

Farm Operations for April

WHEAT

Last irrigation to wheat sown after December 5, should be given in the first week. Avoid irrigation on windy/stormy day.

SUGARCANE

1. Control the weeds from the crop. However, for the control of *dila*, post-emergence application of 2,4-D sodium salt 80 WP @ 800 g per acre in 200-225 litres of water is recommended. Do not sow moong / mash as inter crop, if sugarcane has been sprayed with herbicide(s).

2. Irrigate the crop at 7-12 days interval for better growth of the crop. Apply 65 kg urea to ratoon crop and give irrigation.

3. The incidence of black bug in this crop can be checked by spraying 350 ml of Dursban/Lethal/Massban 20 EC in 400 litres of water per acre with manually operated sprayer. Direct the spray material into the leaf whorl.

4. Mite feeds on lower side of leaves under fine web. The leaves turn red and later appear to be burnt. Baru (*Sorghum halepense*) is the alternative host plant of mite. So, destroy the weed, growing near the sugarcane fields.

5. Do not ratoon the crop if it is severely affected with red rot or wilt.

COTTON

Start sowing of recommended varieties /hybrids of cotton or desi cotton including Bt cotton during this month. Plant seed in polythene bags to fill gaps in cotton. Do not forget to give deep ploughings in such fields where paddy was grown continuously for longer periods as the hard layer developed due to paddy cultivation affect the deep penetration of roots.

Treat the seed of American cotton before sowing to prevent primary seed-borne infection. Add 0.5 g Emisan 6 and 0.25 g Streptocycline per kg seed in one litre of water and soak seed in water for six to eight hours. To reduce the attack of leaf curl disease, avoid growing American cotton in citrus orchards and adjoining *bhindi* crop. Avoid growing *bhindi*, *moong*, *castor* and *arhar* in the cotton crop and as border rows in order to reduce the incidence of American and spotted bollworm; jassid and whitefly. But, control such insect pests on these crops grown in the vicinity of cotton fields properly in order to check their migration to the cotton crop.

In wilt infested fields, prefer to sow PAU 626H, Moti, LD 694 and LD 327, variety of *desi* cotton. To prevent primary infection from seed borne pathogens treat the seed with 0.5 g Emisan 6, 0.25 g streptocycline and 2 g Bavistin/Derosal per kg seed in 2 litres of water and soak the delinted seed in it for two to three hours. If undelinted seed is used, soak it for 6-8 hours.

At the time of sowing, smear the cotton seed with Gaucho 70 WS (imidacloprid) @ 5 g or Cruiser 70 WS 30 g/kg seed for preventing damage by cotton *jassid*.

Sow both American cotton and *desi* cotton varieties in rows at 67.5 cm apart with plant to plant distance of 60 cm for American Cotton and 45 cm in case of Desi Cotton but for hybrids it should be 75 cm.

Drill 75 kg single superphosphate per acre with last preparatory ploughing. If cotton succeeds wheat which received recommended dose of phosphorus, phosphorus should not be applied. In poor soils, half dose of nitrogen (35 kg urea/acre) may be applied at the time of sowing.

For controlling weeds, spray Treflan 48 EC/Shaktiman Triflurex 48 EC (trifluralin) @ 1.0 l/acre pre-plant incorporation or Stomp 30 EC (pendimethalin) @ one litre per acre as pre-emergence application in 250 to 300 litres of water. At the time of spray, there should be sufficient moisture in the soil. For controlling *itsit* which emerges with first irrigation, Stomp @ 1.0 l/acre can also be applied after first irrigation.

SUNFLOWER

1. Since the weather is quite hot during this month, apply irrigations at 8-10 days interval. The crop should not be under stress at flowering, soft dough and hard dough stages.

2. Control Cabbage semi-looper, tobacco caterpillar and Bihar hairy caterpillars by spraying 500 ml of Thiodan 35 EC or 200 ml of Nuvan 85 SL in 100 litres of water per acre. If necessary, repeat the spray after two weeks, if necessary. These insecticides will also control jassid and other sucking pests.

