



Monthly Workshop for Capacity Building of Extension functionaries

Message for the Month of January

**Agronomy**

<b>Crop</b>	<b>Operation/ Diseases/pests</b>	<b>Message/Impact points</b>
<b>Rabi Crops</b>		
Wheat	Establishment/ growth	- Ensure proper drainage by cleaning the channels and fields to avoid water stagnation during winter.
Brown Sarson	Establishment/ growth	-
<b>Rabi Pulses</b>		
Field Pea	Establishment/ growth	-
Lentil	Establishment/ growth	-
Oat fodder	Establishment/ growth	-

**Entomology (Horticulture)**

<b>Apple</b>	<b>San Jose scale &amp; Woolly apple aphid Apple fruit borer</b>	<ul style="list-style-type: none"> <li>- Remove twigs infested with SJS and WAA during pruning and dispose them away from the orchards. Apply Chaubatia paste on cut areas.</li> <li>- To maintain good sanitation in the infested orchards, all the dropped/infested fruits of apple should be collected and buried deep in the soil.</li> <li>- Burlapping practice should be followed and the overwintering stages should be destroyed along with the burlap.</li> </ul>
	<b>Apple blotch leaf miner</b>	<ul style="list-style-type: none"> <li>- Survey and Monitoring of the affected orchards</li> <li>- Mass awareness about the pest among the farmers</li> <li>- Proper sanitation of the orchards at community level</li> <li>- Procure disease and pest free planting material</li> <li>- Collection of fallen leaves/ fruits/other debris and their subsequent destruction</li> <li>- Scrapping of loose bark for exposing the diapausing pupa from tree trunks followed by its destruction.</li> </ul>
<b>Pomegranate</b>	<b>Fruit borer</b>	<ul style="list-style-type: none"> <li>- Collect and dispose of infested fallen fruits and left over fruits on trees.</li> </ul>
<b>Rodent management</b>	<b>Horticulture</b>	<p><b>If weather is dry, follow the below mentioned practices:</b></p> <ul style="list-style-type: none"> <li>- <b>Field sanitation:</b> Removal of dropped rotten fruits, debris and grasses from orchards to discourage rodents from availability of food and shelter</li> <li>- <b>Reduction in bund size:</b> Reduce the size of bunds or boundaries around the orchards up to 30cm to force the rodents to leave the burrows.</li> <li>- <b>Burrow Fumigation:</b> Smoking the burrow with cow dung +Maize</li> </ul>

straw/maize pith + weeds **with** the help of burrow fumigator.

**Chemical control (Rodent bait schedule) :**

- **Day 1:** Plugging of rodent burrows
- **Day 2:** Identification of live burrows for pre-baiting prior to poison baiting; For pre baiting with plain bait crushed rice (48 gm) + broken wheat grain (48 g) + sugar (2.0 g) and mustard oil (2.0 ml) and place 10-15gm/ live burrow.
- **Day 3:** 2.0% Zinc Phosphide\* baiting during late evening with (crushed rice (48 gm) + broken wheat grain (48 gm) + Zinc Phosphide 2.0 gm and 2.0 ml. mustard oil, all mixed together) be placed inside the live burrow @ 6-10 g bait/ live burrow).
- **Day 4:** Collection and burying of dead rodents. Close all burrows at evening hours
- **Day 5:** Identification of live burrows.
- **Day 6:** Fumigate live reopened burrows with Aluminum Phosphide pellets @ 2 pellets/burrow or 5-10 g pouch/burrow and cover with wet mud.

**For residual rodent population :**

- **Bromadiolone:** Bromadiolone (0.25% BC) @ 10- 15 g per burrow to be placed inside the live burrows.

\* **Precautions:** Since residual rodent population develops bait shyness after one baiting with Zinc phosphide, a minimum of 50-60 days' gap should be given before it is used again.

**Note: If treatment has been carried out during December then do not repeat during January.**

**Apiculture**

- Give winter package to colonies if not given in November without disturbing bee cluster on sunny day.
- Narrow the entrance of the hive.
- Provide feeding as sugar candies (12 sq.cm) on top bars near the cluster, if short of store food
- Remove the snow from the top of the hives.
- Keep the colonies on stand to avoid moisture by rain /snow.
- Do not disturb the cluster of bees in the hive.

