



# *National Agromet Advisory Service Bulletin*

*Friday 29<sup>th</sup> November 2019*

*(For the period 29<sup>th</sup> November to 3<sup>rd</sup> December 2019)*



*Issued by*

*India Meteorological Department*

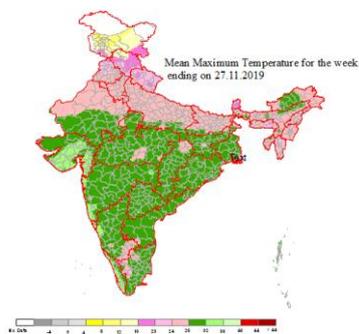
**Weblink For**

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

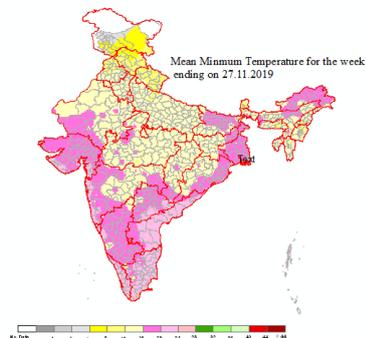
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

## Spatial distribution of weather parameters for the week ending on 27.11.2019

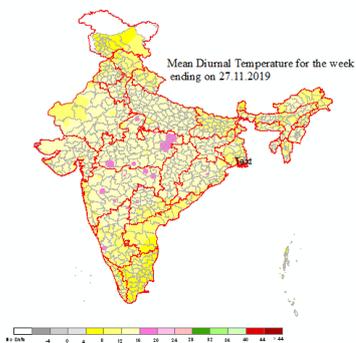
**Mean Maximum Temperature (°C) for the week ending on 27.11.2019**



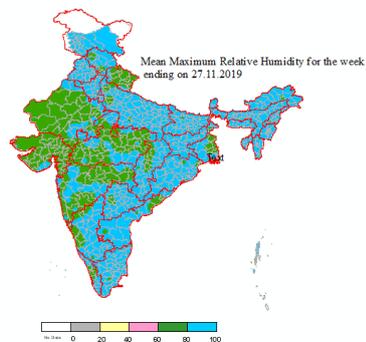
**Mean Minimum Temperature (°C) for the week ending on 27.11.2019**



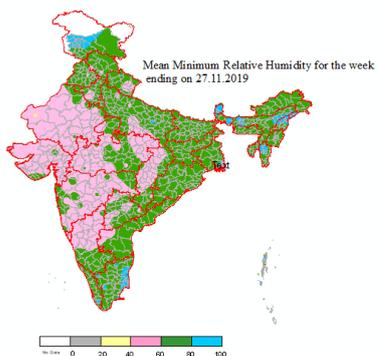
**Mean Diurnal Temperature Variation (°C) for the week ending on 27.11.2019**



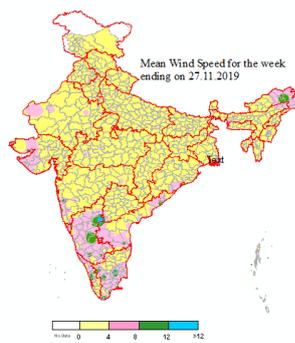
**Mean Maximum Relative Humidity (%) for the week ending on 27.11.2019**



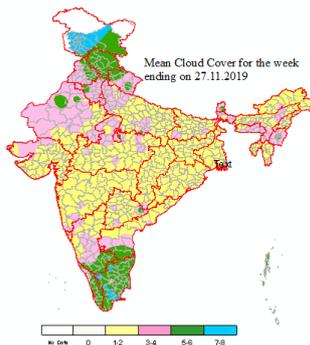
**Mean Minimum Relative Humidity (%) for the week ending on 27.11.2019**



**Mean Wind Speed (km/hr) for the week ending on 27.11.2019**

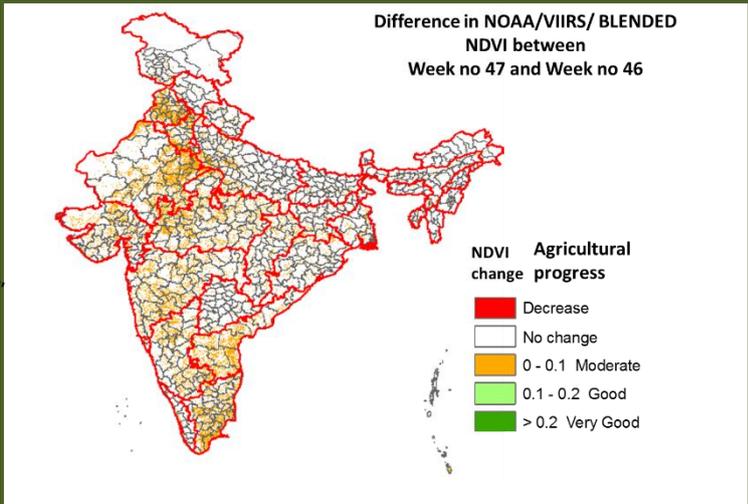
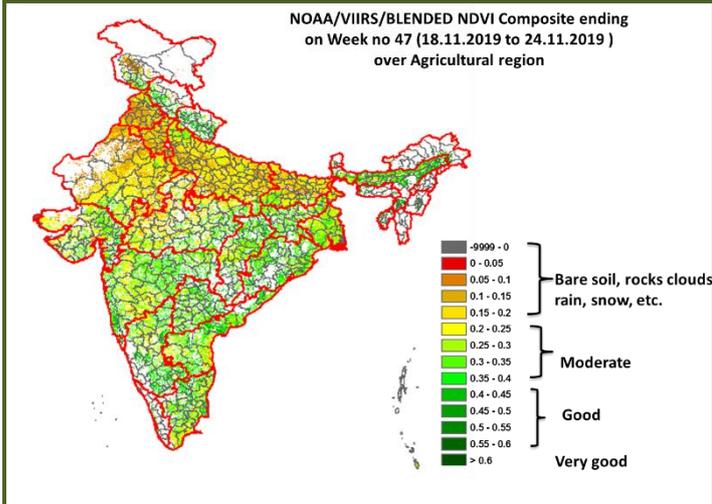


