



National Agromet Advisory Service Bulletin



Friday 14th December 2018
(For the period 14th to 19th December 2018)



Issued by
India Meteorological Department

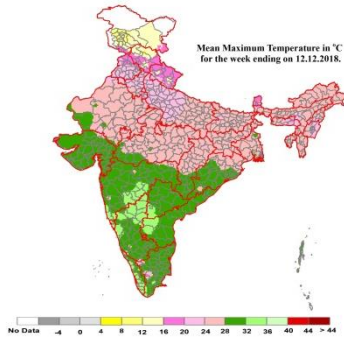
Weblink For

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

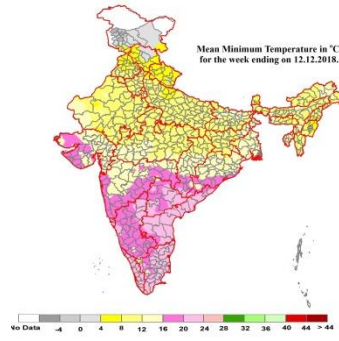
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 12.12.2018

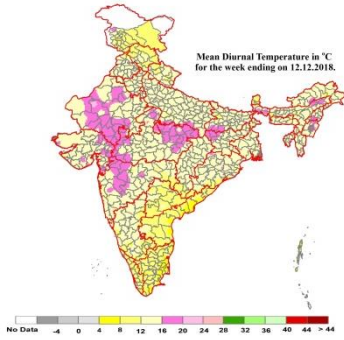
Mean Maximum Temperature (°C) for the week ending on 12.12.2018



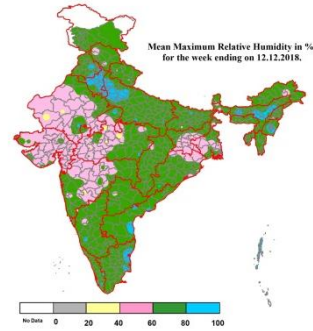
Mean Minimum Temperature (°C) for the week ending on 12.12.2018



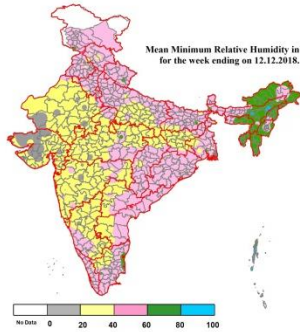
Mean Diurnal Temperature Variation (°C) for the week ending on 12.12.2018



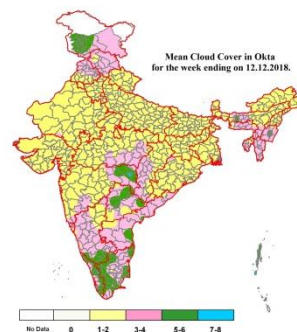
Mean Maximum Relative Humidity (%) for the week ending on 12.12.2018



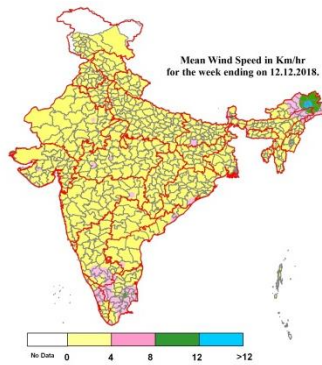
Mean Minimum Relative Humidity (%) for the week ending on 12.12.2018

