



Directorate of Extension

S.K. University of Agricultural Sciences and Technology of Kashmir,
Shalimar, Srinagar -190 025



"An institution
striving to achieve excellence in
Mountain Agricultural Systems"

Monthly Workshop for Extension functionaries of Developmental Line Departments and Subject Matter Specialist of KVKs.

Message for the Month March, 2019

Agronomy

<i>Crop</i>	<i>Operation/ Diseases/pests</i>	<i>Message/Impact points</i>
Rabi Crops		
Wheat	Growth	<ul style="list-style-type: none"> - Clean fields and channels to avoid water stagnation. - Apply top dose of urea @ 3.25 kg/kanal - If weeds visible in the field then it can be controlled by hand weeding or can apply post emergence herbicide like sulfosulfuron @ 30 g ai/ha or clodinothop with 2,4-D (20+500g a.i./ha) or isoproturon 1.5 kg a.i. /ha + 2,4-D @ 0.5 kg a.i. /ha. - Avoid water stress at late jointing stage if possible.
Brown Sarson	Growth	<ul style="list-style-type: none"> - Clean fields and channels to avoid water stagnation in winter. - Thinning can be done in last week of Feb. to maintain proper plant population. - Apply top dose of urea @ 2.25 kg/kanal if not done earlier. - Second flush of weeds should be controlled by hand weeding at the time of thinning.
Rabi Pulses		
Field Pea	Growth	<ul style="list-style-type: none"> - Clean fields and channels to avoid water stagnation in winter. - If weed growth starts then it can be controlled by hand weeding
Lentil	Growth	<ul style="list-style-type: none"> - Same as in case of field pea.
Oat fodder	Growth	<ul style="list-style-type: none"> - Clean fields and channels to avoid water stagnation in winter. - Apply top dose of urea @ 4.1 kg/kanal if not applied earlier. - Weeds can be removed by hand weeding if necessary and possible.

Entomology (Horticulture)

Fruits (Except almond)	<i>San Jose scale & Woolly apple aphid and other pests</i>	<ul style="list-style-type: none"> - Spray of delayed dormant oil @ 2.0% as per University recommendation.
	<i>Hairy caterpillars</i>	<ul style="list-style-type: none"> - Collection and destruction of egg mass.
Vegetables	<i>Overwintering insects (cut worm etc.)</i>	<ul style="list-style-type: none"> - Deep ploughing of fields to expose insects' pupae for desiccation predation by birds. - Removal of weeds in the vicinity of crops to be planted to discourage egg laying by cut worms. - Removal of trash/crop residues of previous crop from the fields.
Rodent management	<i>Horticulture</i>	<p>If weather is dry, follow the below mentioned practices:</p> <p>Field sanitation : Removal of left over debris and grasses from orchards to discourage rodents from availability of food and shelter</p> <p>Reduction in bund size: Reduce the size of bunds or boundaries</p>

around the orchards up to 30cm to force the rodents to leave the burrows

Burrow Fumigation : Smoking the burrow with cow dung +Maize 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 gm)+ sugar (2.0 gm and 2.0 ml. mustard oil) 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.

* **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.

- Since rodents are a serious constraint in horticulture their effective control is only possible, if farmers work together as a community.

Note: If treatment has been carried out during February then do not repeat during March.

- Apiculture
- ☞ Inspect the colonies for stores, Queen Health and strength of the colony.
 - ☞ If the colony is queenless then unite it with the other colony
 - ☞ Clean hives and maintain hygiene of colony
 - ☞ Provide supplementary feeding in the form of sugar syrup @ 1:1.
 - ☞ Remove the winter packing in last week of the month if weather permits

Plant Pathology (Horticulture)

A Fruits

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| Apple | <i>Cankers</i> | - Prune the cankered twigs and dead branches and destroy them.
- Scrap the affected bark of trunks and limbs and apply Bordeaux or Chaubatia paste on the pruned/scarified area. |
| Almond, peach, apricot & cherry | <i>Twig blight, leaf spot, leaf curl</i> | - Spray the trees at bud swelling stage with propineb 70 WP or mancozeb 75 WP or copper oxychloride 50 WP @ 0.3%
- Spray at bud burst stage with carbendazim 50WP or thiophenate methyl 70 WP @ 0.05% |
| Grapes | <i>Anthraxnose</i> | - Spray with copper oxychloride 50 WP or captan 50 WP @ 0.3% |
| Strawberry | <i>Leaf spot</i> | - Spray with carbendazim 50 WP @ 0.05% or mancozeb 75 WP @ 0.3% |

