

## Trial 1

1	Title	On farm evaluation of nutrient and agronomic management on productivity and economics of gram					
2	Problem diagnose/defined	The HYVs may not give optimum yield without proper nutrition (balance fertilizer does) of Panchmahal District.					
3	Details of technologies selected for assessment/refinement	T <sub>1</sub> = Farmers Practices T <sub>2</sub> = Recommended fertilizer dose (N-20kg and P <sub>2</sub> O <sub>5</sub> -40kg) T <sub>3</sub> = Fertilizer dose (N-15kg and P <sub>2</sub> O <sub>5</sub> -40kg) + 2% foliar spray of urea.)					
4	Source of technology	AAU Anand					
5	Production system	Rainfed					
6	Thematic area	Pulses Production					
7	Performance of the technology with performance indicators	Result showed that T <sub>3</sub> recorded and maximum yield (17.75 qtl/ha.) as compared to T <sub>1</sub> (11.10qtl/ha) and T <sub>2</sub> (13.65 qtl/ha).					
8	Final recommendation for micro level situation	Fertilizer dose (N-15kg and P <sub>2</sub> O <sub>5</sub> -40kg) + 2% foliar spray of urea.					
9	Constraints identified and feedback for research	Farmers are not aware about the balance fertilizer application and foliar spray of urea.					
10	Process of farmers participation and their reaction	Through field level demonstration. They convinced about the positive results					
11	Results of On Farm Trials						
Crop/enterprise	No. of trials	Technology refined	Parameters of refinement	Data on the parameter	Production per unit (qtl/ha.)	Net Return (Profit) in `./unit	BC Ratio
Gram	12	Fertilizer dose (N-15kg and P <sub>2</sub> O <sub>5</sub> -40kg) + 2% foliar spray of urea.	- Plant Height -No of Branches -No of Pods/Plant - Yield qtl/ha. -Cost Benefit Ratio	- 41 to 57 cm. (21 to 30 control) - 37 to 51 (12 to 21 control) -110 to 154 (50 to 70 control) -17.75 qtl/ha (11.10 qtl control) Yield - 2.04 (1.48 control)	T <sub>1</sub> =11.10 T <sub>2</sub> =13.65 T <sub>3</sub> =17.75	T <sub>1</sub> =9000 T <sub>2</sub> =13900 T <sub>3</sub> =22625	T <sub>1</sub> =1.48 T <sub>2</sub> =1.68 T <sub>3</sub> =2.04

## Trial 2

1	Title	Improved Crop Production Technology on Pigeonpea Yield in Rainfed Areas.						
2	Problem diagnose/defined	1. Low yield due to use of seed with low genetic potential. 2. Imbalance fertilizer application and not use of micronutrient						
3	Details of technologies selected for assessment/refinement	T <sub>1</sub> = Farmer practices (Spacing- Unspecified) T <sub>2</sub> = Seed Treatment + 20kgN + 50kg P2O5 T <sub>3</sub> = T <sub>2</sub> + 25kg Zinc Sulphat + 20kg Sulphur						
4	Source of technology	IIPR, Kanpur (U.P.)						
5	Production system	Rainfed						
6	Thematic area	Pulse Production						
7	Performance of the technology with performance indicators	Result showed that T <sub>3</sub> recorded and maximum yield (14.32 qtl/ha.) as compared to T <sub>1</sub> (7.20qtl/ha) and T <sub>2</sub> (10.43 qtl/ha).						
8	Final recommendation for micro level situation	Fertilizer dose (N-20kg and P2O5-50kg) + 25kg Zinc Sulphate + 20kg Sulphur.						
9	Constraints identified and feedback for research	Farmers are not aware about the balance fertilizer, secondary and micro nutrient application.						
10	Process of farmers participation and their reaction	Through field level demonstration. They convinced about the positive results						
11	Results of On Farm Trials							
Crop/ enterprise	No. of trials	Technology refined	Parameters of refinement	Data on the parameter	Production per unit (qtl/ha.)	Net Return (Profit) in `./ unit	BC Ratio	
Pigeonpea (AGT-2)	12	Fertilizer dose (N-20kg and P <sub>2</sub> O <sub>5</sub> -50kg) + 25kg Zinc Sulphate + 20kg Sulphur	- Plant Height -No of Branches -No of Pods/Plant - Yield qtl/ha. -Cost Benefit Ratio	- 180 to 210 cm. (146 to190 control) - 42 to 65 (19 to 22 control) -509 to 1006 (250 to 400 control) -14.32 qtl/ha (670 to 850 control) Yield - 2.62 (1.49 control)	T <sub>1</sub> =7.20 T <sub>2</sub> =10.43 T <sub>3</sub> =14.32	T <sub>1</sub> =8300 T <sub>2</sub> =18005 T <sub>3</sub> =31020	T <sub>1</sub> =1.49 T <sub>2</sub> =1.97 T <sub>3</sub> =2.62	

