



National Agromet Advisory Service Bulletin

Friday 3rd January 2020

(For the period 3rd to 7th January 2020)



Issued by

India Meteorological Department

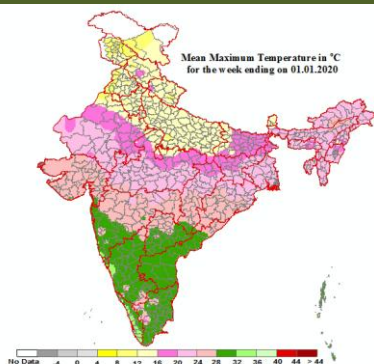
Weblink For

District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

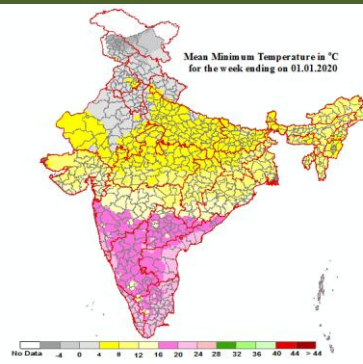
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 01.01.2020

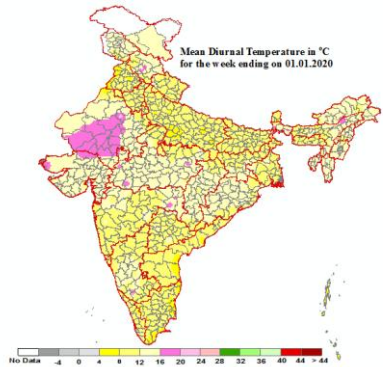
Mean Maximum Temperature (°C) for the week ending on 01.01.2020



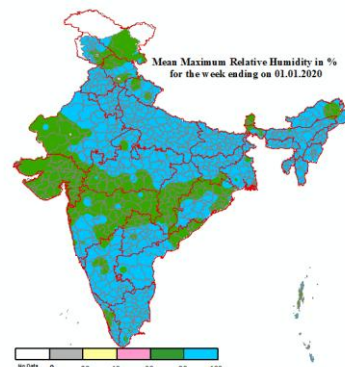
Mean Minimum Temperature (°C) for the week ending on 01.01.2020



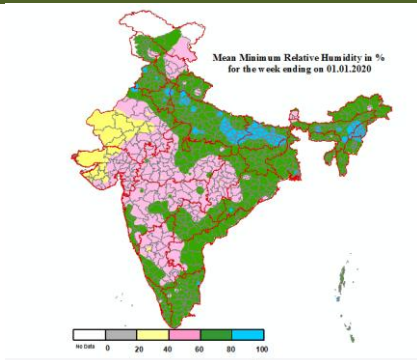
Mean Diurnal Temperature Variation (°C) for the week ending on 01.01.2020



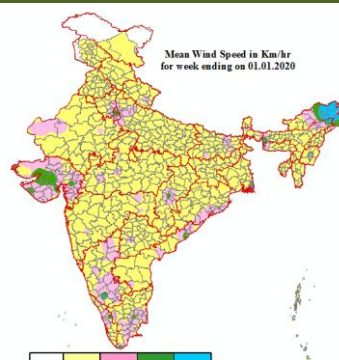
Mean Maximum Relative Humidity (%) for the week ending on 01.01.2020



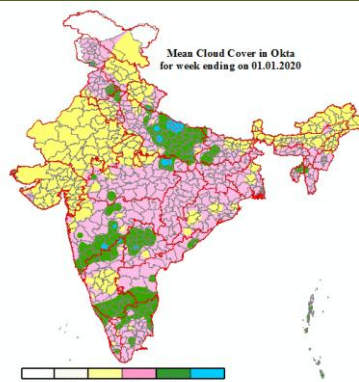
Mean Minimum Relative Humidity (%) for the week ending on 01.01.2020



Mean Wind Speed (km/hr) for the week ending on 01.01.2020

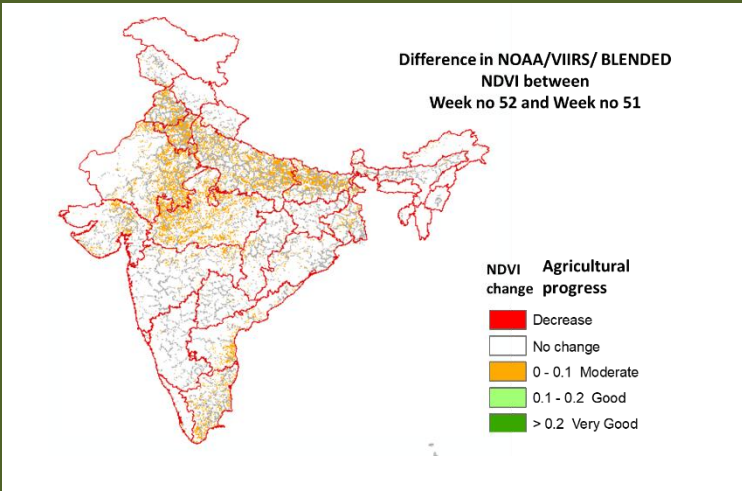
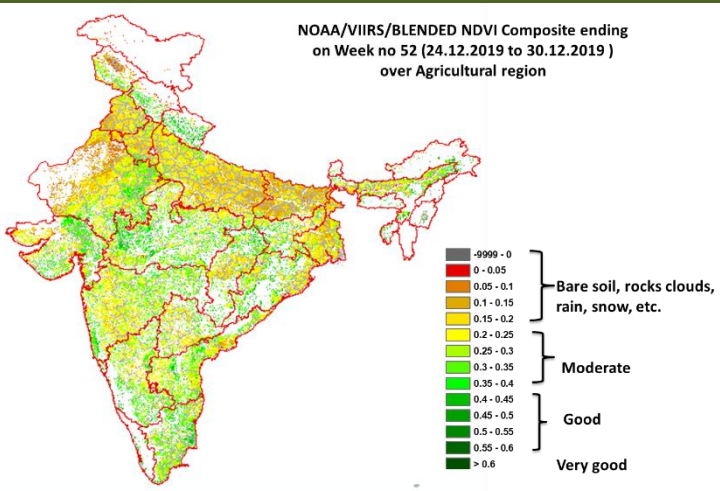