**Mean Cloud Cover (okta) for the week ending on 27.11.2019**



**NOAA/VIIRS/BLENDED NDVI composite for the week number 47 (18.11.2019 to 24.11.2019) over Agricultural regions of India**

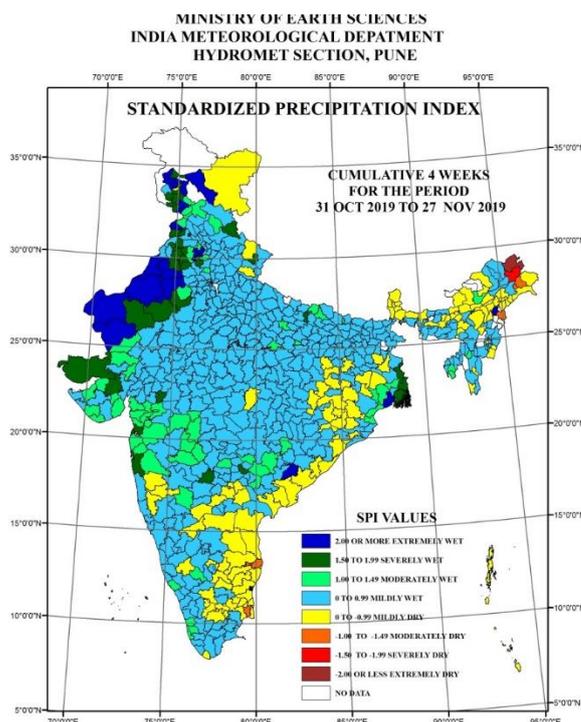
**Difference in NOAA/VIIRS/BLENDED NDVI between week number 47 and week number 46**



Agriculture vigour was good at most parts of Uttarakhand, Konkan; many parts of Himachal Pradesh, North Coastal Andhra Pradesh, Konkan, North Eastern states; at a few places over Telangana, Sikkim, Jharkhand, Odisha, Chhattisgarh, Karnataka, Sub-Himalayan West Bengal, Tamilnadu, East Madhya Pradesh and at isolated places of Jammu Division, South Coastal Andhra Pradesh, Kerala, Vidarbha, Gujarat and East Rajasthan.

Very Good difference in agricultural vigour has been observed at Prakasam district of Andhra Pradesh and good difference in agricultural vigour has been observed at isolated places in Tamilnadu & Coastal Andhra Pradesh. It was moderate over rest of the country.

**Standardised Precipitation Index  
Cumulative 4 weeks for the period 31<sup>st</sup> October to 27<sup>th</sup> November 2019**



- Extremely/Severely wet conditions exist in Valsad, Kutch, Surendranagar districts of Gujarat; Sirsa, Kaithal, Fatehabad districts of Haryana; Kinnaur district of Himachal Pradesh; Anantnag, Baramula, Jammu, Reasi, Udhampur, Badgam, Kupwara, Pulwama, Srinagar, Kargil, Ramban, Samba, Bandipore, Kulgam, Rajouri districts of Jammu & Kashmir; Bidar district of Karnataka; Alirajpur district of West Madhya Pradesh; Mumbai City, Mumbai Suburban districts of Maharashtra; Mokokchung district of Nagaland; Malkangiri district of Odisha; Amritsar, Bhatinda, Kapurthala, Mansa, Patiala, Moga, Faridkot, Tarn Taran, Barnala districts of Punjab; Barmer, Bikaner, Churu, Sri Ganganagar, Jaisalmer, Jodhpur, Nagaur, Hanumangarh, Sikar districts of Rajasthan; Diu; Sant Kabir Nagar district of Uttar Pradesh; East Midnapore, Nadia, North 24 Parganas, South 24 Parganas, Kolkata districts of West Bengal; Bageshwar district of Uttarakhand; Karimnagar district of Telangana.
- Moderately dry conditions exist in Lohit district of Arunachal Pradesh; Tuensang district of Nagaland; Tiruvallur, Tiruvarur districts of Tamilnadu.
- Extremely / Severely dry conditions exist in Dibang Valley, Lower Dibang Valley districts of Arunachal Pradesh.
- 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 4<sup>th</sup> December 2019

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- ◆ Fall in minimum temperature by 2-4°C over northwest India after 24 hours and gradual fall in night temperature over east India after 48 hours. No significant change in minimum temperatures over the rest of the country during next 2-3 days.
- ◆ Shallow to Moderate fog at isolated pockets very likely over parts of east and northeast India during next 2-3 days.