### Trial 3

1	Title	To study the effect of date of sowing on marketable yield of Okra.					
2	Problem diagnose/defined	Low market price and high infestation of diseases and pests in okra during Kharif season.					
3	Details of technologies selected for assessment/refinement	Sowing time: Three T <sub>1</sub> = 1 <sup>st</sup> week of July T <sub>2</sub> = Recommendation 2 <sup>nd</sup> week of June onset of monsoon (first shower) T <sub>3</sub> =1/3 field 2 <sup>nd</sup> week of June 1/3 1 <sup>st</sup> week of July 1/3 3 <sup>rd</sup> week of July					
4	Source of technology	Host Institute.					
5	Production system	Semi irrigated					
6	Thematic area	Vegetable production					
7	Performance of the technology with performance indicators	Result showed that T <sub>1</sub> recorded maximum production (102.30qt/ha) with lowest (2.25) B: C ratio. T <sub>2</sub> recorded minimum production (85.20 qt/ha) with highest (4.08) B:C ratio. T <sub>3</sub> the production was 96.40 qtl with 3.08 B:C ratio. T <sub>3</sub> found best in respect to available resources in the area.					
8	Final recommendation for micro level situation	Active participation of farmers was observed and like this simple and cost effective technology especially in semi irrigated condition.					
9	Constraints identified and feedback for research	Farmers are not aware about the technology.					
10	Process of farmers participation and their reaction	Active participation of farmers were observed they like this simple and cost effective technology					
11	Results of On Farm Trials						
Crop/ enterprise	No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Production per unit (qt/ha.)	Net Return (Profit) in ₹. / unit	BC Ratio
Okra	05	Sowing times	1. Germination Percentage 2. Commencement of flowering 3. No. of pods per plant 4. Yield (Q/ha.) 5. B:C ratio	Production is less (85.20 qtl) during sowing of 3 <sup>rd</sup> week of June but the return is highest however the yield in T <sub>3</sub> is 96.40 qtl with B:C ratio 3.08. In case farmer practices yield is higher but the return is low.	T <sub>1</sub> =102.30 T <sub>2</sub> =85.20 T <sub>3</sub> =96.40	T <sub>1</sub> =56265 T <sub>2</sub> =102240 T <sub>3</sub> =77120	T <sub>1</sub> =2.25 T <sub>2</sub> =4.08 T <sub>3</sub> =3.08

