On Farm Trials has been conducted in the Year 2022-2023

A. Technology Assessment

OFT-1

1	Title	Weed Management in High Density Orchard System in Apple
2	Problem Diagnose/defined	Loss of nutrients, rodent attack, lack of sanitation
3	Details of technologies selected for assessment/refinement	Application of pre and post-harvest herbicides
4	Source of technology	SKUAST-K
5	Production system thematic area	Orchard management
6	Thematic area	Crop production
7	Performance of the Technology with performance indicators	Satisfactory
8	Final recommendation for micro level situation	Needs repeated trials
9	Constraints identified and feedback for research	Adoptability
10	Process of farmer's participation and their reaction	Satisfactory

Results of On Farm Trial-1

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assess ment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Apple	Irrigated	Nutrient loss	Weed Management in high density orchard system in Apple	02	Application of pre and post-harvest herbicides	Fruit yield Fruit quality	1.Weed control efficiency 2.Soil characteristics of Apple orchard 3.Leaf nutrient status 4.Fruit yield characteristics 5. Fruit quality characteristics	See table	Satisfactory

Location of OFT	Particulars	Content
Harwan	Soil pH	6.53
	Available Nitrogen (Kg/ha)	287.94 Kg/ha
	Available phosphorus (Kg/ha)	20.66 Kg/ha
	Available Potassium (Kg/ha)	208.80 Kg/ha
Chatterhama	Soil pH	6.48
	Available Nitrogen (Kg/ha)	263.96 Kg/ha
	Available phosphorus (Kg/ha)	19.87 Kg/ha
	Available Potassium (Kg/ha)	198.14 Kg/ha

Weed Control Efficiency (%) under high density orchard system

Treatment	Days after treatment	Harwan	Chatterhama
T1	30	94.98	91.98
	60	91.16	88.06
	90	69.15	65.87
	120	71.78	62.76
T2	30	100	100
	60	86.54	86.50
	90	100	100
	120	95.12	94.89

Yield Characteristics (3333 tree/ha at spacing of 1m x 3m)

Treatment	Particulars	Harwan	Chatterhama
T1	Initial fruit set (%)	88.43	84.23
	Final fruit set (%)	75.14	77.22
	Fruit Yield per tree (Kg tree^{-1})	8.15	6.96
	Fruit Yield per ha (Tonnes ha^{-1})	27.16	23.19
	Yield efficiency (Kg cm^{-2})	0.89	0.76
T2	Initial fruit set (%)	90.70	89.97
	Final fruit set (%)	87.80	86.93
	Fruit Yield per tree (Kg tree^{-1})	9.24	8.67
	Fruit Yield per ha (Tonnes ha^{-1})	30.79	28.89
	Yield efficiency (Kg cm^{-2})	1.00	0.92

Leaf nutrient status from the midpoint of current season's terminal growth during Mid-July

Treatment	Particulars	Harwan	Chatterhama
T1	Nitrogen (%)	1.98	1.91
	Phosphorus (%)	0.21	0.19
	Potassium(%)	1.61	1.59
T2	Nitrogen (%)	2.29	2.15
	Phosphorus (%)	0.28	0.22
	Potassium (%)	1.71	1.67

Fruit Physical characteristics

Treatment	Particulars	Harwan	Chatterhama
T1	Fruit weight (g)	181.88	176.05
	Fruit length (mm)	65.37	63.30
	Fruit Diameter (mm)	80.70	78.26
	Fruit Volume (cm^{-3})	145.87	141.47
	Specific gravity (Kg cm^{-2})	1.24	1.23
	Fruit Firmness	7.15	7.14
T2	Fruit weight (g)	204.99	201.64
	Fruit length (mm)	68.27	65.98
	Fruit Diameter (mm)	86.44	84.89
	Fruit Volume (cm^{-3})	168.55	167.65
	Specific gravity (g/cm^{3})	1.21	1.20
	Fruit Firmness (Kg cm^{-2})	7.18	7.16