Mean Cloud Cover (okta) for the week ending on 01.01.2020



NOAA/VIIRS/BLENDED NDVI composite for the week number 52 (24.12.2019 to 30.12.2019) over Agricultural regions of India

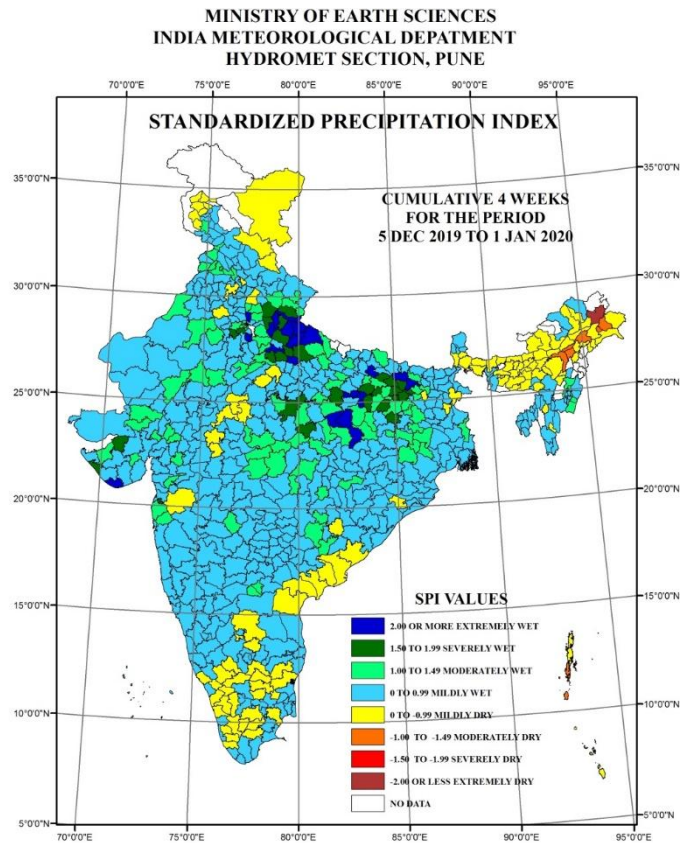
Difference in NOAA/VIIRS/BLENDED NDVI between week number 52 and week number 51



Agriculture vigour was good at few parts of Uttarakhand, West Madhya Pradesh, Chattisgarh, odisha, North Eastern states, Coastal Karnataka & Tamilnadu and at isolated places of Haryana, Himachal Pradesh, East Rajasthan, Gujarat, East Madhya Pradesh, Jharkhand, Sub Himalayan West Bengal, Sikkim, Telangana, Andhra Pradesh, North Interior Karnataka, Tamilnadu, Kerala, Konkan & Goa.

Moderate difference in agricultural vigour has been observed at many places over Haryana, Uttar Pradesh, Bihar, East Rajasthan, Madhya Pradesh and at few places over Punjab, Gujarat, South Coastal Andhra Pradesh & Tamilnadu.

Standardised Precipitation Index Cumulative 4 weeks for the period 5th December 2019 to 1st January 2020



- Extremely/Severely wet conditions exists in Aurangabad, Bhabua, Buxar, Jahanabad, Muzaffarpur, Nalanda, Patna, Samastipur, Saran, Siwan, Vaishali districts of Bihar; Porbandar, Gir Somnath, Morbi districts of Gujarat; Gurgaon, Rewari, Palwal districts of Haryana; Chhatarpur, Katni, Sidhi, Singrauli districts of West Madhya Pradesh; Dadara & Nagar Haveli districts of U.T; Allahabad, Chandauli, Deoria, Farrukhabad, Ghazipur, Hardoi, Kannauj, Kheri, Varanasi, Sant Ravidas Nag, Baghpat, Bareilly, Bijnor, Badaun, Etah, Firozabad, Jyotiba Phule Nagar, Mainpuri, Moradabad, Pilibhit, Rampur, Shahjahanpur, Hapur, Sambhal districts of Uttar Pradesh; Chatra districts of Jharkhand; Nainital, Udham Singh Nagar districts of Uttarakhand; Surajpur districts of Chhatisgarh; Central Delhi districts of Delhi.
- Extremely / Severely dry conditions Lower Dibang Valley districts of Arunachal Pradesh.
- Moderately dry conditions exist in Lohit districts of Arunachal Pradesh; Dibrugarh, Jorhat, Golaghat districts of Assam; South Andaman districts of Andaman & Nicobar Islands.
- Moderately wet to mildly dry conditions were experienced in remaining districts in the country.

Weather Forecast for next 5 days valid upto 0830 hours of 8th January, 2020

◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.

◆ No significant change in Minimum & Maximum temperatures over west India during next 48 hours and fall in minimum temperatures by 3-4°C during subsequent 2-3 days. No significant change in Minimum & Maximum temperatures over rest parts of the country during next 3 days.

