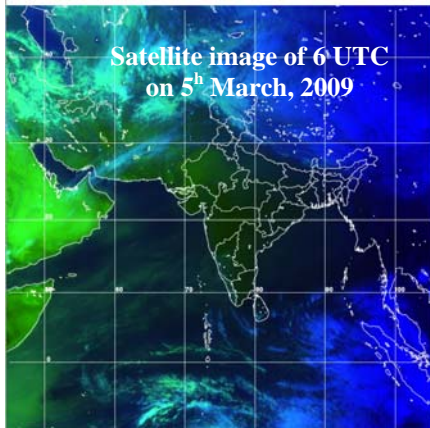




# National Agromet Advisory Bulletin

Thursday, 5<sup>th</sup> March, 2009

(For the period 5<sup>th</sup> March to 9<sup>th</sup> March, 2009)



Satellite image of 6 UTC  
on 5<sup>th</sup> March, 2009

## Chief Synoptic Feature (Based on 1430 hours IST observations of 5<sup>th</sup> March, 2009)

- A fresh western disturbance is likely to affect western Himalayan region on 6<sup>th</sup> & 7<sup>th</sup> March.
- The maximum temperatures continued to remain above normal by 4-7°C over many parts of north-west, west and central India. The minimum temperatures are also above normal by 3-6°C over above regions.
- Due to moving away of a western disturbance, a fall of about 2°C in temperatures is likely over northwest and west India during next 1-2 days.

## Advisories for high temperature

- There are reports of marginal high temperature persisted in northern and central parts of the country particularly East Uttar Pradesh, Bihar and Madhya Pradesh during past few weeks. There may be negative impact on production of *rabi* crops especially wheat in these States if this trend of high temperature continues.
- Therefore, farmers of the above mentioned States are advised to apply light and frequent irrigation to meet the excess evaporative demands and to avoid adverse impact of high temperature.

## Advisories for irrigation

- As there was no significant rain in most of the remaining States of the country during last week and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to the crops.

## Advisories for pest and disease

- Weather conditions are favourable for the incidence of pests and diseases in the following States:
  - Stem borer and blast in summer rice in Orissa.
  - Powdery mildew in peas in Himachal Pradesh.
  - Aphids in mustard in Orissa and Bihar.
- Monitor the crops for the pests and diseases and undertake plant protection measures if required.

Issued by

National Agrometeorological Advisory Service Centre,  
Agricultural Meteorology Division, India Meteorological Department, Shivajinagar, Pune.

The bulletin is also displayed in the website (<http://www.imdagrimet.org>) of the Division

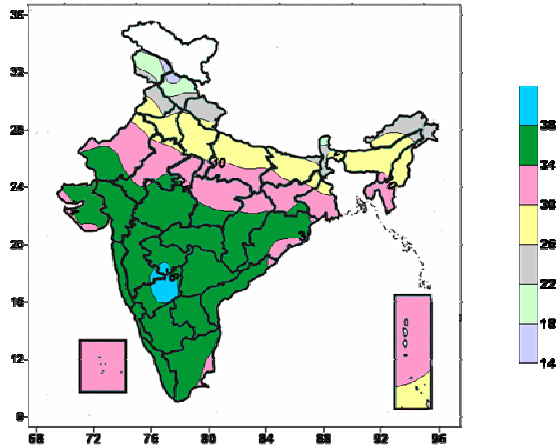
<b>Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks</b>					
<b>Sub-division</b>	<b>Cumulative Rainfall (% Dep.) for the period</b>				
	<b>4<sup>th</sup> February</b>	<b>11<sup>th</sup> February</b>	<b>18<sup>th</sup> February</b>	<b>25<sup>th</sup> February</b>	<b>5<sup>th</sup> March</b>
A & N Islands	-96	-49	-100	-100	-27
Arunachal Pradesh	-71	-100	-93	-40	29
Assam and Meghalaya	-95	-100	-96	-21	-45
NNMT	-100	-100	-69	-100	-54
SH West Bengal & Sikkim	-99	-100	-83	-97	-91
Gangetic West Bengal	-100	-100	-70	-100	-100
Orissa	-100	-100	-100	-100	-100
Jharkhand	-100	-100	-100	-100	-100
Bihar	-100	-68	-53	-100	-100
East Uttar Pradesh	-100	19	-100	-100	-100
West Uttar Pradesh	-100	-2	-100	-100	-100
Uttarakhand	-100	182	20	-100	-100
Haryana, Chandigarh & Delhi	-100	270	-87	-100	-100
Punjab	-100	29	-32	-99	-100
Himachal Pradesh	-95	167	-79	-50	-99
J & K	-96	-50	-39	-13	-95
West Rajasthan	-100	-96	-39	-100	-100
East Rajasthan	-100	-100	-100	-100	-100
West M. P.	-100	-100	-100	-100	-100
East M. P.	-100	-100	-100	-100	-100
Gujarat region	-100	-100	-100	-100	-100
Saurashtra & Kutch	-100	-100	-100	-100	-100
Konkan and Goa	-100	-100	-100	-100	-100
Madhya Maharashtra	-100	-100	-100	-100	-100
Marathwada	-100	-100	-100	-100	-100
Vidarbha	-100	-100	-100	-100	-100
Chhattisgarh	-100	-100	-100	-100	-100
Coastal A. P.	-100	-100	-100	-100	-100
Telangana	-100	-100	-100	-100	-100
Rayalseema	-100	-100	-100	-100	-100
TamilNadu & Pondicherry	-98	-100	-100	-99	-100
Coastal Karnataka	-100	-100	-100	-100	-100
N. I. Karnataka	-100	-100	-100	-100	-100
S. I. Karnataka	-100	-100	-100	-85	-100
Kerala	-100	-100	-65	-100	-99
Lakshadweep	-100	-100	-63	-100	-100

The subdivisions like Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, West Bengal, Sikkim, Orissa, Bihar, Jharkhand, Rajasthan, Madhya Pradesh, Gujarat State, Maharashtra, Chhattisgarh, Andhra Pradesh, Karnataka, Tamil Nadu & Pondicherry, Kerala and Lakshadweep Islands received scanty / deficient rain in all the 5 weeks; Arunachal Pradesh, Uttar Pradesh, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh and Jammu & Kashmir received scanty / deficient rain in 4 out of last 5 weeks; Uttarakhand received scanty / deficient rain in 3 out of last 5 weeks.

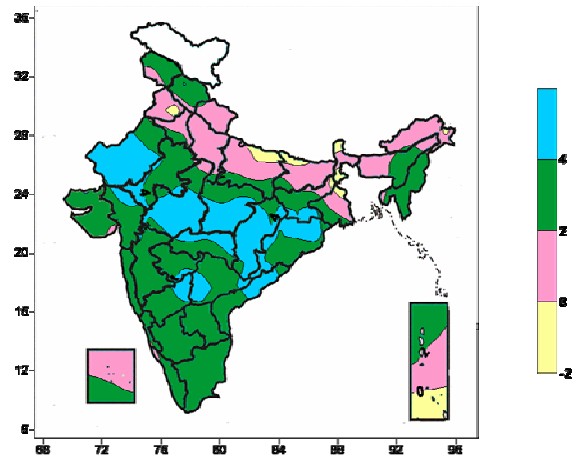
	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%) deficient rainfall		** Data not available

## Contour maps for the week ending 04.03.09

**Actual Mean Maximum Temperature (°C) in India for the week ending 04.03.09**



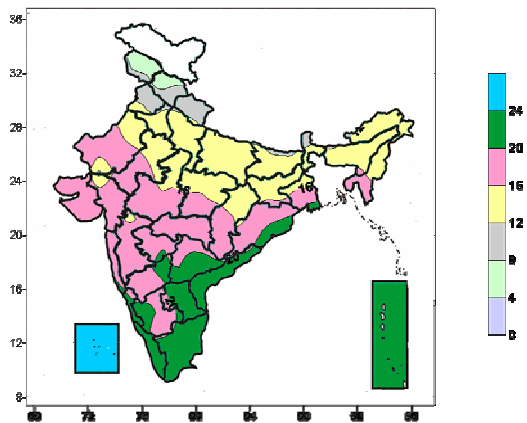
**Maximum Temperature (°C) Anomaly in India for the week ending 04.03.09**



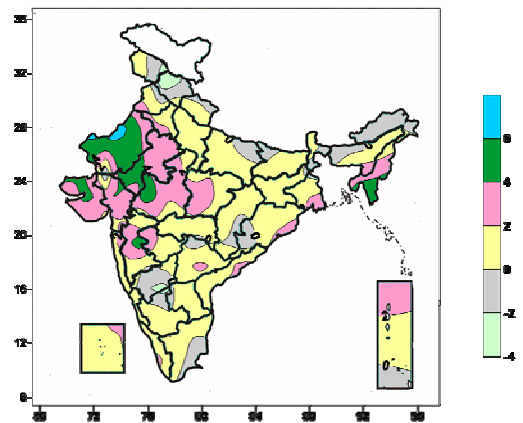
Actual Mean Maximum temperature ranged between 38 to 42°C over some parts of Madhya Maharashtra, Marathwada, Karnataka, 30 to 34°C over most parts of Rajasthan, Andaman Nicobar Island, Lakshadweep, some parts of Gangetic West Bengal, Jharkhand, Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Orissa, Tamil Nadu, 26 to 30°C over most parts of Haryana, Uttar Pradesh, Bihar, Assam, Manipur, some parts of Punjab, Rajasthan, Jharkhand, West Bengal, Andaman & Nicobar Islands, 22 to 26°C over some part of Jammu & Kashmir, Punjab, Uttarakhand, Himachal Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam, 18 to 22°C over some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Bihar, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam, 14 to 18°C over some parts of Jammu & Kashmir, Himachal Pradesh, 34 to 38°C over remaining parts of the Country.