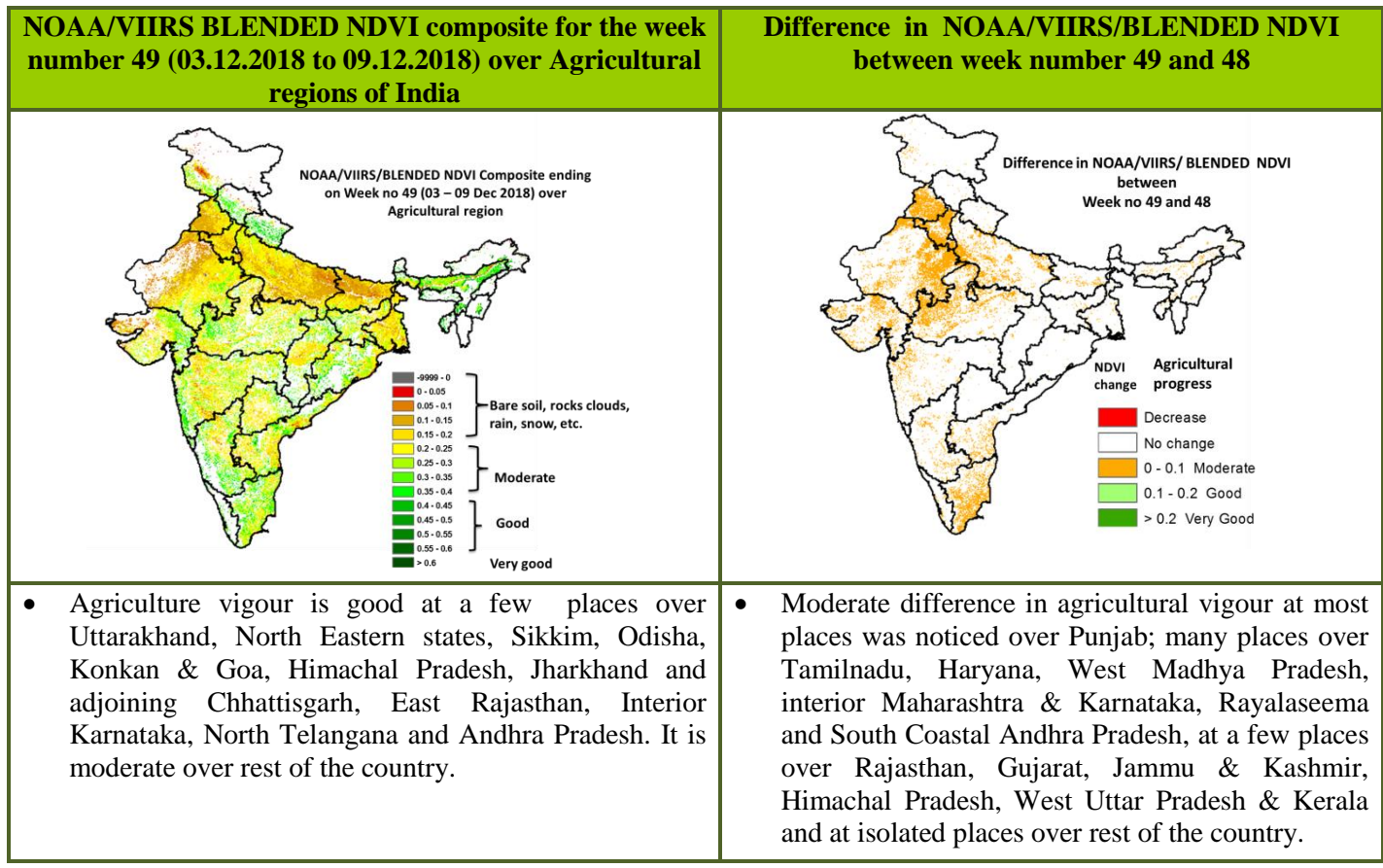


Mean Cloud Cover (okta) for the week ending on 12.12.2018

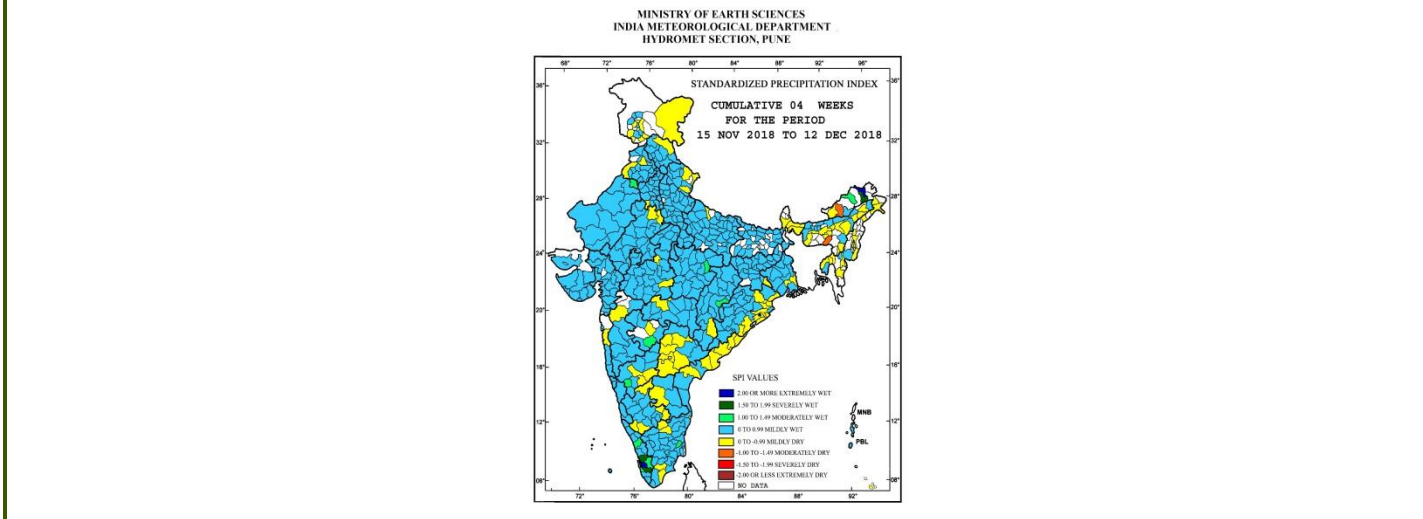


Mean Wind Speed (km/hr) for the week ending on 12.12.2018



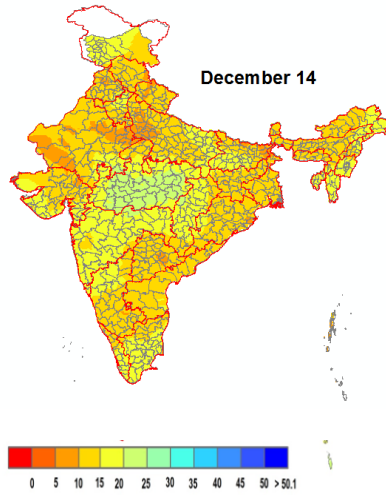


**Standardised Precipitation Index
Cumulative 4 weeks for the period 15th November to 12th December 2018**

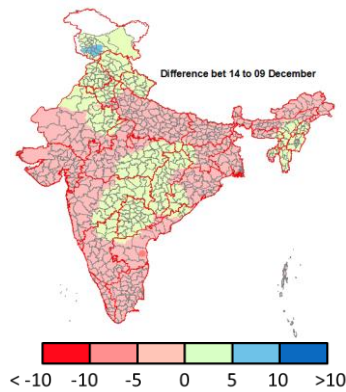
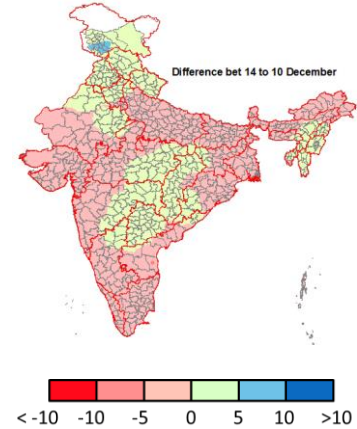
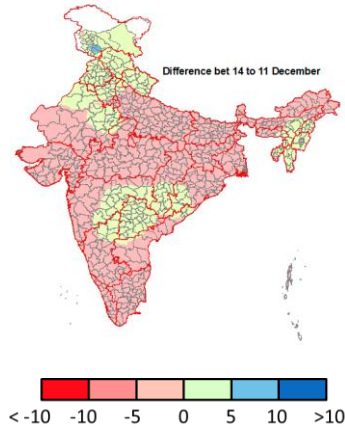
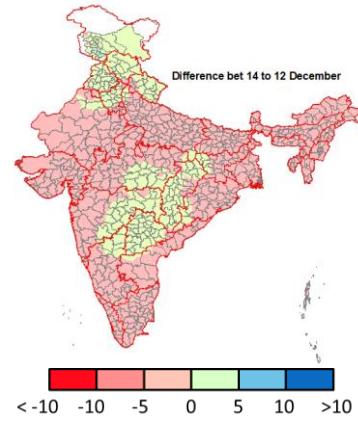
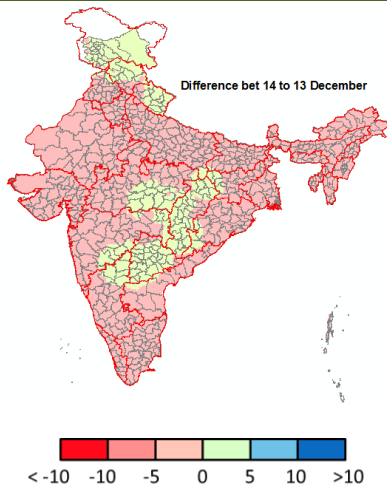


- Extremely/severely wet conditions experienced in few districts of Arunachal Pradesh; Ernakulam, Kottayam, Pathanamthitta districts of Kerala.
- Moderately dry conditions experienced in East Kameng district of Arunachal Pradesh; East Khasi Hills district of Meghalaya.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