5 Day Rainfall Forecast (MID-DAY)

3rd January 2020

Met-Sub-Division	03-Jan Today	04Jan Sat	05Jan Sun	06Jan Mon	07Jan Tue
1. Andaman & Nicobar Islands	DRY	DRY	ISOL	ISOL	ISOL
2. Arunachal Pradesh	FWS	FWS	SCT	ISOL	ISOL
3. Assam & Meghalaya	FWS	SCT	ISOL	ISOL	DRY
4. N. M. M. & T.	WS	SCT	ISOL	DRY	DRY
5. S.H. West Bengal & Sikkim	FWS	FWS	ISOL	DRY	DRY
6. Gangetic West Bengal	FWS	ISOL	DRY	DRY	DRY
7. Odisha	FWS	ISOL	DRY	DRY	DRY
8. Jharkhand	SCT	ISOL	DRY	DRY	DRY
9. Bihar	SCT	ISOL	DRY	DRY	DRY
10. East Uttar Pradesh	FWS	ISOL	DRY	DRY	ISOL
11. West Uttar Pradesh	ISOL	DRY	DRY	ISOL	SCT
12. Uttarakhand	ISOL	SCT	DRY	WS	WS
13. Haryana, Chd & Delhi	DRY	DRY	DRY	SCT	SCT
14. Punjab	DRY	DRY	ISOL	FWS	SCT
15. Himachal Pradesh	ISOL	SCT	DRY	WS	WS
16. Jammu & Kashmir	SCT	SCT	ISOL	WS	WS
17. West Rajsthan	DRY	DRY	ISOL	ISOL	ISOL
18. East Rajasthan	DRY	DRY	DRY	ISOL	ISOL
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	ISOL
20. East Madhya Pradesh	ISOL	ISOL	DRY	DRY	SCT
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	DRY	DRY	DRY	DRY	ISOL
25. Marathawada	ISOL	DRY	DRY	DRY	ISOL
26. Vidharbha	ISOL	DRY	DRY	DRY	ISOL
27. Chhattisgarh	SCT	ISOL	DRY	DRY	ISOL
28. Coastal A. P. & Yanam	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	ISOL	DRY	DRY	ISOL	ISOL
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. T.N., Puducherry & Karaikal	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	ISOL	DRY	DRY	DRY	DRY
34. South Interior Karnataka	ISOL	DRY	ISOL	DRY	DRY
35. Kerala & Mahe	ISOL	ISOL	ISOL	ISOL	DRY
36. Lakshadweep	ISOL	DRY	DRY	ISOL	ISOL

% Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

03 January (Day 2):

- ◆ **Cold day conditions** very likely in isolated pockets over Uttarakhand.
- ◆ **Cold Wave and Ground Frost conditions** in some parts very likely over Punjab.
- ◆ **Heavy rainfall** very likely in isolated places over Nagaland, Manipur, Mizoram & Tripura.
- ◆ **Thunderstorm** accompanied with **hail & lightning** very likely at isolated places over East Uttar Pradesh, Bihar, Sub- Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura; with **lightning** likely at isolated places over east Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam and Telangana.
- ◆ **Dense to very dense fog** at isolated places very likely over Punjab and Haryana, Chandigarh & Delhi and **Dense fog** over East Uttar Pradesh.

04 January (Day 2):

- ◆ **Cold Wave condition** and **Ground Frost conditions** in some parts very likely over Punjab. **Cold Wave conditions** in isolated pockets over Saurashtra & Kutch and north Madhya Pradesh.
- ◆ **Thunderstorm** accompanied with **hail & lightning** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ◆ **Dense to very dense fog** at isolated places very likely over Punjab and Haryana, Chandigarh & Delhi and **Dense fog** over Madhya Pradesh, Odisha, northwest Rajasthan and Uttar Pradesh.

05 January (Day 3):

- ◆ **Cold Wave condition** in isolated places very likely over Saurashtra & Kutch and Madhya Pradesh.
- ◆ **Dense to very dense fog** at isolated places very likely over Uttar Pradesh and **Dense fog** over Madhya Pradesh, northwest Rajasthan, Bihar and Odisha.

06 January (Day 4):

- ◆ **Heavy rain/snow** likely in isolated pockets over Jammu & Kashmir.
- ◆ **Dense fog** at isolated places likely over Odisha and Bihar.
- ◆ **Thunderstorm** accompanied with **hail & lightning** likely at isolated places over Punjab, Haryana Chandigarh & Delhi and West Rajasthan.

07 January (Day 5):

- ◆ **Dense fog** at isolated places likely over Odisha and Bihar.
- ◆ **Thunderstorm** accompanied with **hail & lightning** likely at isolated places over Uttarakhand, West Uttar Pradesh and Madhya Pradesh.

Weather Outlook for subsequent 2 days from 8th to 10th January, 2020

- ◆ Scattered to fairly widespread rain/snow likely over Western Himalayan region.
- ◆ Isolated to scattered rainfall is likely over parts of northwest, central and east India.
- ◆ Weather likely to be dry over remaining parts of the country.

Salient advisories

- As **Cold day conditions** very likely in isolated pockets over Uttarakhand on 3rd; **Cold Wave and Ground Frost** conditions very likely over Punjab on 3rd and 4th; **Cold Wave** conditions likely in isolated pockets over Saurashtra & Kutch on 4th & 5th over north Madhya Pradesh on 4th and over Madhya Pradesh 5th, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from frost / cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/ gunny bags. Keep the animals inside the sheds and provide dry bedding and use electric heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the situation. Keep the chicks warm by providing artificial light in the poultry sheds.

- As **rain/thundershowers** likely at most places over Uttarakhand, Hiamchal Pradesh on 6th & 7th, over Nagaland , Manipur, Mizoram & Tripura along with **heavy rainfall** very likely in isolated places over NMMT on 3rd and **heavy rainfall/snow** in most places over Jammu & Kashmir on 6th and 7th , avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields.
 - As **Thunderstorm accompanied with hail & lightning** very likely at isolated places over East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 3rd and 4th; over Punjab, Haryana Chandigarh & Delhi and West Rajasthan on 6th; over Uttarakhand, West Uttar Pradesh and Madhya Pradesh on 7th; with **lightning** likely at isolated places over east Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam and Telangana on 3rd, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging. Use hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
 - As **Dense to very dense fog** at isolated places very likely over Punjab and Haryana, Chandigarh & Delhi on 3rd and 4th; over Uttar Pradesh on 5th and **Dense fog** over East Uttar Pradesh on 3rd; over Uttar Pradesh on 4th; over Madhya Pradesh on 4th and 5th; over Odisha on 4th to 7th, over northwest Rajasthan on 4th and 5th and over Bihar on 5th to 7th, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for blight disease. If symptoms are noticed, undertake plant protection measures.
- Undertake sowing/ transplanting of following crops:
- Short duration vegetable crops like Amaranthus, cow pea etc. in the interspaces of newly planted banana crop in Kerala.
 - Undertake sowing of sesame from 15th January to 15th February in Telangana.
 - Continue transplanting of Boro rice and tomato in Assam.
 - Carry out transplanting of Rabi onion seedlings in Bihar.
 - Complete sowing of black gram, green gram, horse gram and chickpea in South Interior Karnataka.
 - Continue preparing nursery for Boro rice in West Bengal & Sikkim.
 - Undertake nursery sowing of brinjal in South Gujarat.
 - Continue sowing of late maturing varieties of wheat n Sub Tropical Zone of Jammu & Kashmir.
 - Continue transplanting of onion and sowing of pea in Mid Hills Sub-Humid Zone of Himachal Pradesh.
 - Continue sowing of wheat if the field is ready in West Uttar Pradesh.
 - Undertake transplanting of rabi onion in Semi Arid Eastern Plain Zone of Rajasthan.