SUMMER PULSES

Try to complete the sowing of *Sathi moong* and *Sathi Mash* during the first week of this month.

SUMMER GROUNDNUT

To summer groundnut variety SG 99 / M 522/ SG 84 can be sown during the end of this month. Treat the kernels before sowing with 12.5 ml of Dursban 20 EC (chlorpyrifos) per kg kernels. Dry them in shade and treat with 5 g thiram (75%) or 3 g of Indofil M-45 (75%) per kg kernels.

TURMERIC

1. Start planting turmeric from the end of this month.

2. Planting of turmeric should be done in rows 30 cm apart by keeping plant to plant distance of 20 cm. Six to eight quintal of rhizomes are sufficient for sowing one acre.

3. Spread paddy/wheat straw @ 2.5 tonne/acre after planting. This will help in reducing number of irrigations as well as incidence of weeds and promotes the crop growth.

FODDERS

1. For early *kharif* fodders, sowing of *bajra*, maize, cowpea etc. may be carried out after harvesting *rabi* crops. Cowpea is a very quick growing leguminous fodder which can be sown as a mixture with maize or *bajra*.

2. Take last cutting of Berseem which is to be kept for seed during this month. Berseem crop for seed production should be frequently irrigated. *Kashni* and other weeds should be rogued out .

3. Gram caterpillar generally attacks the *berseem* crop meant for seed. In that case, spray 1000 ml of Thiodon 35 EC or 60 ml Tracer 48 SC in 100 litres of water/acre at the initiation of flowers. Repeat after 10 days, if necessary.

4. Stop irrigation to lucerne after full blossom to arrest vegetative growth for better seed production.

5. Grow perennial fodders on some area. For this purpose, guinea grass and napier *bajra* can be sown in April.

STORE GRAIN INSECT PESTS

Store new grains in clean godowns or receptacles. Plug all cracks, crevices and holes in the godown thoroughly. Disinfest old gunny bags by dipping them in emulsion of 6 ml Sumicidin 20 EC or 5 ml Cymbush 25 EC in 10 litres of water for 10 minutes and dry them in shade before filling with grains or use new gunny bags.

RECLAIMING SALINE AND ALKALI SOILS

This is the time for initiating reclamation of kallar soils. For this follow the steps given below:

1. Get the salt-affected soils tested from PAU or nearest soil testing laboratory. For this take four samples upto 1 metre depth from 0-15 cm, 15-30 cm, 30-60 cm and below 60 cm.
2. Prepare strong bunds around the field.
3. After levelling and ploughing the field, apply heavy irrigation with good quality tubewell water or canal water so that excess salts may leach down.
4. When the field comes into field capacity (*watter*) condition and when recommended apply gypsum according to soil test report.

VEGETABLES

Tomato

Irrigate the tomato crop once a week to encourage maximum fruit setting and development of fruits. Varieties Punjab Kesri, Punjab Chhuhara, PNR-7, S 12, Punjab Upma and Castle Rock as well as hybrid TH-1, TH 2312 and TH 802 start ripening during this month. Pluck the red turning and red ripe fruits regularly to catch distant and local market, respectively. While plucking the fruits, every precaution should be taken to minimize injury and disturbance to the natural canopy of the plants.

Brinjal, Capsicum, Chilli and Cucurbits

These vegetable crops sown under forced conditions start giving harvest. Pluck fruits twice a week in the afternoon except bottle gourd where plucking should be done in the morning. All the crops are pollinated by insects and human movement at flower opening and pollination time disturbs pollinators and cause serious set back to fruit-setting and yield. Irrigate these crops once a week.

Onion

Take care of *kharif* onion nursery sown in March and irrigate regularly after 5-7 days intervals.

Seed Production

Harvest seed crops of pea, radish and turnip. In order to avoid shattering of seeds of turnip, pea and radish in the field, start harvesting even when a few topmost pods per branch are yellowish green. Shift immediately to the thrashing floor. After complete drying, thrash, grade and pack the seeds.