#### Trial 4

1	Title	Impact of mulching and bio fertilizer on yield and qualitative attributes of Aonla cv. Goma Ashwariya					
2	Problem diagnose/defined	Low fruit yield with poor quality.					
3	Details of technologies selected for assessment/refinement	T <sub>1</sub> = Farmers Practices – No practices applied. T <sub>2</sub> = Recommended dose of manure and fertilizers + mulching with paddy straw. T <sub>3</sub> = T <sub>2</sub> + Azatobactor (250 gm per plant) + PSB (250 gm per plant).					
4	Source of technology	Host Institute.					
5	Production system	Semi irrigated					
6	Thematic area	Fruit production					
7	Performance of the technology with performance indicators	Result showed that T <sub>3</sub> recorded maximum production (61.93qt/ha) with (2.53) B: C ratio. Followed by T <sub>2</sub> and T <sub>1</sub>					
8	Final recommendation for micro level situation	Active participation of farmers was observed and like this simple and cost effective technology especially in semi irrigated condition.					
9	Constraints identified and feedback for research	Farmers are not aware about the technology.					
10	Process of farmers participation and their reaction	Active participation of farmers was observed. They like this simple and cost effective technology.					
11	Results of On Farm Trials						
Crop/ enterprise	No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Production per unit (qt/ha.)	Net Return (Profit) in ₹ / unit	BC Ratio
Aonla	05	Application of Biofertilizers	1. Fruit size (length and width). 2. Fruit weight. 3. Yield per ha. 4. Vit.-C 5. T.S.S. 6. B:C ratio	Result showed that T <sub>3</sub> recorded maximum production (61.93qt/ha) with (2.53) B: C ratio. Followed by T <sub>2</sub> and T <sub>1</sub>	T <sub>1</sub> =42.28 T <sub>2</sub> =54.28 T <sub>3</sub> =61.93	T <sub>1</sub> =33824 T <sub>2</sub> =54220 T <sub>3</sub> =74318	T <sub>1</sub> =1.76 T <sub>2</sub> =2.46 T <sub>3</sub> =2.53

## Trial 5

1	Title		Increment of milk production and reduction of anestrus problem in cross bred cow by supplementing of UMMB in the feed.					
2	Problem diagnose/defined		Malnutrition problem. Imbalanced use of feed and fodder. No use of UMMB in feed. No use of deworming agents. Poor knowledge of management practices.					
3	Details of technologies selected for assessment/refinement		T <sub>1</sub> =Farmers practices, no UMMB feeding. T <sub>2</sub> = T <sub>1</sub> +200 gm UMMB feeding/day/cow. T <sub>3</sub> =T <sub>1</sub> +T <sub>2</sub> +50 gm mineral mixture feeding/day/cow+ Deworming by fenbandazole					
4	Source of technology		AAU, Anand					
5	Production system		Semi-Intensive					
6	Thematic area		Animal Nutrition					
7	Performance of the technology with performance indicators		Result showed that T <sub>3</sub> recorded maximum milk production (11.56 lit/day) and lowest service period (94.50 days) as compared to T <sub>1</sub> and T <sub>2</sub> .					
8	Final recommendation for micro level situation		Feeding of UMMB with mineral mixture and deworming by fenbendazole increase milk production and reduce service period and anestrus problem in cross bred cow.					
9	Constraints identified and feedback for research		- Most of the farmers are not aware about the feeding of UMMB and deworming to their animals. - Farmers like due to increasing milk production and reduce anestrus problem					
10	Process of farmers participation and their reaction		Active participation of farmers during regular monitoring farmers liked this simple and cheap technology					
11	Results of On Farm Trials							
	Crop/ enterprise	No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Milk Production per Cow (lit/day)	Net Return (Profit) in ₹. / Cow	BC Ratio
	UMMB	18 cows	Feeding 200 gm UMMB and 50 gm Mineral mixture /day/animal and deworming by fenbendazole	Daily milk yield (Liter per day) Service period (days)	11.56 lit (8.98 lit check) milk production /day/cow and service period 94.50 days as compared to 139.16 days in check	T <sub>1</sub> =8.98 T <sub>2</sub> =10.33 T <sub>3</sub> =11.56	T <sub>1</sub> =118 T <sub>2</sub> =142 T <sub>3</sub> =165.5	T <sub>1</sub> =2.47 T <sub>2</sub> =2.67 T <sub>3</sub> =2.87