Detailed Agromet Advisories

SOUTH INDIA [TAMIL NADU, TELANGANA, ANDHRA PRADESH, KARNATAKA, KERALA]

Realised Rainfall : Significant rainfall occurred in Mahe and in Chennai, Kanchipuram, Nagapattinam, Puducherry, Tiruvarur districts of Tamilnadu. Weather remained mainly dry over rest of the region.

Advisories:

- As **Thunderstorm accompanied with lightning** likely at isolated places over Coastal Andhra Pradesh & Yanam and Telangana on 3rd, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging. Use hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Kerala

- In High Altitude Zone, undertake harvesting of ginger. Cultivate short duration vegetable crops like Amaranthus, cow pea etc. in the interspaces of newly planted banana crop.
- In Problem Area Zone, undertake planting of three to five weeks old seedlings of cool season vegetables such as cabbage & cauliflower. Undertake planting of tapioca.
- In Northern Zone, there is a chance of fusarium wilt in cowpea. Drench the soil rhizosphere with 2 g of Bavistin or 2 ml of Contaf per one litre of water alternatively within 15 days interval to control the disease. Remove severely affected plants and destroy them.
- In Southern Zone, weather is congenial for bacterial blight in rice. Mix 20 g cow dung in 1 litre of water and take the clear solution. Spray Pseudomonas (2%) 20 g/litre on the leaves.

Andhra Pradesh

- In North Coastal Zone, continue nursery sowing of rabi rice and sesame. Spray Tricyclozole @0.6 g / litre of water to keep field bunds weed free.
- In Scarce Rainfall Zone of Rayalaseema, Present weather conditions are favourable for BPH, blast and false smut. To control BPH, spray Acephate @ 1.5 g (or) Pymetrogen @ 0.6 g (or) Ethofenprox @ 2 ml (or) Dynotefuran 20 SG @ 2 g per litre of water, for blast spray Tricyclazole @ 0.6 grams/L or Isoprothiolane 1.5 ml/litre of water and for false smut, spray Propiconazole @ 1 ml (or) Carbendazim @ 2 g per litre of water at evening hours on non rainy day.
- In Krishna Godavari Zone and Southern Zone, present weather conditions are congenial for white fly incidence in blackgram and greengram. Spray monocrotophos @ 1.6 ml or Triazophos @ 1.5 ml or Acephate @ 1.0 g or Dimethoate @ 2.0 ml or Acetamiprid @ 0.2 g per litre of water at 7-10 days interval on non rainy day.

Telangana

- Undertake sowing of sesame from second fortnight of January to first fortnight of February.
- Undertake transplanting of paddy at 4-6 leaf stage. Make 20 cm alleyways at every 2 meters. Apart to facilitate free aeration and control pest & diseases.
- Due to prevailing cold weather cover polythene sheets or tarpaulin sheets on entire nursery bed in the night and remove in the morning to avoid the effect of cool temperatures on germination and growth of nursery.
- Irrigate the rice nursery with water in the night time and remove water early in the morning to speed up nursery growth in cold season.
- The prevailing weather conditions are favourable for blast in paddy nursery. For control, spray Tricyclozole @ 0.6 g or Isoprothoilane @ 1.5 ml per litre of water on non rainy day.

Tamil Nadu

- In Cauvery Delta Zone, weather is congenial for rice gall midge in Thaladi paddy. To control, spray Chlorpyrifos 500 ml/acre or Fipronil 5% SC @ 400 ml/ acre on non rainy day.
- In North Eastern Zone, to manage gall midge in rice, apply Thiamethoxam 25 WG @ 100g/ha or Fipronil 5 SC @ 1000g/ha or Fipronil 0.3 CG @ 16 kg/ha on non rainy day.
- In Western Zone, since the dry spell is anticipated, prepare the land for planting early season sugarcane. Considering the prevailing weather, cotton kapas may be picked up in early morning hours, sort into good and bad kapas followed by shade drying. Store the good kapas over the dried sand bed.
- In South Zone, weather is favourable for early shoot borer in sugarcane. Remove and destroy dead hearts and install pheromone traps @ 10 nos. per ha for surveillance and monitoring. Spray Chlorpyrifos 1000 ml with sticker like Teepol (250 ml / 500 litres of water) with the use of high volume sprayer to be more

effective on non rainy day.

- In High Rainfall Zone, mealy bug infestation may occur in Tapioca. Spray fish oil rosin soap @ 25 gram per litre on non rainy day.

Karnataka:

- In South Interior Karnataka, complete the harvesting of rice and ragi crops. Complete the sowing of black gram, green gram, horse gram and chickpea. Clear the weeds in mango, guava and sapota orchards; put it under the basin as mulch. There is a possibility of occurrence of leaf spot in banana; spray Carbendazim @ 1gm/litre of water on non rainy day.
- In North Interior Karnataka, carry out intercultural operations in wheat, chickpea, sorghum crops and clipping of the apical portion in chickpea (35-40 days after sowing). For control of aphids in safflower, spray Dimethoate (rogar) @ of 1.7 ml /liter of water on non rainy day.
- In Coastal Karnataka, continue picking of cotton bolls. For control of sucking pests in pulses and vegetables, spray Imidacloprid @1.5 ml or Profenofos @ 1ml or Quinalphos @ 1 ml or Dimethoate @ 1ml / litre of water.

