

## FARM OPERATIONS IN MARCH

### WHEAT

1. Apply last irrigation to the timely sown wheat around end March. However, late sown wheat may be irrigated upto April 10.
2. To mitigate the effect of high temperature at grain filling and to enhance yield, apply two sprays of 2% potassium nitrate (13:0:45) by dissolving 4 kg potassium nitrate in 200 litres of water at boot leaf and anthesis stages or two sprays of salicylic acid by dissolving 15 gram salicylic acid in 450 ml of ethyl alcohol using 200 litres of water per acre at boot leaf and early milking stages.
3. The plants affected with flag smut should be rogued off and destroyed so as to reduce the inoculum in the field. Remove loose smut infected ears from the field kept for seed production.
4. If the population of aphid reaches at ETL (5 aphids/earhead ), give two sprays of 2 litre PAU Homemedede Neem Extract at weekly interval or single spray of 20 g Actara/Taiyo 25 WG (thiamethoxam) in 80-100 litres of water per acre.
5. Army worm larvae feed on developing grains of wheat. Control these by spraying 40 ml Coragen 18.5 SC (chlorantraniliprole) or 400 ml Ekalux 25 EC (Quinalphos) in 100 litres of water per acre.

### SUMMER PULSES

1. Sowing of summer moong (SML 1827, SML-668, SML 832) and summer mash (Mash -1137 and Mash -1008) may be started from mid March onwards. Use 15 kg seed rate per acre for summer moong SML-668 and 12 kg for SML -1827, SML-832 and 20 kg for summer mash. Apply 11 kg urea and 100 kg single superphosphate per acre at the time of sowing to moong and 11 kg urea and 60 kg single superphosphate per acre to mash. If moong follows potato, there is no need to apply any fertilizer. Inoculate the summer moong seed with consortium biofertilizer and inoculate the seed of summer mash with *Rhizobium* culture at the time of sowing.

### OILSEEDS

1. Protect *raya* from White rust by spraying 0.25 % solution of Ridomil Gold (250 g in 100 litres of water).
2. Check mustard aphid on *raya/gobhi sarson* by spraying 40 g Actara 25 WG (thiamethoxam) or 400 ml Metasystox 25 EC or 400 ml Rogor 30 EC (dimethoate) or 600 ml Dursban/ Coroban 20 EC (Chlorpyrifos) in 80-125 litres of water per acre. Spray the crop in afternoon when the pollinators are less active. Irrigate sunflower at two weeks interval.

### SUGARCANE

1. Complete sowing of sugarcane by the end of this month using recommended varieties i.e.CoPb 95, CoPb 96, Co 15023, CoPb 92, Co 118, CoJ 85, CoJ 64 (early maturing), CoPb 98, Co 238, CoPb 91, CoPb 93,CoPb 94 & CoJ 88 for mid - late maturing varieties.
- 2.To improve the germination, soak the setts in ethrel solution overnight. To prepare the solution, dissolve 25 ml of Ethrel 39 SL in 100 liters of water or soak the setts in water for 24 hours before planting.
3. The seed selected for planting should be free from red rot, wilt, smut, ratoon-stunting and grassy shoot disease.

4. For the control of termites, apply 200 ml Coragen 18.5 SC (chlorantraniliprole) using 400 litres of water over the seed setts in furrow before covering them with soil.
5. To check the attack of early shoot borer, apply 10 kg granules of Regent/Mortel/Rippen 0.3G (fipronil) per acre before planking.
6. Application of Atrataf 50 WP (atrazine) or Sencor 70 WP (metribuzin) or Karmex 80 WP/Klass 80 WP (diuron) @ 800 g/acre or 1000 g/acre Authority NXT 58 WP (sulfentrazone + clomazone) in 200 litres of water as pre-emergence application provides effective control of annual grasses and broadleaf weeds. For control of hardy weed like Bans Patta use only Sencor 70 WP or Karmex/Klass 80 WP @ 800 g/acre. Fields infested with *dila*, post-emergence application of 800 g per acre 2, 4-D sodium salt 80 WP in 200 litres of water is recommended. Fields infested with *Ipomoea* spp. (*lapeta vel*) and other broad leaf weeds, apply 800 g of 2,4-D sodium salt 80 WP or 400 ml per acre 2,4-D amine salt 58 SL by dissolving in 200 litres of water when these weeds are at 3 to 5 leaf stage.
7. Apply 8 tonnes of farm yard manure/pressmud per acre fifteen days before planting and mix it into the soil and reduce the dose of nitrogen from 60 kg to 40 kg/ acre. However, on coarse textured soil if farm yard manure is applied in addition to recommended dose of fertilizers, approximately 10% higher yields can be obtained. In the absence of farm yard manure apply 65 kg urea per acre at planting. Apply azotobactor/consortium biofertilizer @ 4 kg/acre in furrows at the time of sowing for obtaining higher yield. If soil is low in phosphorus, apply 75 kg single super phosphate (12 kg phosphorus) per acre at planting. To the autumn sugarcane apply 65 kg urea in end of March.
8. For getting higher returns, one row of summer moong/summer mash or mentha can be intercropped without any adverse effect on the cane crop.

