OFT-1: Effect of Pre-harvest Foliar Application of Methyl Jasmonate and Potassium Sulphate

on Color Development and Storability Properties of Apple.

1	Title	Effect of Pre-harvest Foliar Application of Methyl Jasmonate and Potassium Sulphate on Color Development and Storability Properties of Apple
2	Problem Diagnose/defined	Less color development and low shelf life
3	Details of technologies selected for assessment/refinement	T0: Control T1: Methyl Jasmonate @ 10 mM/Lt T2: Potassium Sulphate @ 5gm/Lt T3: T1+T2
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Integrated Nutrient Management
6	Thematic area	Integrated Nutrient Management
7	Performance of the Technology with performance indicators	Table below
8	Final recommendation for micro level situation	Use of Methyl Jasmonate@ 1.5 gm/litre and Potassium Sulphate@ 5gm/litre
9	Constraints identified and feedback for research	-
10	Process of farmer's participation and their reaction	Through diagnostic visits, trainings, visit of farmers to KVK etc.

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 men	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Apple	Rainfed	Less color development and low shelf life	Effect of Pre-harvest Foliar Application of Methyl Jasmonate and Potassium Sulphate on Color Development and Storability Properties of Apple	03	Methyl Jasmonate @ 10 mM/Lt Potassium Sulphate @ 5gm/Lt	Color development, Anthocyanin, Firmness and Shelf life	Table below		Satisfactory

Table:

Treatments	Fruit Weight (gm)	Firmness (kg/cm2)	SSC (%)	Fruit Color	Anthocyanin (mg/100 gm)	Shelf Life (Days)
T0: Farmer Practice	175.32	6.51	14.15	L= 51.23 A= 17.06 B= 24.12	8.97	80
T1: Methyl Jasmonate @ 10 mM/Lt	178.06	7.62	15.92	L= 38.52 A= 27.23 B= 17.94	22.39	120
T2: (Potassium Sulphate @ 5gm/Lt)	176.18	7.25	14.68	L= 41.94 A= 22.12 B= 19.23	18.92	65
T3: Methyl Jasmonate @ 10 mM/Lt + Potassium Sulphate @ 5gm/Lt)	180.63	8.32	16.34	L= 38.12 A= 29.25 B= 17.23	25.78	88

OFT-2: Impact of Hydrogel on Soil Nutrient availability and Fruit Quality in Temperate Fruit Crops

1	Title	Impact of Hydrogel on Soil Nutrient availability and Fruit Quality in Stone Fruit Crops.
2	Problem Diagnose/defined	Low Quality
3	Details of technologies selected for assessment/refinement	T0: Farmers Practice T1: 100gm/tree T2: 150gm/tree
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Integrated Nutrient Management
6	Thematic area	Integrated Nutrient Management
7	Performance of the Technology with performance indicators	Ongoing
8	Final recommendation for micro level situation	Use of hydrogel as soil nutrient @ 100-150gm/tree
9	Constraints identified and feedback for research	Ongoing
10	Process of farmer's participation and their reaction	Through diagnostic visits, trainings, visit of farmers to KVK etc.

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
Stone Fruits	Irrigate d	Low Quality	Impact of Hydrogel on Soil Nutrient availability and Fruit Quality in Temperate Fruit Crops	03	T1: 100gm/tree T2: 150gm/tree	Fruit Grade % age	Table below		Satisfactory

OFT-3: Assessment of Different Thinning Practices for Optimizing Crop Load Management in High-Density Apple Orchards

1	Title	Assessment of Different Thinning Practices for Optimizing Crop Load Management in High-Density Apple Orchards
2	Problem Diagnose/defined	Alternate bearing and small fruit size
3	Details of technologies selected for assessment/refinement	T0: No Thinning/Erratic Thinning T1: α-NAA @ 10-15 ppm applied at 7-35 days from full bloom followed by hand thinning, 4-6 Fruits per cm2 TCSA T2: 6-BA @ 50-150 ppm applied at 5-30 days from full bloom followed by hand thinning 4-6 Fruits per cm2 TCSA
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Fruit Production
6	Thematic area	Crop Load Management
7	Performance of the Technology with performance indicators	Fruit size improved and regular bearing achieved.
8	Final recommendation for micro level situation	6-BA @ 50-150 ppm applied at 5-30 days from full bloom followed by hand thinning 4-6 Fruits per cm2 TCSA
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 assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Apple	High Density	Alternate bearing and Small fruit size	Assessment of Different Thinning Practices for Optimizing Crop Load Management in High-Density Apple Orchards	03	α-NAA @ 10-15 ppm applied at 7-35 days from full bloom followed by hand thinning 4-6 Fruits per cm2 TCSA)– (RP) 6-BA @ 50-150 ppm applied at 5-30 days from full bloom followed by hand thinning 4-6 Fruits per cm2 TCSA) – (RP)	Fruit grade % age	Table Below		Satisfactory

