



National Agromet Advisory Service Bulletin

Friday 8th December 2017
(For the period 8th to 13th December 2017)



Issued by
India Meteorological Department

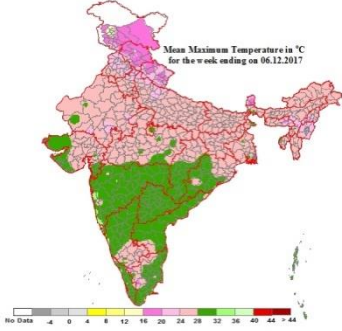
Weblink For

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

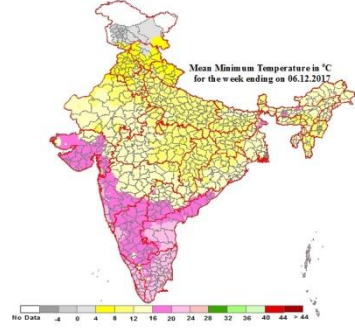
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending 06.12.2017

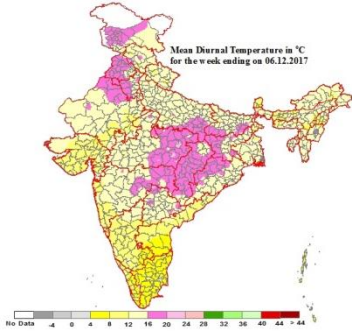
Mean Maximum Temperature (°C) for the week ending 06.12.2017



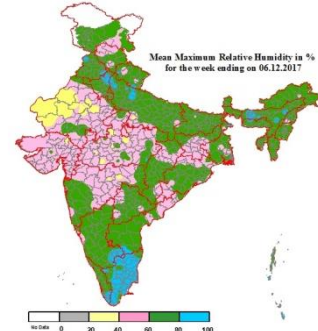
Mean Minimum Temperature (°C) for the week ending 06.12.2017



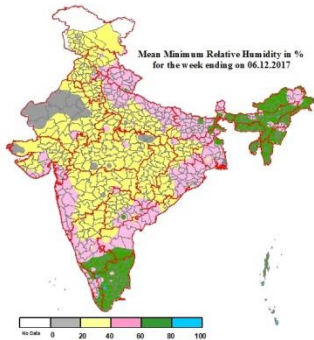
Mean Diurnal Temperature Variation (°C) for the week ending 06.12.2017



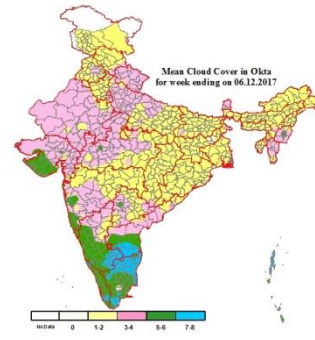
Mean Maximum Relative Humidity (%) for the week ending 06.12.2017



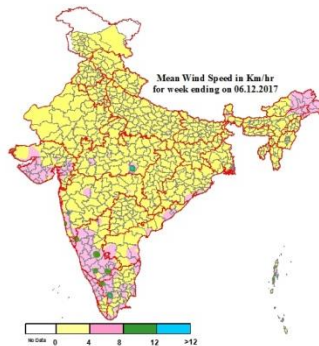
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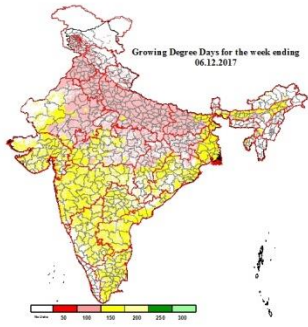
Mean Cloud Cover (okta) for the week ending 06.12.2017



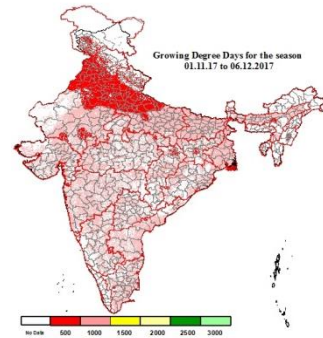
Mean Wind Speed (km/hr) for the week ending 06.12.2017