Animal Husbandry:

- In Karnataka, maintain the ambient room temperature in the poultry house; cover the sides with curtains during cool hours of the day.
- In Tamilnadu, due to prevailing weather conditions, cattle may get affected by Foot and Mouth disease. Vaccinate cattle against FMD in the nearby veterinary dispensary during this month.

Sericulture

- Manage the humidity in the rearing house by providing good cross-ventilation. Dust dry slaked lime powder when silkworms settle for moult.

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

Realised Rainfall: Dry weather prevailed over North-eastern region during the week.

Advisories:

- As **rain/thundershowers** likely at most places Nagaland, Manipur, Mizoram & Tripura along with **heavy rainfall** very likely in isolated places over NMMT on 3rd with **heavy rain/snow** likely in isolated pockets over at many places over Arunachal Pradesh and over Assam & Meghalaya on 3rd, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields.
- As **Thunderstorm accompanied with hail & lightning** very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 3rd and 4th; provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging. Use hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Arunachal Pradesh

- In Arunachal Pradesh, spray Mancozeb@ 2 g per 4 litres of water as preventive spray against late blight infestation in potato. Spray Dimethoate @ 4 ml per litre of water if aphid infestation in mustard crop is above ETL. Undertake plant protection measures after current spell of rain

Assam & Meghalaya

- In Assam, continue transplanting of *Boro* rice seedlings in the main field, which have attained 5-6 leaf stage. Weather is congenial for occurrence of blight disease in potato. To control the disease, spray

Mancozeb 75% (Indofil M 45/ Dithane M 45) @ 2.5g/litre at canopy closure at an interval of 7-10 days in fair weather. Alternatively, spray 1% Bordeaux mixture (10g CuSO₄ + 10g lime) in 1 litre of water. Undertake plant protection measures after current spell of rain

- In Central Brahmaputra Valley, complete sowing of wheat, maize, pulses and oilseeds crops. Take up transplanting of tomato.
- In Upper Brahmaputra Valley Zone, North Bank Plain Zone and Barak Valley Zone, spray Chlorpyrifos 20 EC @ 5 ml/litre of water or Dimethoate 30EC @ 0.5 litre per 500-700 litres of water per ha area against aphid and saw fly infestation in rapeseed and mustard crops. Undertake plant protection measures after current spell of rain
- In Barak Valley Zone, prevailing weather condition may leads to infestation of aphids, jassids and beetles in rajmah crops. So for effective control, spray Dimethoate or Malathion @ 1ml/litre of water on clear day.
- In North Bank Plain Zone, continue planting of potato.
- In Hill Zone of Assam, monitor leaf feeders in cole crops. If pest population is above ETL, spray B.t. @ 1.0 gram/litre of water or Spinosad @1 ml / 3 litres of water. Undertake plant protection measures after current spell of rain
- In Meghalaya, continue transplanting of *rabi* crops. Go for regular harvesting of ginger, turmeric and Khasi Mandarin fruits. Maintain proper soil moisture in the field of standing crops by irrigation. To prevent bird damage of Khasi Mandarin fruits, use bird netting or use traditional methods of bird control.

Manipur, Mizoram, Tripura and Nagaland

- In Nagaland, postpone harvesting of sesame crop for a few days. Mechanically collect and destroy pos borers in gram crop.
- In Manipur, temporary shed structures may be prepared using bamboo and dried twigs or branches to protect young plants and nurseries against fog/ frost/ snow in open field. In fruit crops and perennial vegetables, apply organic mulches after earthing up and weeding to conserve residual soil moisture as well as to maintain the soil temperature. Light watering during morning hours is advised for the rabi crops (especially in vegetative stages) to avoid effects of frost/ fog on crops.
- In Mizoram, continue harvesting of matured pods of soybean. Cover maize crop field surface with legume crop and vegetable crops like pumpkin and cucumber for conserving soil moisture. Provide irrigation every three days interval. Use straw mulch where irrigation is not possible.
- In Tripura, continue sowing of *Boro* rice after necessary seed treatment. Foggy and cloudy weather may be sensitive for infestation of blight in potato. To manage, apply Cymoxanil+ Mancozeb or Metalaxyl+ Mancozeb @ 1.5gm per litre of water at least twice at an interval of 15 days on clear day.

Animal Husbandry

- To protect the livestock from sudden drop in temperature, keep the animals in a shed or in covered area during the night. Carry out vaccination against FMD, Haemorrhagic Septicaemia, Black Quarter etc.

Fishery

- In North Bank Plain Zone of Assam, apply Potash @ 4-5 mg/litre of water or Sukrena WS @ 1 litre per bigha of water or Lime in required doses to protect the fish population against various bacterial diseases prevalent in winter season.

EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]

Realised Rainfall: Rainfall occurred in Purulia district of Gangetic West Bengal and in Lohardagga district of Jharkhand. Weather remained dry/mainly dry over rest of the region.

Advisories:

- As **heavy rain/snow** likely in at many places over Sub-Himalayan West Bengal & Sikkim on 3rd and 4th and over Gangetic West Bengal and Odisha on 3rd, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields.
- As **Thunderstorm accompanied with hail & lightning** very likely at isolated places over Bihar, Sub-Himalayan West Bengal & Sikkim on 3rd and 4th; with lightning likely at isolated places over Gangetic West Bengal and Odisha on 3rd, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging. Use hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- **As Dense fog** over over Odisha on 4th to 7th and over Bihar on 5th to 7th, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for blight disease. If symptoms are noticed, undertake plant protection measures.