Table:

Treatments	Grade%			
	Fancy	A	B	C
T0: Farmers Practice	04	42	24	30
T1: α-NAA @ 10-15 ppm applied at 7-35 days from full bloom followed by hand thinning 4-6 Fruits per cm2	12	68	16	04
T2:6-BA @ 50-150 ppm applied at 5-30 days from full bloom followed by hand thinning 4-6 Fruits per cm2 TCSA	15	77	06	02

OFT-4: Evaluation of Different Pruning Times for Optimizing Apple Production under Changing Climatic Conditions.

1	Title	Evaluation of Different Pruning Times for Optimizing Apple Production under Changing Climatic Conditions
2	Problem Diagnose/defined	Low productivity and High Susceptibility to climate change
3	Details of technologies selected for assessment/refinement	T0: Pruning in the 3rd Week of Nov through December T1: Pruning in the 3rd Week to last week of February T2: Pruning in the 1st week of March to 2nd of week of March
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Fruit Production
6	Thematic area	Integrated Crop Management
7	Performance of the Technology with performance indicators	Ongoing
8	Final recommendation for micro level situation	Ongoing
9	Constraints identified and feedback for research	Awaited
10	Process of farmer's participation and their reaction	-

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 assess ment	Feedbac k from the farmer
1	2	3	4	5	6	7	8	9	10
Apple	Irrigated	Low productivity and High Susceptibility to climate change	Evaluation of Different Pruning Times for Optimizing Apple Production under Changing Climatic Conditions	03	Pruning in the 3rd Week to last week of February Pruning in the 1st week of March to 2nd of week of March (RP)	Increase in productivity	Ongoing	Ongoing	-

OFT-5: Assessing the Performance of Different Chemicals for the Management of Necrotic Leaf Blotch (NLB) in Apple

1	Title	Assessing the Performance of Different Chemicals for the Management of Necrotic Leaf Blotch (NLB) in Apple
2	Problem Diagnose/defined	Less color development and leaf abscission
3	Details of technologies selected for assessment/refinement	T0: Use of Non-Specific Chemicals T1: Foliar application of ZnO @0.1% T2: Soil Drenching with Paclobutrazol @1ml/year age of the tree + Application of ZnO @ 0.1%
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Fruit Production
6	Thematic area	Integrated Crop Management
7	Performance of the Technology with performance indicators	Yet to be conducted
8	Final recommendation for micro level situation	Awaited
9	Constraints identified and feedback for research	-
10	Process of farmer's participation and their reaction	-

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
Apple	Irrigated	Less color development and leaf abscission	Assessing the Performance of Different Chemicals for the Management of Necrotic Leaf Blotch (NLB) in Apple	03	Foliar application of ZnO @0.1% Soil Drenching with Paclobutrazol @1ml/year age of the tree + Application of ZnO @ 0.1%	Grade %age	Awaited	Awaited	Satisfactory

OFT-6: Management of Fruit Fly in Cucurbits

1	Title	Management of Fruit Fly in Cucurbits
2	Problem Diagnose/defined	Control in yield loss
3	Details of technologies selected for assessment/refinement	T0 = Farmers Practice (Local) T1 = Insecticide Mixture Spray as per (POP)
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Integrated Pest Management
6	Thematic area	Integrated Pest Management
7	Performance of the Technology with performance indicators	-
8	Final recommendation for micro level situation	Use of Insecticide Mixture Spray as per (POP)
9	Constraints identified and feedback for research	Significant infestation by fruit flies. Using insecticide mixture sprays as per POP to curtail the yield loss.
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 assess ment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Cucurbits	Irrigated	Control in yield loss	Management of Fruit Fly in Cucurbits	03	T0 = Farmers Practice (Local) T1 = Insecticide Mixture Spray as per (POP)	Yield loss & %infestation	Table below		Satisfactory