### **FODDER PRODUCTION**

1. Sow early summer and multicut fodder crops such as maize, bajra and sorghum during this month to meet the fodder scarcity during summer lean period. This is also an ideal time to sow Guinea Grass and Napier Bajra.
2. Conserve surplus barseem as hay and oats as silage for cheap milk production during lean period.
3. Remove Kashni weed plants from barseem seed crop. Be watchful about the attack of gram caterpillar on barseem seed crop. The pest should be properly controlled on crops like wheat, sathi moong, sathi mash & sunflower growing in the vicinity of berseem in order to check its migration to berseem fields.

## VEGETABLES

### Chilli

Transplant CH-52, H-27 (hybrids) and Punjab Sindhuri, Punjab Tej varieties of chilli at a spacing of 75cm (Row -Row) X 60cm (Plant -Plant). Prepare the field by applying 10-15 tonnes FYM, 25 kg urea, 75 kg single superphosphate and 20 kg muriate of potash per acre. Irrigate immediately after transplanting and later on 10-12 days intervals depending upon the soil & climate.

### Kharif Onion

1. In second fortnight of March, sow nursery of onion variety Agri Found Dark Red to produce bulb sets. Sow 5 kg of seed on well prepared beds on an area of 8 marlas to produce bulb sets for one acre.
2. On onion bulb crop, onion thrips feed on foliage and produce white spots followed by curling called "Silver Top".
3. For controlling purple blotch, spray the crop with 300g of Caviet or 600g of Indofil M-45 and 200 ml of Triton or linseed oil in 200 litres of water per acre.

### Okra

1. Sow Punjab Lalima and Punjab Suhawani variety in this season. Apply 40 kg urea per acre at sowing and 45kg as top dressing after first picking. Soak 8 to 10 kg seed in water over night. Dibble 4 to 5 seeds per hill on the southern slope of ridges keeping hill at 15 cm spacing. Apply light irrigation after 10 to 12 days depending upon soil & climatic conditions.

### Cucurbits

1. Apply recommended fertilizer and prepare channels as per recommended spacing for each cucurbitaceous vegetable. Irrigate the channels before sowing. Dibble atleast 1-2 seeds per hill.

### Tomato

1. Apply second dose of nitrogen in the first fortnight of this month. Stake plants on beds. Irrigate regularly at 10 to 12 days interval to encourage the maximum fruit setting.
2. Late blight disease may appear on tomato early in this month. The crop may be sprayed with Indofil M-45 @ 600 g/acre at 7 days intervals to control this disease.
3. Spray tomato crop with 60 ml Coragen 18.5 SC (chlorantriamiprole) or 30 ml of Fame 480 SL (flubendiamide) or 200 ml of Indoxacarb 14.5 SC per acre in 100 litres of water to check the attack of fruit borer.

### Cowpea

Sow cowpea variety Cowpea-263 keeping lines 45 cm and plants 15 cm apart using 8-10 kg seed per acre. Apply 45 kg urea, 100 kg single superphosphate and 16 kg Muriate of Potash per acre.

### Potato

The potato tubers should be sorted out carefully before storage. Tubers showing late blight symptoms in the form of brown-purplish discoloured areas on the skin of the tubers should be rejected and destroyed. Care should also be taken to sort out Late blight, black scurf and scab infected tubers.