Impact Points:

- ☞ Use disease-free graft wood (scion) for grafting or top working operations.
- ☞ Avoid water logging in orchards and nursery beds.
- ☞ Ensure orchard sanitation

B Vegetables

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| All vegetable seedlings | <i>Pre-emergence</i> | - Prepare raised nursery beds and incorporate well decomposed FYM @ 20 tons / ha. |
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(open or hot bed)	<i>damping off</i>	- Treat the seeds with mancozeb 75 WP or captan 50 WP @ 3 g/kg seed before sowing.
	<i>Post-emergence damping off/seedling blight</i>	- Drench the nursery beds with mancozeb 75 WP (2g) + carbendazim 50 WP (1g) in 1 lit. of water. Repeat drenching if needed after 10-12 days of first drenching. - Give light but frequent irrigation in the morning hours. - Avoid water stagnation.
	<i>Leaf spots and downy mildew</i>	- Spray the crop with mancozeb 75WP @ 0.3% or metalaxyl MZ 72 WP @ 0.2%
	Knol-khol, cabbage, cauliflower, radish, Turnip (seed crop)	

Impact Points

- Provide proper drainage.

Vegetable Science

Tomato, Brinjal, Chillies, Capsicum	<i>Sowing of seeds in hot beds</i>	- Sowing can be continued in hot beds
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Impact points

- ☞ Polythene cover must be removed during day time if it is too sunny.

Tomato, Brinjal, Chillies, Capsicum, Knol-Khol and Saag.	<i>Sowing of seed in raised open beds</i>	- Convenient sized beds (2m x 1m & 15 cm) raised above ground may be thoroughly prepared for raising nursery.
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Impact Points:

- ☞ The beds should be raised to avoid stagnation of water.
- ☞ Well decomposed FYM may be applied to the beds @ 6kg / bed.
- ☞ Also mix 40 g urea, 20g each of DAP & MOP to the working soil.

Cucurbits in bags and in low tunnels	<i>Sowing of seeds in polybags & low tunnels for early raising</i>	- Poly packs of size 15x10 cm are first punched and then filled with soil, sand and FYM/vermicompost in the ratio of 1:1:1 - 2-3 seeds per pack are sown and kept under protected structures. - Sowing of seeds in low tunnels can be done for early raising of cucurbits.
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Impact Points:

- ☞ Low tunnels should be made at elevated areas to avoid water stagnation during rainy season.
- ☞ After seed sowing cover seed beds (low tunnels) with paddy straw & sprinkle water so that optimum level of moisture is maintained in the seed bed.
- ☞ If rainy conditions prevail cover the seed beds with polythene unless the seed gets germinated.
- ☞ Temperature in low tunnels must be regulated by removing polythene during day time.

Cauliflower, Cabbage, Knol-Khol and Solanoaceous vegetables	<i>Trans-planting</i>	- Seedling raised under protected conditions may be transplanted after proper land preparation
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Impact Points

- ☞ Before transplanting, the seedlings must be hardened by exposing them to open field conditions and/ or by withholding irrigation for couple of days.
- ☞ Before uprooting seedlings, irrigation may be given to ensure less damage to

- the roots.
- Potato *Planting*
- Potato tubers may be planted in plains of Kashmir valley from ending March.
 - Planting must be done in furrows with spacing of 60 x 20 cm followed by ridge making (about 15 cm high) immediately.
 - Seed rate/kanal is 80-100 kg
 - Before planting apply FYM @ 1.25 - 1.50 t/kanal, urea @ 6 kg, DAP @ 11 kg and MOP @ 8.5 kg/kanal

Impact Points:

- + Apply full quantity of DAP & MOP and half dose of urea as basal dose at the time of sowing.
- + Only sprouted tubers should be used for planting.
- + Medium sized tubers should be planted, avoid oversized or small tubers.
- + Each tuber should have at least one eye for ensuring proper germination of tubers.