Actual Mean Maximum temperature anomaly ranged between 4 to 6°C over most parts of West Rajasthan, Madhya Pradesh, Chattisgarh, some parts of Gujarat, East Rajasthan, Vidarbha, South Interior Karnataka, Coastal Andhra Pradesh, Telangana, Orissa, Jharkhand, 0 to 2°C over most parts of Punjab, Uttarakhand, Uttar Pradesh, Bihar, Arunachal Pradesh, Assam some parts of Haryana, Himachal Pradesh, West Madhya Pradesh, West Bengal, Jharkhand, Assam, Tripura, Andaman Nicobar Island, Lakshadweep, -2 to 0°C over some parts of Haryana, East Uttar Pradesh, Bihar, West Bengal & Sikkim, Arunachal Pradesh, 2 to 4°C over remaining parts of the country.

**Actual Mean Minimum Temperature (°C) in India for the week ending 04.03.09**



**Minimum Temperature (°C) Anomaly in India for the week ending 04.03.09**



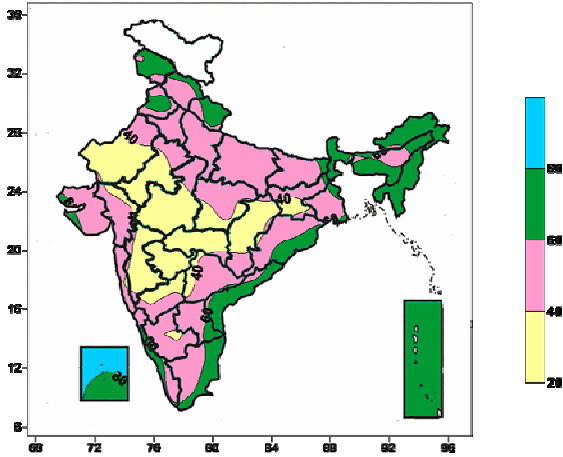
Actual Mean Minimum Temperature ranged between 24 to 28°C over most parts of Lakshadweep Island, 20 to 24°C over most parts of Andhra Pradesh, Tamil Nadu, Kerala, Coastal Karnataka and Andaman & Nicobar Islands, some parts of Marathwada, Coastal Orissa, Coastal Karnataka, Interior Karnataka, 12 to 16°C over most parts of Haryana, New Delhi, Uttar Pradesh, Bihar, Jharkhand, Assam, Arunachal Pradesh, some parts of Punjab, Rajasthan, Madhya Pradesh, Gujarat, Madhya Maharashtra,

Minimum Temperature anomaly ranged between 4 to 6°C over most parts of West Rajasthan, some parts of East Rajasthan, Gujarat, Madhya Maharashtra, Mizoram, Tripura, 2 to 4°C over some parts of Punjab, Haryana, Delhi, Rajasthan, Madhya Pradesh, Konkan, Madhya Maharashtra, Marathwada, Raylaseema, Coastal Andhra Pradesh, Gujarat, Orissa, Gangetic West Bengal, Assam, Manipur, Mizoram, Kerala, Lakshadweep, Andaman Nicobar

Chattisgarh, West Bengal, Manipur, Mizoram, Orissa, 8 to 12<sup>0</sup>C over most parts of Punjab, Uttarakhand, some parts of Jammu & Kashmir, Himachal Pradesh, Haryana, Bihar, Sikkim, Arunachal Pradesh, 4 to 8<sup>0</sup>C over some parts of Jammu & Kashmir, Himachal Pradesh, 16 to 20<sup>0</sup>C over remaining parts of country.

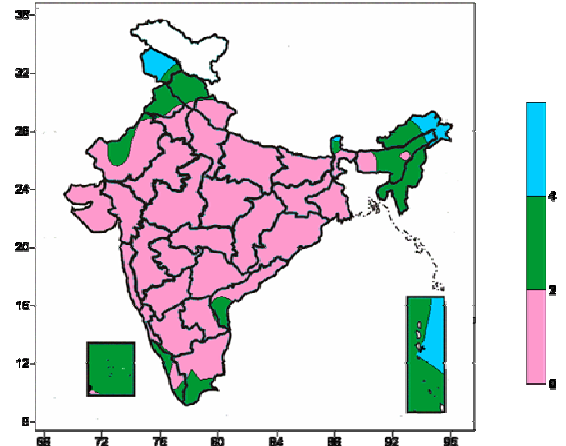
Island, -2 to 0<sup>0</sup>C over some parts of Jammu & Kashmir, Punjab, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, West Rajasthan, West Bengal, Assam, Arunachal Pradesh, Orissa, Chattisgarh, Rayalaseema, Telengana, Vidarbha, South & North Interior Karnataka, Tamil Nadu, 0 to 2<sup>0</sup>C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 04.03.09



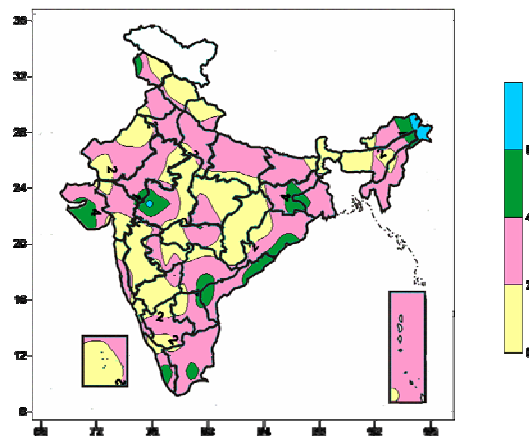
Relative humidity ranged from 80 to 100% over some parts of Lakshadweep, 60 to 80% over most parts of Jammu & Kashmir, Uttarakhand, Sub-Himalayan West Bengal & Sikkim, North East India, Andaman & Nicobar Islands, some parts of Punjab, Himachal Pradesh, Saurashtra & Kutch, Bihar, Jharkhand, Gangetic West Bengal, Coastal Orissa, Coastal Andhra Pradesh, Coastal Tamil Nadu, Kerala, Coastal Karnataka, 20 to 40 % over most parts of Rajasthan, west Madhya Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, over some parts of Gujarat, East Madhya Pradesh, Jharkhand, Rayalaseema, Interior Karnataka, to 60% over remaining parts of the country..

Cloud amount (okta) over India for the week ending 04.03.09



Cloud amount ranged from 4 to 6 okta over some parts of Jammu & Kashmir, Arunachal Pradesh, Andaman Nicobar Island, 2 to 4 okta over most parts of Himachal Pradesh, Punjab, Sikkim, North East India, Andaman Nicobar Islands, Lakshadweep, some parts of West Rajasthan, Coastal Andhra Pradesh, Tamil Nadu, Kerala, 0 to 2 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 04.03.09

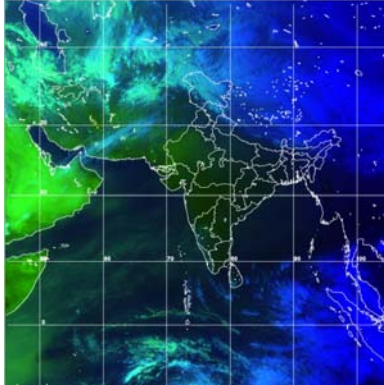


Wind speed ranged between 6 to 8 knots over some parts of Arunachal Pradesh, West Madhya Pradesh, 4 to 6 knots over some parts of Jammu & Kashmir, Arunachal Pradesh, Jharkhand, Saurashtra & Kutch, East Rajasthan, West Madhya Pradesh, Coastal Orissa, Andhra Pradesh, Kerala, Tamil Nadu, 0 to 2 knots over most parts of Himachal Pradesh, Chattisgarh, Sub-Himalayan West Bengal, Madhya Maharashtra, North Interior Karnataka, some parts of Jammu & Kashmir, Punjab, Uttarakhand, Uttar Pradesh, Haryana, West Rajasthan, Madhya Pradesh, Gujarat, Konkan & Goa, Marathwada, Vidarbha, Assam, Arunachal, Orissa, South Interior Karnataka, Coastal Karnataka, Kerala, Andaman & Nicobar Islands, & Lakshdweep, 2 to 4 knots over remaining parts of the country.