**Growing Degree Days for the week ending
06.12.2017**

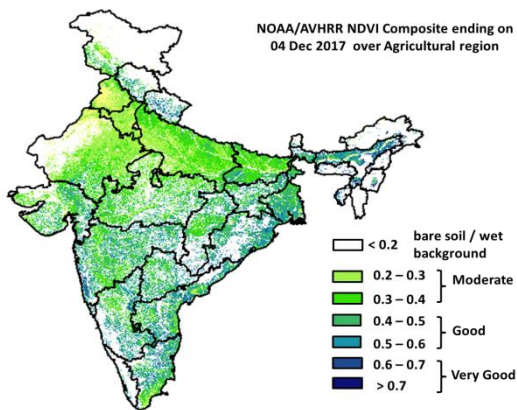


**Growing Degree Days for the season ending
06.12.2017**

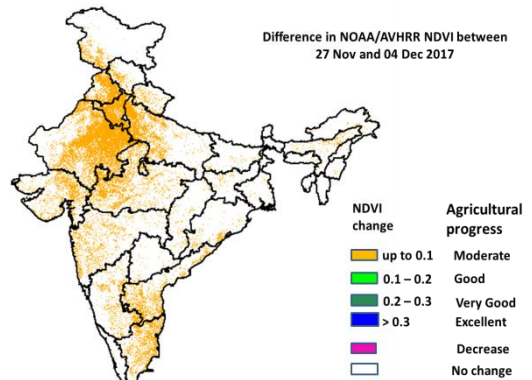


* Base temperature for *Rabi* Season is taken as 05⁰ C

**NOAA/AVHRR NDVI composite ending on 4th
December 2017 over Agricultural regions of India**

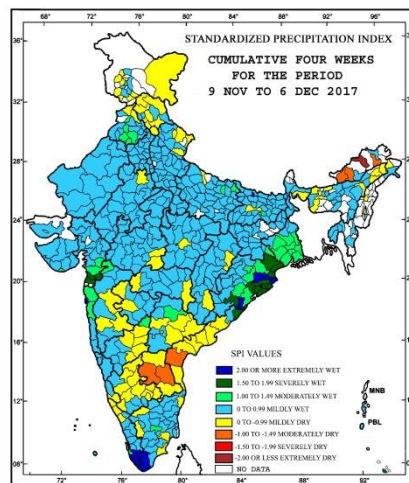


**Difference in NOAA/AVHRR NDVI between 27th
November and 4th December 2017**

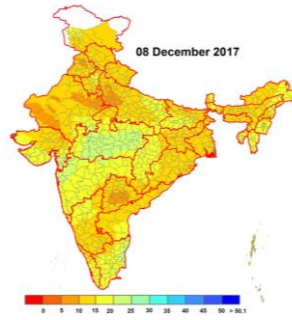


**Standardised Precipitation Index
Cumulative 4 weeks for the period 9th November to 6th December 2017**

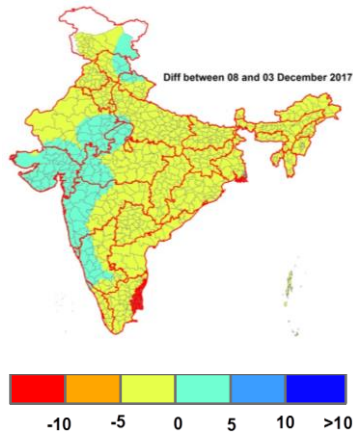
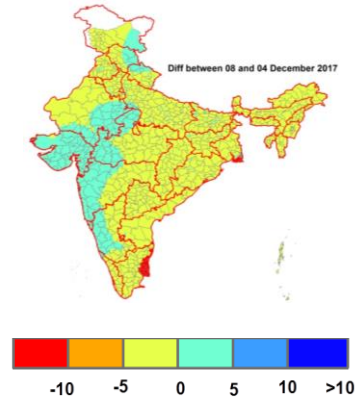
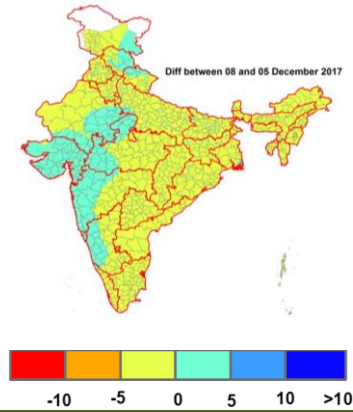
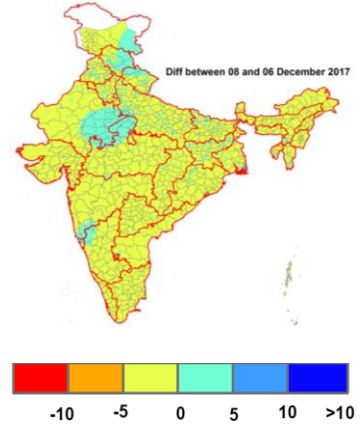
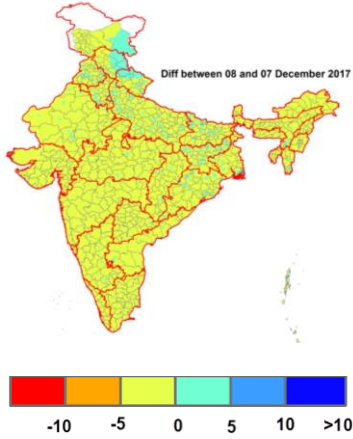
MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE



Daily Soil Moisture (mm) for 8th December 2017 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



Deep Depression

- The Deep Depression over central Bay of Bengal moved further northnorthwestwards with a speed of about 33 kmph during past 6 hours, and lay centered at 0830 hours IST of today, the 08th December, 2017 over westcentral Bay of Bengal near Latitude 15.0°N and Longitude 86.8°E, about 510 km southsoutheast of Gopalpur and 610 km eastsoutheast of Machilipatnam. It is likely to maintain the intensity of deep depression for about 12 hours and weaken gradually into a depression during subsequent 12 hours. The system is very likely to move north northwestwards and reach north Andhra Pradesh and south Odisha coasts around 9th December morning as a depression.

Weather Forecast for next 5 days valid upto 0830 hours of 13th December 2017

- Meteorological subdivision wise detailed 5 days rainfall forecast is given in Table below.
- Minimum temperatures very likely to fall by about 2°C over many parts of northwest India during next 24 hours and rise by 2-4°C thereafter. No significant change in minimum temperatures very likely over rest parts of the country during next 3 days.

5 Day Rainfall Forecast (Mid day) 8th December 2017

Met-Sub-Division	08-Dec Today	09Dec Sat	10Dec Sun	11Dec Mon	12Dec Tue
1. Andaman & Nicobar Islands	FWS	FWS	SCT	ISOL	ISOL
2. Arunachal Pradesh	DRY	DRY	DRY	DRY	ISOL
3. Assam & Meghalaya	ISOL	SCT	SCT	SCT	ISOL
4. N. M. M. & T.	SCT	FWS	FWS	FWS	ISOL
5. S.H. West Bengal & Sikkim	DRY	ISOL	ISOL	ISOL	ISOL
6. Gangetic West Bengal	SCT	FWS	SCT	ISOL	ISOL
7. Odisha	FWS	FWS	SCT	DRY	DRY
8. Jharkhand	ISOL	ISOL	ISOL	DRY	DRY
9. Bihar	DRY	DRY	DRY	DRY	DRY
10. East Uttar Pradesh	DRY	DRY	DRY	ISOL	ISOL
11. West Uttar Pradesh	DRY	DRY	ISOL	SCT	ISOL
12. Uttarakhand	DRY	DRY	DRY	WS	WS
13. Haryana, Chd & Delhi	DRY	DRY	DRY	WS	SCT
14. Punjab	DRY	DRY	ISOL	WS	SCT
15. Himachal Pradesh	DRY	DRY	ISOL	WS	WS
16. Jammu & Kashmir	ISOL	DRY	ISOL	WS	WS
17. West Rajasthan	DRY	DRY	SCT	WS	ISOL
18. East Rajasthan	DRY	DRY	DRY	FWS	SCT
19. West Madhya Pradesh	DRY	DRY	DRY	ISOL	ISOL
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	DRY	DRY
24. Madhya Maharashtra	DRY	DRY	DRY	DRY	DRY
25. Marathawada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal Andhra Pradesh	ISOL	ISOL	DRY	ISOL	ISOL
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. Tamilnadu & Puducherry	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	DRY	DRY	DRY	DRY	DRY
34. South Interior Karnataka	DRY	DRY	DRY	DRY	ISOL
35. Kerala	ISOL	ISOL	ISOL	ISOL	ISOL
36. Lakshadweep	DRY	DRY	ISOL	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 Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

- **08 December (Day 1):** Heavy rain at isolated places very likely over north coastal Andhra Pradesh, coastal areas of Odisha and West Bengal. Squally winds speed reaching 40-50 gusting to 60 kmph along & off Andhra Pradesh, Odisha and West Bengal coasts. Sea conditions are very likely to be rough to very rough along & off Andhra Pradesh, Odisha and West Bengal coasts. Fishermen are advised not to venture into Sea along & off Andhra Pradesh, Odisha and West Bengal coasts. Moderate to dense fog at isolated places very likely over Assam & Meghalaya.
- **09 December (Day 2):** Heavy rain at isolated places very likely over Odisha, West Bengal, south Assam & Meghalaya and Mizoram & Tripura. Squally winds speed reaching 40-50 gusting to 60 kmph along & off Odisha and West Bengal coasts. Sea conditions are very likely to be rough to very rough along & off Odisha and West Bengal coasts. Fishermen are advised not to venture into Sea along & off Odisha and West Bengal coasts.
- **10 December (Day 3):** Heavy rain very likely at isolated places over Gangetic West Bengal, south Assam & Meghalaya and Mizoram & Tripura.
- **11 December (Day 4):** Heavy rain or snow at isolated places likely over Jammu & Kashmir and Himachal Pradesh. Heavy rain at isolated places likely over Punjab, Haryana, Chandigarh & Delhi, south Assam & Meghalaya and Mizoram & Tripura.
- **12 December (Day 5):** Heavy rain or snow at isolated places likely over Jammu & Kashmir, Himachal Pradesh and Uttarakhand.