Fruit Colour (L*a b)

Treatment	Particulars	Harwan	Chatterhama
T1	L	35.12	35.08
	a	33.24	32.13
	b	20.72	19.98
T2	L	34.56	33.34
	a	33.76	32.74
	b	16.04	15.53

L denotes the degree of darkness (0-50) and degree of lightness (50-100)
Positive value of "a" denote redness and negative values denote greenness
Positive value of "b" denote yellowness and negative values denote blueness

Fruit Chemical characteristics

Treatment	Particulars	Harwan	Chatterhama
T1	Total Soluble Solids (^{0}B)	12.56	12.09
	Total sugars (%)	9.59	9.45
	Titrable acidity (%)	0.50	0.51
	TSS/acid Ratio	25.12	23.70
T2	Total Soluble Solids (^{0}B)	12.98	12.86
	Total sugars (%)	9.59	9.65
	Titrable acidity (%)	0.43	0.43
	TSS/acid Ratio	30.18	29.90

Effect of Weed Management practices on Soil Characteristics of apple

Treatment	Particulars	Harwan	Chatterhama
T1	pH	6.50	6.47
	Nitrogen (Kg/ha)	290.98	286.92
	Phosphorus (Kg/ha)	19.87	18.19
	Potassium (Kg/ha)	209.65	200.15
T2	pH	6.57	6.51
	Nitrogen (Kg/ha)	318.16	292.65
	Phosphorus (Kg/ha)	21.89	20.68
	Potassium (Kg/ha)	276.33	210.85

OFT-2

1	Title	Foliar Application of Calcium for Improving Quality and Storability of Cherry
2	Problem Diagnose/defined	Poor fruit quality
3	Details of technologies selected for assessment/refinement	Nutrient spray at specific stages
4	Source of technology	SKUAST-K
5	Production system thematic area	Quality improvement
6	Thematic area	Crop improvement
7	Performance of the Technology with performance indicators	Satisfactory
8	Final recommendation for micro level situation	Needs repeated trials
9	Constraints identified and feedback for research	Adoptability
10	Process of farmer's participation and their reaction	Satisfactory

Results of On Farm Trial-2

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assess ment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Cherry	Irrigated/Rainfed	Low fruit quality	Foliar application of calcium for improving quality and storability of Cherry	03	Foliar spray of nutrients at specific stages	Fruit yield Fruit quality	1. Fruit set (%) 2.Fruit yield (kg/tree) 3. Fruit yield characteristics 4. Fruit quality characteristics	See table	Satisfactory

Table-2 Effect of nutrient application on Fruit set, fruit yield, annual shoot growth, Leaf area and leaf calcium

Treatment	Particulars	Faqirgujri	Darbagh	Theed
T1	**Fruit set (%)**	18.02	18.68	19.12
	Fruit Yield per tree (Kg tree^{-1})	7.98	8.86	8.32
	Annual Shoot Growth (cm)	17.84	18.96	18.03
	Leaf area(cm^2)	65.84	67.48	66.93
	Leaf calcium (%)	2.03	2.18	2.09
T2	**Fruit set (%)**	21.01	23.92	22.05
	Fruit Yield per tree (Kg tree^{-1})	9.03	11.03	10.26
	Annual Shoot Growth (cm)	19.03	21.23	19.94
	Leaf area(cm^2)	67.47	74.15	71.20
	Leaf calcium (%)	2.48	2.86	2.76

OFT-3

1	Title	**Impact of Post Milking Teat Disinfection on Prevention of Mastitis**
	Problem Diagnose/defined	Sub clinical Mastitis
3	Details of technologies selected for assessment/refinement	Post milking teat disinfection with Povidone Iodine based germicidal dip (P. Iodine; glycerin 4:1)
4	Source of technology	SKUAST-K
5	Production system thematic area	Animal Production
6	Thematic area	Dairy Production
7	Performance of the Technology with performance indicators	On going
8	Final recommendation for micro level situation	On going
9	Constraints identified and feedback for research	-
10	Process of farmer's participation and their reaction	Satisfactory