### 5 Day Rainfall Forecast (MID-DAY)

29<sup>th</sup> November 2019

Met-Sub-Division	29-Nov Today	30Nov Sat	01Dec Sun	02Dec Mon	03Dec Tue
1. Andaman & Nicobar Islands	SCT	SCT	ISOL	ISOL	ISOL
2. Arunachal Pradesh	ISOL	ISOL	ISOL	ISOL	DRY
3. Assam & Meghalaya	DRY	DRY	DRY	DRY	DRY
4. N. M. M. & T.	DRY	DRY	DRY	DRY	DRY
5. S.H. West Bengal & Sikkim	DRY	DRY	DRY	ISOL	ISOL
6. Gangetic West Bengal	DRY	DRY	DRY	DRY	DRY
7. Odisha	DRY	DRY	DRY	DRY	DRY
8. Jharkhand	DRY	DRY	DRY	DRY	DRY
9. Bihar	DRY	DRY	DRY	DRY	DRY
10. East Uttar Pradesh	ISOL	DRY	DRY	DRY	DRY
11. West Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
12. Uttarakhand	ISOL	DRY	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	DRY	DRY	DRY	DRY
15. Himachal Pradesh	ISOL	DRY	DRY	DRY	DRY
16. Jammu & Kashmir	SCT	DRY	ISOL	DRY	DRY
17. West Rajsthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	DRY	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	ISOL	ISOL
24. Madhya Maharashtra	DRY	DRY	ISOL	ISOL	DRY
25. Marathawada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal A. P. & Yanam	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	DRY	DRY	DRY	ISOL	ISOL
30. Rayalaseema	SCT	SCT	SCT	SCT	ISOL
31. T.N.,Puducherry & Karaikal	FWS	WS	WS	FWS	SCT
32. Coastal Karnataka	DRY	ISOL	SCT	SCT	ISOL
33. North Interior Karnataka	DRY	DRY	ISOL	ISOL	DRY
34. South Interior Karnataka	ISOL	ISOL	FWS	FWS	ISOL
35. Kerala & Mahe	SCT	SCT	FWS	FWS	ISOL
36. Lakshadweep	SCT	SCT	FWS	FWS	SCT

#### % Station Reporting Rainfall

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

## Weather Warning during next 5 days

**29 November (Day 1): ♦ Thunderstorm** accompanied with **lightning** very likely at isolated places over Rayalaseema, Kerala & Mahe, Lakshadweep and Tamilnadu, Puducherry & Karaikal.

♦ **Dense fog** very likely in isolated pockets over south Punjab, West Haryana and North Rajasthan during morning hours.

♦ **Heavy to very rainfall** very likely at isolated places over Tamilnadu, Puducherry & Karaikal.

♦ **Squally weather** conditions likely to prevail over southwest Arabian Sea and also over southwest Bay of Bengal off Sri Lanka coast and adjoining Comorin area.

**30 November (Day 2): ♦ Thunderstorm** accompanied with **lightning** very likely at isolated places over Rayalaseema, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Tamilnadu, Puducherry & Karaikal.

♦ **Heavy rainfall** at a few places with **very heavy falls** at isolated places very likely over Tamilnadu, Puducherry & Karaikal and **heavy rainfall** at isolated places over Coastal Andhra Pradesh & Yanam, Rayalaseema and Kerala & Mahe.

♦ **Squally weather** conditions likely to prevail over southwest Arabian Sea and also over southwest Bay of Bengal off Sri Lanka coast and adjoining Comorin area.

**01 December (Day 3): ♦ Thunderstorm** accompanied with **lightning** very likely at isolated places over Rayalaseema, South Interior Karnataka, Lakshadweep, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Tamilnadu, Puducherry & Karaikal.

♦ **Heavy rainfall** at a few places with **very heavy falls** at isolated places very likely over Tamilnadu, Puducherry & Karaikal; **heavy to very heavy rainfall** at isolated places over Kerala & Mahe and **heavy rainfall** at isolated places over Coastal Andhra Pradesh & Yanam, Lakshadweep and South Interior Karnataka.

**02 December (Day 4): ♦ Thunderstorm** accompanied with **lightning** very likely at isolated places over South Interior Karnataka, Lakshadweep, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.

♦ **Heavy rainfall** likely at isolated places over South Interior Karnataka, Lakshadweep, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.

**03 December (Day 5): No Weather Warning.**

## Weather Outlook for subsequent 2 days from 4<sup>th</sup> December to 6<sup>th</sup> December, 2019

- ♦ Isolated to Scattered rainfall likely over peninsular India, parts of west and northwest of India.
- ♦ Weather likely to be dry over remaining parts of the country.

### Salient advisories

- As **Thunderstorm** accompanied with **lightning** very likely at isolated places over Kerala and Tamilnadu, Puducherry & Karaikal from 30<sup>th</sup> November to 2<sup>nd</sup> December, over Rayalaseema and Coastal Andhra Pradesh on 30<sup>th</sup> November & 1<sup>st</sup> December, over South Interior Karnataka on 1<sup>st</sup> & 2<sup>nd</sup> December, 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 due to strong winds. Keep harvested produce at safer places.
- As rain/thundershowers likely at most/many places over **Tamilnadu, Puducherry & Karaikal** from 29<sup>th</sup> November to 2<sup>nd</sup> December, over **South Interior Karnataka** and **Kerala** on 1<sup>st</sup> & 2<sup>nd</sup> December along with

**Heavy rainfall** at a few places with **very heavy falls** at isolated places very likely over Tamilnadu, Puducherry & Karaikal and **heavy rainfall** at isolated places over Coastal Andhra Pradesh on 30<sup>th</sup> November & 1<sup>st</sup> December, **heavy rainfall** at isolated places over Kerala on 30<sup>th</sup> November & 2<sup>nd</sup> December and over Rayalaseema on 30<sup>th</sup> November, **heavy to very heavy rainfall** at isolated places over Kerala on 1<sup>st</sup> and **heavy rainfall** at isolated places over South Interior Karnataka on 1<sup>st</sup> & 2<sup>nd</sup> December, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places. Keep the cattle under shed during heavy rainfall period.