Odisha

- Complete the sowing of lentil, field pea, green gram, black gram and chickpea. Undertake sowing of groundnut after seed treatment with Thiram @ 3g/kg seeds seven days before sowing. Postpone irrigation to wheat crop in case of rainfall. Carry out wrapping and propping of medium and late duration varieties of sugarcane crop at 4-5 months age.
- Bacterial wilt has been found in brinjal and tomato crops. To control, spray 1 g Streptocycline in 10 litres of water. Spray Imidacloprid 17.8% SL @ 0.25 ml/litre of water for thrips, aphids and white fly in vegetable crops on clear day.

Bihar

- Carry out transplanting of Rabi onion seedlings. Carry out thinning and weeding in mustard crop. Carry out weeding in maize (at 20-25 and 40-45 DAS) and wheat (at 30-35 DAS) crops. Postpone irrigation to wheat crop in case rain occurs.
- Spray Dithane M-45 or Ridomil MZ @ 2.5g per litre of water in potato field to prevent early and late blight disease on clear day. Spray Dithane-M-45 @ 2 g/ litre of water for white rust and Rogor 30 EC @ 1 litre per hectare in 1000 litres of water against attack of painted bug and aphids in mustard crop on clear day.

Jharkhand

- As early potato is reaching maturity, remove the upper leaves of the plant. This will help in hardening of the tuber and its skin. Harvest the timely sown rapeseed crop when siliqua turns bright yellow and dry the harvested crop in the sun for 2-3 days before threshing.

West Bengal

- In Sub-Himalayan West Bengal, continue preparing nursery for Boro rice. Apply light irrigation to potato, mustard and cole crops as per the requirement. Complete the harvesting of Mandarin orange.
- For management of insect/ pests in potato crop, spray neem oil @ 3ml + sandoist @ 0.5ml/litre of water at evening hours at 7 days intervals on clear day.
- In Gangetic West Bengal, keep the base of nursery bed dry and apply straw ash for avoiding seedling death due to low temperatures. Place polythene cover over the seed bed. Postpone irrigation to vegetable crops in case of rainfall. Postpone irrigation to potato crop and remove excess water from the field.
- Apply Dithane M45 @ 2.5g/litre of water or Chlrothalonyl @ 2ml/litre of water for rust disease in lentil

and lathyrus crops at flowering stage. Mustard crop is at vegetative stage. If there is incidence of aphid in the crop, spray Imidacloprid @ 1ml/1.5 litres of water at clear weather condition. Place 2-3 yellow sticky traps per bigha for aphid control. Undertake plant protection measures after current spell of rain

Andaman & Nicobar Islands

- Spray 1 % vermiwash or panchagavya in brinjal to increase the growth and fruit set. Provide irrigation to vegetables depending on soil moisture deficit. Harvest the matured unopened flower buds of clove by placing polythene sheet around the tree.
- Do soil application in pulses with Trichoderma harzianum @ 10 g in 1 kg of FYM, before sowing for controlling wilt disease in pigeon pea.

Animal Husbandry

- In Andaman & Nicobar Islands, de-worm the goats at 3 months interval to keep the parasitic load under control. Provide iron tonic or ferrous sulphate solution to pigs and keep the shed and pig clean.
- In Bihar, contact veterinarian for lumpy skin disease in cattle.
- In West Bengal, take special care of the mother cow and the newly born calf. Cover young animals with jute bags.

Fishery

- In West Bengal, apply less amount of floating food during day time only. Clear the surrounding for direct sunlight. Stir pond water once a week. Apply CIFAX @ 1 litre/ha-m for three months or as required to control ulcer disease of fish.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Weather remained mainly dry/dry over the region.

Advisories:

- As **Cold Wave** conditions likely in isolated pockets over Saurashtra & Kutch on 4th and 5th, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from frost / cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/ gunny bags. Keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the situation. Keep the chicks warm by providing artificial light in the poultry sheds.
- As **Thunderstorm accompanied** with lightning likely at isolated places over east Vidarbha on 3rd, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging. Use hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Maharashtra

- In Konkan, maintain 5 cm water level in rice fields. Apply irrigation to groundnut. To control cashew borer in inflorescence of cashew, spray Profenophos 50 % @ 1 ml per litre of water. Apply 2nd split dose of urea @ 11 g per vine of watermelon and 20 g of urea per vine of hybrid watermelon at one month after planting. To control powdery mildew in mango, spray Lambda Cyhalothrin 5% EC @ 6 ml + Hexaconazole @ 5 ml per 10 liters in water.
- In Madhya Maharashtra, undertake sowing of watermelon (varieties : Sugar Baby, Arka Manik, Arka Jyoti). Undertake intercultural operation like weeding in wheat and gram. Apply irrigation in wheat. To control thrips in onion, spray Dimethoate 30% @ 15 ml or Lambdacyhalothrin 5% @ 6 ml per 10 litres of water. To control internode borer in sugarcane, Release Trichogramma chilonis @ 2 phule trichocards /

acre at 15 days interval starting from earthing up to one month prior to harvesting. To control blight in safflower, spray Carbendazim + Mancozeb @ 20 g and Cypermethrin @ 15 ml per 10 liters of water. To control fall army worm in maize, spray 5% Neem Seed Kernel Extract. To control aphids in wheat, spray Thiamethoxam 25 wg @ 1g per 10 litres of water.

- In Marathawada, continue harvesting of matured pigeon pea. To control rust in wheat, spray Mancozeb (75 WP) @ 25 g or Propiconazole 25 % EC @ 10 ml per 10 liters of water on non rainy days.
- In Vidharbha, continue nursery sowing of *summer* rice. Cover the nursery with plastic or rice straw to improve seedling growth. Undertake intercultural operation like hoeing and weeding in wheat, safflower and gram. In orchards affected with rains/hailstorm, maintain field sanitation by removing detached fruits and other plant parts to avoid disease infestation. Prune the damaged branches and smear the cut ends with Bordeaux paste (1:1:10). Also apply Bordeaux paste up to one metre height from the base of the affected trees. To control pod borer (ETL :10-20 larvae/plant) in pigeon pea, spray Emamectin benzoate 5% SG @ 3 g in 10 liters of water. To control blast in rice nurseries, spray Copper oxy-chloride @ 25g + Streptocycline @ 0.5g in 10 liters of water on non rainy day.