Results of On Farm Trial – 3

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assess ment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Animal Science	Sub Clinical/clinical Mastitis	Assessing the impact of post milking teat disinfection on the prevention of Mastitis	Impact of Post Milking Teat Disinfection on Prevention of Mastitis	03	Impact of teat disinfection on Mastitis	CMT Score, under health, Milk yield and milk PH	-	Awaited	Satisfactory

Table-3

Treatments		Results
T1	No Teat disinfection	Awaited
T2	Post milking teat disinfection with Povidone iodine based germicidal dip (P. Iodine; Glycerine 4:1)	Awaited

OFT-4

1	Title	**Impact of Bio-fertilizers on Growth & Yield of Garden Pea**
2	Problem Diagnose/defined	Deleterious effects of chemical fertilizers on human health and environment.
3	Details of technologies selected for assessment/refinement	Rhizobium + Phosphorus and Potassium
4	Source of technology	Solubilising micro-organisms
5	Production system thematic area	Crop Production
6	Thematic area	Organic Farming
7	Performance of the Technology with performance indicators	Satisfactory
8	Final recommendation for micro level situation	Needs repeated trials
9	Constraints identified and feedback for research	Adoptability
10	Process of farmer's participation and their reaction	Satisfactory

Results of On Farm Trial – 4

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Garden Pea	Irrigated	Deleterious effects of chemical fertilizers	Impact of Bio-fertilizers on Growth & Yield of Garden Pea	02	Seed & Soil treatment with Rhizobium+Phosphorus & Potassium Solubilising bacteria	Growth & Yield	-	See Table	Satisfactory

Table-4: Growth and Yield Parameters

Treatments	Plant Height (cm)	No. of Primary branches	Pod Length (cm)	No. of Pods/ Plant	Pod Yield/Plant (g)	Seed Yield/Plant (g)	Seed Yield/ha
T1: Farmers Practice	101.33	2.33	8.36	46.67	221.67	43.00	46.56
T2: Azotobacter+Rhizobium+Phosphorus And Potassium Solubilizing micro-organisms	106.00	2.67	11.03	50.00	223.33	63.62	50.87

OFT-5

1	Title	**Comparative Analysis of Organic Over Conventional Method on Growth Yield and Quality of Strawberry**
	Problem Diagnose/defined	Low yield /poor quality
3	Details of technologies selected for assessment/refinement	Use of straw mulch and biofertilizer fortified vermicompost
4	Source of technology	SKUAST-K
5	Production system thematic area	Crop Production
6	Thematic area	Organic Farming
7	Performance of the Technology with performance indicators	Satisfactory
8	Final recommendation for micro level situation	Needs repeated trials
9	Constraints identified and feedback for research	Adoptability
10	Process of farmer's participation and their reaction	Satisfactory

Results of On Farm Trial – 5

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assess ment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Strawberry	Irrigated	Low yield & poor quality	Comparative Analysis of Organic Over Conventional Method on Growth Yield and Quality of Strawberry	02	1) Use of Strawberry mulch 2)Application of biofortified vermicompost	Growth & Yield	-	See Table	Satisfactory

Table-5

Treatments	Plant Height (cm)	Plant Spread (cm)	No. of leaves/plant	Leaf Area (cm)	No. of runners/plant	No. of flowers/plant	No. of berries/plant	Fruit lengh (cm)	Fruit diameter (cm)	Fruit Weight (g)	Yeild (q/ha)
T1: Farmers Practice	18.33	19.16	32.29	22.80	3.96	18.19	15.54	2.55	2.33	9.69	218.39
T2: Straw Mulch+Biofertilizers+Fortified Vermicompost	20.13	24.33	37.72	27.60	4.77	24.12	22.09	2.62	2.65	11.72	237.81