### **Chief Synoptic Feature (Based on 1430 hours IST observations of 5<sup>th</sup> March, 2009)**

- A fresh western disturbance is likely to affect western Himalayan region on 6<sup>th</sup> & 7<sup>th</sup> March.
- The maximum temperatures continued to remain above normal by 4-7°C over many parts of north-west, west and central India. The minimum temperatures are also above normal by 3-6°C over above regions.
- Due to moving away of a western disturbance, a fall of about 2°C in temperatures is likely over northwest and west India during next 1-2 days.

### **Satellite image of 6 UTC on 5<sup>th</sup> March, 2009**



### **Zone-wise Forecast (Forecast valid upto 1430 hours IST of 8<sup>th</sup> March, 2009)**

#### **NORTHWEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, WEST UP]**

- Rain/snow is likely at isolated places during next 24 hours and at a few places thereafter over Jammu & Kashmir.
- Rain/snow is likely at isolated places over Himachal Pradesh from tomorrow onwards.
- Rain/snow is likely at isolated places over Uttarakhand after 48 hours.
- Mainly dry weather is likely over the rest region.

#### **EAST INDIA [EAST UP, JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]**

- Mainly dry weather is likely over the region.

#### **NORTHEAST INDIA [ARUNACHAL PRADESH, NMM & T, ASSAM, MEGHALAYA]**

- Rain/thundershowers are likely Isolated over the region.

#### **SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]**

- Isolated Rain/thundershowers are likely over Nicobar Islands.
- Mainly dry weather is likely over the rest region.

#### **WEST INDIA [GOA, MAHARASHTRA (OTHER THAN VIDARBHA), GUJARAT, RAJASTHAN]**

- Mainly dry weather is likely over the region.

#### **CENTRAL INDIA [M.P., CHHATTISGARH, VIDARBHA]**

- Mainly dry weather is likely over the region.

#### **Weather Outlook from 1430 IST of 8<sup>th</sup> March, 2009 to 1430 IST of 10<sup>th</sup> March, 2009 (Based on numerical weather products):**

Under the influence of an approaching easterly wave, isolated to scattered rain/thundershowers are likely over extreme south peninsula from 8<sup>th</sup> onwards.



# Zonewise Agromet Advisories

**NORTH WEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, WEST UP]**

## **Himachal Pradesh**

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), wheat (flowering / grain formation), barley, oat and oil seeds (flowering / grain formation), potato (planting / vegetative / tuber formation), cabbage, cauliflower and broccoli (head formation), pea (flowering / pod formation), leafy vegetables like lettuce, methi, palak, dhania etc. (vegetative).
- As there was no significant rain during last few weeks and no significant rain is likely to occur for next five days over the State and there is also persisting above normal temperature in some parts of the State, apply light and frequent irrigation to the crops.
- For seed crop of berseem and oat one cut can be taken. As there is less possibility of rain, apply urea to irrigated crop of oat where first cut has been taken.
- Earthing up can be undertaken in potato crop. It is also optimum time for sowing of potato in mid hills region.
- As there is less possibility of rain, termite affected plots may be treated with 80 ml chloropyriphos mixed with 1 kg of sand for one kanal area of plot.
- Under prevailing weather it is advised for nursery sowing of tomato, chilli, capsicum and brinjal in poly house. Summer squash crop should be raised in poly tubes in the poly houses so that plant may be ready after 15 days for transplanting in the field. The transplanting of onion may be finished within this week. It is optimum time for sowing of raddish (Pusa Himani).
- Weather is congenial for production of white button mushroom in the closed room. Maintain room temperature at 18-22<sup>0</sup>C and relative humidity around 85% for successful cultivation.
- Under present weather the training and pruning work of peach, plum and apricot may be completed at the earliest.
- Under prevailing weather condition there is possibility of infestation of powdery mildew. For control of powdery mildew in peas spray Sulfex @ 25 g per 10 litres of water or karathane @ 5 ml per 10 litres of water.
- Weather condition is also congenial for downy mildew in cruciferous vegetables. For control spray Redomil M-Z @ 25 g per litre of water at 15 days interval.
- Do white washing on the stem of the trees of apple with 10 kg Chuna + 100 gm. of Copper oxicleotide + 25 liters of water to protect from diseases and direct solar radiation.

## **Honeybees**

- Due to winter season enough flora is not available for bees, therefore farmers are advised to give artificial feed of 50% sugar and 50% water solution to honey bees.
- Also ensure proper packing to the apiary to protect from cold.
- Ensure before packing that weak apiaries should be given artificial food. Insert the brood chamber without frame for ensuring aeration.

## **Animal Husbandry**

- Still the night temperature is low enough to protect the newly born calves in some parts of the State. Pregnant and lactating cows and buffaloes should be given 2 kg feed for their body maintenance and additional 1 kg for developing calves with mineral mixture @ 15-30 g per day. For milch animals 2 kg feed + one kg additional feed per 2.5 kg milk production should be given.

## **Uttarakhand**

- **Major Standing Crops:** Sugarcane (harvesting), wheat (grain formation) and potato (tuber formation / early maturity), mustard, chickpea and lentil (pod formation / early maturity), cabbage, onion, garlic and tomato (vegetative).

- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State and there is also persisting above normal temperature in some parts of the State, apply light and frequent irrigation to the crops.
- Undertake field preparation and planting of sugarcane with irrigation facilities.
- Undertake harvesting of matured crops of potato, lentil, sugarcane and *toria* as weather conditions are favourable for harvesting of the crops.
- Farmers are advised to undertake field preparation and sowing of sunflower with irrigation facilities. Sow certified seeds of high yielding varieties.
- Farmers are advised to undertake field preparation and sowing of non seasonal pea with improved varieties in high hills.
- As weather is favourable for sowing of moong and urd, undertake sowing of these crops with irrigation facilities.
- Farmers are also advised to undertake sowing of french bean. Ensure proper soil moisture at the time of sowing.
- Details of varieties are given in Annexure I.

### **Punjab**

- **Major Standing Crops:** Horticultural crops (vegetative), spring sugarcane (early vegetative), potato (tuber formation / early maturity), wheat (grain formation), gram and lentil (pod formation), pea and vegetable crops like chilly, tomato, brinjal and onion (early vegetative) and oilseeds (pod formation).
- As there was no significant rain during last few weeks and mainly dry weather is likely for next five days over the State and there is also persisting above normal temperature in some parts of the State, apply light and frequent irrigation to the crops to meet the excess demands for evapotranspiration.
- Farmers are advised to complete sowing of sunflower and transplanting of chilli, tomato, brinjal and onion with irrigation facilities. Undertake sowing of cucurbits in polythene bags for raising early crop.
- Undertake field preparation and planting of sugarcane with irrigation facilities.
- Farmers are advised to undertake field preparation and nursery sowing of bhindi.
- Details of crop varieties are mentioned in Annexure I.
- Farmers are advised to raise nurseries of muskmelon, pumpkin, chillies and capsicum.
- Farmers are advised to undertake planting of deciduous fruit crops like pear, grapes and phalsa. Pruning in grapes may be completed.
- Undertake layering of litchi trees and side grafting of mango for their propagation.
- Give well chopped barseem mixed with wheat straw to avoid aphara (Tympany) in animals.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
  - pod borer attack in gram; spray 400 ml Endosulfan 35 EC or Quinalphos 25 EC or 200 ml Monocrotophos 36 SL in 100 litres water per acre.

### **Haryana**

- **Major Standing Crops:** Spring sugarcane (early vegetative), vegetable crops (early vegetative), wheat (grain formation) and oilseeds (pod formation).
- As there was no significant rain during last few weeks and mainly dry weather is likely for next five days over the State and there is also persisting above normal temperature in some parts of the State, apply light and frequent irrigation to the crops to meet the excess demands for evapotranspiration.
- Prepare the field and continue the planting of sugarcane with early maturing varieties with irrigation facilities.
- Complete sowing of sunflower and berseem.
- Details of crop varieties are mentioned in Annexure I.
- Farmers are advised to prepare the field and continue sowing of cucurbits.
- Complete transplanting of tomato and continue transplanting of onion and chillies.
- Pruning in grapes may be completed.