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**Plant Pathology**

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| <b>A Fruits</b>      | <i>Water-logging</i>         | - Provide proper drainage in orchards to drain off surface water.  |
| All temperate fruits | <i>Foliar fungal disease</i> | - Collection and destruction of fallen leaves.   |
|                      | <i>Fruit rots</i>            | - Bury mummified and diseased fruits left in and around orchards in compost pits to avoid over-wintering of pathogens.   |
|                      | <i>Cankers</i>               | - Prune the cankered twigs as well as dry branches & destroy them.<br>- Scrap the affected bark of trunks and limbs, and apply Bordeaux paint (copper sulphate, hydrated lime, linseed oil in the ratio of 1:2:8) or Chaubatia paste (copper carbonate, lead oxide and linseed oil in the ratio of 4:4:5) on pruned/scarified area/ wound. |

**Impact Points:**

- ☞ Ensure orchard sanitation.
- ☞ Ensure proper drainage
- ☞ Destroy fallen leaves

**B Vegetables**

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| Turnip, radish, carrot, cabbage, cauliflower and knol-khol | <i>Water-logging</i> | - Provide proper drainage in orchards to drain off surface water. |
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### **Floriculture and Landscape Architecture**

Shrubs/ Edges	<i>Intercultural operations</i>	- Snow to be removed from Hedges/edges to prevent damage.
Bulbous crops	<i>Storage of Liliium/ Gladiolus</i>	- Liliium to be stored in Coca peat to avoid moisture loss. - Gladiolus to be stored in well ventilated moisture free conditions.
Ploy houses	<i>Management</i>	- Vents of polyhouse need to be closed so as to ensure proper temperature. - Proper sanitation to be maintained in polyhouses with crops like gerbera, rose etc
Pot plants/indoor plants	<i>Exotic /Indigenous</i>	- Indooring of pot plants and management of light, irrigation and pests.

### **Vegetable Science**

Cole crops/ root crops	<i>Care of Seed crop</i>	- In case of high frost conditions, mulches and thatches can be used to protect crops from frost damage.
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*Impact Points:*

- ☞ Maintain soil moisture during frost period for maintaining turgidity in cells, otherwise it leads to bursting of plant tissues. These damaged tissues are source of entry for various bacterial and fungal infections.
- ☞ Watering should be done during warmest part of the day to avoid chilling the roots.
- ☞ Avoid watering of leaves to prevent frost build up on foliage.

<b>Vegetable crops (Kharief)</b>	Hot Bed Preparation	- Early nursery raising during spring.
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*Impact Points:*

- Select raised areas of the vegetable garden for hot bed preparation to avoid water logging.

**Construction of Hot bed**

**Dimensions of hot bed:** Length : 2 mt Breadth: 1 mt Depth : 75 cm

**Size of pegs: Front side:** 60 cm, Back side : 75 cm

**Material required:** Paddy straw 1-1.5 khuroos, Timber: 0.8 cft, Polythene sheet: 200-250 gm, Fresh Cow dung.

**Construction procedure:**

- ✓ Dig a pit of above mentioned dimensions.
- ✓ Cover the base of the pit with 10-12 cm thick layer of fresh cow dung, followed by 10 cm thick straw layer.
- ✓ Repeat the above stated process twice.
- ✓ Press and sprinkle water
- ✓ Cover the substrate with 10 cm thick layer of garden soil.
- ✓ Mix 40 g urea, 20 g each of DAP and MOP with working soil.

Cover top properly with polythene.

<b>Cultivation under protected conditions</b>	Seed sowing of leafy vegetables like kale, spinach, methi and orach may be done under low tunnels if weather conditions are feasible.	- Leafy vegetables are ready for harvesting in January provided they are sown well in time. - Multiple picking of leafy vegetables can be taken under protected conditions.
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### **Fruit Science**

<i>Training of young fruit trees</i>	- Adopt Modified Leader system for pome, stone and nut fruits and Kniffin, Head or Bower system in grapes, however, T or Pergola system is practised in Kiwifruit.
<i>Pruning of bearing fruit trees</i>	- In HDP of apple adopt Tall spindle system is usually practiced.
<i>Protection against snow damage</i>	- Remove diseased, dried or narrow angled branches along with water sprouts and prefer thinning out over lapping branches. Apply white lead paint or Bordeaux paste to the pruned cuts.
<i>Nursery</i>	- Tightening of trellis system in HDP
<i>Young trees</i>	- Removal of hail/shade nets in HDP orchards if any
<i>Bearing trees</i>	- Tying of scaffold branches with ropes
<i>Sowing of nuts</i>	- Optimise pruning to reduce the canopy load of the trees.
<i>Other Measures/ Operations</i>	- Staking of budded or grafted nursery plants to avoid snow damage.
	- Maintain drainage in the nursery.
	- Thatching of young trees to prevent them from freezing injury
	- Mulching of tree basins
	- In case of heavy snow fall, go for shaking of fruit trees/limbs and remove snow from crotches of plants.
	- Maintain drainage in orchards also
	- If due to some reasons, nuts have not been subjected to stratification, go for direct sowing if field conditions permit.
	- In case of heavy snowfall go for dibbling nuts in rows in the already proposed fields by a bamboo stick of 5 cm girth.
	- Cut down, and remove the stumps of old or worn out fruit trees that are not worth renovating.
	- Maintain orchard sanitation. Remove fallen leaves and bury them if not done earlier
	- Place mulches over strawberry plants that were planted last summer, or bring potted ones into the greenhouse or conservatory. The extra warmth will give an earlier crop.