## HORTICULTURAL OPERATIONS

1. The evergreen fruit plants like citrus, mango, litchi, guava, loquat, papaya, sapota, *ber* etc. can be planted in the field.
2. The young as well as the old trees should be irrigated regularly and more frequently as they put forth new growth/ flushes. The young plants should be provided with stakes for upright and straight growth. To litchi trees, apply irrigation after the fruit set and continue watering at 3 weeks intervals. To grapevines, one irrigation is needed during the first week of March. In Peach and plum, apply irrigations at weekly interval from end of this month till fruit maturity. Interval can further be decreased after mid-April.
3. The peach and plum orchards can also be mulched with 10 cm thick layer of paddy straw under the plant canopies after application of second split of chemical fertilizers. It will conserve the moisture, suppress the weeds and improve fruit yield and quality.
4. For rejuvenation of senile guava trees, head back such trees at 1.5 m from the ground level leaving 2-3 primary scaffolds and apply Bordeaux Paste on the cut ends.
5. For checking foot rot in citrus (*Phytophthora* spp.), give two applications of Curzate M8 as paint (2 g/100 ml of Linseed oil) to the infected trunk portion and drenching (25 g/10 litres of water/ tree) the soil at the base of the tree can be done. Drenching of the soil around basin of the tree and main limbs with Sodium hypochlorite 5% @ 50ml tree in 10 litres of water per tree can also be done in this month.
6. To advance the ripening of Umran *ber*, spray Ethephon 400 ppm (250 ml in 300 litres of water in first week of March) at colour break stage. The peak season for harvesting of *ber* in Punjab is mid-March to mid-April.
7. To check the insect pests of citrus especially psylla and aphids, spray 200 ml Crocodile/Confidor 17.8 SL or 160g Actara/Dotara 25 WG (thiamethoxam) or 6.25 litre MAK HMO (Horticulture Mineral Oil) in 500 litres of water on spring flush. For the control of withertip or die-back in citrus, spray Bordeaux mixture 2:2:250 before the flower opening.
8. For management of powdery mildew in mango, spray Contaf @ 1.0 ml per liter of water before flowering, during flowering and after fruit set.

## ORNAMENTALS

### Seasonals

Nursery of summer season annuals like *Cosmos*, *Gaillardia*, *Gomphrena*, *Kochia*, *Zinnia*, *Portulaca* can be raised under semi shade conditions for planting in next month. Collect seeds from mature plants of winter annuals, clean and dry store for next season planting.

### Chrysanthemum

Suckers of chrysanthemum which were planted on the raised beds in January or February can be pinched for growth of lateral branches. Ensure weeding and timely irrigation for vigorous growth of mother plants. Check for infestation of black aphid on terminal shoots.

### Permanent plants

During this month, all types of permanent evergreen ornamental plants including trees, shrubs and climbers can be planted. Pits of size 3 times the diameter of root ball and depth same as that of root ball are dug and excavated soil is mixed with equal volume of well rotten FYM, along with drenching of pit with Chlorpyrifos @ 40 ml per 10 liter of water. Seeds of ornamental shrubs can also be sown on raised nursery beds during this month.

### Lawns

Layout (formal or informal) of new lawn is planned and executed during this month. The grass roots/suckers/dibbles of selected varieties can be dibbled in well prepared land. Irrigation with the help of sprinkler can be helpful for better establishment of lawn. Lawn can also be established by turfing.

### Pot plants

Best time for the propagation, manuring and repotting of shade loving and other pot plants like *Dracaena*, *Pedilanthus*, *Alocasia*, *Chlorophytum*, Ferns, *Rhoeo* etc. Repotting, grooming and corrective pruning will improve their aesthetic look and control their canopy spread. Potted plants can also be divided for multiplication.

### Bulbous plants

If the summer flowering bulbs could not be planted, so far, these can be planted now in the well prepared beds or in the pots. Tuberose bulbs can be planted during this month also.

### Rose

During this month rose bushes require more frequent watering due to rise in temperature. Root suckers arising from the base below the graft union must be removed along with removal of dried /faded flowers to encourage development of lateral buds.

### Marigold

The transplanting of seedlings of summer season marigold variety Punjab Gainda No.1 should be done during this month.

## **AGROFORESTRY**

### **Poplar**

1. Sugarcane can be planted in poplar plantations of less than three years age up to end March.
2. Keep on irrigating the Poplar plantations and nurseries at interval of 7-10 days so that leaf emergence be completed properly. Spread rice straw (4 ton/acre) in newly established nurseries for better control of weeds.

### **Eucalyptus**

1. Sow the seeds on raised beds either by broadcasting or in lines 10 cm apart at a rate of 20 g/m<sup>2</sup>. Cover the beds with a thatch and sprinkle water frequently to keep the upper soil layer moist. Transfer the young seedlings in polythene bags filled with mixture of soil and FYM (2:1)
2. The application of phosphorus dose and one third of nitrogen fertilizer to the eucalyptus plantations should be done in second fortnight of March.