- **Shallow to Moderate fog** at isolated pockets very likely over parts of northeast India during next 2-3 days, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for early blight disease. If symptoms are noticed, undertake plant protection measures.
- Undertake sowing/ transplanting of following *rabi* crops:
  - In North Zone of Kerala, continue transplanting of cool season vegetables like cauliflower and cabbage.
  - In Southern Zone of Coastal Andhra Pradesh and Scarce Rainfall Zone of Rayalaseema, continue sowing of *rabi* groundnut with assured irrigation.
  - In Telangana, continue nursery sowing of *rabi* rice.
  - In North Interior Karnataka, complete sowing of chickpea, wheat and sunflower.
  - In Central Brahmaputra Valley, continue land preparation/sowing of wheat, maize, rapeseed-mustard, *rabi* pulses and oilseeds crops; take up nursery bed preparation/ sowing of *boro* rice,
  - In Odisha, carry out nursery raising/transplanting of tomato, cabbage, cauliflower and onion; sowing of groundnut, sesame, sunflower, mustard, etc.
  - In South Gujarat, continue planting of sugarcane, sweet potato and nursery preparation for chilli, brinjal.
  - In Madhya Pradesh, continue sowing of wheat, gram, mustard, pea, chickpea and lentil. Prepare nursery for tomato, brinjal, chilli, cauliflower, cabbage, spinach, fenugreek, garlic, radish, pea, carrot, etc.
  - In Chhattisgarh, undertake land preparation/sowing of chickpea and mustard; nursery raising of onion and transplanting of cauliflower, cabbage, chilli, tomato, brinjal, etc.
  - In Jammu & Kashmir, continue sowing of wheat, mustard, peas and gram.
  - In Punjab, continue sowing of wheat, radish, spinach, etc. and transplanting of mid-season cauliflower.
  - In Uttar Pradesh, continue sowing wheat, barley, gram, mustard, chickpea, vegetable pea and lentil.
  - In Semi-Arid Eastern Plain Zone of Rajasthan, undertake sowing of wheat, barley, fenugreek and cumin.

## Detailed Agromet Advisories

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

**Realised Rainfall** : Significant rainfall occurred in Alappuzha, Pathanamthitta and Thiruvananthapuram districts in Kerala, Ariyalur, Chennai, Cuddalore, Kanchipuram, Karaikal, Nagapattinam, Nilgiris, Puducherry, Pudukottai, Ramanathapuram, Thanjavur, Theni, Tirunelveli, Tiruvarur, Toothukudi and Villupuram in Tamilnadu. Weather remained mainly dry in rest of the region.

#### Advisories:

- As **Thunderstorm** accompanied with **lightning** very likely at isolated places over Kerala and Tamilnadu, Puducherry & Karaikal from 30<sup>th</sup> November to 2<sup>nd</sup> December, over Rayalaseema and Coastal Andhra Pradesh on 30<sup>th</sup> November & 1<sup>st</sup> December, over South Interior Karnataka on 1<sup>st</sup> & 2<sup>nd</sup> December, 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 due to strong winds. Keep harvested produce at safer places.
- As rain/thundershowers likely at most/many places over **Tamilnadu, Puducherry & Karaikal** from 29<sup>th</sup> November to 2<sup>nd</sup> December, over South Interior Karnataka and Kerala on 1<sup>st</sup> & 2<sup>nd</sup> December **Heavy rainfall** at a few places with **very heavy falls** at isolated places very likely over Tamilnadu, Puducherry & Karaikal and **heavy rainfall** at isolated places over Coastal Andhra Pradesh on 30<sup>th</sup> November & 1<sup>st</sup> December, **heavy rainfall** at isolated places over Kerala on 30<sup>th</sup> November & 2<sup>nd</sup> December and Rayalaseema on 30<sup>th</sup> November, **heavy to very heavy rainfall** at isolated places over Kerala and **heavy rainfall** at isolated places over South Interior Karnataka on 1<sup>st</sup> & 2<sup>nd</sup> December, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places. Keep the cattle under shed during heavy rainfall period.

#### Kerala

- In Southern Zone, weather is congenial for rice bug attack in paddy field, apply fish amino acid 20ml/litre of water either before 9am or after 3pm in an encircling manner from outer to inner side after current spells of rain.
- In Problem Area Zone, weather is congenial for mahali incidence in arecanut, spray 1% Bordeaux mixture
- In Central Zone, due to cloudy weather, there is a chance of leaf folder attack in Mundakan Paddy. To control, use trichogramma cards (2CC per one acre). Cut the cards into small pieces and fix in different regions of the field. If the attack is severe, spray Quinalphos @ 2ml per one liter of water.
- In High Altitude Zone, sigatoka leaf spot disease in banana may become severe due to increase in relative humidity, spray 1% Bordeaux mixture or Bavistin (1g/lit of water) after cutting the severely affected leaves and destroying it. Undertake plant protection methods after current spells of rain.

#### Andhra Pradesh

- In North Coastal Zone, boll rot disease in cotton, spray 1 g. streptomycin + 30 g Copper oxychloride in 10 liters of water
- In Southern Zone, farmers who are taking up paddy nurseries are advised select varieties like NLR-34449, MTU-1010. Also weather is congenial for spodoptera incidence in greengram and blackgram, spray Chloripyrifos @ 2.5 ml/L (or) Quinolphos @ 2 ml/L of water for 1st and 2nd instar larvae. If 3rd and 4th instar larvae is observed then spray Emamectin benzoate @ 0.3 g/L (or) Ppinosad @ 0.3ml/L of water.
- In Scarce Rainfall Zone of Rayalaseema, undertake sowing of rabi groundnut from November 15 to December 15, with assured irrigation. Select high yielding varieties and sow them at a distance of 22.5 X 10 cm after seed treatment with Thiamethoxam @ 2 ml. + 4 ml. water per kg of seeds.
- In Krishna Godavari Zone, weather is congenial for whitefly incidence in blackgram and greengram,

spray Monocrotophos @ 1.6 ml/lit or Triazophos @ 1.5 ml/lit or Acephate @ 1.0 g/ lit or Dimethoate @ 2.0 ml/lit or Acetamiprid @ 0.2 g/litre of water at 7-10 days interval by alternating the chemicals against whitefly.