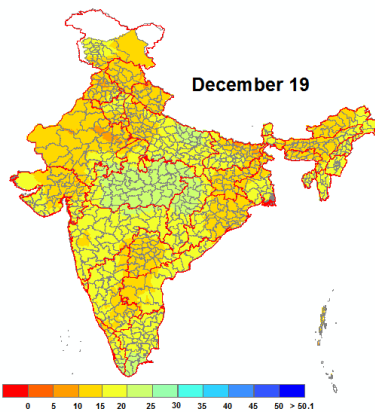
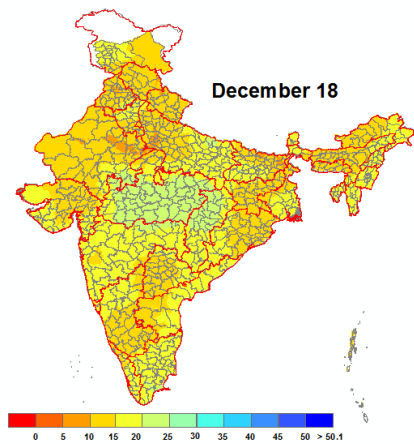
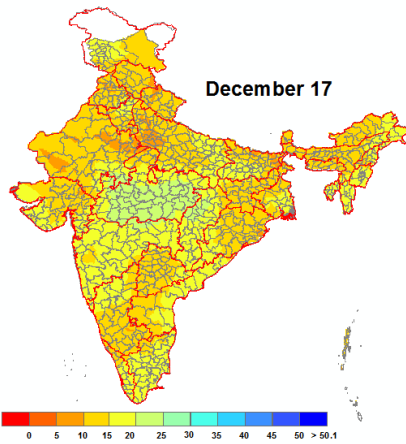
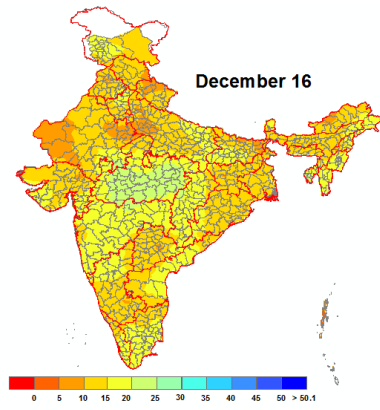
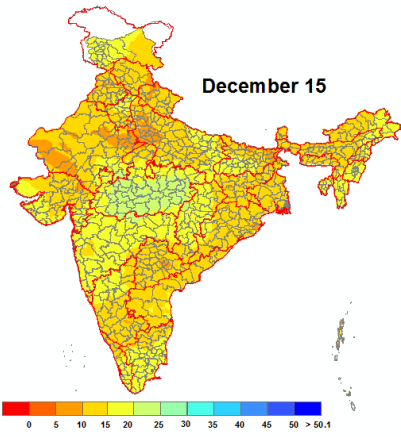
Daily Soil Moisture (mm) for 14th December 2018 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 15th to 19th December 2018 (ending at 0830 IST)
for 60 cm depth**



Significant Weather Feature - Deep Depression

- The deep depression over southeast Bay of Bengal moved further north-northwestwards with speed of 12 kmph during past 6 hours and lay centered at 0830 hrs IST of today, the 14th December 2018 over southeast Bay of Bengal near Latitude 8.5°N and Longitude 87.4°E, about 670 km east of Trincomalee (Sri Lanka), 930 km east-southeast of Chennai (Tamilnadu) and 1090 km southeast of Machlipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic storm during next 24 hours and into a Severe Cyclonic Storm in subsequent 36 hours. It is very likely to move northnorthwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Weather Forecast for next 5 days valid upto 0830 hours of 19th December 2018

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- Shallow to moderate fog at isolated places in morning hours very likely over north Bihar, East Madhya Pradesh, Jharkhand, Chhattishgarh and Vidarbha during next 2 days and over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 5 days.
- Minimum temperatures very likely to fall by 1-2°C over parts of northwest India during next 48 hours.
- No significant change in minimum temperatures likely over rest parts of the country during next 2-3 days.

5 Day Rainfall Forecast (Mid-day) 14th December 2018

Met-Sub-Division	14-Dec Today	15Dec Sat	16Dec Sun	17Dec Mon	18Dec Tue
1. Andaman & Nicobar Islands	FWS	SCT	ISOL	SCT	SCT
2. Arunachal Pradesh	ISOL	DRY	DRY	SCT	FWS
3. Assam & Meghalaya	DRY	DRY	DRY	SCT	FWS
4. N. M. M. & T.	DRY	DRY	DRY	ISOL	FWS
5. S.H. West Bengal & Sikkim	DRY	DRY	DRY	ISOL	SCT
6. Gangetic West Bengal	DRY	DRY	ISOL	SCT	SCT
7. Odisha	DRY	ISOL	SCT	FWS	SCT
8. Jharkhand	DRY	DRY	ISOL	SCT	SCT
9. Bihar	DRY	DRY	DRY	ISOL	ISOL
10. East Uttar Pradesh	DRY	DRY	ISOL	ISOL	ISOL
11. West Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
12. Uttarakhand	DRY	DRY	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	DRY	DRY	DRY	DRY
15. Himachal Pradesh	DRY	DRY	DRY	DRY	DRY
16. Jammu & Kashmir	ISOL	DRY	DRY	DRY	DRY
17. West Rajasthan	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	ISOL	SCT	ISOL
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	ISOL	DRY	DRY	DRY	DRY
25. Marathwada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	ISOL	SCT	ISOL
27. Chhattisgarh	DRY	DRY	ISOL	FWS	SCT
28. Coastal Andhra Pradesh	ISOL	FWS	WS	WS	SCT
29. Telangana	ISOL	ISOL	ISOL	ISOL	DRY
30. Rayalaseema	DRY	DRY	SCT	ISOL	ISOL
31. Tamilnadu & Puducherry	ISOL	ISOL	ISOL	ISOL	DRY
32. Coastal Karnataka	DRY	DRY	ISOL	DRY	DRY
33. North Interior Karnataka	ISOL	DRY	DRY	DRY	DRY
34. South Interior Karnataka	DRY	DRY	DRY	DRY	DRY
35. Kerala	ISOL	DRY	DRY	DRY	DRY
36. Lakshadweep	DRY	DRY	DRY	DRY	DRY

