

## Farm Operations of Agronomical Crops For September

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### Paddy :

1. Rogue out the weeds and off type plants from the field.
2. Give timely and not excessive irrigation for higher yield and stop irrigation two weeks before harvesting.
3. Planthoppers sometime become serious in paddy and the crop dries up in patches. The plant hoppers can be controlled by spraying 94 ml Pexalon 10 SC (Triflumezopyrim) or 120g Chess 50 WG (Pymetrozine) or 40 ml of Confidor/Crocodile 17.8 SL (Imidacloprid) or 800 ml of Ekalux/Quinalmass 25 EC (Quinalphos) in 100 litres of water per acre. For better results, direct the spray towards the base of the plants.
4. Paddy stem borers cause dead hearts and white erect ears near maturity. If the paddy fields show more than 5% dead hearts during vegetative stage, spray 20 ml Fame 480 SC or 170g Mortar 75 SG or one litre of Coroban/Dursban/Lethal/Chlorguard /Durmat/Classic / Force 20 EC in 100 litres of water/acre. In basmati rice, when 2% dead hearts are noticed these pests can be controlled by applying any of above insecticide or 60 ml Coragen 20 SC (Chlorantraniliprole) in 100 litres of water per acre or 4 kg Ferterra 0.4 GR (Chlorantraniliprole) or 6 kg Regent/Mortel/Mifpro G/Mahavir GR 0.3 G (Fipronil) or 10 kg Padan/Kritap/Sanvex/Caldan/Nidan/Marktup/Miftap 4 G (Cartap hydrochloride) or Dursban 10 G (Chlorpyrifos) or 4 kg Vibrant 4 GR (Thiocyclam hydrogen oxalate) per acre in standing water. Fame 480 SC/ Martar 75 SG/ Coragen 20 SC/Padan / Kritap / Sanvex / Caldan / Nidan / Marktup 4 G Regent / Mortel/Mifpro G/Mahavir GR 0.3 G / Dursban 10 G / Ferterra 0.4 GR or Vibrant 4 GR also control leaf folder effectively.

5. Control leaf folder when leaf damage reaches 10 % by spraying 20 ml Fame 480 SC (Flubendiamide) or 170g Mortar 75 SG (Cartap hydrochloride) or one litre of Coroban/Durmet/Force 20 EC (Chlorpyrifos) in 100 litres of water per acre.
6. To save the crop from sheath blight, keep the bunds of the fields clean by removing grass. On noticing the disease symptoms spray the crop with Nativo 75 WG @ 80 g or Lustre 37.5 SE @ 320 ml or Amistar Top 325 SC or Tilt/Bumper 25 EC Folicur/Orius 25 EC or Monceren @ 200ml or Bavistin @ 200 g in 200 litres of water per acre. Repeat the spray after 15 days interval
7. If high humidity and cloudy weather persists, the crop may be sprayed at boot stage with Kocide 46 DF (Chopper hydroxide) @ 500 g in 200 litres of water per acre to control false smut.

### **Maize :**

1. Maintain adequate water supply particularly at tasseling and silking stages. Stress at these stages causes considerable losses in yield.
2. After heavy rains if water stagnates in the fields, drain out the excessive water to keep the plants free from bacterial stalk rot.
3. The attack of maize borer can be checked by spraying 30 ml Coragen 18.5 SC (Chlorantraniliprole) in 60 litres of water/acre.

### **Wheat :**

During field preparation, the field should be ploughed 2-3 times in order to make the soil brittle. It should be kept in mind that the soil should not become lumpy and the stumps of the previous crop should be removed.

### **Sugarcane :**

1. Start sowing of early maturing sugarcane varieties like Co 118, CoJ 85 and CoJ 64 from second fortnight of this month keeping 90 cm distance between rows.
2. Prop up the sugarcane crop in the beginning of this month by using trash-twist method. Irrigate the crop at regular intervals for getting better yields.
3. Grow toria, potato or garlic as intercrops in sugarcane for getting higher returns  
Rogue out the canes affected by red rot and wilt.