### **Telangana**

- Undertake nursery sowing of rice during 10<sup>th</sup> November to 15<sup>th</sup> December. Apply well decomposed FYM @ 400kg or poultry manure @ 200 kg /2guntas (200m<sup>2</sup>) nursery.
- The Prevailing weather conditions are congenial for Cercospora & Alternaria leaf spot in cotton, spray Propiconazole @ 1ml per liter of water.
- Weather is congenial for hoppers, Mealy Bugs and Scale Insects in Mango due to recent rains, spray Dimethoate @ 2 ml per liter of water.

### **Tamil Nadu**

- In Western Zone, garden land banana may be planted. A sucker must weigh 2 kg each and must be dipped in 0.1% Carbendazim solution before planting. Also again dip the sucker in clay water mixture and sprinkle 3 g of Carbofuron per sucker.
- In High Rainfall Zone, weather is congenial for leaf hopper in mango, spray two rounds of Acephate @ 1 g /litre or Phasolone @ 1.5 ml / litre along with sticking agent @ 10 ml / litre of water. Undertake plant protection methods after current spells of rain.
- In North Western Zone, to control botrytis diseases in castor field, spray Propiconazole (1.5 ml / litre) fungicide in castor field to avoid yield loss.
- In High Altitude Hilly Zone, to increase the berry size in pepper crop, undertake foliar spray of Naphthalene Acetic Acid (NAA) @ 40 ppm (40 mg/litre of water) after current spells of rain.

### **Karnataka:**

- In Coastal Karnataka, undertake harvesting of arecanut. Continue picking of matured cotton bolls.
- In North Interior Karnataka, carry out intercultural operations in sorghum, wheat crop. Complete sowing of chickpea, wheat, sunflower and harvesting of maize. Carry out nipping in earlier sown chick pea crop. Apply irrigation in pigeon pea crop. For control of flower and pod dropping in cotton, spray Alpha Naphthalin Acetic acid @ 0.25 ml / litre of water.
- In South Interior Karnataka, complete harvesting of matured groundnut, maize, ragi, sugarcane and onion crops. Complete sowing of horse gram, green gram, black gram, cowpea, field bean, jowar, chickpea crops. Undertake harvesting of arecanut in clear weather.
- In South Interior Karnataka, due to high humidity wilt disease is noticed in banana; to manage this, spray fungicide Bavistin @ 2mg / litre of water after current spells of rain
- In North Interior Karnataka, to manage Downey mildew disease in grapes, spray Trichoderma @ 5 ml dissolved in one liter of water.

### **Animal Husbandry:**

- In Southern Zone of Tamil Nadu, Hoof disorder disease may be spread in cattle. Hence, the hoofs should be periodically curtailed and cleaned. Maintain hygiene in the cattle shed. If symptoms found, immediately contact the local veterinarian for treatment.
- In Karikal and Puducherry, babesiasis disease in cattle, apply Butox @ 2 ml/l of water on cattle and also spray it on the nearby areas of the cattle shed to control Ectoparasites.
- In Karnataka, vaccination sheep against Blue tongue. Fumigate shed by burning neem leaves and stem to evoke smoke during evening which will prevent mosquitoes entering the shed.

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

**Realised Rainfall:** Mainly dry/dry weather prevailed in the region during the week.

### **Advisories:**

- Shallow to Moderate fog at isolated pockets very likely over parts of northeast India during next 2-3 days, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato

crops for early blight disease. If symptoms are noticed, undertake plant protection measures.

#### **Arunachal Pradesh**

- In Arunachal Pradesh, continue sowing of mustard, maize and pea. Continue planting of potato and transplanting of cole crops.

#### **Assam & Meghalaya**

- In Lower Brahmaputra Valley Zone, continue land preparation/ sowing of lentil and wheat. Continue harvesting of Sali rice.
- In Central Brahmaputra Valley, continue land preparation/ sowing of wheat, maize, pulses and oilseeds crops. Continue harvesting of *Sali* rice and nursery bed preparation/ sowing of *boro* rice. Take up transplanting of tomato.
- In Upper Brahmaputra Valley Zone, take up harvesting of Sali rice. Continue nursery bed preparation/ sowing of *Boro* rice. Farmers who have not completed planting of potatoes, should preferably select late grown varieties like Kufri Sindhuri, Kufri Megha etc. for planting within mid of December. Apply Imidachloropid (1ml/5 litres of water) or Thiomethoxam (1g/3 litres water) to control aphid, hoppers and white fly infestation in chilli crop.
- In Barak Valley Zone, continue sowing of rapeseed/mustard and planting of potato. Undertake sowing of tomato and rajmah. Spray Malathion 50 EC @ 1.5ml/litre to protect the cole crops from leaf eating caterpillars.
- In North Bank Plain Zone of Assam, carry out harvesting of Sali paddy. Go for land preparation and sowing of Rabi pulses like lentil, rajmah, pea and lathyrus. Take up sowing of winter vegetables like cabbage, cauliflower, knolkhol, brinjal, radish and carrot. Continue nursery bed preparation/sowing of Boro rice. Continue sowing of rapeseed-mustard and planting of potato.
- In Hill Zone of Assam, continue harvesting of matured Sali rice. Infestation of field rats in the matured sali rice crops may be controlled by applying 2-3 tablets of Celphos/Phostoxin/ Quickphos per burrow. Block the burrows after application of the tablets. Farmers are advised to go for bagging of the banana bunches with muslin cloth or polyethylene before fruit set in order to protect the fruits from the attack of banana fruit and leaf scarring beetle.
- In Meghalaya, carry out transplanting for cole crops (cabbage, cauliflower, broccoli) and undertake sowing of pea, coriander, palak, radish and carrot. Carry out harvesting of Sali/kharif rice (lowland) and make the field ready for Rabi crops. Go for regular harvest of Khasi Mandarin and guava fruits.