## Trial 6

1	Title		Increase growth performance of growing goats through supplement concentrate and probiotics feeding.				
2	Problem diagnose/defined		Low growth rate of growing goats. Malnutrition problem. No use of concentrate and probiotics feeding. No use of deworming agents.				
3	Details of technologies selected for assessment/refinement		T <sub>1</sub> = Farmers Practices:- only Grazing.. T <sub>2</sub> = T <sub>1</sub> +150 gm Concentrate mixture Feeding/day/Kids T <sub>3</sub> = T <sub>1</sub> +T <sub>2</sub> +3 gm probiotics feeding/day/kid +deworming by fenbandazole.				
4	Source of technology		CIRG, Makhdoom (Mathura)				
5	Production system		Semi-Intensive				
6	Thematic area		Animal Nutrition				
7	Performance of the technology with performance indicators		Result showed that T <sub>3</sub> recorded maximum weight gain/day/kid (102.44g) as compared to T <sub>1</sub> and T <sub>2</sub>				
8	Final recommendation for micro level situation		Feeding of concentrate with probiotics feeding and deworming by fenbendazole increase growth rate of growing goats.				
9	Constraints identified and feedback for research		- Most of the farmers are not aware about the feeding of concentrate and probiotics and deworming to their goats. - Farmers like due to increasing body weight of growing goats.				
10	Process of farmers participation and their reaction		Active participation of farmers during regular monitoring and farmers like this simple and cheap technology				
11	Results of On Farm Trials						
Crop/ enterprise	No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Production (body wt per kid (g/day.)	Net Return (Profit) in Rs. / kid	BC Ratio
Concentrate and probiotics	60 growing goats	Feeding 3 g probiotics with 150 g concentrate mixture /day/kids and deworming by fenbendazole	Body weight and morphometrics measurement was taken monthly (3-6 month)	Body weight gain 102.44 g /day/kid as compared to 42 g/day/kid in control	T <sub>1</sub> =42.00 T <sub>2</sub> =83.55 T <sub>3</sub> =102.44	T <sub>1</sub> =2077.5 T <sub>2</sub> =2571 T <sub>3</sub> =2846	T <sub>1</sub> =3.77 T <sub>2</sub> =3.86 T <sub>3</sub> =3.89

## Trial 7

1	Title	Management of phyllody disease of sesamum by intercropping with maize.					
2	Problem diagnose/defined	Phyllody disease of sesamum reduces the yield of sesamum.					
3	Details of technologies selected for assessment/refinement	T <sub>1</sub> = Farmers Practices (no measures). T <sub>2</sub> = Intercropping of 2 rows of sesamum with one row of maize T <sub>3</sub> = T <sub>2</sub> + one spray of dimethoate 0.03% at the time of initiation of flowering.					
4	Source of technology	CHES, Vejalpur					
5	Production system	Rainfed					
6	Thematic area	Disease management					
7	Performance of the technology with performance indicators	Better field performance in T <sub>3</sub> recorded least disease incidence (7.71%) than T <sub>1</sub> (19.58%) and T <sub>2</sub> (10.52%).					
8	Final recommendation for micro level situation	Intercropping of two rows of Sesamum with one row of Maize and one spray of Dimethoate 0.03% at initiation of flowering.					
9	Constraints identified and feedback for research	Farmers are not aware about the IPM package and practices.					
10	Process of farmers participation and their reaction	Farmers liked this simple and cheap technology. They convinced about the positive results					
11	Results of On Farm Trials						
Crop/ enterprise	No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Production per unit (q/ha.)	Net Return (Profit) in ₹ / unit	BC Ratio
Sesamum	12	To prevent the losses due to phyllody disease	- Percentage of phyllody disease - yield - Benefit Cost Ratio	- 7.71 % in T-3 and 19.58 % in check - yield of sesame 5.02q and maize 5.58 q/ha (5.11 q sesame in check) - 1.77 (1.60 control) BCR	T <sub>1</sub> = Sesamum 5.11 T <sub>2</sub> = Sesamum 4.57 and Maize 5.41 T <sub>3</sub> = Sesamum 5.02 and Maize 5.58	T <sub>1</sub> =11,460 T <sub>2</sub> =13,130 T <sub>3</sub> =15,500	T <sub>1</sub> =1.60 T <sub>2</sub> =1.67 T <sub>3</sub> =1.77