Gujarat

- In Middle Gujarat, carry out hand weeding in wheat crop. Apply irrigation to potato crop.
- In North Gujarat, under cold and dry weather conditions, apply light irrigation to wheat and castor crops in the evening. Carry out intercultural operations in mustard and fennel crops. There are chances of blight disease in the potato crop. To control this disease, spray Mancozeb 0.2% @ 30 gram plus 25 ml of concentrated desi soap solution in 10 litre of water. Spray next three doses at the interval of 10 days.
- In South Gujarat, undertake nursery sowing of brinjal. Complete planting of sweet potato. Undertake mulching in sugarcane crop.
- In Saurashtra & Kutch, continue picking of matured bolls of cotton in time. Under present weather conditions, spray Hexaconazole @15 ml/10 liters of water to prevent blight and powdery mildew infestation in cumin crop.

Animal Husbandry

- In Gujarat, considering the cold weather conditions, provide luke warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Weather remained dry/mainly dry over the region during the week.

Advisories:

- As **Cold Wave** conditions in isolated pockets over north Madhya Pradesh on 4th and over Madhya Pradesh 5th, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from frost / cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/ gunny bags. Keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the situation. Keep the chicks warm by providing artificial light in the poultry sheds.
- As **Thunderstorm accompanied with hail & lightning** very likely at isolated places Madhya Pradesh on 7th; with **lightning** likely at isolated places over Chhattisgarh on 3rd, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging. Use hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

- **As Dense fog** very likely over Madhya Pradesh on 4th and 5th, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for blight disease. If symptoms are noticed, undertake plant protection measures.

Madhya Pradesh

- In Malwa Plateau Zone, irrigate wheat crop which is in CRI stage (21-25 days after sowing). Carry out intercultural operations in vegetable crops and mustard. Apply Chlorpyrifos dust or Melathion dust @ 20 kg/ha to control gram cut worm in chick pea crop on clear day.
- In Keymore Plateau Zone, irrigate wheat crop which is in CRI stage (21-25 days after sowing) and mustard crop before flowering stage. Continue sowing of vegetables like garden pea, spinach, coriander, carrot, radish, garlic..
- In Nimar Valley Zone, avoid irrigation to chickpea crop at flowering stage and provide irrigation to the crop at pod filling stage. Monitor crop for pod borer infestation and take suitable measures.
- In Gird Zone, irrigate wheat crop which is in CRI stage (21-25 days after sowing). Install bird perches in chick pea field to control pod borers. For stem and fruit borer in brinjal crop, spray diamethoet @ 750 ml per 500-600 litres of water per hectare on clear day.
- In Bundelkhand, monitor potato crop of early blight and, if noticed, spray Metalaxyl + Mencozeb in 2:1 ratio / litre of water. Spray Quinolphos 25 EC @ 2.0 ml per litre of water to control stem borer and fruit borer in brinjal crop on clear day.
- In Central Narmada Valley Zone, do not irrigate wheat, gram and mustard crops in case of rainfall. Carry out earthing up and apply fertilizers to one month old potato crop.

Chhattisgarh

- In Chhattisgarh Plain Zone, irrigate wheat crop at CRI stage (21 DAS). Carry out thinning in mustard/toria and sunflower crops. Apply irrigation to gram, lathyrus and lentil crops 40-45 days after sowing. Irrigate vegetable crops at regular intervals. Spray Indoxacarb @300 gram/hactare dissolved in 500 liter water for control of pod borer in pigeon pea on clear day.
- In Northern Hill Zone, carry out inter culture operations in pulses and oilseed crops to conserve soil moisture and control weeds. Carry out nipping (pruning of upper parts) in gram crop before flowering stage. It enables the plant to bear more branches and subsequently more flowers and pods. Continue transplanting of onion seedlings. if pod borer infestation in pigeon pea is above ETL, spray Polytrin C @ 1 litre/ha or Endoxacarb @ 300 ml/ha on clear day.
- In Bastar Plateau Zone, for the control of aphid insect in mustard crop, spray Thiamethoxam 25 WG of 0.5 ml or Imidacloprid 200 SL 1.5 ml/litre of water and repeat it at 10 to 15 days interval 2 to 3 times as per the requirement on clear day. For the control of white fly in tomato crop, apply Thiamethoxam 25 WG 400 g or Acetamiprid 20% WP 100ml per hectare on clear day.

Animal Husbandry

- Keep cattle in a dry, airy and clean place. Vaccinate cattle for FMD. Vaccinate goats with ETV vaccine. Take measures to control ticks and mites in animals. Vaccinate the poultry birds to prevent Ranikhet disease. (first F-1 at the age of 7 days & second R2B at the age of 8 weeks).

NORTH INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]

Realised Rainfall : Significant rainfall occurred Ananthnag and Kulgam districts of Jammu & Kashmir. Weather remained mainly dry/ dry over rest of the region.

Advisories:

- As **Cold day conditions** very likely in isolated pockets over Uttarakhand on 3rd; **Cold Wave and**

Ground Frost conditions in some parts very likely over Punjab on 3rd and 4th, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from frost / cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/ gunny bags. Keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the situation. Keep the chicks warm by providing artificial light in the poultry sheds.

- As **rain/thundershowers** likely at most places over Uttarakhand, Hiamchal Pradesh on 6th & 7th; **heavy rainfall** very likely in isolated places over Jammu & Kashmir on 6th and 7th along with **heavy rain/snow** likely in isolated pockets over Jammu & Kashmir on 6th; at many places over East Uttar Pradesh on 3rd and over Punjab on 6th, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields.
- As **Thunderstorm accompanied with hail & lightning** very likely at isolated places over East Uttar Pradesh on 3rd and 4th; over Punjab, Haryana Chandigarh & Delhi and West Rajasthan on 6th; over Uttarakhand and West Uttar Pradesh on 7th, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging. Use hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **Dense to very dense fog** at isolated places very likely over Punjab and Haryana, Chandigarh & Delhi on 3rd and 4th; over Uttar Pradesh on 5th and **Dense fog** over East Uttar Pradesh on 3rd; over Uttar Pradesh on 4th and over northwest Rajasthan on 4th and 5th, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for blight disease. If symptoms are noticed, undertake plant protection measures.