% 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

- **14 December (Day 1):** Dense fog at isolated places is very likely over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Madhya Pradesh and Chhattisgarh. Squally wind very speed reaching 50-60 kmph gusting to 70 kmph very likely over southwest & adjoining southeast Bay of Bengal. Sea condition likely to be very rough over southwest & adjoining southeast Bay of Bengal. Fishermen are advised not to venture into these sea areas.
- **15 December (Day 2):** Dense fog at isolated places is very likely over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Madhya Pradesh, Bihar and Chhattisgarh. Heavy rain at isolated places very likely over Coastal Andhra Pradesh and north coastal Tamilnadu. Gale wind wind speed reaching 60-70 kmph gusting to 80 kmph is very likely over southwest & adjoining westcentral Bay of Bengal from morning onwards. Sea condition likely to be very rough to high southwest & adjoining westcentral Bay of Bengal. Fishermen are advised not to venture into these areas. Squally wind speed reaching 45-55 kmph gusting to 65 kmph very likely to commence along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry from evening onwards.
- **16 December (Day 3):** Dense fog at isolated places is very likely over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and Bihar. Heavy to very heavy rain at a few places with isolated extremely heavy fall very likely at isolated places over Coastal Andhra Pradesh and isolated heavy over north coastal Tamilnadu. Gale wind wind speed reaching 80-90 kmph gusting to 100 kmph very likely over westcentral and adjoining southwest Bay of Bengal. Sea condition likely to be very high to very high over westcentral & adjoining southwest Bay of Bengal. Squally wind speed reaching 45-55 kmph gusting to 65 kmph very likely along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts. Fishermen are advised not to venture into westcentral & adjoining southwest Bay of Bengal and along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts.
- **17 December (Day 4):** Heavy to very heavy rain at a few places with isolated extremely heavy fall at isolated places over Coastal Andhra Pradesh and isolated heavy over Chhattisgarh, Odisha. Gale wind wind speed reaching 80-90 kmph gusting to 100 kmph very likely over westcentral & adjoining southwest Bay of Bengal. Sea condition likely to be high to very high over westcentral & adjoining southwest Bay of Bengal. Gale wind wind speed reaching 80-90 kmph gusting to 100 kmph very likely over along & off Coastal Andhra Pradesh from morning hours. Fishermen are advised not to venture into westcentral & adjoining southwest Bay of Bengal and along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts.
- **18 December (Day 5):** No Weather Warning.

Weather Outlook for subsequent 2 days from 19th to 21st December 2018

- Scattered to fairly widespread rainfall activity over Andaman & Nicobar Islands and Isolated over northeast India and south Peninsular India.
- A feeble westren disturbance likely to affect westren Himalayan region.
- Dry weather likely over the rest of the country.

Salient Advisories

- As squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely over southwest & adjoining southeast Bay of Bengal on 14th. Squally wind speed reaching 45-55 kmph gusting to 65 kmph very likely to commence along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry on 15th and 16th December. Sea condition likely to be very rough over southwest & adjoining southeast Bay of Bengal, fishermen are advised not to venture into these sea areas.
- As gale wind speed reaching 60-70 kmph gusting to 80 kmph is very likely over southwest & adjoining westcentral Bay of Bengal from morning of 15th onwards, 80-90 kmph gusting to 100 kmph very likely over westcentral and adjoining southwest Bay of Bengal on 16th and 17th, over along & off Coastal Andhra Pradesh from morning hours of 17th December. Sea condition likely to be very rough to high over southwest & adjoining westcentral Bay of Bengal. Fishermen are advised not to venture into westcentral & adjoining southwest Bay of Bengal and along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts.
- As rain/thundershowers likely at most/many places over **Coastal Andhra Pradesh** from 15th to 17th, along with heavy to very heavy rain at a few places with isolated extremely heavy fall very likely at isolated places

over Coastal Andhra Pradesh on 16th and 17th, heavy rain at isolated places very likely over Coastal Andhra Pradesh on 15th, over north coastal Tamilnadu on 15th and 16th December, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.

- As rain/thundershowers likely at many places over **Andaman & Nicobar Islands** on 14th, over **Odisha** and **Chhattisgarh** on 17th, over **Arunachal Pradesh, Assam & Meghalaya** and **Nagaland, Manipur, Mizoram & Tripura** on 18th December, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- As dense fog at isolated places very likely over **Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh** from 14th to 16th, over **East Madhya Pradesh** and **Chhattisgarh** on 14th and 15th, over **Bihar** on 15th and 16th December, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
- In **Delhi**, due to foggy weather, there are chances of late blight disease in potato, spray Mancozeb @ 2 g/litre of water along with Tepol (sticky material) in the seed potato crop.

Detailed Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in the Kannur and Pathanamthitta districts of Kerala, Nellore district of Coastal Andhra Pradesh, Shivamogga district of South Interior Karnataka during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at most/many places over Coastal Andhra Pradesh from 15th to 17th, along with heavy to very heavy rain at a few places with isolated extremely heavy fall very likely at isolated places over Coastal Andhra Pradesh on 16th and 17th, heavy rain at isolated places very likely over Coastal Andhra Pradesh on 15th, over north coastal Tamilnadu on 15th and 16th December, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
 - As squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely over southwest & adjoining southeast Bay of Bengal on 14th. Squally wind speed reaching 45-55 kmph gusting to 65 kmph very likely to commence along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry on 15th and 16th December. Sea condition likely to be very rough over southwest & adjoining southeast Bay of Bengal. Fishermen are advised not to venture into these sea areas.
 - As gale wind speed reaching 60-70 kmph gusting to 80 kmph is very likely over southwest & adjoining westcentral Bay of Bengal from morning of 15th onwards, 80-90 kmph gusting to 100 kmph very likely over westcentral and adjoining southwest Bay of Bengal on 16th and 17th, over along & off Coastal Andhra Pradesh from morning hours of 17th December. Sea condition likely to be very rough to high over southwest & adjoining westcentral Bay of Bengal. Fishermen are advised not to venture into westcentral & adjoining southwest Bay of Bengal and along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts.
 - **Kerala:**
 - In problem Areas Zone, farmers are advised to undertake seed treatment before sowing to protect the rice crop from seed borne diseases. Pseudomonas should be dissolved in the water used for soaking the seeds @ 10g/Kg seed for 12-14 hours and then drain the water and keep for sprouting.
 - In High Altitude Zone, short duration vegetable crops like Amaranthus, cow pea etc. can be cultivated in the inter spaces of newly planted crop. Apply first dose of fertilizers (50:65:65g NPK per plant). Spray 1% Bordeaux mixture as a prophylactic measure to control leaf spot.
 - In High Altitude Zone, to control blast, bacterial leaf blight and sheath rot diseases on paddy, apply Fujione @ 300ml/ha for controlling Blast and Ediphenphos @ 500ml/ha for sheath rot and sheath blight diseases, for controlling bacterial leaf blight spray Streptocycline @ of 15 g in 300 liters of water per hectare and apply bleaching powder @ 5 kg/ha in irrigation water.
 - In Northern Zone, shoot and fruit borer disease on okra, spray Chlorantraniliprole (3 ml in 10 litres of water) 2-3 times at weekly interval.
 - In Central Zone, there is a chance of brown spot, blast and bacterial leaf blight disease in paddy, spray 20g

Pseudomonas per one litre of water. Also, destroy the affected leaves along with the Spodoptera. If spodoptera attack is severe, spray Quinalphos 2ml per one litre of water or Chlorantraniliprole 3 ml per ten litre of water.

