5	Rabi 2014	62%
25	Assessment of Elephant foot yam variety	Improved variety Gajendra	5	Kharif 2012	60%
26	Assessment of Onion variety	Improved variety N 53	5	Rabi 2013	65%
27	Assessment of STCR based nutrient management in Rice	Fertilizer applied on the basis of Soil test based recommendation	5	Kharif 2013	50%
28	Assessment of management practices of store grain pest of pulses	Mixing of neem leaf powder @ 100g per kg seed and malathion @ 2g per kg seed during storage	5	Rabi 2014	65%
29	Assessment of STCR Based nutrient management in Maize	Fertilizer applied on the basis of Soil test based recommendation	5	Rabi 2014	47%
30	Assessment of bullock drawn maize planter	Sowing of maize by bullock drawn maize planter	5	Rabi 2014	55%
		TOTAL	**165**		

OFT's conducted on Different Crops/Enterprises

Ginger variety Roma

Onion variety N 53

Sowing of maize by tractor drawn maize planter

INM in wheat

Wilt management in Tomato