4. Collect and destroy the shoots infested with Gurdaspur borer and repeat this operation at weekly intervals.

### **Mustard :**

1. Sow early varieties of mustard such as Pusa mustard-25,Pusa mustard-27,Pusa mustard-28 and Pusa Tarak in this month.
2. For weed control,spray 2.2 litres /ha of Fluchloralin in 600-800 litres of water before sowing.
3. For preventing white rust,treat the seeds with Metalaxyl(Apron 35 SD) @ 6 g/kg of seeds or Bavistin @ 2g/kg of seeds.
4. If weed control is not done before sowing,spray 3.3 litres of Pendimethalin(30 EC) in 600-800 litres of water 1-2 days after sowing.

### **Cotton :**

1. Do not allow cotton crop to suffer for want of water during flowering and fruiting stages, otherwise a lot of shedding of flowers and bolls will take place resulting in poor yield. To hasten boll opening last irrigation may be given at the end of September.
2. To get higher yields, give four sprays of 2% potassium nitrate 13:0:45 (2 kg potassium nitrate in 100 litres of water) at weekly intervals starting from flower initiation.
3. If the damage/population of sucking insect pests reaches economic threshold levels, spray the crop with Ulala 50 WG (Flonicamid) @ 80g/acre or Osheen 20 SG (Dinotefuran) @ 60g/ acre or Polo/Craze/Ruby/Ludo/Shoku 50 WP (Diafenthion) @ 200g/acre or Lano/Daita 10 EC (Pyriproxifen) @ 500 ml acre or Oberon/Voltage 240 SC (Spiromesifen) @ 200ml/acre or Applaud 25 SC (Buprofezin) @ 400ml/ acre for the control of whitefly. For the control of jassid, use Keefun 15 EC (Tolfenpyrad) or Osheen 20 SG @ 60g per acre or Ulala 50 WG @ 80g/acre or Confidor or Confidence or Imidacel or Markdor (Imidacloprid) @ 40 ml/acre or Actara/Extra super/Dotara/Thomson (Thiamethoxam) 25 WG @ 40 g/acre in 125-150 litres of water with manually operated knapsack sprayer. To check the attack of grown up American bollworm larvae prefer to spray 2 litres Chlorpyrifos 20 EC or Tracer 48

SC (Spinosad) @ 60 ml or Avaunt 15 SC (Indoxacarb) @ 200 ml per acre. Repeat the spray if it rains within 24 hours of spraying. Mealy bug infested rows/plants should be sprayed with 500 ml Buprofezin 25 EC in 125 - 150 litres of water.

4. To control fungal foliar leaf spots, the crop should be sprayed with Amistar Top or 200 ml/acre in 200 liters of water at 15-20 days interval.
5. Do not use synthetic pyrethroids on cotton for the control of bollworm complex after mid- September.

## **OILSEEDS**

### **Groundnut :**

1. Do not allow the crop to suffer for want of water at the pod development stage. Any stress at this stage cause drastic reduction in yield of groundnut.
2. Control Tikka disease by spraying with wettable sulphur @ 500-750 g/acre in 200-300 litres of water per acre or Bavistin/ Derosal/Agrozim @ 50-60 g/acre in 100 litres of water per acre. Give 3-4 sprays at 15 days interval starting from August.

### **Toria :**

1. September is the optimum period for sowing of toria. Use short duration variety TL 17, PBT 37 and TL 15 for better yield and getting the field vacated well in time.
2. Toria may be sown after applying 55 kg urea and 50 kg single superphosphate per acre. If single superphosphate is not available, apply gypsum @ 50 kg per acre particularly in sulphur deficient soils along with nitrogen and phosphatic fertilizers.
3. For getting higher productivity, grow toria + gobhi sarson as intercrops at 22.5 cm row spacing by mid- September.

### **Jatropha :**

1. Take special care to control the weeds in the nursery plants and remove the weeds with the help of shovel,khurpi,etc in the planted crop. Weed control is necessary during the rainy season.

## **FODDER PRODUCTION :**

1. Prepare the land for the sowing of berseem during last week of September. Mix oats and sarson/raya in berseem to get first cutting early. Berseem seed should be free from Kashni seed. Inoculate the berseem seed with Rhizobium culture. Apply 22 kg urea and 185 kg super phosphate/acre at the time of sowing berseem. If 6 tonnes of FYM has been applied then 125 kg superphosphate/acre will be sufficient. Where rye grass has been mixed in berseem apply 22 kg urea/acre after each cutting.
2. Sow maize for fodder production upto mid September to have fodder for the scarcity period.
3. Preserve the surplus green fodder of maize or bajra as silage or hay to supplement the shortage of green fodder.