▪ **Andhra Pradesh:**

- In Krishna Godavari Zone, undertake sowing of *rabi* groundnut and pulses after current spells of heavy rain.
- In High Altitude Zone, undertake harvesting of matured rice and rajmash after current spells of heavy rain.
- In Southern Zone, the present weather conditions are favourable for Maruca spotted pod borer in red gram. Spray Chlorpyrifos @ 2.5 ml. + DDVP @ 1 ml or Thiodicarb @ 1 g/litre of water after current spells of rain.
- In Rayalaseema, to control powdery mildew in green gram, spray Michlobutanil @ 1g or Diphane Conozol @ 1 ml/litre of water after current spells of rain.

▪ **Telangana:**

- In South Telangana Zone, complete nursery sowing of rice. In North Telangana Zone, cover entire nursery bed with polythene sheets at night and remove in the morning to avoid the effect of low temperatures on germination. Apply irrigation at bud initiation to flowering stage in red gram. Apply nitrogenous fertilizers in maize.
- Prevailing weather conditions are congenial for Incidence of shoot borer maize. Spray Chlorpyrifos @ 2.0 ml or Acephate @ 1.5 g per litre of water at 10-15 days after sowing. If crop is at 25-30 days stage apply Carbofuran 3G granules @ 3-4 kgs per acre in leaf whorls and to control anthracnose in grapes, spray Propineb @ 3 g per liter of water within 20 days after pruning in South Telangana zone.
- Prevailing weather conditions may be congenial for maruca and helicoverpa in red gram. Spray Chlorpyrifos @ 2.5 ml or Novaluron @ 0.75 ml along with Dichlorvos @ 2.0 ml per litre of water in Northern Telangana zone.

▪ **Tamil Nadu:**

- In High Rainfall Zone, there are chances for increase in the severity of infection of rice stem borer and leaf folder, farmers are advised to spray Chlorantraniliprole 0.3 ml/litre of water or Flubendiamide 0.1ml/litre of water.
- In High Altitude Hilly Zone, for control coffee berry borer on coffee, ethyl alcohol and methyl alcohol can be mixed in equal ratio of 1:1 and kept in the coffee plantation to attract the insect.
- In Western Zone, since continuous cloudiness with high relative humidity may be favourable for the multiplication of brown plant hopper in rice, farmers are requested to monitor the crop and provide sufficient drainage and ventilation for more aeration. Further if any incidence noticed spray any one of the following chemicals directing the base of the rice crop: Phasalone 1500 ml /ha or Chloropyrifos 1250ml/ha or Imidacloprid 100to 125ml/ha, Acephate 75 SP 625gm/ha or Dichlorvos 400ml/ha. Also, Present weather is favourable for downy mildew incidence in grapes. Monitor and spray 1% Bordeaux mixture or any other copper fungicide at 0.25%.
- In Cauvery Delta Zone, gall midge incidence is being noticed in the thaladi paddy crop due to prevailing weather condition, spray Chlorpyrifos 20 EC 500 ml/acre when rainfall does not occur.

▪ **Karnataka:**

- In North Interior Karnataka, continue nipping in Bengal gram crop. Carry out intercultural operations in chick pea, safflower and sorghum crops. Continue picking of matured cotton bolls. Avoid picking of kapas during early morning hours. Provide protective irrigation to wheat, sugarcane, Bengal gram, pigeon pea and vegetable crops.
- In South Interior Karnataka, spray Mango Special @ 5g/litre for initiation and fruit development in mango. Complete harvesting of rice, ragi and matured sugarcane crops. Undertake harvesting of ginger and turmeric crops. Spray Planofix @ 0.25 ml / liter of water against flower drop in pomegranate orchards.
- In Coastal Karnataka, continue cotton picking.
- In North Interior Karnataka, to manage fungal diseases in grapes, spray 1 % Bordax mixture 2-3 days after pruning and to manage Anthracnose disease, spray Thiophenate Methyl @ 1 ml/litre of water. Spray Thiamethoxam 25 WDG @ 0.2 g or Imidacloprid @ 0.3 ml/ litre of water for controlling brown plant hopper in late transplanted rice crop.
- In South Interior Karnataka, spray Immomactin Benzoate @ 0.3 ml/litre to control caterpillar in Bengal gram crop. Spray 0.125% Metalaxyl 72 WP or 2% Copper-oxy-Chloride 50 WP or 1% Bordeaux mixture @ 5 to 10 litre/plant against quick wilt in pepper crop.
- In Coastal Karnataka, for the control of tube rot in pineapple, treat the tubers with 3 g Copper Oxychloride /litre of water and then take up the planting.

• **Animal Husbandry**

- In Karnataka, provide a mineral mixture along with concentrated feeds to milch animals. Vaccinate the livestock for Black Quarter and foot and mouth diseases.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
 - As rain/thundershowers likely at many places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 18th December, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - **Arunachal Pradesh:**
 - Complete harvesting of *kharif* rice at the earliest. Complete sowing of mustard, pea/gram in rice fallow and transplanting of *rabi* vegetables.
 - Spray Dimethoate 30 EC @ 3ml/litre as preventive measure against aphid in mustard on a non rainy day.
 - **Assam:**
 - Complete planting of potato at the earliest. Continue sowing of wheat, continue harvesting of Sali rice and nursery bed preparation/sowing of *Boro* rice in Assam. Complete sowing of rapeseed and mustard, pea, and *rabi* pulses. Transplant seedlings of cauliflower, knolkhol, tomato, brinjal and radish in the main field at 30-35 DAS and due to prevailing dry spell, farmers are advised to provide light irrigation on every alternate day for better establishment and smooth growth. Mulching may be done after irrigation.
 - In Barak Valley Zone of Assam, due to low temperature, there is chance of attack of Saw fly and aphid in the field of rapeseed–mustard at vegetative stage. Spray Dimethoate 30 EC or Ragor @ 2 ml per litre of water. Also to control the late blight disease in potato field apply Redomil @ 2ml/litre of water at the first appearance of late blight. 10-15 days after application of Redomil spray Indofil M-45 @ 2.5 ml/litre of water as alternative way until full control of late blight on a non rainy day.
 - **Meghalaya:**
 - Complete transplanting of cole crops, cucurbits and sowing of pea. Avoid irrigation in ginger and turmeric fields at rhizome maturity stage. Undertake harvesting of *kharif* rice.
 - **Manipur:**
 - Continue land preparation and sowing of *rabi* maize.
 - Spray Cypermethrin @ 2ml/litre of water or Nuvan @ 0.5ml/litre of water against aphid in field pea. Spray Tracer (Spinosad) 48 SC @ 300ml/ha or Imidachloprid @ 1ml/3-4 litre of water or Fipronil @ 2ml/litre of water against thrips in potato on a non rainy day.
 - **Mizoram:**
 - Continue harvesting of upland rice, sowing of radish and leafy mustard and nursery preparation of tomato, crucifer, onion, brinjal and chilli.
 - Due to high humidity the problem of citrus canker get aggravated in acid lime leading to excessive fruit drop. Spray Copper Oxchloride 180 gms with Spreptocycline 6 gms in 60 liter of water to control canker on a non rainy day.
 - **Tripura:**
 - Continue nursery bed preparation for sowing of *Boro* rice. Continue sowing of *rabi* legumes like toria, sesame, lentil and planting of potato.
 - **Nagaland:**
 - Complete transplanting of vegetable crops like cabbage, tomato, radish and broccoli. Continue harvesting of TRC/WRC rice. Undertake sowing of toria and linseed as second crop utilizing the residual moisture in the field after the harvest of early to medium duration paddy varieties and sowing of zero tillage lentil and pea after rice by opening small furrow between rice stubbles.
 - **Animal Husbandry**
 - In Central Bramhaputra Valley Zone of Assam, in winter protect poultry birds from cold by using electric bulb (300Watt for 100 sq.feet) to prevent Coryza disease. In case of lacrimation and swelling of the head, treat the fowl with Sulphur drugs.
 - In North Eastern States, to protect poultry birds from cold winds, gunny bags or plastic sheath curtains should be installed on the side walls of shed house and bedding material (litter) should be increased by six inches. Care should be taken not to restrict ventilation. Undertake vaccination against ranikhet disease in poultry during this period.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at many places over Andaman & Nicobar Islands on 14th, over Odisha on 17th December, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers

to the standing crops.

▪ **Odisha:**

- Continue harvesting of paddy crop after current spells of rain. Prepare the land and sow wheat crop as quick as possible. It is optimum time to sow toria, mustard, linseed, groundnut and sunflower. Prepare wet nursery for sowing pre-germinated seeds of short and medium duration summer paddy. Complete land preparation for sowing green gram and black gram at optimum soil moisture condition after harvest of paddy. Take up sowing of pulses (lentil, field pea and chick pea), coriander and garlic. Raise wet bed nursery of summer rice in the second fortnight of December and carry out transplanting in January. Go for sowing of green pea, potato tubers, garlic, onion, tomato cauliflower, cabbage, KnolKhol, broccoli, radish, etc. Cotton crop is at boll maturity to boll bursting stage. Pick out cotton from matured bursted bolls. Castor crop is at maturity stage. Harvest the matured spikes.
- To control fruit and shoot borer in brinjal, spray Neem based pesticide 1500 ppm @ 600ml/acre at initial stages. Later on go for alternate spray of Spinosad 45% SC @ 70 ml/acre and Thiodicarb @ 250g/acre at 15 days interval. Cole crops may get affected by diamond back moth. To control, apply Spinosad 45SC @ 0.5ml/litre of water undertake plant protection measures after current spells of rain.

▪ **Bihar:**

- As dense fog at isolated places very likely over Bihar on 15th and 16th December, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
- Start the sowing of late sown wheat varieties. Give light irrigation in early sown wheat crop which reaches Crown Root Initiation (CRI) stage @ 21-25 days after sowing. Carry out earthing up in potato followed by light irrigation.
- Present weather condition is congenial for attack of sucking insect-pests such as white fly, leaf hopper and aphid in vegetables crops. For control, spray Imidacloprid @ 3ml/litre of water.

▪ **Jharkhand:**

- Harvest matured late rice varieties. After threshing, dry the grains and store them at moisture level 8-10%. Raise nursery of summer rice with improved rice varieties. As per the availability of water, apply scheduled irrigation to wheat crop at various crop stages. Prepare land for transplanting onion. Take up sowing of improved varieties of table pea. Carry out nipping (pruning of upper parts of the plant) of 30 to 40 days (before flowering) old gram crop. It enables the plant to bear more branches and subsequently more flowers and pods.
- Rapeseed and mustard crops are attacked by aphids. Spray Monocrotophos @ 2 ml per litre of water or Emidachlorpyrid @ 1 ml per litre of water to control. Existing weather condition favours the attack of leaf spot disease in wheat crop. Spray immediately the fungicide Indofil M-45 @ 2 g per liter of water as and when symptoms of disease appear on a non rainy day.

▪ **West Bengal:**

- In Sub-Himalayan West Bengal, continue land preparation for potato. Continue harvesting, threshing and drying of Aman rice. Continue sowing of winter vegetable seeds in the nursery bed. Before sowing treat the seed bed with fungicide Copper-oxychloride @ 4g/litre of water. Continue harvesting Mandarin orange fruits as per the elevation. Carry out careful rouging and destruction of infected ginger and turmeric plants.
- In Gangetic West Bengal, continue nursery sowing of boro paddy. Maintain a thin layer of water over the seed bed. If possible, arrange polythene shade over seed bed. Continue planting potato and sowing of lentil. Cover the fencing around betel vineyard with cotton cloths like sari as a protection from strong Northern wind. Carry out thinning followed by light irrigation in mustard crop. Carry out intercultural operations in gram, pea, onion, garlic and other vegetable crops.
- In Sub-Himalayan West Bengal, for management of winter vegetable pest at early vegetative stage, spray Chlorpyrifos 50% + Cypermethin 5% @ 1.5 ml/liter of water on a non rainy day.
- In Gangetic West Bengal, wrap plastic sheets around mango trunk and apply grease to seal any cracks to prevent young mealy bugs from climbing up the trees. For bight in early sown mustard due to cloudy weather, apply Diethane-M-45 @ 2.5g per litre of water on a non rainy day.

▪ **Andaman & Nicobar Islands:**

- In the Andaman Islands, Protect the vegetable nursery as continuous rain is expected. Make trenches in vegetable field to avoid stagnation of water. Plant suitable fodder sapling in upland area as the soil condition is conducive.
- In the Nicobar Islands, make channels in home garden to drain out excess rain water. Plant suitable fodder sapling in upland area as the soil condition is conducive.

• **Animal Husbandry**

- In Odisha, clean the shed and de-worm the animals. Give mineral mixture along with salt regularly and wheat grains, jaggery etc. may be provided @ 10%-20% in the daily ration during winter season to meet the energy requirement of the animals. 10% extra dry matter should be provided over and above the total requirement to

fulfill the extra energy requirement in winter.