Table: INFESTION IN BY FRUIT FLIES IN PARTHENOCARPIC CUCUMBER (*Cucumis sativus* L.)
(Location: Takenwari, Qamarwari)
NAME OF FARMER: MOHMMAD LATIF DAR

S. No	Mean number of fruits /5 tree		Mean number of Fruits infested/5 plants (%)		Mean weight (g) of fruits infested/5 plants (%)		Mean weight (g) of marketable fruits / 5 plants		Mean loss (g) over control (%)	Yield saved (g) over control (%)
1	Treat.	Control	Treat.	Control	Treat.	Control	Treat.	Control		
	12	10	0.20	3.20	31	443	1570	957	1.97	98.02
2	11	9	0.40	4.20	35	540	1699	1034	2.07	97.93
3	15	8	0.20	3.40	45	520	1756	1090	2.56	97.43
4	13	11	0.60	3.60	41	420	1873	975	2.19	97.81
5	14	10	0.20	2.80	56	310	1790	985	3.12	96.87

No. of trails taken=5; plants selected per treatment=5; N=25); mean damage under control ranges from 55-65%.
Result from 1st to 5th picking

OFT-7: Management of Fruit Borer in Tomato

1	Title	Management of Fruit Borer in Tomato
2	Problem Diagnose/defined	Yield loss
3	Details of technologies selected for assessment/refinement	T0: Farmers Practice T1: Installation of pheromone traps @ 12-15 traps/ha and Spray imidacloprid 17.8 SL @ 30 ml/100 lit. of water 35 DAT (POP)
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Integrated Pest Management
6	Thematic area	Integrated Pest Management
7	Performance of the Technology with performance indicators	Ongoing
8	Final recommendation for micro level situation	Installation of pheromone traps @ 12-15 traps/ha and Spray imidacloprid 17.8 SL @ 30 ml/100 lit. of water 35 DAT (POP)
9	Constraints identified and feedback for research	Heavy yield loss and infestation
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 assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Tomato	Irrigated	Yield loss	Management of Tomato Fruit Borer	03	Installation of pheromone traps @ 12-15 traps/ha and Spray imidacloprid 17.8 SL @ 30 ml/100 lit. of water 35 DAT (POP)	Yield loss & % infestation	Ongoing		Satisfactory

OFT-08: Effect of Edible Coating on Post-harvest Quality of Capsicum at Ambient Storage.

1	Title	Effect of Edible Coating on Post-harvest Quality of Capsicum at Ambient Storage.
2	Problem Diagnose/defined	Poor Shelf Life
3	Details of technologies selected for assessment/refinement	T0: Farmer's Practice T1: Capsicum will be Coated with Chitosan (2% solution) Coated surface will be air dried by using high speed fan Coated Bell Pepper will be Stored in Ambient Condition.
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Post Harvest Management
6	Thematic area	Post Harvest Management
7	Performance of the Technology with performance indicators	Table below
8	Final recommendation for micro level situation	Capsicum will be Coated with Chitosan (2% solution) Coated surface will be air dried by using high speed fan Coated Bell Pepper will be Stored in Ambient Condition.
9	Constraints identified and feedback for research	-
10	Process of farmer's participation and their reaction	Farmers were satisfied

Results of On Farm Trial-08

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
Capsicum	-	Poor Shelf Life	Effect of Edible Coating on Post-harvest Quality of Capsicum at Ambient Storage.	02 No.	Capsicum will be Coated with Chitosan (2% solution) Coated surface will be air dried by using high speed fan Coated Bell Pepper will be Stored in Ambient Condition	Weight Loss Firmness Fungal decay Sensory evaluation	Table below		Satisfactory

Treatment	PWL (%) at Day 15	Shrinkage Score	Decay Incidence (%)	Relative Cost	Overall Assessment
Control	18.0 ± 0.30	5.0	40	Very Low	Poor
0.5% Chitosan	13.5 ± 0.25	4.0	22	Low	Moderate
1.0% Chitosan	9.0 ± 0.20	2.8	08	Moderate	Best (Optimum)
1.5% Chitosan	8.5 ± 0.18	2.6	06	High	Slightly Better Quality but Less Economical

Shriveling rating: 1 = No shrinkage, 2 = Slight, 3 = Moderate, 4 = Severe, 5 = Very severe.