Floriculture and Landscape Architecture

- Winter care of Pot plants - Rotation of pot plants and proper mointering for moisture,diseaes and insect pests
- Monitoring of Bulb storage - Mointering of stored bulbs of lilium etc

Soil Science

- ☞ The orchardists of valley are advised to apply the required quantity of fertilizers i.e., Urea, DAP and MOP to fruit trees on the basis of soil test report and after consulting horticultural expert. However, if soil testing has not been conducted due to some reason and if general conditions of fruit trees and quality as well as yield of fruit is good, then on an average, the recommended dose o these fertilizers as per package of practices should be applied.
- ☞ Before application of fertilizers it is important to assure that there is good moisture content in the soil.
- ☞ The fertilizers should be applied under the canopy of fruit trees away from tree trunk.
- ☞ The fertilizer application should be followed by light hoeing in order to cover the applied fertilizers.
- ☞ If organic manures have not been applied to fruit trees, the orchardists should apply these manures under the canopy of fruit trees away from tree trunk and mixed with soil.
- ☞ The organic manures should be well decomposed otherwise they will create some problems.
- ☞ If possible, also use bio-fertilizers with organic manures.
- ☞ Besides orchardists are advised to conduct the spray of boric acid @ 1.5g/ litre of water to fruit trees at bud swell stage, if they have experienced boron deficiency in their orchards.

Livestock Production Management

Sheep/Goat

- As lambing period is going on, intensive care should be adapted.
- Weak and underweight lambs along with dams should be kept in warm pen/ lambing pen (temperature 15-20 °C) for 1-3 days to reduce mortality from hypothermia.
- Naval cords of the newly born lambs should be dipped in Povidone solution to avoid infection.
- A minimum floor space of 1.5 m²/lamb-Dam pair should be ensured in the lambing pen to prevent overcrowding.
- Colostrum feeding should be ensured to lambs for the initial three days and milk feeding thereof.
- Creep mixture should be fed to lambs (15 days and above).
- Routine recording of body weight of lambs should be ensured to assess the growth rate.
- The dams (ewes/does) should be regularly observed for Pregnancy toxemia signs and in case of any such eventuality, glucose therapy (I/V) and molasses (orally) should be initiated after due consultation with a registered veterinarian.

- As a preventive measure, supplementation of concentrate mixture with molasses @ 5-10% should be done to keep a check on pregnancy toxemia in ewes. Additionally root crops (Turnips/carrots) @ 500g/pregnant ewe/day should be fed.
- Sanitation and cleanness in and around the livestock sheds should be ensured at all times.
- Deworming against coccidiosis should be done to lambs/kids with a suitable anticoccidial at specified dosages (15-21 days age).
- Vaccination against clostridial infections (MCC vaccination) should be ensured to lambs/kids at 21-30 days age.
- Commensurate with the availability of green fodder, quantity of hay should be gradually reduced as the animals turn to grazing.

Cow/ Cattle

- The cow should be fed 250 g -500 g of concentrate/head/day in addition to normal ration (DM @ 3% of body weight and extra concentrate @ 1 kg/3kg of Milk produced/day)
- On a thumb rule basis, a cow producing 15 litres of milk should be fed approximately 6 kg of concentrate/day in the absence of high quality green fodder).
- Sufficient Hay (Maize, oats, rye, sorghum) should be provided (12 kg).
- Additional concentrate (500g) should be provided to pregnant cow. Drying should be done after 7 months of gestation.
- FMD vaccination should be done to adult animals (non-pregnant) and calves above 3 months age.

Ration Table

❖ Animal	Concentrate	Hay
Cow (15litre milk/day)	6 Kg	10-12 Kg
Pregnant cow	6 kg +0.5 kg	do

❖ **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 part,	1
Mineral mix.	2

Machine made: Pellet feeds for cattle available in market etc.

VETERINARY MEDICINE

“Contagious Ecthyma in Small Ruminants”

- Contagious ecthyma (ORF) is a common malady in sheep and goats caused by a parapoxvirus. The virus enters the body via cuts on the muzzle or mouth.
- ORF first appears as blisters on the lips, muzzle and in the mouth. These blisters soon develop into crusty scabs. Lesions can also spread to the lower legs and teats, especially in ewes or does that are nursing infected young.
- The scabs, which contain the virus, fall off infected animals and become a source of infection for susceptible animals. In addition to the scabs, the virus can be spread via the infected animal’s saliva.
- Young animals are more susceptible to the virus because their immune system is not fully developed nor have they ever been exposed to the virus previously.
- Infection typically lasts for 3-4 weeks, and, except in very rare cases, affected animals completely recover.
- Most animals develop only mild signs, though some, particularly younger animals, may stop eating and drinking due to pain. These animals may have difficulty nursing and will need to be supplemented with bottle or tube feeding. Nursing ewes or does may reject their young as well due

to the pain associated with suckling.

Methods of prevention include:

- Vaccination, if available
 - Improving pastures to reduce the risk of cuts to the mouth/muzzle
 - Quarantining new animals for a minimum of 30 days
 - Isolating known infected animals
 - Wearing gloves when handling herd members and changing those gloves when moving from one animal to another
 - Disinfecting all buckets, troughs and other equipment
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