- In Bihar, low temperature condition may result in reduction of milk production. Farmers are advised to provide energy rich diet to animals.
- In Jharkhand, keep animals in a covered shed/area during night to protect them from a sudden drop in temperature. Keep the animal bedding dry. Vaccinate against FMD, Haemorrhagic Septicaemia (HS), Black Quarter (BQ), Enteroxemia during this month. To prevent poultry birds from cold, cover the windows and doors with gunny sheet and if all the chicken comes under the brooder, increase the temperature by addition of more bulbs in brooder.
- In West Bengal, keep cowshed dry and cover the openings of cowshed with jute bags to prevent viral pneumonia due to cold (symptom: Stretching of body hair, high temp., redish eye) and Hyperglycemia. Arrange electric bulb whole day in the cages of new born chicks. For avoiding moist condition, apply lime and old news paper in the litter.
- **Fisheries**
- In Odisha, provide feed @ 2 -3 % of body mass of fish. Go for false netting to get good growth of fish. To correct acidity, apply 100 kg lime and cifax 500 ml per acre meter of water.
- In West Bengal, apply CIFAX @ 1litre/ha-m for three months or as required to control ulcer disease of fish. Apply less amount of floating food. Clean the surroundings for direct sunlight. Stir the fishes with net once a week. Apply 8-10 kg lime mixed with water per bigha pond area.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
 - **Maharashtra:**
 - In South Konkan, for transplanting of rice, undertake main field preparation such as ploughing of the land. Apply 7.5 tonnes of FYM or Compost evenly also add 5.0 tonnes of Gliricidia in the field before puddling. Continue preparatory tillage operations for *rabi* groundnut. In North Konkan, complete nursery bed preparation for *rabi* rice before 20th December. As dry weather prevailed and likely to prevail for next 3-5 days, apply protective irrigation to orchards and vegetables.
 - In Madhya Maharashtra, complete sowing of wheat before 15th December. For late sowing of irrigated wheat use NIAW-34 and AKAW-4627 varieties. Apply irrigation to 18 to 21 days old wheat crop. For conservation of soil moisture, undertake intercultural operation like weeding in wheat fields.
 - In Marathwada, continue picking of cotton. As dry weather prevailed and is likely to prevail for next 3-5 days, apply irrigation to wheat, sugarcane and orchards.
 - In West Vidarbha, continue picking of cotton. Keep the harvested produce in safer place. For very late sowing of wheat (December 15- 7 January) recommended variety is AKW-381. Undertake seed treatment with Thiram @ 3.0 g/kg seed or Vitavax 75 WP @ 2.5 g/kg seed. In East Vidarbha, continue nursery bed preparation for *summer* rice. Apply 60 kg per hectare of nitrogenous fertilizer to 21-25 days old wheat crop. Undertake intercultural operation like weeding in gram, linseed and mustard.
 - In Marathwada, to control pod borer in chickpea, spray Quinalphos 25 % @ 400 ml or Emaectin benzoate 5 % @ 80 g per acre. To control aphids in safflower, spray Dimethoate 30 % @ 260 ml per acre.
 - **Gujarat:**
 - In North Gujarat, undertake picking of matured cotton bolls. Apply irrigation in potato, wheat (at CRI stage), mustard, lemon and vegetable crops. Continue harvesting of custard apple, pomegranate and aonla fruits.
 - In Middle Gujarat, apply irrigation in potato, wheat (at CRI stage) and cluster bean crops. Use drip irrigation in potato crop for better production. Continue picking of matured cotton bolls.
 - In South Gujarat, apply irrigation in wheat crop at heading stage (60-75 DAS). Undertake land preparation for planting of sugarcane crop. Complete sowing of wheat, sorghum, gram, Indian bean, green gram, pea, lentil and corn crops. Operate foggers in cucumber, muskmelon and capsicum vegetable crops.
 - In Saurashtra & Kutch, carry out intercultural operations in mustard crop. Apply irrigation in wheat, castor, coriander, garlic, chick pea and vegetable crops at regular interval. Continue picking of matured cotton bolls. Continue harvesting of custard apple, pomegranate and aonla fruits.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
 - As dense fog at isolated places very likely over East Madhya Pradesh and Chhattisgarh on 14th and 15th December, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
 - **Madhya Pradesh:**

- In East Madhya Pradesh, continue planting of potato and garlic. Undertake transplanting of *rabi* vegetables. Complete sowing of wheat. Apply first irrigation in wheat crop where it has reached CRI stage. Undertake transplanting of onion.
- In West Madhya Pradesh, undertake sowing of late varieties of wheat. Continue harvesting of green chilli, okra and cucurbit crops. Continue planting of sugarcane and potato. Continue thinning in mustard. Apply irrigation in vegetables, gram, mustard and in wheat at CRI stage. Undertake harvesting of matured pods of green pea.
- In Central Narmada Valley Zone, to control Purple blotch attack in onion crop, apply Copper Oxy Chloride @ 40 g and Streptocyclin @ 2 g per 15 litres of water.
- In Bundelkhand Zone, to control attack of alternaria disease in tomato, spray Mencozeb @ 2.5 g/litre of water.
- **Chhattisgarh:**
 - As rain/thundershowers likely at many places over Chhattisgarh on 17th December, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - Undertake transplanting of onion. Continue intercultural operations in oilseed crops and pulses. Undertake intercultural operations in transplanted vegetables and apply nitrogenous fertilizers. Undertake earthing up in potato. Undertake seedling preparation of cucurbits in polythene bags.
 - In Bastar Plateau Zone, continue field preparation for planting of *rabi* colocasia and bunda.
 - In North Hill Zone, there are chances of attack of pod borer in pigeon pea, spray Polytrin C @ 1 litre/ha or Endoxacarb @ 300 ml/ha after current spells of rain.
- **Animal Husbandry**
 - In Madhya Pradesh, newly borne calves should be protected from cold. For this floor should be covered with paddy straw litter which provides a thermal mulch. All milk animals should be kept in specially protected and safe cattle sheds during night. Provide 4-5 hours light in poultry houses during night.
 - In Chhattisgarh, due to decrease in temperature and its possible adverse effects, dairy farmers are advised to keep the animals in the cattle shed with concrete/brick roof. Give protein enriched diet to the animals.

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

- **Realised Rainfall:** Rain/snow occurred in Baramula, Ganderbal, Ramban and Reasi districts of Jammu & Kashmir during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As dense fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh from 14th to 16th December, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
 - **Jammu & Kashmir:**
 - In Valley Temperate Zone, provide drainage channels in the fields wherever there is probability of water accumulation during winter months.
 - Maintain field sanitation and proper drainage in saffron fields to avoid water lodging. To control rodents, identify live burrows. Place aluminium phosphide pouches (5-10g) in these live burrows @ 1pouch/burrow.
 - In Sub Tropical Zone, apply second dose of fertilizer to normal sown wheat at tillering stage, after receipt of rain at optimum soil moisture condition. Continue sowing of late sown wheat crop (varieties: WH-1021, PBW-590, PBW-373, Raj-3077, Raj-3765, DBW16) in clear weather condition. Carry out hoeing and weeding operations in chickpea and 20 days old lentil.
 - **Uttarakhand:**
 - In Hill Zone, undertake transplanting of onion seedling after root treatment by fungicides, pesticides and bio agents. Complete the sowing of late wheat crop as early as possible. Seeds should be treated with Bavistin or Thiram @ 2-2.5 g per kilogram of seed. Carry out mulching in Cole crops in valley region.
 - In Bhabar and Tarai Zone, complete sowing of late sown variety of wheat like UP 2425, UP2328, PBW 373, UP 2526, UP 2565 till 25th December. To control the grassy and broad leaf weed in wheat field, spray solution of Vesta @ 400g/700 litres of water/ha after 30-35 days of sowing. Apply timely irrigation in the field on occurrence of frost/fog. Carry out weeding in pulses at the interval of 20-25 days and 35-40 days after sowing.
 - **Himachal Pradesh:**
 - In Sub-Montane & Low Hills Sub-Tropical Zone, carry out thinning and weeding in timely sown mustard crop. Apply irrigation to wheat crop. After 3-4 days of irrigation, broadcast second dose of nitrogen.
 - Carry out earthing-up in potato if crop has attained a height of 15-22 cm. If required, the practice may be repeated after 15 days.
 - Monitor mustard crop against attack of white rust. If infection is high, spray Dithane-M-45 @ 2 g/litre of water.