#### **Manipur, Mizoram, Tripura and Nagaland**

- In Nagaland, provide support to the French bean crop with cane frames.
- In Manipur, continue harvesting and sun-drying of matured *kharif* rice and sowing of rapeseed, lentil and field pea. Continue planting of potato and transplanting of cole crops and onion. Carry out harvesting of 9 months old ginger and turmeric crops. Carry out land preparation for sowing of broad bean, French bean and pea crops.
- In Mizoram, to manage northern leaf blight disease in maize, spray approach (Methoxy-acrylates) @ 2g/litre of water in clear/ dry day. To manage rhizome rot disease in ginger and turmeric, provide adequate drainage and apply *Trichoderma harzianum* @ 50 g/bed along with FYM/ neem cake or apply Ridomil @ 2 g/litre of water.
- In Tripura, prepare field for sowing of Rabi crops after harvesting of rice. Farmers having at least 4 irrigation may cultivate potato and those who have at least 2 - 3 irrigation facility, may proceed for the cultivation of Gram, Lentil, Pea, etc. Seeds of pulse crops must be treated with *Rhizobium* culture before sowing.

#### **Animal Husbandry**

- In Assam, to protect poultry from cold, put gunny bags or plastic sheath curtains on the side walls of shed and increase bedding material by six inches. Care should be taken not to restrict ventilation.
- In Arunachal Pradesh, vaccinate poultry against Ranikhet disease and infectious bronchitis.

- In Nagaland, as the temperature is dropping, provide vitamin complex to poultry. Use incandescent bulbs, plastic sheets, jute sacks and plastic sacks to protect birds from cold winds.

### **Fishery**

- In Central Brahmaputra Valley, to protect the fish population against various bacterial diseases prevalent in winter season, apply Potash @ 4-5 mg/litre of water or Sukrena WS @ 1 litre per bigha of water.
- In Manipur, maintain water level at a depth of 1.0m to 1.5m. Fish stocking may be done in small scale. Feeds should be provided @ 3 % body weight per day. Harvesting of fishes may be done. Select disease free fishes to be stocked as brooder. Harvest rain water to maintain fish pond water.

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

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

### **Advisories:**

#### **Odisha**

- Continue harvesting /threshing of medium duration rice. Maintain 5 cm water level in the field of late varieties at flowering and grain filing stage. Continue picking of matured cotton bolls. Continue sowing of wheat, groundnut, sesame, sunflower, mustard, green gram, black gram, pea and sweet corn. Undertake planting of potato crop, transplanting of cabbage, cauliflower, onion crops, nursery sowing of vegetables like brinjal, tomato, chilli and capsicum. Continue planting of carrot, radish, garlic, legumes etc.
- For control of fall army worm infestation in maize field, spray Spinosad 45% SC @ 0.3 ml/litre of water or Chlorantraniliprole 18.5% SC @ 0.4 ml/litre of water.

#### **Bihar**

- Complete harvesting/threshing of rice crop. Complete the sowing of wheat by 30<sup>th</sup> November. Continue sowing of maize, mustard, chick pea, lentil, gram, potato, pea and transplanting of brinjal, tomato, chilli, late sown cauliflower and cabbage. Continue land preparation for sowing of onion.

#### **Jharkhand**

- Continue sowing of mustard crop. Complete nursery sowing of onion and transplanting of cabbage and cauliflower. Continue nursery preparation of late cole crop and tomato; protect nurseries of these crops from frost /cold wave by covering with plastic sheet. As night temperature is gradually decreasing, maintain the optimum soil moisture and apply irrigation in chilli at a regular interval. Complete the sowing of wheat, potato, Bengal gram, lentil, field pea, mustard, linseed, barley etc.
- Weather is conducive for blight disease in potato if foggy condition prolongs; prophylactic spraying of Krilaksil or Ridomil MZ chemical @ 1.5 g / liter water is recommended. Incidence of powdery mildew is likely in pea crop; prophylactic spraying of Sulfex @ 3 g or Karathene @ 1 ml / litre of water twice at weekly interval during evening time is recommended.

#### **West Bengal**

- In Sub-Himalayan West Bengal, undertake planting of potato, cole crops and sowing of wheat crop. Continue preparing raised bed for sowing crucifers. Complete the harvesting of large cardamom. Continue harvesting of Mandarin orange and sowing of garden pea. Carry out sowing of lentil after harvesting of rice crop.
- In Gangetic West Bengal, undertake nursery preparation for brinjal, tomato, chili in upland area. Carry out planting of potato, transplanting of late variety seedlings of cauliflower, cabbage, broccoli, tomato and sowing of French beans. Continue field preparation for sowing of mustard.
- In Sub-Himalayan West Bengal, to prevent leaf blight in black gram, spray Mancozeb 63% W.P + Carbendazim 12% W.P @ 2g/liter of water.

#### **Andaman & Nicobar Islands**

- Continue land preparation for sowing of snake gourd. Do earthing up, weeding in sweet potato on 25th and 50th day after planting. Continue harvesting of matured Arecanut and sundry them for 30 to 40 days, preferably on bamboo or wooden structure.
- Reduce pest attack in okra by installing pheromone trap @ 1/100 sq. m. area.

#### **Animal Husbandry**

- In Jharkhand, to protect the poultry from cold at night, cover the shed or window with plastic bags at night and lift the sacks up during the day to get sunlight.
- In West Bengal, make arrangements to protect livestock from cold winds. Make use of bulbs to maintain proper temperature in the poultry house.
- In Bihar, vaccination animal for Foot & Mouth disease. Provide one full spoon of salt with their food in morning and evening regularly.

#### **Fishery**

- In Odisha, there is a possibility of “EUS” disease in fish; apply ‘Cifax’ @ 400 ml mixed with 40 litres of water in one acre pond area as a preventive measure.
- In West Bengal, clean the aquatic weed from the bottom of fish pond.

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

- **Realised Rainfall:** Weather remained dry over the region.