Chilli

Transplant seedlings of chilli in the afternoon keeping ridges at 75 cm and plants at 60 cm distance and apply light irrigation immediately. Apply 20 kg muriate of potash, 75 kg single superphosphate and 30 kg urea per acre. After a week, replant into the gaps and irrigate immediately.

Garlic

Stop watering in the first week but apply light irrigation prior to harvesting to facilitate the operation and uproot in the last week. Cure in the field for 5 to 7 days. Tie the produce in bundles of a kg. each, shift in a cool and ventilated place. Sort out bulbs with dried cloves during storage.

VEGETABLE PESTS

1. Onion thrip should be checked by spraying 250 ml Malathion 50 EC in 80 litres of water per acre.
2. Red pumpkin beetle attack on cucurbits can be reduced by spraying 75-150 g of Sevin/ Hexavin 50 WP in 50-100 litres of water per acre.
3. Spray the muskmelon crop with Indofil M-45 @ 300 g in 100 litres of water per acre depending upon the growth stage. Start first spray in 2nd week of April before the appearance of the disease followed by six more sprays at weekly interval. Give sprays promptly after rains. Under heavy disease situation give 3rd and 4th spray of Ridomil MZ @ 500 g/acre in 200 litres of water or Aliette 80 WP @ 600 g/acre at 10 days interval followed by one more spray of Indofil M-45 @ 600 g/acre in 200 litres of water.
4. Fruit borer attack in tomato crop can be checked by spraying 800 ml of Thiodan 35 EC or 800 g of Sevin/Hexavin 50 WP or 600 ml of Carina 50 EC or 100 ml of Sumicidin

20 EC or 200 ml of Ripcord 10 EC or 160 ml of Decis 2.8 EC in 100 litres of water for one acre. Repeat at 10 days interval.

5. To protect the tomato crop from early blight spray the crop with Indofil M-45 @ 600 g/acre in 200 litres of water.

HORTICULTURAL OPERATIONS

1. During this month there is a marked change in weather. The temperature rises rapidly and humidity gets low. The growers are advised to adopt the measures to save their valuable fruit trees from drought, windstorm and sun injury. Whitewash the trunk, provide shelter to young trees and give frequent irrigation.

2. The heavy bearing cultivars of peaches like Shan-E-Punjab and of plum like Kala Amritsari and Sulej Purple normally need fruit thinning in early days of the month to minimise the danger of limb-breakage and to improve the marketable size and quality of the fruits.

3. Apply second dose of inorganic fertilizers to the fruit trees of citrus, pear, litchi, plum, grapes etc.

4. The stock sprouts emerging from the newly planted young fruit plants below the bud union should be removed/pinched off regularly.

5. In young orchards *Sathi Moong* can be sown upto first week of April.

6. To check pathological fruit drop in citrus give one spray of 2 : 2 : 250 Bordeaux mixture.

7. To check zinc deficiency in citrus, spray the affected trees with 0.3% zinc sulphate solution, without addition of lime, to spring flush in April.

8. In order to get only winter seasons guava crop, spray urea 10% during April-May when maximum flowers have opened. Also withhold irrigation during this period.

9. Spray 625 ml of Nuvacron 36 SL or 1250 ml of Rogor 30 EC or 1140 ml Thiodan 35 EC or 1250 ml Hostathion 40 EC or 1000 ml metasystox 25 EC or 100 ml Imidacloprid 200SL per acre in 500 litres of water on citrus crop to control citrus psylla. Hostathion and Thiodan will also control citrus white fly.

10. Spray Bavistin 400 g in 400 litres of water for controlling Anthracnose and Belytan 40 g in 100 litres of water for the control of powdery mildew of grapes. For control of grapevine thrip spray 500 ml of Malathion 50 EC in 500 litres of water per 100 vines.

11. To control lac insect in *Ber*, spray 250 ml of Rogor 30 EC in 250 litres of water.

12. To check peach leaf curl caused by aphids, spray 800 ml Rogor 30 EC in 500 litres of water. Repeat the spray after 15 days if necessary.