- Due to high relative humidity, infection of blight may occur in potato and tomato. Constant monitoring is advised. If symptoms appear then spray Carbendazim @ 1.0 g/litre of water or Dithane-M-45 @ 2.0 g/litre of water.
- **Punjab, Haryana & Delhi:**
- In Punjab, complete the sowing of raya and wheat. Continue harvesting of matured maize, green gram. Continue planting of early varieties of potato and pea. Complete sowing of spinach, radish, turnip and carrot. Continue planting of early varieties of sugarcane. Continue planting of seedlings of onion. Complete transplanting of Pea, tomato and provide polythene sheet/Sarkanda/Kahi/ rice straw to save the plants from frost. Continue late sown short duration varieties of wheat.
- In Haryana, continue intercultural operations in vegetables and mustard. Continue field preparation for sowing of mustard. Continue harvesting of timely sown bajra, guar, green gram, black gram and picking up of matured cotton bolls. Continue sowing of mustard, barley, gram, wheat and oats. Complete the sowing of berseem.
- In Delhi, continue planting of winter sugarcane at optimum soil moisture for better seed germination. Continue transplanting of onion. Continue transplanting of cauliflower, cabbage, broccoli and tomato. Continue sowing of carrot on raised bed. Apply irrigation in wheat at CRI stage. Continue sowing of oat and barseem. Continue late sowing of wheat crop with recommended varieties PBW 373, WH 1021, WH 1124, Raj 3765.
- In Delhi, to control late blight in potato, spray Mancozeb @ 2 g/litre of water along with Tepol (sticky material) in the seed potato crop.
- **Uttar Pradesh:**
- In East Uttar Pradesh, complete sowing of wheat. Apply 1st irrigation in gram, pea, lentil and 2nd irrigation in mustard, garlic. Continue sowing of coriander, spinach, radish, carrot, fenugreek, fennel etc. Continue planting of sugarcane, potato, ginger and turmeric. Undertake transplanting of tomato, cauliflower, cabbage, knolkhol and broccoli crop. Undertake intercultural operation in vegetables as and where necessary.
- In West Uttar Pradesh, continue sowing of recommended wheat varieties. Apply irrigation in toria, mustard, potato. Undertake weeding in pea after 20-25 days of sowing. Continue sowing of recommended varieties of pea, gram, lentil and winter vegetables like radish, carrot, fenugreek, coriander, etc. Continue nursery raising of recommended onion varieties. Continue transplanting of mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli crop. Continue sowing of garlic in raised bed. Continue earthing up in potato. Continue weeding in vegetables.
- In West Uttar Pradesh, spray Mancozeb @ 2 g/litre of water along with Tepol (sticky material) in potato crop for control of late blight.
- **Rajasthan:**
- In Semi Arid Eastern Plain Zone, Irrigated North Western Plan Zone and Sub Humid Southern Plain and Aravali Hill Zone, this is the right time for sowing of late sown wheat. Treat the seeds with fipronil 5 SC @ 6 ml per kg of seed before sowing.
- In Flood Prone Eastern Plain Zone, there are chances of white dust formation on young shoots in fruit trees, spray 0.5% Karathane solution on affected trees.
- In Arid Western Plain Zone, weather conditions are favourable for wilt disease on tomato, spray Thiophanate methyl @ 7.5 gm + Ridomil @7.5 gm per 15 liter water.
- In Sub Humid Southern Plain and Aravali Hill Zone, continue sowing of wheat and barley.
- In Semi Arid Eastern Plain Zone, leaf curl & Mosaic diseases may affect papaya crop, therefore at the initial appearance of this disease, uproot & burn the affected plants & to check further spread of disease spray Dimethoate 30EC or Methyl Demeton 25 EC @ 1.0 ml per litre water. Also to control aphid insects attack in cauliflower & radish, spray Acephate 75 SP @ 1.5 gm per litre water.
- **Animal Husbandary**
- In Uttar Pradesh, vaccinate cattle against FMD and BQ. Provide them clean drinking water. Keep poultry houses clean. Give salt and minerals in addition to dry/green fodder to the cattle. Give balanced feed to the poultry birds. Supply sufficient concentrate with green fodder to the cattle.
- In Uttarakhand, protect the animals from cold by covering gunny bags during night and give some sunbath during day time. Install electric bulb in chicken poultry to maintain night temperature.
- In Himachal Pradesh, replace the poultry houses with fresh litter to avoid wetting and keep the houses clean and ensure clean drinking water to the birds. Increase the poultry feed by 10%. Protect the birds from cold. Attack of Diarhria and cocksedia expected so, consult the nearby veterinarian. In case of poultry, save them from cold winds by providing curtains so that temperature of shed does not fall below 160 C.
- In Haryana, due to fall in night temperature, keep the animals under shed. Provide 50 grams iodized salt and 50 to 100 grams mineral mixture daily with animal feed/fodder to keep them healthy.
- **Apiculture**
- In Jammu & Kashmir, provide winter packing to bee colonies to protect them from cold. Sulphur dusting/oxalic acid spray @ 3.5% in one litre of water is recommended at fortnight intervals to control

ectoparasitic mites. Migrate colonies to areas having floral resources (near toria/vegetable crops). Spray Chloropyriphos around boxes of apiary for protection from termites or put the leg of these beehives stand in water pot.

- **Floriculture**

- In Jammu & Kashmir, continue planting of spring flowering bulbs (tulip, iris, daffodils etc.). Continue transplanting of winter flowering annuals. Prune the trees and shrubs to avoid damage by heavy snow during winter. Make preparations for protection of house plants during winter season.

The Agromet Products in this Bulletin are generated by Agrimet Division, weather forecast issued by NWFC, New Delhi and Agromet Advisories are prepared based on the DAAS Bulletins issued by different Agrometeorological Field Units.