OFT-6

1	Title	Role of Nano Urea in reducing the Application of Conventional Urea in Kale
	Problem Diagnose/defined	Excessive use of fertilizer
3	Details of technologies selected for assessment/refinement	Application of Nano Urea as a top dressing
4	Source of technology	SKUAST-K
5	Production system thematic area	Crop Production
6	Thematic area	Organic Farming
7	Performance of the Technology with performance indicators	Satisfactory
8	Final recommendation for micro level situation	Needs repeated trials
9	Constraints identified and feedback for research	Adoptability
10	Process of farmer's participation and their reaction	Satisfactory

Results of On Farm Trial – 6

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Kale	Irrigated		Role of Nano Urea in reducing the Application of Conventional Urea in Kale	02	Application of Nano Urea as a top dressing	Growth & Yield	-	See Table	Satisfactory

Table-6

Treatments	Plant Height (cm)	Plant Spread (cm)	No. of leaves/plant	Weight of whole plant (gm)	Leaf yeild (q/ha)
T1: Farmers Practice	45.09	52.57	13.93	335.54	557.12
T2: Application of Nano Urea as a Top dressing	51.11	60.37	15.80	371.58	598.15

OFT-7

1	Title	Scientific Packaging of Bell Paper for enhancement of Shelf Life.
	Problem Diagnose/defined	Poor Shelf Life of Bell Paper.
3	Details of technologies selected for assessment/refinement	Shrink Wrap Packaging
4	Source of technology	SKUAST-K
5	Production system thematic area	-
6	Thematic area	Packaging
7	Performance of the Technology with performance indicators	Satisfactory.
8	Final recommendation for micro level situation	Shrink wrap packaging enhanced the shelf life of bell paper by 8 days at ambient temperature& 11 days at refrigerated conditions.
9	Constraints identified and feedback for research	The results showed enhance in shelf life of bell paper.
10	Process of farmer's participation and their reaction	Satisfactory.

Results of On Farm Trial-7

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assess ment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Vegetables	No Packaging Intervention	Poor shelf life of bell paper	Scientific Packaging of Bell Paper for enhancement of Shelf Life.	02	SKUAST-K	Shelf Life	Increase in shelf life of bell paper	Table below	Satisfactory

Table-7

Product	Shelf Life (Days)			
Capsicum (Bell Paper)	Ambient Condition		Refrigerated Condition	
	Shrink Wrapped	Unwrapped	Shrink Wrapped	Unwrapped
	12	04	19	08

OFT-8

1	Title	Effect of Pretreatment on Drying of Bottle Guard
	Problem Diagnose/defined	Blackening of bottle guard during drying
3	Details of technologies selected for assessment/refinement	T1: Farmers Practice T2: Dipping in KMS Solution (0.02% KMS)
4	Source of technology	SKUAST-K
5	Production system thematic area	-
6	Thematic area	Drying
7	Performance of the Technology with performance indicators	Satisfactory
8	Final recommendation for micro level situation	No blackening of bottle guard was observed after dipping in 0.02% KMS
9	Constraints identified and feedback for research	The results of the pretreatment showed no blacking of bottle guard.
10	Process of farmer's participation and their reaction	Satisfactory.

Results of On Farm Trial-8

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of Assessment	Data on the Parameter	Results of assess ment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Vegetables	Drying without pretreatment leads to blackening	Blackening of bottle guard during drying	Effect of Pretreatment on Drying of Bottle Guard	01	SKUAST-K	1) Blackening 2) Rehydration Ratio	1) No Blackening 2) Good Rehydration Ratio	Table below	Satisfactory

Table-8

Treatments	Results
T1: Farmers Practice	Blackening
T2: Dipping in 0.02% KMS Solution	1) No Blackening 2) Good RR Ratio

OFT-9: Winter Management of Pot/House Plants under Low Tunnel Polyhouse

(On going)