## BEEKEEPING

First fortnight of March is still an ideal time for starting beekeeping, as during this month, pollen and nectar rewarding bee flora are available and weather conditions are favourable for foraging. Brood rearing in the colonies is at full swing and the colonies grow rapidly. Ample drone brood is also reared. Thus, this period is also suitable for multiplication of existing stock of the colonies which can be accomplished by small beekeepers by selective colony division method and by big beekeepers through mass queen bee rearing from selected breeder colonies. Older and ineffective queen bees may also be replaced with the new ones reared from the selected stock. Migrate bee colonies to *Eucalyptus* plantation in the beginning of March if not migrated earlier. Beekeepers should extract available ripe honey before migrating the colonies. If colonies are over populated, provide more space by giving raised combs or frames with comb foundations. If the chamber is full to its capacity of 10 frames, provide super chamber. Manage the colonies to prevent and check swarming by remaining vigilant and following appropriate methods. Dust sulphur powder on the top bars of bee combs @ 1.0 g per comb against brood mite *Tropilaelaps clareae*. Cover the treated top bars of combs using inner cover. Alternatively, fumigation with formic acid (85%) @ 5 ml daily for two weeks may be applied. The latter treatment will also take care of *Varroa* mite. Trickling of 5 ml of oxalic acid (4.2 %) solution prepared in sugar solution (60 %) between every two bee combs late in the evening thrice at weekly interval is also effective against *Varroa* mite. In the case of infestation by *Varroa*, destruction of sealed drone brood comb part, *Varroa* trapping on drone brood and then its destruction, dusting of icing sugar @ 1.5 g per comb inbetween the combs 8 times at 3 days interval, and use of sticky papers with wire mesh on *Varroa* bottom board, can also be integrated. Keep checking colonies at regular interval for presence of the brood diseases. If suspected, immediately consult experts and appropriate control measures should be undertaken. Preferably use non-chemical methods for disease management. Use of antibiotics should be strictly avoided. Proper spacing among the colonies and extraction of honey only from the supers separated from brood chamber with queen excluder help in preventing spread of *Varroa* and brood diseases among the colonies in apiary.

## MUSHROOM GROWING

1. During this month, the environmental temperature starts increasing (above 25<sup>0</sup>C) which is not appropriate for continuing the cultivation of button mushroom.
2. The 2<sup>nd</sup> crop of white button mushroom (50-60 days of harvesting) should be terminated during this month by removing the spent compost from the growing rooms. The growing rooms should be thoroughly cleaned and disinfected with 4% formalin.
3. The trays/shelves should be cleaned, disinfected with 4% formalin, sun dried and stored for next season.
4. The harvesting of *dhingri* mushroom can be continued up to the end of this month.
5. Start procuring wheat straw/paddy straw for cultivating summer mushroom varieties (milky and paddy straw mushroom).



## **DAIRY FARMING**

1. Regularly deworm the calves with piperazine liquid (4ml/kg body weight) first at 15 days of age then 22 days and then one month up to 6 months of age and then 3 monthly by using different drug combinations to avoid resistance.
2. Get your animals examined after 3 months of artificial insemination for routine pregnancy check up.
3. Do not feed green sprouted, rotten or soiled potatoes to dairy animals. These can cause serious and fatal poisoning.
4. Watch animals for signs of heat after 60 to 75 days of parturition and get them inseminated. Proper heat detection techniques should be followed for good conception rate.
5. Provide mineral mixture (70-80 gm/day) regularly and bypass fat (100 gm/day) to the early lactating animals for atleast 3 months after parturition.
6. Make hay from surplus leguminous fodders to replace concentrates which can be used in scarce period. It is highly beneficial for growing calves.
7. Check animals for mastitis twice in a month using CMT kit
8. Sowing of sorghum/maize and guar should be carried out for green fodder requirements.
9. Increase protein by 2% in concentrate ration.
10. Use mats in tying system to prevent hoof deformity and check the dung (looseness) for symptoms of acidosis. Add buffer (Soda bicarb upto 50-70 gm) to correct it.

## **POULTRY FARMING**

1. This is the best time for starting the broiler rearing as the day temperature starts rising. Get egg type chicks booked well in advance with a hatchery of repute in the adjoining area.
2. Purchase the day-old chicks duly vaccinated against Marek's disease from reputed hatchery. It is essential to clean and disinfect the poultry sheds before putting the chicks.
3. Provide proper temperature under the brooder i.e. 95° F and decrease it by 5° F every week until it reaches to 70° F. Switch on the brooder 24 hours before arrival of chicks.
4. Spread old newspapers on bedding and put maize dalia on them as day old chicks cannot locate feeders.
5. Provide balanced ration to birds according to their requirements.
6. De-worm the chicks regularly at 6-8 weeks interval.
7. Cull all the uneconomical layers regularly because they are increasing your feed costs.
8. Do not allow visitors to enter inside the poultry house. Put shoe covers before entering poultry farms.
9. Do not disturb poultry birds frequently as it will result in reduced growth as well as production.
10. Increase number of waterers in the shed and provide fresh water to the birds.
11. Remove upper layer of deep litter and decrease the thickness of deep litter in the shed.

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