ORNAMENTALS

Annuals

1. The borders and beds intended to be used for summer flowering annuals should be cleaned and prepared for the purpose. As soon as the summer flower seedlings e.g. Cosmos, Gaillardia, Gompherena, Kochia and Zinnia etc. are ready they may be transplanted in the well prepared beds. Transplanting work may preferably be carried out in the evening followed by irrigation.

2. Seed should be collected from the already selected winter flowering annuals. After proper drying and cleaning the same may be stored for the next season.

Permanent plants

Keep on irrigating these plants regularly. Do not allow the weeds to grow around them.

Cannas will be at their best and should now be selected for propagation purposes. If the cuttings of shrubs are not done, so far, the same be done early this month.

Chrysanthemum

In case of large flowered Chrysanthemum encourage the growth in beds by regular watering. In pots limit the watering to check the growth. In case of small flowered Chrysanthemum, branching may be encouraged by pinching back to 10 cm from the ground.

Roses

Major flowering of the rose will be over in this month. Keep on removing the faded flowers and suckers from the root stock. Timely watering, weeding and hoeing will keep the plants in good conditions.

Lawns

For having lush green lawns, their timely watering and frequent mowing is very important. Irrigation of lawns through sprinklers is the best for getting excellent results. If the growth of the grass is poor, a light dose of nitrogenous fertilizer may be given.

Pot plants

Foliage plants in pots will have resumed activity. The delicate ones should be moved away from the positions exposed to the direct sun.

Bulbous plants

The bulbs of 'Nargis' and 'Gladioli' which have become dormant and their leaves are dried up, may be taken out from the soil, cleaned, treat it with some fungicide, dry them and then store in some cool dry place. The bulbs of Caladiums and 'Football Lilly' may be planted early this month, if not planted in the last month.

AGROFORESTRY

Poplar

1. As the temperature has started rising, thus irrigate the poplar plantations at weekly intervals instead of fortnightly.
2. Turmeric can be sown in poplar having less than three years of age. In the plantations of more than three years age, fodder crops should be raised.
3. The attack of Poplar leaf defoliator and leaf webber starts in this month. Control the insects by collecting and destroying infested leaves. Spray monocrotophos 36 SL @ 600 ml (Monocil, Nuvacron, Monolik) in 200-250 litres of water per acre with rocking sprayer.
4. To control caseworm infestation spray carbryl 50 WP (Sevin/Hexavin) @ 1 kg in 200 litres of water/acre. Keep on irrigating the Poplar plantations at interval of 7-10 days.

Safada

5. Keep on irrigating the *Eucalyptus* plantations at 15 days intervals during April.
6. After gypsum application sow green manure crop and use 20 kg of dhaincha seed for one acre. If soil test for phosphorus is low it is better to apply 75 kg of single superphosphate to green manure crop and omit phosphorus application to following paddy crop. Give irrigation to green manure crop as and when needed.

BEE KEEPING

Colonies bee strength during April is about at its peak. Keep vigil for swarming in the colonies and manage the colonies to check and prevent swarming. Colonies should be provided enough space in the form of raised empty combs or frames with wax foundations and super chambers to cope-up with brood rearing and honey storage. The early part of the month is still suitable for queen bee rearing as the drone brood rearing is generally continued. Thus the stock multiplication can be undertaken either by dividing the colonies or through mass rearing the queen bees. The progressive beekeepers should prefer the latter method for its well known added advantages. Older queen bees may also be replaced with the new ones raised preferably from the selected good stock following mass queen bee rearing technique. Dust sulphur powder on the top bars of bee combs @ 1.0 g per comb against brood mite (*Tropilaelaps clareae*). Alternatively, fumigation with formic acid (85%) @ 5 ml daily for two weeks may be applied, which, however, should be avoided during nectar flow. The latter treatment will also take care of *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 sugar powder in between bee combs and use of sticky papers with wire mesh *Varroa* bottom board can also be integrated. Keep vigil of the brood diseases and on suspicion, immediately consult expert and suggested control measure should be undertaken; non-chemical methods should be preferred. Use of antibiotics should be 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 an apiary. If *Eucalyptus* is in bloom around the apiary and colonies have surplus sealed honey, it should be extracted. Afterwards, commercial beekeepers may migrate their apiaries to sunflower growing areas. Considering the ensuing summer season, colonies should be managed to be placed under shade.