## Trial 8

1	Title	<b>Integrated Pest Management for fruit and shoot borer in brinjal.</b>						
2	Problem diagnose/defined	Fruit and shoot borer is one of the major insect pests of brinjal in this region causing considerable loss						
3	Details of technologies selected for assessment/refinement	T <sub>1</sub> = Farmers Practices: - Frequent sprays of pesticides. T <sub>2</sub> = a. Removal of previous year brinjal crop residue from farm before planting. b. Prompt cutting and disposal of damaged shoots. c. Installation of pheromone-baited traps @ 40/ ha throughout the field once at flowering starts. The trap should be installed in such a way that the lure remains 1 foot above canopy level. The lure should be changed at least at monthly level. T <sub>3</sub> = T <sub>2</sub> + spray with neem oil @ 5%.						
4	Source of technology	AAU, Anand						
5	Production system	Rainfed						
6	Thematic area	Integrated Pest Management						
7	Performance of the technology with performance indicators	Result showed that T <sub>3</sub> recorded minimum pest infestation (6.5 % damaged shoots & 14.5 % damaged fruits than T <sub>1</sub> (21.0% damaged shoots & 40.5% damaged fruits ) and T <sub>2</sub> (12.5% damaged shoots & 24.0 % damaged fruits )						
8	Final recommendation for micro level situation	Foliar spray of Neem oil @ 5%.						
9	Constraints identified and feedback for research	Farmers are not aware about the IPM package and practices.						
10	Process of farmers participation and their reaction	Active participation of farmers during regular monitoring farmers liked this technology. They convinced about the positive results						
11	Results of On Farm Trials							
	Crop/ enterprise	No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Production per unit (q/ha.)	Net Return (Profit) in ₹ / unit	BC Ratio
	Brinjal	12	Foliar spray of neem oil 5%	- Per cent infestation of fruit and shoot borer - yield - Benefit Cost Ratio	- 6.5 % damaged shoots & 14.5 % damaged fruits in T-3 and 21.0 % damaged shoots & 40.5 % damaged fruits in check -yield 268.5 q/ ha (169.0 q/ ha in check) - 2.87 (1.99 control) BCR	T <sub>1</sub> = 169.00 T <sub>2</sub> =225.00 T <sub>3</sub> =268.50	T <sub>1</sub> =42,000 T <sub>2</sub> =68,340 T <sub>3</sub> =87,490	T <sub>1</sub> =1.99 T <sub>2</sub> =2.55 T <sub>3</sub> =2.87



## Trial 9

1	Title	<b>Management of chickpea Pod Borer</b>						
2	Problem diagnose/defined	Pod borer is one of the major insect pests of chickpea in this region causing considerable loss						
3	Details of technologies selected for assessment/refinement	<p>T<sub>1</sub>=Farmers Practices - No measures.</p> <p>T<sub>2</sub>= Installation of pheromone traps with <i>Helicoverpa armigera</i> lures @ 40 traps/ ha. The traps should be installed one month after sowing and at one feet height above the crop canopy covering the whole field uniformly. The lures should be changed after every 3 weeks.</p> <p>T<sub>3</sub>=T<sub>2</sub>+ Spray of neem based formulation @ 5% on the appearance of first instar larvae.</p>						
4	Source of technology	AAU, Anand						
5	Production system	Rainfed						
6	Thematic area	Pest management						
7	Performance of the technology with performance indicators	Result showed that T <sub>3</sub> recorded least pest infestation (8.19 %) than T <sub>1</sub> (28.06 %) and T <sub>2</sub> (19.44 %).						
8	Final recommendation for micro level situation	Spray of neem based formulation @ 5% on appearance of first larval.						
9	Constraints identified and feedback for research	Farmers are not aware about the IPM package and practices.						
10	Process of farmers participation and their reaction	Active participation of farmers during regular monitoring farmers liked this technology						
11	Results of On Farm Trials							
	<b>Crop/enterprise</b>	<b>No. of trials</b>	<b>Technology refined</b>	<b>Parameters of assessment/refinement</b>	<b>Data on the parameter</b>	<b>Production per unit (q/ha.)</b>	<b>Net Return (Profit) in ₹ / unit</b>	<b>BC Ratio</b>
	Gram	12	Foliar spray of neem oil 5%	- % infestation of pod borer - yield - Benefit Cost Ratio	- 8.19 % in T-3 and 28.06 % in check -yield of gram 19.20 (14.0 q in check) - 1.92 (1.58 control) BCR	T <sub>1</sub> = 14.00 T <sub>2</sub> = 16.50 T <sub>3</sub> = 19.20	T <sub>1</sub> =13,400 T <sub>2</sub> =18,080 T <sub>3</sub> =23,900	T <sub>1</sub> =1.58 T <sub>2</sub> =1.73 T <sub>3</sub> =1.92