## VEGETABLES

### Potato :

1. The climatic conditions are ideal for sowing early varieties. Take out seed potato from the cold storage in the first fortnight of this month and spread in ventilated place under diffused sunlight in thin layers. Turn the surface of tubers once in a day and allow buds to sprout for a week. Sprouts should attain 0.5 - 1.0 cm length before sowing.
2. Use healthy and disease free seed.
3. Disinfect the tubers before sowing with 0.25 % solution of Monceren (250ml per 100 litre water) or 0.083 % of Emesto Prime (83 ml per 100 litre water) for 10 minutes to check black scurf of potato.
4. Application of FYM @ 20 tonnes per acre or green manuring is beneficial for this crop. Drill 82.5 kg urea, 155 kg superphosphate and 40 kg muriate of potash per acre at the time of sowing and remaining urea of 82.5kg at the time of earthing-up.
5. For weed control, use Gramoxone/Kabuto 24 SL (paraquat) @ 500-750 ml per acre at the stage when most of the weeds have emerged and potato crop showed 5-10 % emergence. Use 250 to 300 litres of water in knap sack sprayer fitted with flat fan nozzle and 100 litres of water with power sprayer.

6. Rainy potato crop becomes ready for harvest in 60-70 days. As soon as the crop becomes ready, it should be harvested immediately and sold in the market in 4-5 days as it has very little preservation capacity.

### **Garlic :**

In the second fortnight of this month, apply 20 tonnes of well rotten farmyard manure per acre along with 40 kg urea, 155 kg superphosphate per acre at sowing. Apply two split doses of urea @ 40kg at 30 and 60 days of sowing. Dibble or drill 225 to 250 kg healthy cloves of garlic in watter condition on ridges. Keep lines 15 cm and plants 7.5 cm apart. Irrigate immediately after sowing.

### **Peas :**

1. If pea crop is to be sown for the first time treat the seed (40kg/acre) of early maturing varieties *i.e.*, AP-3 and Mater Ageta-7 with Rhizobium culture specific for pea. Apply 8 tonnes of FYM, 45 kg urea and 155 kg superphosphate per acre before sowing.
2. Apply 10 kg Furadan 3 G per acre in furrows at sowing for reducing the infestation of stem fly in early sown pea crop.

### **Cole crops :**

1. Transplant fully developed seedlings (4-6 weeks old) of main season varieties of cauliflower. Apply 45 kg urea, 155 kg superphosphate and 40 kg muriate of potash before transplanting. Apply 55kg urea as a top-dressing four weeks after transplanting.
2. Sowing of late season varieties of cauliflower *i.e.* Pusa Snow Ball-1 and Pusa Snow Ball K-1 can be started. Sow 250 g seed in one marla to grow seedlings for planting an acre.

### **Root Crops :**

Start sowing of “desi” varieties of radish (Punjab Safed Mooli-2), turnip (L-1) and carrot (Punjab Black Beauty and PC 161), using 4-5 kg seed rate of radish and carrot and 2-3 kg seed rate of turnip per acre. Keep ridges 45 cm and plants 7.5 cm apart. Cultivation of root crops on ridges help in better growth and development of roots and easy harvest. To maintain plant- plant distance do the thinning of seedlings 15 days after emergence.

### **Palak :**

Use 4-6 kg/acre seed of Punjab Green. Seed should be sown 3-4 cm deep in rows at 20 cm apart in watter conditions.

### **FRUITS**

1. It is optimum time for the planting of ever green fruit plants like mango, sweet orange, mandarin, lime, lemon, litchi, guava, aonla, loquat and papaya as the atmospheric temperature cools down considerably and there is enough moisture in the soil and air.
2. The newly planted fruit plants are very tender and therefore, operations like irrigation, removal of sprouts stock, training, staking and plant protection measures should be undertaken with extreme care.

### **Mango :**

1. In gardens that show signs of zinc deficiency, application of zinc sulphate @150-200 g/tree with other fertilizers has been found beneficial.
2. If there is no rain,give light irrigation to the plants.

### **Litchi :**

1. In acidic soil,apply lime @ 10-15 kg at an interval of 3 years to increase yield.
2. In gardens that show signs of zinc deficiency, application of zinc sulphate @150-200 g/tree with other fertilizers has been found beneficial.