Decay Incidence (%) =Total number of fruits observed/ Number of decayed fruits×100

- Chitosan coating significantly reduced PWL, shrinkage, and decay compared with the control.
- 1.5% chitosan produced the lowest values for all deterioration parameters.
- However, the difference between 1.0% and 1.5% chitosan was relatively small, suggesting that 1.0% chitosan may be considered the optimum concentration when both effectiveness and economic feasibility are considered.
- Thus, for commercial application, 1.0% chitosan is recommended, whereas 1.5% chitosan provides maximum shelf-life extension.

OFT-09: Mineral Mixture Supplementation on production Performance of Sheep

1	Title	Mineral Mixture Supplementation on production Performance of Sheep
2	Problem Diagnose/defined	Lack of sheep specific mineral mixture
3	Details of technologies selected for assessment/refinement	T0= Farmers Practice T1= Feeding of 25 grams of sheep specific mineral mixture/day/animal
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Feeder Management
6	Thematic area	Feeder Management
7	Performance of the Technology with performance indicators	Table below
8	Final recommendation for micro level situation	Feeding of 25 grams of sheep specific mineral mixture/day/animal
9	Constraints identified and feedback for research	-
10	Process of farmer's participation and their reaction	Farmers were satisfied.

Results of On Farm Trial-09

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
Sheep	-	Lack of sheep specific mineral mixture	Mineral Mixture Supplementation on production Performance of Sheep	03 No.	Feeding of 25 grams of sheep specific mineral mixture/day/ animal	Growth performance (Monthly Weight gain, wool production), Health parameter (BCS, incidence of diseases), Reproductive parameters (conception rate, Lambing percentage, Birth weight of lambs). Economics	Table below		Satisfactory

Table:

Parameters	T0	T1
Average Initial Body weight (kgs)	12.48	12.24
Average final body Weight (kgs)	20.16	31.32
Average Monthly Body weight (kgs)	1.28	3.18
Total weight gain in 6 months (kgs)	7.68	19.08
BCS	2.0 to 2.5	2.5 to 3.5
Mortality	4-5%	Nil
Conception rate	65-75%	85-90%
Lambing %	85-90%	105-120%
Birth weight Kgs	2.5 -2.84	3.26-3.86
Lamb mortality 0 to 3 month	15-20%	5-10%
BCR	1.65:1	2.45:1

- Age of Sheep: **4-8 Months**
- Start Date of mineral mixture: **1st June 2025**
- Date of Completion: **30th**

OFT-10: Effect of Extended Photo period on Growth and Egg Production in Backyard Poultry.

1	Title	Effect of Extended Photo period on Growth and Egg Production in Backyard Poultry
2	Problem Diagnose/defined	Drop in egg production /less egg production
3	Details of technologies selected for assessment/refinement	T0: No artificial light; birds exposed to natural light during day time (around 8 hours) T1: Artificial light to extend photo period up to 14 -16 hours.
4	Source of technology	SKUAST-Kashmir
5	Production system thematic area	Production and Management
6	Thematic area	Production and management
7	Performance of the Technology with performance indicators	Induces early maturation (18 weeks) and Increased egg production
8	Final recommendation for micro level situation	Artificial light to extend photo period up to 14 -16 hours
9	Constraints identified and feedback for research	Increased Photo period has increased the egg Production and Positive impact on bird health
10	Process of farmer's participation and their reaction	Farmers were satisfied.

Results of On Farm Trial-10

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
Backyard Poultry		Drop in egg production /less egg production	Effect of Extended Photo period on Growth and Egg Production in Backyard Poultry	03 No.	Artificial light to extend photo period up to 14 -16 hours.	Egg production; Growth rate, Feed consumption, Development of vices	Table Below	➢ Induces early maturation by 6 to 7 weeks in T1 ➢ Increased Average body weight gain by 45.45% in T1 ➢ Increased Average egg production by 48. 98% in T1 ➢ FCR better in T1	Satisfactory

Table:	Parameters		T0	T1
	Average Initial Body weight grams		34.75	37.25
	Average Final Body weight grams		1461.05	2652.13
	Average Body weight grams		1426. 30	2614.88
	Average Adult body weight Kg		1.46±0.043	2.65±0.032
	Age at first Point of Lay (PoL) weeks		24-25	17-18
	Annual Egg production		125±13.55	245±12.45
	Growth rate grams per weeks	0 to 14 weeks	65.34±7.52	97.43±12.45
		14 to 72weeks	16.26±3.62	27.45±13.61
	FCR		3.23±0.36	2.27±0.25
	Development of vices (feather pecking)		Nil	3-5%