## Trial 10

1	Title	<b>Nutritional Kitchen garden</b>						
2	Problem diagnose/defined	Lack of diversified vegetables in diet.						
3	Details of technologies selected for assessment/refinement	T <sub>1</sub> = <b>Farmers Practices:</b> - (Only rainy season, mostly bottle guard). T <sub>2</sub> = T <sub>1</sub> +Green leafy vegetables T <sub>3</sub> = T <sub>1</sub> +T <sub>2</sub> +diversified vegetables round the year						
4	Source of technology	AAU, Anand						
5	Production system	Semi-Intensive						
6	Thematic area	Increase Nutrients in diet						
7	Performance of the technology with performance indicators	Result showed that T-3 recorded maximum production of diversified vegetables round the year.						
8	Final recommendation for micro level situation	In human diet 300 gm vegetables (120gm green leafy vegetables + 100 gm tuber and roots vegetables + 80 gm others vegetables) recommended daily requirement per head.						
9	Constraints identified and feedback for research	- Most of the farm women are not aware about the benefits of Kitchen Garden. -Farm women like to improved their health status and also provide the house hold prosperity.						
10	Process of farmers participation and their reaction	Active participation of farm women observed during regular monitoring. They like this simple and useful technology						
11	Results of On Farm Trials							
Crop/ enterprise		No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Production per unit (kg/ha.)	Net Return (Profit) in ₹. / unit	BC Ratio
<b>Kitchen garden</b>		12 (10 x 10 sq.m each trial)	Supplementation diversified vegetables round the year	- Availability of vegetables/day - Consumption of vegetables - Surplus of vegetables - B:C ratio	Production of 5.8 kg vegetables/day/family, consumption 1.5kg/day/family and surplus 4.3 kg/day/demo	T <sub>1</sub> =708 T <sub>2</sub> =1004 T <sub>3</sub> =1988	T <sub>1</sub> =2380 T <sub>2</sub> =4760 T <sub>3</sub> =12211	T <sub>1</sub> =2.16 T <sub>2</sub> =3.17 T <sub>3</sub> =4.52

## Trial 11

1	Title	Vegetable Nursery under low tunnels for Self employment of farm woman					
2	Problem diagnose/defined	Lack of women friendly house hold income generating work.					
3	Details of technologies selected for assessment/refinement	T <sub>1</sub> = Farmers Practices growing of vegetable seedling on flate bed. T <sub>2</sub> = Growing of vegetable seedling on raised bed with line sowing. T <sub>3</sub> = T <sub>2</sub> + under low tunnels.					
4	Source of technology	IARI, Pusa campus, New Delhi,					
5	Production system	Irrigated					
6	Thematic area	Nursery					
7	Performance of the technology with performance indicators	Result showed that T <sub>3</sub> recorded maximum B: C ratio (1.51) as compared to T <sub>1</sub> & T <sub>2</sub> .					
8	Final recommendation for micro level situation	Active participation of farm women was observed. They like this new and useful technology.					
9	Constraints identified and feedback for research	Farm women's were not aware about the technology.					
10	Process of farmers participation and their reaction	Active participation of farm women was observed.					
11	Results of On Farm Trials						
Crop/ enterprise	No. of trials	Technology refined	Parameters of assessment/ refinement	Data on the parameter	Production of seedlings/bed (3X1m)	Net Return in Rs. / bed	BC Ratio
Vegetable Nursery	12	Production of healthy seedlings	Reduce time 6-8 and 4-6 days as compared to T <sub>1</sub> and T <sub>2</sub> respectively	No. of seedling per sq. m. Plant height Returns in all treatments. B:C ration	T <sub>1</sub> =564 T <sub>2</sub> =652 T <sub>3</sub> =726	T <sub>1</sub> =423 T <sub>2</sub> =652 T <sub>3</sub> =907.5	T <sub>1</sub> =1.14 T <sub>2</sub> =1.35 T <sub>3</sub> =1.51