Jammu & Kashmir

- In Sub Tropical Zone, of Jammu & Kashmir, continue sowing of late maturing varieties of wheat. Provide thatching prepared from Sarkanda or any other material to young fruit plants to protect them from low temperature. In lentil, undertake hoeing and weeding. In mustard, apply Cypermethrin 10EC @ 1ml or Chloropyriphos 3EC @ 2ml per litre of water to control mustard sawfly. Undertake plant protection measures after current spell of rain
- In Cold Arid Zone, keep the vents of greenhouses closed during cloudy days. Cover the Poly-houses to conserve energy. Stop irrigating orchards or nurseries in open. Drain out excess water to avoid frost damage.
- In Valley Temperate Zone, provide drainage in the Rabi crop fields wherever there is probability of water accumulation during winter months and make bunds and irrigation channels clean. Complete transplantation of onion seedlings.
- In Sub Tropical Zone, of Jammu & Kashmir, due to congenial weather for collar rot and root rot in gram, rogue out affected plants and drench the affected patches of the field with Thiram or Captan @ 2g/litre of water. If aphid attack is observed in 10 cm of shoot tip, spray the crop with Chloropyripous@ 0.05% or Metasystox @ 0.03%. Undertake plant protection measures after current spell of rain

Himachal Pradesh

- In High Hill Temperate Dry Zone, after completing the excavation of pit (15-20 cm above the ground) for apple plantations, start filling up the pits with dung manure, superphosphate and pesticides etc. Cover the small plants with grass to avoid cold paralysis.
- In Mid Hills Sub-Humid Zone, continue transplanting of onion and sowing of pea. Undertake harvesting of ginger and turmeric. Cover the small plants with grass to avoid cold paralysis. Withheld application of

irrigation in all the crops. Protect the nurseries of temperate as well as other fruits plants from cold and frost by covering them with thatches, straw and gunny bags.

Punjab, Haryana and New Delhi

- In Punjab, avoid application of irrigation, fertilizer and other chemical and plant protection sprays; remove excess water from fields.
- In Western Zone of Punjab, due to cold to severe cold conditions and rain thereafter, do not irrigate crops like wheat, mustard; vegetables like radish, turnip, carrot and newly planted orchards. Provide polythene sheet/Sarkanda/Kahi/ rice straw to protect tomato plants from frost.
- In Western Plain Zone of Punjab, harvest mid and late season maturing variety of sugarcane.
- In Western Zone of Haryana, undertake intercultural operations in wheat, barley and chickpea crop. Apply need based irrigation and fertilizer doses to wheat, barley and mustard crops.
- In **Delhi**, continue sowing of late maturing varieties of wheat, Undertake transplanting of onion, tomato, cauliflower, cabbage, knolkhol and broccoli crops in raised bed. Due to high relative humidity, infection of blight may occur in potato and tomato crops. To control, spray Carbandizam @ 1gm or Dithane-M-45 @ 2gm / litre of water on clear day. In present weather conditions, monitor mustard crop for aphids. If insect population above ETL, spray Rogar or Quinalphos @ 2.0 ml/litre water is recommended when sky is clear.

Uttar Pradesh

- In East Uttar Pradesh, avoid irrigation to wheat crop as rainfall is forecast in Bahraich district and adjoining areas. Irrigate timely sown wheat crop at CRI stage in Varanasi and adjoining areas. Continue weeding followed by light irrigation in standing crops of field pea, mustard, Bengal gram and chick pea. Continue harvesting of mature sugarcane crop. Avoid spraying of insecticide/pesticides, weedicides, etc. in potato crop.
- In West Uttar Pradesh, continue sowing of wheat if the field is ready. Postpone irrigation /top dressing urea to the already sown wheat crop. Continue raising nursery of onion. Carry out transplanting of brinjal, cabbage, cauliflower, tomato and chilli seedlings. Carry out harvesting of toria crop in stages. Carry out hoeing and weeding in mustard at 15 to 20 DAS; in pea crop at 20 to 25 DAS and in Bengal gram at 30 to 35 DAS. Apply irrigation to mustard at 30-35 DAS and to green pea at 40-45 DAS. Apply irrigation to potato crop after weeding and hoeing operations.

Uttarakhand

- In Bhabar and Tarai Zone, undertake weeding and hoeing in wheat, mustard and barley. Undertake sowing of fruit crops like apple, pear, plum, wall nut etc. and nursery sowing of tomato, brinjal and capsicum.
- In Sub-Humid Sub-Tropic Zone, carry out weeding operation in wheat and potato crops.

Rajasthan

- In Semi Arid Eastern Plain Zone, undertake transplanting of rabi onion. Maintain 15 cm row to row and 10 cm plant to plant distance. Leaf curl & Mosaic diseases may affect papaya crop. Uproot and burn the affected plants. To check further spread of disease, spray Dimethoate 30EC or Methyl Demeton 25 EC @ 1.0 ml per litre water.
- In South Eastern Humid Plain Zone, weather is congenial for pod borer in green gram, spray Emamectin Benzoate SG @ 100 gram per hectare with 500-600 litre of water. Dust Quinalphos 1.5 % powder 25 kg /hectare to control cutworm attack in green gram.
- In Sub Humid Southern Plain and Aravali Hill Zone, keeping in view of possibility of cold wave during next five days, protect nurseries, fruit orchards and other high value crop by cold barrier or covering by

crop residues.

Animal Husbandry

- In Rajasthan, considering the sudden dip in minimum temperature, take suitable protection measures to protect poultry birds and livestock.
- In Uttar Pradesh, maintain optimum room temperature in poultry and dairy units by providing electric bulbs. Give salt and minerals to cattle in addition to dry/green fodder. Give balanced feed to poultry birds. Keep cattle and poultry sheds clean.

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