- Farmers are advised to give the 50grams Iodized salt along with 50 to 100 grams mineral mixture daily to keep calves and adult animals healthy.

**Plant Protection:** Weather conditions are favourable for mild incidence of

- aphids in mustard and therefore, farmers are advised to monitor the aphid build up and spray the crop with 250 to 400 ml Metasystox 25 EC or Rogor 30 EC per acre as weather is expected to be dry.
- pod borer attack in gram; spray 400 ml Endosulfan 35 EC or Quinolphos 25 EC or 200 ml Monocrotophos 36 SL in 100 litres water per acre.

## Delhi

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), *toria* (maturity), mustard (capsule / seed formation / seed maturity), potato (tuber maturity), gram (pod / grain formation), wheat (flowering / grain formation), *rabi* onion (vegetative).
- As there was no significant rain during last few weeks and no significant rain is likely to occur for next five days over the State and there is also persisting above normal temperature in the State, apply light and frequent irrigation to wheat, vegetables, mustard, gram etc.
- As dry weather is likely to prevail, farmers are advised to continue harvesting of already matured crops of potato, *toria*, mustard etc.
- Farmers are advised to save the recently transplanted seedlings of tomato from high winds using stakes. Farmers are also advised to sow the seeds of tomato as the weather condition is favourable.
- As present weather conditions are favourable, farmers are advised for direct sowing of vegetables like ladies finger, bottle gourd, ridge gourd, cucumber etc. and also transplanting of sugarcane.
- Under prevailing weather condition complete sowing of sunflower immediately.
- Prevailing weather condition is conducive for powdery mildew infestation in pea and other pulses. Spraying of Carathene @ 2 g per litre of water (700 litres / ha) is advised where infestation is observed.
- In view of favourable weather conditions for aphid infestation in tomato, late mustard and cabbage, spraying of Confidor (Imidacloprid) @ 0.25 % solution is advised.
- Present weather condition is favourable for infestation of pod borer in gram. Farmers are advised to monitor the crops and use pheromone traps for managing the pest. Under high infestation farmers are advised to spray Endosulfan 0.07% when the population crosses Economic Threshold Level (ETL).
- Farmers are advised for regular monitoring against fungal disease on flower panicle of mango.
- Details of crop varieties are mentioned in Annexure I.

## Uttar Pradesh

- **Major Standing crops:** Sugarcane (grand growth / cane formation), mango (fruit setting), rai, mustard, gram, pea and lentil (pod formation/early maturity), potato (tuber formation/early maturity) and wheat (grain formation).
- As there was no significant rain during last few weeks and no significant rain is likely to occur for next five days over the State and there is also persisting above normal temperature in some parts of the State, apply light and frequent irrigation to the crops to meet the excess demands for evapotranspiration.
- Continue picking of vegetable crops depending upon the market demand.
- Undertake weeding, intercultural operations, application of fertilizers and pesticides in the standing crops like garlic and onion as favourable weather conditions prevail during these days.
- Sowing / transplanting of onion may be continued.
- Farmers are advised to harvest the matured crops of potato, sugarcane, rai and *toria* as favourable weather conditions are prevailing.
- Sowing of *zaid* maize at seed rate of 18-20 kg / hectare may be done after preparing field and purification of seeds.



- Prepare field and undertake sowing of summer vegetables, sunflower, moong and urd with irrigation facilities. Details of crop varieties are mentioned in Annexure I.
- Weather conditions are favourable for mild incidences of hopper in mango and leaf eating caterpillar in summer vegetable crops. Monitor the crops for the pests and undertake plant protection measures to control the pests.

## J & K

- **Major Standing Crops:** Wheat (tillering), pulses (late vegetative), mustard (late vegetative). This is proper time for planting of orchard tree saplings in Jammu and sowing of vegetable crops in nursery in Rajouri divisions.
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State, apply irrigation to the crops.
- Undertake intercultural operations in brown sarson, pulses and wheat in Srinagar, mustard in Jammu division, beet, mongol and spinach in Leh division and mustard, berseem, pulses and vegetable crops in Rajouri division on a non rainy day to keep the field weed free.
- Complete transplanting of onion and tomato seedlings in Jammu division. Undertake planting of saplings in orchard.
- Undertake sowing of vegetable crops like bhindi, beans, cucurbits and nursery sowing of tomato, brinjal and chillies in Jammu and Rajouri division.
- Pruning in grape vine, phalsa, peach and plum crops may be undertaken during these days. Farmers are advised to plan for new orchard plantation during these days. Application of nitrogenous fertilizer in orchards may be done on a non rainy day. Keep the orchards free from weeds by intercultural operation on a non rainy day. Remove the thatched / covering material from the young fruit plants if not done earlier.
- Undertake sowing of tomato, brinjal, chilly and capsicum in nursery and raising of poly bags for bottle gourd, cucumber, pumpkin, sponge gourd and bitter gourd in Rajouri division.
- Undertake transplanting of popular trees in main field in Jammu division.
- Garlic which has been mulched or covered with polythene/grasses/leaves/Straw against frost/snow fall should continue till Mid March.
- Weather conditions are congenial for mild incidences of
- aphids in late sown mustard in Jammu and Rajouri division, collar rot and root rot in pulses and leaf eating caterpillar in vegetable crops in Rajouri division;
- collar rot in gram and powdery mildew in field pea in Jammu division;
- monitor the crops for the pests and diseases and undertake plant protection measures.
- **Honeybees:** In apiculture provide artificial feeding of sugar water solution in the ratio of 1:1. Protect the bee colonies from bee predator birds. Shift the bee colonies near the mustard field to minimize the honey production.
- **Animal Husbandry:** Due to decrease in minimum temperature protect the pregnant and milch animals from cold and feed them mineral mixture regularly. Cover the poultry shed with gunny bags in order to protect the birds from cold weather.

## EAST INDIA [EAST UP, JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]

### Bihar

- **Major Standing Crops:** Sugarcane (vegetative), *rabi* maize (cob formation), pulses (pod formation), potato (tuber formation / maturity) and sunflower (head formation), wheat (grain formation) and *boro* rice (tillering).
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State, apply irrigation to the crops.

- Avoid moisture stress in wheat and maize crop by maintaining adequate soil moisture as moisture stress at this stage affects the yield of these crops. Avoid irrigation to fruit crops during flowering.
  - Weather is favourable for sowing of summer green gram. Farmers are advised to prepare the land and undertake sowing. Seed treatment with rhizobium culture before sowing is advised. Adopt spacing of 30 x 7 cm.
  - Farmers are advised to prepare land and continue the sowing of summer vegetables.
  - Undertake intercultural operations, application of fertilizers and pesticides in maize, tomato, brinjal, cauliflower, cabbage and *boro* rice.
  - Farmers are advised to continue the field preparation and undertake planting of sugarcane crops.
  - Weather condition has become favourable for sowing of summer maize crop in north Bihar. The farmers should ensure sufficient moisture in the field at the time of sowing for better germination of seeds. Seed treatment with Thiram @ 2.5 g per kilogram of seeds is advised before sowing.
  - Farmers are also advised to harvest the matured potato, rapeseed and mustard crops as weather favourable for undertaking harvesting.
- Plant Protection:** Weather conditions are favourable for mild incidence of
- litchi mite and borer in litchi orchards. Spray Rogor @ 1.5 to 2.0 ml / litre of water against borer insects immediately.
  - severe aphid infestation in the late sown mustard / *toria* crop. Spray Endosulphan@1.5 ml per litre of water to protect the crops.

### Jharkhand

- **Major Standing Crops:** wheat (grain formation), *rabi* oilseeds (pod formation), potato (tuber formation / maturity).
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State, apply irrigation to the crops.
- Undertake transplanting of onion and sowing of bitter gourd, sponge gourd, ridge gourd, bhindi and water melon in the main field.
- Farmers are advised to undertake weeding, intercultural operations in early sown summer rice as weather is favourable.