### **Banana :**

For prevention of leaf spot disease, spray 2g of Dithane M-45 or 2.5 g of Copper oxychloride with 2-3 litres of water at an interval of 10-15 days.

### **Aonla :**

Spraying of zinc sulphate(0.4%),copper sulphate(0.4%) and borax(0.4%) in the month of September-October is beneficial for the internal development of fruits.

### **Citrus :**

1. For checking pre-harvest fruit drop , spray the trees with 2,4-D sodium salt of horticulture grade (5 gm) in 500 litre of water during mid September.
2. Leaf miner can be checked by spraying 200 ml Crocodile/Confidor 17.8 SL (Imidacloprid) and citrus psylla can be checked by spraying 200 ml Crocodile/Confidor 17.8 SL or 160g Actara/Dotara 25.
3. To check withertip or die back, anthracnose or stem- end rot diseases, spray the plants with Bordeaux mixture 2 : 2 : 250.

### **Grape :**

For the control of anthracnose disease, spray the vines with Bordeaux Mixture in the middle of September and again in end-September for the control of downy mildew.

### **Loquat :**

To full grown Loquat tree apply 50 kg FYM alongwith 2 kg Single Superphosphate and 1.5 kg Muriate of Potash in this month.

### **Pear :**

Apply supplemental dose of urea @ 500 g to full grown plants of Punjab Beauty pear in this month in addition to recommended dose of fertilizers.

### **Guava :**

Apply 500 g urea, 1250 g S.S.P. and 750g Muriate of Potash to full grown guava trees as second installment of in organic fertilizers.



## ORNAMENTALS

### **Roses :**

In the second half of this month, the water should be withheld to prepare the rose plants for pruning. The pruning can be done from last week of September until first fortnight of October. Use sharp secateurs for pruning and apply fungicides the cut ends.

### **Chrysanthemum :**

Take care of drainage in the chrysanthemum pots. Keep on training the plants. Keep on disbudding the side shoots in case of large flowered chrysanthemum to get appropriate size of the flowers.

### **Marigold :**

Marigold seed sowing is done during this month for winter season crop.

### **Gladiolus and other Bulbous crops:**

Planting of gladiolus corms should be started. Staggered planting must be practiced. Before planting of corms, the corms must be treated with some fungicide solution for half an hour. Well developed bulbs of Narcissus (Nargis), Freesia etc. can be planted now. The soil should be well drained and rich in organic matter. Double Dahlia plants can be raised both from the terminal cuttings as well as from the bulbs during this period. de shoots in case of large flowered chrysanthemum to get appropriate size of the flowers.

### **Annuals :**

Nursery of winter annuals can be raised during this month on raised beds. Seeds with hard seed coat like sweet pea are sown directly after soaking them in the water overnight. Immediately after sowing the seeds water must be sprinkled on the beds. The seedlings are to be protected from damping off disease in the nursery beds.

### **Lawns :**

The lawns must have gained good growth during the rainy season. Adjust the lawn mower blades in such a way that the lawn is mowed as close to the ground as possible. For getting lush green appearance of the lawn, apply 1.0 kg CAN or 500 g urea per 1000 sq. ft.

## **FARM FORESTRY**

### **Poplar :**

1. Irrigate the poplar plantations at fortnightly interval.
2. In poplar nurseries, the caterpillars of leaf Defoliator and Leaf Webber feed on leaves. Control the insects by collecting and destroying the infested leaves.
3. Autumn crop of sugarcane can be sown if the Poplar age is less than 3 years, however, maize/bajra/sorghum can be taken as fodder at any age of the Poplar.

### **Safeda :**

The planting drive of seedlings or clonal planting stock should be done in pits of 50 × 50 × 50 cm. The pits should be filled with 50 % top soil and 50 % FYM.

## **MUSHROOM GROWING**

1. Start procuring fresh paddy straw by the end of the month and October. Store in the form of bundles of 1.0 to 1.5 kg in a dry and covered space.
2. Start composting using wheat straw during 2nd-3rd week for growing white button mushroom following the schedule as recommended.
3. Book your spawn as per requirement for cultivation of button mushroom.
4. Remove the spent material (bags) of milky mushroom from the growing rooms.