MUSHROOM FARMING

1. Make arrangement for the procurement of wheat straw for button mushroom cultivation starting in
September.
2. Book seed for paddy straw mushroom and milky mushroom in the first half of April for its use in growing these mushrooms.
3. Start cultivation of Paddy straw mushroom from mid April onwards. For this purpose, use 1-1½ kg wet Paddy straw bundles to lay the Paddy straw bed.
4. Spray water on the beds twice daily. Mushrooms start appearing by 10-12th day and continues for three weeks.
5. Milky mushroom cultivation using boiled wheat straw (2 kg bag) to be started in this month. Bags will be ready for casing after 17-20 days.

DAIRY FARMING

1. Summer is approaching, so take adequate steps to protect the animals from summer heat and stress. Increase protein level in the concentrate by increasing oilseed cakes by 5-7 per cent.
2. Watch the animals for heat symptoms and get the animal inseminated in mid to second half of the heat.
3. Take adequate steps for calf management and feed colostrums within 1-2 hours of the

- birth irrespective of expulsion of placenta.
4. To prevent tick infestation, spray the sheds/barn and animal regularly with Butox liquid 2 ml per litre of water and repeat after 10 days.
 5. Keep the shed and animal clean.
 6. Regularly deworm the calves with piperazine liquid (4 ml kg body weight) first at 10 days of age, then 15 days and then monthly upto 3 months of age and then 4 monthly upto 1 year of age.
 7. Make sure that all the animals are vaccinated against FMD, if still not, then get them vaccinated immediately, keep their record and repeat after six months.
 8. Do not feed excess wheat/cereal to dairy animals. This can be fatal.

POULTRY FARMING

1. It is the best time to replace the stock. Cull the unprofitable birds to provide sufficient space to young chicks. Brooding in these days can be carried out more easily.
2. Reduce the thickness of litter and change the wet liter.
3. Provide cool and fresh water to birds. Provide sufficient water to avoid excess movement of birds.
4. Proper vaccination schedule must be followed.
5. Vaccinate the chicks of 6-8 weeks with *Ranikhet* disease vaccine and fowl pox vaccine at 8-10 weeks of age.
6. Start deworming the pullets at 3 months of age and then regularly at one month interval.
7. White wash the poultry shed from outside especially roof. This will help to reflect the sun rays.
8. Provide artificial lights during early morning so that birds may be able to consume feed in cool hours.
9. Increase proteins, minerals and vitamins in ration to provide required amount of these nutrients.

FISH FARMING

1. Stock the ponds with the seed of grass carp @400-500 per acre.
2. The seed of common carp, commonly called as *American Machhi* or *Golden* can also be stocked, if it were not stocked during March.
3. Continue manuring and fertilization @ 120 kg/acre/week of FYM and 16 kg/acre/week of single superphosphate or 5 kg/acre/week of DAP.
4. Water level should be maintained at 5 feet.
5. Continue supplementary feeding also according to the following feeding table.

Average body weight of fish	Upto 50 g	50-100 g	100-200 g	200-300 g	300-400 g	400-500 g	500-600 g
Feed 1000 fish/day	0.1	0.3	1.2	1.3	4.5	6.9	10.4

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3. Prepare strong bunds around the field.
4. After levelling and ploughing the field, apply heavy irrigation with good quality tubewell water or canal water so that excess salts may leach down.
5. When the field comes into field capacity (*watter*) condition apply gypsum according to soil test report.

STORED GRAIN PESTS

1. Clean your stores meant for wheat storage thoroughly.
2. Plug all cracks, crevices and holes in the store thoroughly.
3. Disinfect old gunny bags by putting them in emulsion prepared by mixing 6 ml Sumicidin 20 EC or 5 ml Cymbush 25 EC in 10 litres of water for 10 minutes and by drying them in shade.
4. Disinfect empty godowns with Malathion 50 EC @ 100 ml in 10 litres of water.