### Orissa

- **Major Standing crops:** Sugarcane (harvesting), sunflower, mustard (pod formation / maturity), vegetables (vegetative / flowering / fruiting / harvesting), wheat (grain formation), potato (tuber formation / maturity), onion (vegetative) and summer rice (tillering), summer sunflower (seedling / early vegetative) and summer groundnut (vegetative / flowering).
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State, apply irrigation to the crops.
- Farmers are advised to undertake sowing of summer moong, maize, sesame and planting of marigold.
- Current weather conditions are favourable for planting of pine apple. Use healthy, robust 3-4 months aged rhizomes of 350-400 g by weight. Plant the seedlings in 0.5x0.5x0.5 m pit at a spacing of 1x 0.3 m distance.
- Farmers are advised to complete sowing of summer cow pea, green gram and planting of papaya. Details of crop varieties are mentioned in Annexure I.
- Undertake planting of sugarcane. Dip the sugarcane seed material (setts) in Bavistin solution (1.5 g / litre of water) for 20-30 minutes before planting.
- As dry weather is prevailing, undertake intercultural operations in *rabi* crops and early sown summer groundnut to keep the fields weed free.
- Early sown summer sunflower is at 25 days. Thin out plants keeping one healthy plant.
- Maintain average water depth at 5ft level in the fish pond. Feed fishes with oil cake, bran mixture at 2% of their body weight daily. Start partial harvesting of fishes above ABW 750g.

**Plant Protection:** Weather conditions are favourable for mild incidence of

- yellow stem borer in rice. Install light trap or pheromone trap to monitor yellow stem borer population. If incidence is more in the field (5% DH), apply phorate 10 G @ 4 kg / acre or Cartap hydrochloride 4G @ 5 kg / acre ensuring no leakage of water through the bunds.
- blast in rice. Spray 0.6 g Tricyclazole or 1 ml. Ediphenphos per litre water. Withhold top dressing of Urea for five days after the spraying. Increased temperature may favour the egg laying of stem borer in rice in the main field.
- Brown Plant Hopper(BPH) infestation may be found in BPH prone areas. Keep regular watch on BPH attack. Drain out the water and again irrigate the field.
- aphids and leaf webber in late sown mustard crop. Spray the crop with Quinalphos @ 2 ml / litre.
- shoot and fruit borer in brinjal. Clip all the infested terminal shoots and destroy them. Immediately after clipping, spray the crop with Fenvalerate @1 ml/litre, if sucking insects are not there. If sucking insects are present along with fruit and shoot borer, spray the crop with Actara 25WG @1g/4 litre of water or Spinosad 45 SC @ 0.5 ml/litre of water.

### West Bengal

- **Major Standing Crops:** Sugarcane (cane maturity / harvesting), mustard, gram and lentil (seed / grain formation / early maturity / maturity), wheat (milk / dough), potato (maturity / harvesting) and *boro* rice (tillering), sesamum, green gram (sowing).
- As there was no significant rain during last few weeks in most of the districts of the State and mainly dry weather is likely during next five days, apply irrigation to wheat and vegetables.
- As mainly dry weather is like to prevail, farmers are advised to undertake intercultural operation to keep the fields weed free.
- Timely transplanted *boro* rice crop is now at tillering stage. Maintain 3-5 cm depth of standing water at tillering stage. As dry weather is prevailing, apply 13 kg of urea per bigha as second top dressing after 40 – 45 days of transplanting.
- Harvest already matured potato and mustard.
- Under present weather condition, undertake preparation of land and complete sowing of sunflower. 600 to 800 g of well filled plump seeds of sunflower are required to cover one bigha land.
- As weather condition is favourable, prepare sandy-loam and well drained land for sesamum cultivation. It can also be sown after harvesting of potato. The seed rate varies from 400 to 700 g per bigha.
- Also prepare well-drained and sandy-loam soil for green gram. The seed rate varies from 2.5 to 3 kg / bigha when sown in broadcasting. Seed should be inoculated with *Rhizobium* culture before sowing.
- Due to variation of temperature between day and night, rice plant may be infected by blast and brown spot diseases. Spray the crop with Ediphenphos 50 EC @ 1 ml / litre or Carbendazim 50 WP @ 1 g / litre or Tricyclozole 75 WP @ 0.6 g / litre of water when the above disease symptoms appear. Decide number of spray depending on the severity of infection.
- Details of crop varieties are mentioned in Annexure I.

### Sikkim

- **Major Standing Crops:** Orange (maturity / picking), large cardamom (vegetative), *rabi* wheat (flowering / milk / dough), mustard (capsule / seed formation), vegetable crops (flowering / fruiting / harvesting), potato (tuber formation / maturity / harvesting), *kharif* maize (sowing), summer vegetables (sowing / nursery sowing).
- As there was no significant rainfall during last few weeks in the state and mainly dry weather is likely to prevail over the state for the next five days, apply irrigation to the vegetable crops, wheat, orange and large cardamom in medium and low hills.

- Undertake intercultural operations and application of mulches in vegetable crops like cabbage, cauliflower, carrot, Chinese cabbage, knol-khol, garden peas, radish, turnip, lettuce, celery, spinach, etc., and also in orange orchard to conserve moisture.
- Maintain large cardamom sucker nursery; apply FYM and undertake intercultural operations.
- Pre-treated, healthy & certified seeds of recommended off-Season vegetables (cabbage, cauliflower, carrot, chinese cabbage, knol-khol, garden peas, radish, rayo sag, spinach, turnip etc.) may be sown in raised nursery beds / ridges in High Hills region availing congenial weather condition.
- Under prevailing weather undertake sowing of *kharif* maize and *Kharif* Vegetables (tomato, chilly, capsicum, brinjal, cabbage, lali Sag, ladies finger, radish, bodi, bitter gourd, snake gourd, pumpkin, cucumber etc.) in Medium Hills and Low Hills regions using pre-treated, healthy & certified seeds of high yielding varieties.

**Plant Protection:** Weather conditions are congenial for mild incidences of trunk borer in orange. Monitor the crop/tree and undertake plugging of holes to control the insects.

## **NORTHEAST INDIA [ARUNACHAL PRADESH, NMM & T, ASSAM, MEGHALAYA]**

### **Assam**

- **Major Standing crops:** Arhar (pod formation / maturity), sugarcane (harvesting), vegetables (vegetative / flowering / fruiting / harvesting), mustard, lentil and pea (pod formation / maturity / harvesting), wheat (flowering / grain formation), potato (maturity / harvesting) and *boro* rice (early vegetative / tillering).
- As there was no significant rain over the State during last few weeks and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to vegetable crops like raddish, brinjal, tomato, onion and carrot and also to wheat, mustard, lentil and pea.
- As there is no possibility of significant rain, farmers are advised to undertake intercultural operation to keep the fields weed free.
- Under prevailing dry weather condition, farmers are advised to undertake harvesting of sugarcane. Farmers are also advised to harvest already matured crops of arhar, potato, mustard, lentil and pea under present weather.
- Under present weather top dressing of N @ 3 kg urea per bigha may be carried out in *boro* rice at the tillering stage. Also maintain 3-5 cm stagnant water in *boro* rice field.
- Sowing of direct seeded *ahu* rice may be undertaken as the weather is likely to be fair & dry in the next week. Transplanted *ahu* rice may also be raised where irrigation facilities are available. Sowing of seeds in nursery beds for this purpose may be started now.
- As weather condition is favourable, undertake sowing of black gram and green gram. Sowing may be carried out from 15<sup>th</sup> February to 15<sup>th</sup> March.
- As present weather condition is favourable, farmers may go for cultivation of summer vegetables like ladies finger, bottle gourd, pumpkin, ridge gourd, cucumber, bitter gourd, snake gourd etc. as growing of early summer vegetable crops will fetch more income.
- March-April is the high time for sowing of jute seeds. As weather condition is favourable, prepare land and start sowing of jute.
- Rust in field pea has been observed in some locality and is likely to be increased. To prevent the spread of this disease Calixin @ 1-2 ml / litre of water may be applied depending on the disease intensity.
- Details of crop varieties are mentioned in Annexure I.

### **Fishery**

Due to gradual decline of water level in ponds, fishery owners are advised to take out excess fishes

## Arunachal Pradesh

- **Major Standing crops:** *Rabi* vegetables, pea and potato (harvesting), wheat (grain formation/maturity), mustard (maturity), *rabi* maize (grain formation / maturity).
- As there was no significant rainfall in most of the districts during last week except East Siang, West Siang, Rohit and Tiap and no significant rainfall is likely during next five days, farmers are advised to apply irrigation to mustard, wheat and *rabi* maize. Postpone irrigation in the above mentioned districts as there was sufficient rainfall during last week
- Farmers are advised to undertake intercultural operations in late sown crops.
- Also undertake harvesting of matured vegetables, mustard, wheat, pea, potato and *rabi* maize.
- Farmers are advised to undertake land preparation for sowing of summer vegetables.

## SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

### Andhra Pradesh

- **Major Standing Crops:** sugarcane (grand growth), gram (grain formation/development/maturity), wheat, mustard and sunflower (grain/seed development) and chilly (fruit development)
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State and there is also persisting above normal temperature in some parts of coastal Andhra Pradesh, apply light and frequent irrigation to the crops.
- Farmers in Srikakulam, Vijayanagaram and Visakappattinam are advised to undertake ratoon or new planting after harvesting of sugarcane.
- Farmers in Krishna, West Godavari, Guntur and Prakasam districts are advised to undertake sowing of rice fallow maize and rice fallow pulse crops during these days. Details of varieties are given in Annexure I.
- Farmers in high altitude regions of Srikakulam, East Godavari, Vijayanagaram, Visakappattinam and Khammam are advised to complete harvesting of red gram. Complete transplanting the seedlings of rice and ragi.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- incidence of thrips, rust and late leaf spot in groundnut.
- leaf spot in turmeric, stem and fruit borer in brinjal, late BPH in rice and necrosis in onion in Karimnagar, Nizamabad, Warranagl and Medak districts;
- spotted pod borer and powdery mildew in black gram, green gram and red gram, *spodoptera* in gram, sucking pests in cotton and white fly and fruit rot in chilly in Guntur;
- early shoot borer in sugarcane, black headed caterpillar, eriophid mite, bud rot in coconut.
- Stem borer, blast, sheath blight, brown plant hopper, white backed plan hopper in rice.
- undertake plant protection measures to control the pests and diseases.

### Karnataka

- **Major Standing Crops:** Annual sugarcane (grand growth). *rabi* crops (grain development/maturity/harvesting). This is proper time for sowing of *summer* and *rice fallow* crops.
- As there was no rainfall during last few weeks in the state and mainly dry weather is likely to prevail over the state for the next five days, apply irrigation to the crops.
- Farmers in Gulbarga and Raichur are advised to undertake harvesting of red gram and early sown sunflower due to dry weather conditions prevail during theses days. Arrange proper storage for harvested produce. As sorghum and safflower crops are at grain filling stage, conserve moisture in the soil to overcome stress conditions.
- Irrigation must be given to coconut at an interval of 5-10 days depending upon the type of soil weather, which helps to control dropping of fruits.

- If farmers have irrigation facility, provide irrigation to mango trees up to first week of April, then stop the irrigation. Then provide one or two irrigation during fruit development stage, which helps for increasing fruit size. To reduce flower and fruit drop in mango spraying of 4 ml planofix in 16 liter of water is recommended.
- Undertake sowing of *summer* crops like water melon, snake gourd and ribbed gourd.
- After the harvest of *rabi* crops, farmers are advised to undertake deep ploughing to conserve moisture and to control weeds and soil borne pathogens.

**Plant Protection:** Weather conditions are favourable for mild incidences of:

- *Heliothis* in gram and red gram and jassids and powdery mildew in mango in Dharwad;
- blast in rice, flower drop in arecanut and powdery mildew in pulses and mango; undertake plant protection measures.
- tea mosquito on cashew. So farmers are advised to take up spraying of lambda cyhalothrin @ 0.5 ml/lit of water.
- jassids and powdery mildew in mango. Spray 1.7 ml Dimethoate 30 EC plus Carbendazim 0.1 % per liter of water.

## Kerala

- **Major Standing Crops:** *Mundakan* rice (maturity), vegetable (vegetative/flowering/fruited) and plantation crops (coconut, arecanut, pepper and cashew). This is proper time for sowing *puncha* rice and *rice fallow/summer* vegetable crops.
- As there was no rainfall during last few weeks in the state and mainly dry weather is likely to prevail for the next five days, farmers are advised to apply irrigation to the crops.
- Undertake sowing of *puncha* rice in nursery in Malappuram, Kasargod, Kozhikode and Kannur districts.
- Undertake sowing of rice and *summer* vegetable crops in and around Thrissur.
- Intercultural operations, irrigation, husk burial, mulching, shading of young plants and seed nut collection may be continued in coconut. Collected seeds nuts may be stored in shade for a minimum period of 60 days prior to sowing in nursery.
- Details of varieties are given in Annexure I.
- Provide thatches to young plants of arecanut in Wayanad and coconut in Thiruvananthapuram to prevent from sun scorching. Undertake coating of bottom portion of rubber trees with lime.
- Continue harvesting/plucking of arecanut, coconut, pepper, banana, ginger, cardamom and coffee in Wayanad and turmeric, ginger and pepper in Thrissur as conducive weather conditions prevail during these days. Collect and store seed nuts for new planting.
- Undertake planting of ginger in Wayanad district and pepper in poly bags in Thrissur district.
- Tapping and plant protection operations may be continued in rubber. In defoliated trees, tapping may be discontinued. The basal trunk portion may be painted with lime to protect the young trees from sun scorching. The plantation may be kept clean and fire belt may be made to avoid fire incidence.

### Plant Protection:

- Weather conditions are favourable for the attack of
- red palm weevil, rhinoceros beetle, stem bleeding, and leaf rot in coconut, spindle bug, yellowing, *Sigatoka* leaf spot, bunchy top and rhizome weevil in banana, white stem borer in coffee and powdery mildew, leaf spot, shoot and fruit borer in vegetable crops in Wayanad.
- fruit fly and powdery mildew in gourds and bacterial wilt in tomato, brinjal and chilly in Malappuram, Kasargod, Kozhikode and Kannur districts;
- pseudo stem weevil, rhizome weevil and bunchy top in banana and tea mosquito bug in cashew.
- mealy bugs, scales, mites, etc. in vegetables.
- leaf eating caterpillar, coried bug attack, leaf rot and stem bleeding in coconut.



- Undertake plant protection measures.

### Tamilnadu

- **Major Standing Crops:** Special season sugarcane (grand growth stage), Cotton (boll maturity/ picking stage). *Rabi* crops like rice, pulses, millets and oilseeds are at grain maturity stage. This is proper time for sowing of summer irrigated crops. Early sown summer groundnut is at early vegetative/vegetative stage.
- As there was no sufficient rain during last few weeks in the state and mainly dry weather is likely to prevail over the state for the next five days, farmers are advised to apply irrigation to the crops.
- Undertake land preparation and nursery sowing of *navarai* rice. Use seed rate for short duration varieties @ 60 Kg/ha, medium duration varieties @40 Kg/ha. Treat the seeds with *Pseudomonas fluorescens* @ 10gm/kg of seeds and then with 3 packets of Azospyrillum per ha seed. Prepare nursery in an area 20 cents/ha.
- Undertake land preparation and sowing of maize, bitter gourd, pumpkin, snake gourd and water melon as conducive weather conditions prevail during these days.
- Complete sowing of irrigated safflower, gingelly and groundnut in Western region and undertake transplanting of vegetable crops such as bhendi, tomato, cowpea, dolichos and chilly may be taken up with irrigation facilities.
- Continue land preparation for sowing of summer irrigated crops in Thirunelveli, Tuticorin and Virudhunagar districts.
- **Plant Protection:** Present weather is conducive for mild incidences of boll worm in cotton and fruit borer and tip rot in chilly in southern region; undertake plant protection measures.
- brown plant hopper and leaf folder in paddy. To avoid the incidence of brown plant hopper, apply carbaryl 25kg/ha and spray monocrotophos 1000 ml/ha, to control leaf folder.
- sigatoka leaf spot in banana. Hence watch for the incidence and spray Carbendazim 1g/litre.

### WEST INDIA [GOA, MAHARASHTRA, GUJARAT, RAJASTHAN]

#### Maharashtra

- **Major Standing Crops:** Sugarcane (pre-seasonal and *suru*) (cane maturity / harvesting), *rabi* jowar (grain maturity / harvesting), *rabi* sunflower & safflower (seed maturity / harvesting), summer sunflower (sowing / germination), maize (cob maturity / harvesting), gram (pod maturity / harvesting), wheat (dough/ maturity in early sown crops while late sown crop at milk / dough stage), summer rice (transplanting / early tillering / tillering in Konkan & transplanting / early tillering in East Vidarbha), summer groundnut (vegetative / flowering in Konkan and sowing / germination / vegetative in other divisions).
- As there was no significant rain during last few weeks over the State and mainly dry weather is likely to prevail for next five days and there is also persisting high temperature, apply light and frequent irrigation to the standing crops to meet the excess demands for evapotranspiration.
- As dry weather is prevailing, farmers are advised to continue harvesting of already matured crops of sugarcane, jowar, safflower, sunflower, gram and maize.
- Under prevailing weather, transplanting of summer rice and ragi may be completed with 30 to 35 days old seedlings at a distance of 20 x 20 cm or 15 x 15 cm in North Konkan and also continue transplanting of summer rice in East Vidarbha. Also undertake sowing of summer groundnut (30 x 10 cm spacing), summer bajra (30 X 10 cm spacing) and summer sunflower, summer ridge gourd (1.5 X 1 m spacing), summer tomato (90 x 30 cm spacing) and summer ladies finger (30 x 20 or 30 X 15 cm spacing).
- Details of crop varieties are mentioned in Annexure I.
- Under present situation, apply a dose of Nitrogen @ 40 kg / ha to summer rice after 30 days from transplanting in Konkan.