## **DAIRY FARMING**

1. Animals usually lose weight after calving during first 100 days. Hence farmers should follow practices of good management and balanced feeding e.g. quality green fodder, balance feed and mineral mixture so that the weight loss is minimum.

2. Healthy animals usually come in heat within 50-60 days after parturition. Observe such animals for heat symptoms and get the animals inseminated within 12 to 18 hrs after onset of heat in order to reduce calving interval.
3. Provide dry bedding to young calves and follow the recommended practices of deworming and vaccination.
4. In case of tick infestation, control it by spraying Asuntol (1 g/litre of water) or Butox (2 ml/litre of water) on the animals as well as in the sheds and repeat the spray after 10-15 days. Do not spray animals below six months of age. Animal sheds especially corners, crevices etc. should also be sprayed. Strictly follow the manufacturers instructions while spraying the insecticides. Keep the animal sheds and surroundings clean to keep the fly population under control.
5. Deworm the adult animals regularly at an interval of four months with broad spectrum anthelmintics, keeping in view the prevalence of endoparasites in your area.
6. For prophylaxis against trypanosomiasis (surra) disease, consult the local veterinarian. Since the disease is transmitted by flies, so spray insecticides to keep the flies away.
7. Protect udder of animals from mastitis by proper sanitation and using teat dip by the solution of 100 ml povidone or iodine plus 20 ml glycerine.

## **POULTRY**

1. Light plays an important role in egg production. Provide 14-16 hours of total light to layers, including the day light. Gradually go on increasing the light when egg production starts.
2. Provide extra grit in the hoppers to avoid production of thin shelled eggs.
3. Stir the litter regularly to avoid dampness. At the same time, sufficient air movement should be made possible inside the poultry shed.
4. It is best season to raise the broilers. Get your broiler chicks from a reputed hatchery.
5. Protect the sheds from rodents as they eat feed meant for poultry.

## **HONEY BEE MANAGEMENT**

Provide drawn combs/frames and super chambers as per requirement, in case there is nectar flow or pollen income or both from the available bee flora. Ripe (sealed) honey, in case of the availability of nectar flow, should be extracted. In case of pollen flow, provide raised empty worker brood cell combs in the brood chamber to hasten colony growth, and honey extraction be resorted only to honey supers separated from the brood chamber with queen excluder. All precautions to avoid robbing should be undertaken during and after honey extraction. This would also curb spread of bee diseases and Varroa mite. Dust sulphur powder on the top bars of the bee combs @ 1.0 g per comb against *Tropilaelaps clareae* brood mite's infestation. Alternatively, fumigation with formic acid @ 5 ml daily for two weeks may be applied. The latter treatment will also take care of Varroa mite but it should be avoided during nectar flow. In the case of heavy infestation by Varroa destructor mite, the destruction of sealed drone brood comb part, Varroa trapping in sealed drone brood and then its destruction and the use of sticky papers on bottom board coupled with the use of Varroa board can also be integrated. Dusting of icing sugar @ about 2 g in the evening time in between every two bee combs 7-8 times at three days interval is also helpful in reducing the mite infestation. Spray of freshly prepared oxalic acid solution (4.2%) prepared in 60 per cent sugar solution in water, on the adult bees in the late evening thrice at weekly interval, is also helpful in the reduction of the mite population. Proper spacing among the colonies and also among the migrated apiaries and the extraction of honey from only the super separated from the brood chamber with queen excluder help in preventing spread of Varroa. Keep vigil of the brood diseases and on suspicion, immediately consult experts and appropriate control measures should be undertaken; non-chemical methods should be preferred. The suspected colonies should immediately be isolated from the healthy looking stock. Adopt necessary apiary management operations to avoid wax moth attack inside the colonies. Inspect the stored combs for wax moth attack and apply fumigation with burning sulphur or with aluminium phosphide, if necessary. In areas of floral dearth, give sugar feeding (sugar: water = 1:1) to the honey bee colonies according to the needs and take all measures to prevent/check robbing. In the event of pollen flow and drone brood rearing, queen bee rearing can be undertaken depending upon the prevailing weather conditions, for stock multiplication or for requeening for which progressive beekeepers can follow mass queen bee rearing technique for which the best

performing selected colonies should be used as ‘breeder colonies’. For further information, consult beekeeping experts.