#### **Advisories:**

##### **Maharashtra**

- In Konkan, continue nursery bed preparation for summer rice and land preparation for groundnut. Complete sowing of horse gram, cowpea and wal in fallow lands in Sindhudurg district.
- In Madhya Maharashtra, continue picking of cotton. Apply irrigation to wheat. To control leaf spot in early sown wheat, spray Thiophanate Methyl 70% WP @ 7 to 8 g in 10 liters of water. To control of pod borer in pigeon pea, spray Chlorantraniliprole @ 150 ml in 500 liters of water per hectare. Undertake intercultural operation like hoeing in chickpea (20 DAS).
- In Marathawada, continue picking of cotton. Undertake top dressing of Nitrogen @ 50 kg / ha in early sown wheat. Apply irrigation to early sown wheat and gram. To control rhizome fly in turmeric, undertake earthing up and drenching with Chloropyrifos 50 % @ 500 ml per acre in water.
- In Vidharbha, continue picking of cotton. Dry the harvested produce under the sun. For delayed sowing of irrigated wheat (up to December 15) use varieties - AKW 4627, PDKV Sardar, AKW-381, HI-977, AKW-1071(Purna), HD 2501. Undertake intercultural operations like weeding in early sown safflower and gram. To control Helicoverpa in pigeon pea (above ETL (10-20 larvae/plant)), spray Emamectin benzoate 5% SG @ 3 g in 10 litres of water.

##### **Gujarat**

- In Middle Gujarat, continue sowing of wheat and planting of potato crop.
- In South Gujarat, complete sowing of corn, pulses (Indian Bean, gram, green gram) crops. Continue planting of sugarcane and sweet potato. Complete nursery preparation for chili, brinjal and transplanting of bell pepper. Undertake mulching in sugarcane crop with its leaves; use plastic or fodder as a mulching material in vegetable crops to conserve soil moisture.
- In North Gujarat, undertake harvesting of matured fruits of custard apple, pomegranate, aonla and picking of matured bolls of cotton. Complete sowing of mustard, gram, wheat, cumin, fenugreek, fennel, potato, carrot, cabbage, brinjal and tomato crops.
- In Saurashtra & Kutch, complete sowing of mustard, chickpea, wheat, sorghum, garlic, coriander, cumin, fenugreek, carrot, planting of potato and transplanting of onion crop. Apply irrigation in pigeon pea through drip irrigation system. Continue sowing of fodder sorghum and chickpea.
- In Middle Gujarat, for control of leaf blight disease in tomato, spray Copper Hydroxide 77 WP @25 gram in 10 litres of water at an interval of 10 days.
- In Saurashtra & Kutch, under present weather conditions severe attack of thrips has been reported in chili.

Spray Profenofos @ 20 ml with 500 ml of 5 % neem seed extract. In case of heavy attack, spray of Spinosad or Spinetoram @3 ml per 10 liters of water.

#### **Animal Husbandry:**

- In Gujarat, to protect animals from cold winds, keep cattle indoors at night time.

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

**Realised Rainfall:** Dry weather prevailed over the region during the week.

#### **Advisories:**

##### **Madhya Pradesh**

- In Malwa Plateau Zone, continue land preparation and sowing of wheat and chickpea. Go for planting of mango, guava and citrus fruits in new orchards. In cotton crop areas where jassid and white fly infestation has crossed ETL, apply Imidachloprid 17.8 SL @ 3 ml/10 litre or Thiamethoxam 25 WG @ 2g/ 10 litre or Acetamiprid 20 SP @ 3g/10 litres of water. Also, install pheromone traps @ 5/ha for monitoring pink bollworm.
- In Vindhya Plateau Zone, continue sowing of improved wheat varieties after necessary seed treatment. Take up sowing of gram and lentil. Prepare nursery bed for rabi crops like onion, tomato, brinjal, chilli, cabbage and cauliflower. Continue planting of potato and garlic.
- In Central Narmada Valley Zone, continue land preparation and sowing of wheat, gram and mustard. Take up raising of tomato, brinjal, chilli and cucurbit vegetables.
- In Bundelkhand, continue sowing of wheat. Continue raising onion nursery. Monitor the timely-sown mustard, pea, chickpea and lentil crops for pest and disease infestation.
- In Jhabua Hill Zone, continue sowing of wheat, gram and mustard. Prepare nursery for winter vegetables like tomato, brinjal, chilli, cauliflower, cabbage, spinach, fenugreek, garlic, radish, pea, carrot etc. To control leaf eating caterpillar in guava, ber, custard apple, citrus fruits, etc., spray Trizophos @ 2 ml/litre of water.

##### **Chhattisgarh**

- In Chhattisgarh Plain Zone, continue harvesting of matured rice crop. Continue nursery sowing of early varieties of winter vegetables like cabbage, cauliflower and knolkhol. Continue nursery sowing of tomato, brinjal, chilli and capsicum after seed treatment by Thiram @ 2 gram/ kg seeds. Prepare the fields for sowing of rabi crops and go for sowing of chickpea, safflower, linseed and lentil in time.
- In Northern Hill Zone, continue sowing of chickpea and mustard. Take up sowing garlic. Go for nursery raising of onion seedlings. Start transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal, etc. and directly sowing the seed of radish, turnip, spinach, carrot, etc. after treatment with fungicide.
- In Bastar Plateau Zone, carry out harvesting of matured rice crop. Undertake sowing of wheat, moong, urad, sunflower, lathyrus, gram, safflower, lentil, potato, pea, etc.

#### **Animal Husbandry**

- In Chhattisgarh, provide concentrate feed to milch animals mixed with dry & green fodder and ensure enriched diet having proteins, carbohydrates, fat, vitamins, minerals, etc.