- As prevailing weather condition is favourable, apply dose of 136 kg N<sub>2</sub>, 85 kg P<sub>2</sub>O<sub>5</sub> & 85 kg K<sub>2</sub>O / ha to the pre-seasonal sugarcane after 4 to 4.5 months from planting at the time of final earthing up followed by irrigation and also apply 100 kg Nitrogen / ha to sugarcane (*suru*) after 6 to 8 weeks from planting followed by irrigation.
- As dry weather is prevailing, apply third dose of 330 g Nitrogen (700 g urea) and 330 g Potash (550 g murate of potash) per plant of coconut of age 5 years and more and also apply 75 g Nitrogen (160 g urea) and 75 g Potash (125 g Murate of potash) per plant of arecanut of age 3 years and more followed by irrigation.

#### **Plant protection**

- There is chance of attack of thrips on cashew in Konkan, for control spray 50% prophanophos @ 10 ml or 5 % Lamdacylothrin @ 6 ml / 10 liters of water. There is also chance of attack of nut borer in cashew, spray D.D.V.P @ 1 ml / 1liter of water.
- Infestation of thrips on onion crop is likely to be increased in Western Maharashtra scarcity zone. For control spray Trizophos + Deltamethrin @ 20 ml or 25 % Cypermethrin @ 5 ml in 10 liters of water.

### **Gujarat**

- **Major Standing Crops:** Sugarcane (maturity / harvesting), mustard (early maturity / maturity / harvesting), gram (maturity / harvesting), vegetables (vegetative / flowering / fruiting / harvesting), potato (tuber maturity / harvesting), wheat (milk / dough), groundnut (early vegetative / vegetative), summer rice (early vegetative / tillering) and green gram, black gram, cow pea, cluster bean and pearl millet (sowing).
- As there was no significant rain during last few weeks over the State and mainly dry weather is likely to prevail for next five days and there is also persisting high temperature, apply light and frequent irrigation to the standing crops to meet the excess demands for evapotranspiration.
- As there is no possibility of rain, undertake intercultural operation to keep the fields weed free.
- Prevailing weather is conducive for harvesting of matured crops of mustard, gram and potato.
- As weather condition is favourable, apply Amm. Phosphate @ 50 kg N / ha as first split dose of fertilizer in brinjal and Urea @ 45 kg N / ha as first split dose of fertilizer in tomato.
- Under prevailing weather condition farmers are advised to prepare land and undertake sowing of summer crops like green gram, black gram, sesamum, cow pea, pearl millet and summer vegetables like ladies finger, bitter gourd, bottle gourd, small gourd and cluster bean.
- As there is chance of attack of fruit borer in brinjal and okra in Bhal and Coastal region due to favourable weather condition, apply Endosulfan @ 20 ml in 10 liters of water.
- Under prevailing weather condition there is chance of attack of thrips in chilli in North Saurashtra region and powdery mildew in mango in North Saurashtra and South Gujarat regions. For control of thrips in chilli, spray triphose @ 15 ml / 10 litres of water. To control powdery mildew in mango spray sulphur 80 WP @ 30 gm or dinocap @ 10 ml / 10 litres of water.

### **Rajasthan**

- **Major Standing Crops:** Wheat (grain formation), mustard, gram (pod formation), vegetable crops (flowering / fruiting / harvesting).
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State and there is also persisting above normal temperature in some parts of the State, apply light and frequent irrigation to the crops to meet excess evapotranspirative demands.
- Undertake sowing of groundnut, cucurbits like bitter gourd, water melon, pumpkin (kaddu), cucumber, round gourd (tinda), ridged Gourd (turai), bottle gourd, muskmelon in Bhilwara, Sirohi, Udaipur and Chittorgarh. A seed rate of 100-120 kg/ha for groundnut may be used.
- Undertake sowing of cucurbits, *zaid* pearl millet fodder, *zaid* sorghum fodder, *zaid* green gram and okra in Ajmer, Dausa, Tonk and Jaipur.

- Undertake sowing of bajra, jowar, sweet gourd, cucumber, pumpkin, bitter gourd, tinda, tomato and ladies finger in Barmer, Churu, Jalore and Jodhpur.
- Undertake sowing of sugarcane in Sriganganagar and Hanumangarh.
- Details of varieties are given in Annexure I.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- aphids in maize in Banswara district, spray Methyl Demeton 25 E.C. @ 1 lit/ha or Phosphomidan 85 WSC @ 300 ml/ha at the time of aphid infestation on tassel.
- powdery mildew on mango and vegetables (cauliflower and chillies) in Banswara district, spray Karathane @ 1 ml/lit or Sulphur Fungicide @ 2.5 gm/lit.
- pod borer on gram in Alwar, Bharatpur and Karauli districts, dust 20-25 kg Malathion 5% or Methyl Parathion 2% dust using duster before flowering and pod formation. Spray Endosulfan 35 EC or Fenitrothion 25 EC @ 1.25 l/ha in case of availability of water.
- loose smut on wheat in Alwar, Dholpur, Bharatpur, Karauli and Sawai Madhepur district. Farmers are advised to destroy the loose smut affected ears to prevent its spread. Spray 0.2% solution of Propiconazole to manage Karnal bunt disease.
- covered smut on barley in Alwar, Dholpur, and Bharatpur district. Farmers are advised to destroy the covered smut affected ears to prevent its spread. Spray 0.25% solution of Dithane M 45 at 15 days interval to manage leaf blight disease.
- termite and other soil insects on greengram in Alwar, Dholpur, Bharatpur, Karauli and Sawai Madhepur district, apply 25 kg/ha Endosulfan 4% dust or Quinalphos 1.5% dust.
- powdery mildew on mango in Karauli and Sawai Madhepur district, spray Karathane @ 1ml/l water to manage the disease. First spray should be done before flowering and second during fruiting period. Wrap plucked papaya fruits in paper bags to induce ripening.

## CENTRAL INDIA [M.P., CHHATTISGARH]

### Madhya Pradesh

- **Major Standing Crops:** Sugarcane (grand growth), soyabean (pod maturity), maize (cob development/maturity), cotton (boll development) and vegetable crops (vegetative).
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State and there is also persisting above normal temperature in some parts of the State, apply light and frequent irrigation to the crops to meet excess evaporative demand.
- Undertake intercultural operations in cauliflower, cabbage, tomato, chilly, onion and brinjal in Chhindwara and Betul as mainly dry weather is likely for the next five days.
- Undertake sowing of summer vegetables like cucurbits, ladies finger and also cow pea.
- Undertake sowing of moong and urad in Khandwa, Khargone and Harda districts and sunflower in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- Undertake transplanting of brinjal in Mandsaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh. Prepare the nursery of summer vegetables such as brinjal and chilly. Apply irrigation and nitrogen to onion.
- Undertake sowing of sugarcane in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- Undertake sowing of mung, maize, urd, sunflower, sesame, lobia and fodder crops in Chhindwara and Betul districts.
- Details of varieties are given in Annexure I.
- **Plant Protection:** Weather conditions are favourable for
- fruit borer on tomato and brinjal in Tikamgarh, Chhattrapur and Datia districts, spray Malathion 1ml in 1 litre of water.
- powdery mildew in coriander, peas and methi in Tikamgarh, Chhattrapur and Datia, spray Sulphur 2 g / litre of water.

- sucking pest on mango in Tikamgarh, Chhatrapur and Datia, spray Dimethoate 2ml in 1 litre water. To control fruit drop, spray N.A.A. Hormone 20 ppm.
- **Animal Husbandry:** Provide proper ventilation and clean water to cattle and arrange for vaccination to protect them from infectious diseases in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts. Create smoke during the night in cattle shed to prevent cattle from mosquitoes and bees.
- To control ticks and mite in cattle, sheep and goat, apply butox / deltox @ 4 ml/ l of water on the body in Jhabua and Dhar districts.

### Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative / maturity), wheat (milk / dough), gram, pea, mustard, berseem, pigeon pea and linseed (early maturity / maturity / harvesting), potato (maturity / harvesting), vegetables (vegetative / flowering / fruiting / harvesting), summer rice (tillering), summer vegetables (sowing).
- Due to above normal temperatures, the evaporation rate has increased during last few weeks (presently 5-6 mm/day) and thereby the water requirement of *rabi* crops has also increased. Therefore, it is advised to apply light and frequent irrigation to maintain proper soil-moisture and micro-climate within the crop canopy, so that the adverse effect of higher temperature or thermal stress can be minimised. The farmers who have drip irrigation system for vegetables and plantation crops should regulate the water discharge rate accordingly to maintain proper soil moisture around root zone.
- As dry weather is prevailing, it is advised to undertake intercultural operation, fertilizer application, earthing up followed by irrigation in sugarcane crop wherever the crop is at knee height stage.
- Now the temperature conditions are suitable for proper germination of sugarcane. Hence, it is advised to prepare well pulverized field and plant sugarcane. Intercropping of summer moong, early maturing crops or leafy vegetables can also be done for additional income.
- As weather condition is favourable, it is time for sowing of some cucurbitaceous crops, like pumpkin, bitter gourd, bottle gourd, okra etc. Hence, the sowing of these vegetables should be completed at the earliest.
- Temperature is suitable for proper germination of summer mung. Hence the sowing of summer mung can be done this week.
- As weather condition is congenial, intercultural operation and weeding are advised in sunflower and groundnut. Complete final intercultural operation in groundnut within flowering stage. Fertilizer application followed by irrigation should also be done in sunflower after weeding.
- Summer rice is at tillering stage. Under prevailing weather, application of second top second dressing of N is recommended at this stage.
- Presently mango crop is at flowering / fruit setting stage and at this stage there is chance of infestation of powdery mildew, which causes poor fruit setting and later on fruit dropping. Hence, it is advised to keep watch over the crops and whenever the symptom appears, spray Carbendizim (Bavistin) @ 1.5 g or Sulphex @ 3 g per litre of water.

## Annexure I Crop varieties

### Uttarakhand:

- **Sugarcane:** Co- Pant 84211, COS-95255, COS-8436, COS-88230, COS-96268 and Moderate to late varieties like Co-Pant 97222, Co-Pant-96219, Co-Pant-84212, Co-Pant-90223.
- **Sunflower:** MSFS-8, NSFH-9, Ranjha, Heer, Badshah etc.(hybrids), Morden and Paradobic (varieties).
- **French bean:** Pant Anupama, Pant Bean-2, VL Vonibean-1 and Pusa Parvati
- **Pea:** VL Ageti, Matar-7 or Vivek Matar-10
- **Moong:** Pant Moong-2, Pant Moong-4, Pant Moong-5 & Narendra Moong-1.
- **Tomato:** VL-Tomato – 3
- **Urd:** Pant Urd – 30, Pant Urd-35 & Narendra Urd -1.

### Punjab:

- **Sugarcane:**  
**Early maturing:** COJ 64, COH 56 and COH 92, **mid-season:** CoJ-88 CoS-8436, and **late maturing variety:** CoJ-89 and Co-1148
- **Bhindi:** Punjab Padmini, Punjab 7, Punjab 8 and Pusa sawni.

### Haryana:

- **Sugarcane:** COJ 64, COH 56 and COH 92.
- **Sunflower:** Surajmukhi No.1, Hybrids: KBSH 1, PAC 36, MSFH 8, PCSH 234, KBSH 44, HSFH 848.

### Uttar Pradesh:

- **Sunflower:** Modern, Sankar, Surya, Jwalamukhi

### Bihar:

- **Summer maize:** Suwan, Ganga 11, Deoki, Shaktiman 3 and 4
- **Summer moong:** Pusa Vishal, Samrat, PS 16 and SML 668

### Orissa:

- **Maize:** Hybrid varieties-MRM-3838, MRM-3765, Shaktiman 1, Bio 9681, Cargil 633, Deccan 105, K.H. 510 , Composite varieties – Navjot, Arun, Kiran.
- **Sesame:** Uma, Usha, Kalika, Nirmala, Prachi and Amrit.
- **Summer moong:** PDM 11, PDM 54, K 851 and TARM 1.
- **Cowpea:** Bush type- Pusa Phalguni, Pusa Komal, and runner type- American long, and Banarasi long, other improved varieties like Russian Giant, EC-4316, NP-3, C-152, UPC-286, UPC-5286 and IGFI-450 can be grown.
- **Papaya:** Honey dew, Kurg honey dew, Coimbatore-1, Coimbatore-2, Pusa delicious, Pusa Majestic, Pusa Dwarf and Pusa Giant.
- **Pineapple:** Que, queen, Simachalan and Maritius.

### Assam

- **Direct seeded *ahu* rice:** Luit, Kapili,disang, Pusa-2-21, Culture-1 etc.
- **Direct seeded *ahu* rice:** Lachit, Chilarai, Govind, IR-50, Rachi, Jaya etc.
- **Boro rice:** Jyotiprasad, Bishnuprasad, Jaymoti, Kanaklata, Boro-1 and Boro-2.
- **Ridge Gourd:** Pusa Nasder, Surekha etc.
- **Bitter gourd:** Monsoon Monarch, Long green Monsoon, Coimbatore long etc.
- **Pumpkin:** Arka Suryyamukhi, Arka-Chandan, Large green etc.
- **Snake gourd:** Long green, Long white, Extra long etc.
- **Cucumber:** Chinese Green, Pusa Sonjog, AAUC-I, AAUC-2, AAUC-3, UC-4 etc.
- **Jute:** JTC 212, JRC 312, UPC 94.

## West Bengal

- **Sunflower:** Morden, Sidhesor, Surya and hybrid varieties like Pack-36, Pack-1091, M.F.S.H.-17, Sungin-85, B.S.H.-1, Surya-51, K.B.S.H.
- **Sesame:** Rama, Tilottoma.
- **Green gram:** TM-99-50, PDM-54, TARM-1, 2 etc.

## Maharashtra

- **Groundnut:** Improved varieties like TAG-26, TG-37, TAG-24 & SB-11.
- **Summer ridge gourd:** Pusa Nasdar, Konkan Harita.
- **Summer sunflower :** EC-68414, Morden & PKVSF-9.
- **Summer tomato:** Dhanshri, Phule-Raja.
- **Summer ladies finger:** Parbhani Kranti, Parbhani Utkarsha, Akola Bahar, Arka Anamika, Arka Abhay & Phule Kriti.
- **Summer bajra:** Shardha and Saburi or I.C.T.P-8203, I.C.M.V.-211.

## Delhi

- **Sunflower:** Modern.
- **Tomato:** HS 101, HS 102, Pusa Rubi etc.

## Gujarat

- **Green gram:** Guj. GG-3 & Guj. GG-4 etc.
- **Sesamum:** Gujarat Til -2.

## Jammu

- **Radish:** Japanese white and Minowase
- **Beans Contender and Arka Komal**
- **Potato Kufri Jyoti and Kufri Badshah**

## Madhya Pradesh:

- **Wheat: Unirrigated/ Semi-irrigated:** JWS-17, HW-2004, HI-1500, Malav Ratna (HD-4672) and Malav Shri (HI-8381).
- **Irrigated:** GW-273, Kanchan (DL-803-3), WH- 147, GW- 190, GW- 322 and Malav Shakti (HI-8498).
- **Gram:** JG- 412, JG- 226, JG- 11 and JG- 130.
- **Maize:** JM- 421, JM- 8, JM- 12, Chandan makka- 3, Ganga- 3, Ganga- 4 and HPQM – 1.
- **Sugarcane:** Co Jawahar-86141, Co Jawahar-86572, Co Jawahar-86600, Co 86032.

## Andhra Pradesh:

- **Black gram:** LBG 402, 648, 645, 685, 709 and 752.

## Kerala:

- **Bhindi:** Arka anamica, Arka Abhay, Susthira

## Tamil Nadu:

- **Groundnut:** TMB-13, VRI-6 and VRI-7
- **Gingelly:** SVPR-1, TMB-5, 6 and VRI-2.
- **Rice:** ADT-36, ADT-37, ADT-39, ADT-43, ADT(R)-45, ADT(R)-47, Co-43, Co-47
- **Maize:** Co-1, Co.H.(M)-4, Co.H.(M)-5, Private Hybrids

## Rajasthan:

- **Green gram:** SML-686, Pusa Vishal, PDM-139 & G-8.
- **Groundnut:** TAG-24, SB-11, DH-86 and GG-2.
- **Bhindi:** Pusa sawani, Pusa Makhmali, Parbhani, Kranti, Arka Abhay & Arka Anamika