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### **Food Sciences & Technology**

<b>Vegetables</b>	<b>Mixed vegetable pickle</b>	- Use surplus vegetables that are produced in bulk particularly for those vegetable belts where glut in the market may generate post harvest losses due to rotting and decay for the preparation of mixed vegetable pickle for fetching better returns.
		<b>Impact Points:</b>
		✓ Processing and value addition of vegetables for extending shelf life and efficient utilization of surplus produce which otherwise may go waste on account of rot and decay.
		✓ Value added products fetch better returns
<b>Potato</b>	<b>Post harvest sweetening due to low temperature storage</b>	Reconditioning of potato should be followed that can be accomplished by storing the potatoes at a temperature of 15°C for effective conversion of total sugars in to starch for at least 21 days.
		<b>Impact Points:</b>
		✓ Higher starch content and low total sugar content improves the texture of sliced potatoes.
		✓ It also prevents after cooking discolouration particularly after frying.
		✓ Improves taste and consumers acceptability.
		✓ Prevents sticking of potatoes during frying.

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**Discolouration of Potatoes (Solanin formation)** - Store harvested potatoes that are produced in bulk under dark conditions. In Nylon bags to prevent increased solanine synthesis. Mechanical injury to the tubers should also be avoided which may also hasten solanine formation.

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**Garlic Post harvest sprout inhibition** Garlic bulbs/ cloves should be treated with hot water at 60°C for at least 2.5 to 3 minutes, dried and then stored in air tight plastic container at temperatures below 10° C (3-4°C preferably) for effective sprout inhibition.

**Impact Points:**

- ✓ Prevents shrinkage and weight loss of cloves.
- ✓ Prevents discolouration.
- ✓ Improves consumers' acceptability.
- ✓ Fetches better market returns.
- ✓ Prevents nutrient losses.

**Livestock Production Management**

- Small ruminants (Sheep/ goat)
- Dry fodder (Sorghum/oats) should be provided @ 1kg/animal and pelleted feed @ 500-700 gm/adult and 400 gm/weaner.
  - Don't graze animals outside during earlier hours due to frost.
  - Root crops (Turnips/carrots) @ 500g/pregnant ewe.
  - Sanitation and cleanness in and around the livestock sheds should be maintained.
  - Multicomponent Clostridial vaccination (MCC) to pregnant ewes before one month of expected date of lambing should be ensured for protection against Lamb dysentery, Struck, Pulpy kidney disease, Black disease and Braxy.
  - Broad spectrum anthelmintic (**pregnancy safe**) dosing to pregnant ewes should be ensured before 7-15 days of expected date of lambing as advised by veterinarian.
  - Routine recording of body weight during last three days of every month.
  - While ensuring heating arrangement for the newborn animals, ventilation should not be compromised.

**Cow**

**Concentrate can be:**

Category	Concentrates	Greens
Cow (15litre milk/day)	6 Kg	Adlib*. (50kg)
Pregnant cow	6 kg +0.5 kg	do

*\*If quality green fodder is available, 7-8 kg can replace 1 kg of concentrate*

❖ **Homemade Concentrate**

Feed ingredient	Parts
Wheat bran	20
Rice bran	15
Mustard oil cake	22
Maize	35
Molasses/Gur	5
Salts (mixture of iodized salt)	1
Mineral salts	2

## **AQUACULTURE/ FISHERIES**

### **Winter care in trout raceways:**

Frozen raceways that normally have water flowing through them, it is important to maintain the flow. The portion of raceway surface can freeze for some period with no harm to the trout as long as the flow is sustained. It is not necessary to break the ice in the raceway, except as needed to maintain the flow.

Decrease the feeding rate as the water temperature declines.

If the raceway surface freezes for an extended period of time, it is not necessary to break the ice to feed the trout. At water temperatures below 4 degrees trout can survive for a more than month without feed.

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No. Au/De/MW/ 2025/01-40

Dated: 31-12-2024

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