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

**Realised Rainfall :** Significant rainfall occurred in Kinnaur and Kullu districts of Himachal Pradesh; Anantnag, Bandipore, Baramulla, Kulgam, Kupwara, Ramban and Srinagar districts of Jammu & Kashmir. Dry weather prevailed over rest of the region.

#### **Advisories:**

##### **Jammu & Kashmir**

- In Sub Tropical Zone, carry out hoeing and weeding operations in chick pea and lentils. Carry out thinning operation in oil seeds like gobi sarson and mustard.
- In Intermediate Zone, continue sowing of wheat. Carry out hoeing and weeding operations in toria.

Undertake field preparation for transplanting of onion and planting of garlic.

- In Cold Arid Zone, drain out excess water from orchards /nurseries in open to avoid chances of frost damage. However, protected nurseries must be irrigated few times during the winters (once or twice a month).

#### **Himachal Pradesh**

- In Sub-Montane and Low Hills Sub Tropical Zone, carry out intercultural operations in rabi crops. Carry out weeding and hoeing operations in tomato, chilli, capsicum and brinjal. Complete sowing of raddish, carrot, turnip, fenigreek, broccoli and potato.
- In Mid Hills Sub Humid Zone, spray 5 % urea in apple before leaves fall, so that they get energy and strength for good crop next year. Apply chubtia paint on the cut of branches after pruning.
- In High Hill Temperate Dry Zone, start digging pits for new plantations.

#### **Punjab, Haryana and New Delhi**

- In Punjab, undertake sowing of wheat, broccoli, Chinese cabbage, radish, spinach, etc. and transplanting of mid-season cauliflower. Complete the harvesting of paddy and picking of cotton. Provide irrigation to sugarcane, vegetables and fruit crops.
- In Undulating Plain Zone, undertake sowing of timely sown wheat varieties. Continue sowing of oil seeds. Complete nursery sowing of onion. Complete sowing of peas and hand hoeing should be done to control weeds orchard.
- In Haryana, considering the dry weather and favourable temperature, farmers are advised to compete the harvesting of mature crops soon as possible and go for sowing wheat, barley and rabi crops. Complete the picking of cotton. Complete the harvesting and threshing of paddy crop. Do not burn the residue of the crop after harvesting. Undertake thinning and weeding in timely sown mustard crop.
- In Delhi, undertake sowing of mustard, gram, pea and lentil; transplanting of onion seedling in the prepared fields and planting of early potato. Undertake transplanting of mature seedlings of cauliflower, cabbage, broccoli and tomato. Undertake field preparation for sowing of wheat, transplanting of marigold in raised bed and sowing of gladiolus in prepared fields. Irrigate wheat at CRI stage. Monitoring the mustard crop against attack of painted bug.
- In Western Zone of Punjab, there is possibility of shoot and fruit borer in brinjal crop. To control, spray 80 ml Coragen 18.5 SC (Chlorantraniliprole) using 100-125 litres of water/acre 3-4 times at 14-days interval.
- In Haryana, possibility of fall in night temperature, keep the animal under sheds and clean the surroundings to control fly and mosquito in cattle shade. Provide the cattle /animals 50 grams iodized salt and 50 to 100 grams mineral mixture daily along with animal feed/fodder, green fodder to keep them healthy.

#### **Uttar Pradesh:**

- In East Uttar Pradesh, apply light irrigation in Potato. Continue sowing of lentil and pea. Continue sowing of wheat in sufficient moisture & use good quality wheat seeds. Take up sowing of recommended & advance varieties of Barley. Start preparation for sowing of advance and recommended varieties of Rai and Mustard in vacant fields.
- In West Uttar Pradesh, as the temperature conditions are favorable for sowing of wheat, start sowing of wheat under irrigated condition. The rapeseed crop is in the start of flowering stage, which is sensitive to the lack of moisture, so maintain proper moisture by light irrigation. In the mustard crop, weeding and hoeing should be done 15 to 20 days after sowing. Farmers are advised to sowing of chickpea crop. In the pea crop, weeding should be done 20-25 days after sowing. Clean the mango orchards and cut the twigs that are dry and diseased.

#### **Uttarakhand**

- In Bhabar and Tarai Zone, continue sowing of wheat. Seeds should be treated with tricodarma 5g + pseudomonas 5g/kg before sowing. Continue harvesting of red gram. Apply light irrigation in toria and yellow mustard at one month after sowing. Carry out weeding and hoeing operations in cabbage and

cauliflower.

- In Hill Zone, continue sowing of wheat. Complete sowing of vegetable pea. Continue transplanting of onion. Undertake sowing of seeds of apple, wild Himalayan pear, wild apricot, peach etc after suitable seed treatment.
- In Sub-Humid Sub-Tropic Zone, continue sowing of wheat.

### **Rajasthan**

- In Southern Humid Plain Zone, prepare the field for sowing of maize and complete sowing of chickpea.
- In Flood Prone Eastern Plain Zone, undertake sowing of wheat. Continue sowing of barley and lentil.
- In Semi-Arid Eastern Plain Zone, carry out sowing of wheat, barley, fenugreek and cumin.
- In Sub Humid Southern Plain and Aravali Hill Zone, undertake sowing of wheat, barley, fenugreek. Also prepare onion nursery.
- In Arid Western Plain Zone, harvest groundnut and cotton crops at physiological maturity stage for getting better pods and greater lint yield. Continue sowing of gram, mustard, wheat and barley.

### **Animal Husbandry**

- In Uttar Pradesh, farmers are advised to give proper & balanced feed to animals. Carry out de-worming of calves of dairy animals. Vaccinate cattle against H.S. and B.Q. diseases. Vaccinate goat against PPR disease. Increase light duration in poultry farms. Farmers are advised to vaccinate cows, buffalo, goats, and sheep's against the mouth and foot disease controls. Keep goat in dry and shaded place and provide green fodder, fresh and clean water three times in a day.

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