Weather Outlook for subsequent 2 days from 13th to 15th December 2017

- A fresh western disturbance is likely to cause precipitation at many places over Western Himalayan region and rainfall at a few places over northern plains. Isolated rainfall also likely over central India.
- An easterly wave is likely to cause rainfall at many places over southwestern parts of peninsular India.
- Weather is likely to be dry over the remaining parts of the country.

Salient Advisories

- The **Deep Depression** over central Bay of Bengal moved further northnorthwestwards with a speed of about 33 kmph during past 6 hours, and lay centered at 0830 hours IST of today, the 08th December, 2017 over westcentral Bay of Bengal near Latitude 15.0°N and Longitude 86.8°E, about 510 km southsoutheast of Gopalpur and 610 km eastsoutheast of Machilipatnam. It is likely to maintain the intensity of deep depression for about 12 hours and weaken gradually into a depression during subsequent 12 hours. The system is very likely to move north northwestwards and reach north Andhra Pradesh and south Odisha coasts around 9th December morning as a depression.
- In association with the System, heavy rain at isolated places very likely over **north coastal Andhra Pradesh** on 8th December, rain/thundershowers would occur at many places over **Andaman & Nicobar Islands** and **Odisha** on 8th and 9th, over **Gangetic West Bengal** on 9th December along with heavy rain at isolated places very likely over Coastal areas of Odisha and West Bengal on 8th, over Odisha and West Bengal on 9th, over Gangetic West Bengal on 10th December, avoid 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 winds speed reaching 40-50 gusting to 60 kmph along & off **Andhra Pradesh** coast, along and off **Odisha and West Bengal** coasts on 8th and 9th and sea conditions are very likely to be rough to very rough along & off Andhra Pradesh coast on 8th December, along & off Odisha and West Bengal coasts on 8th and 9th December, provide support to young fruit plants, banana, propping up in sugarcane and staking in vegetables to protect them from lodging. Fishermen are advised not to venture into Sea along & off Andhra Pradesh coast.
- As moderate to dense fog at isolated places very likely over **Assam & Meghalaya** in the morning hours on 8th 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 plant protection measures.

- As rain/snow would occur at most places over **Jammu & Kashmir, Uttarakhand** and **Himachal Pradesh** on 11th and 12th December, rain/thundershowers would occur at most places over **Haryana, Chandigarh & Delhi** and **West Rajasthan** on 11th, at many places over **East Rajasthan** on 11th, over **Nagaland, Manipur, Mizoram & Tripura** from 9th to 11th December, along with heavy rain or snow at isolated places likely over Jammu & Kashmir on 11th and 12th, over Himachal Pradesh on 11th and over Uttarakhand on 12th December. Heavy rain at isolated places likely over Punjab, Haryana, Chandigarh & Delhi on 12th, over south Assam & Meghalaya and Mizoram & Tripura from 9th to 11th December, avoid 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.
- In **Tamil Nadu**, in the Cauvery Delta Zone, in view of realised rainfall, drain the excess rainwater from the paddy fields to improve better aeration in the root zone.
- Complete late sowing of wheat in **Gujarat, Rajasthan, Punjab, New Delhi** and **Jammu & Kashmir**. Continue sowing of Bengal gram in **Telangana**.
- Continue harvesting of matured Sali rice in **Assam** in clear weather and keep harvested produce in safer places. Continue picking of cotton in **Gujarat**.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in all districts of Tamil Nadu, Alappuzha, Idukki, Kollam, Malappuram, Palakkad, Pathanamthitta and Thiruvananthapuram districts of Kerala, Chamrajnagar, Kodagu and Mysuru districts of South Interior Karnataka, Chittoor district of Rayalseema during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As heavy rain at isolated places very likely over north coastal Andhra Pradesh on 8th December, avoid 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 winds speed reaching 40-50 gusting to 60 kmph along & off Andhra Pradesh coast and sea conditions are very likely to be rough to very rough along & off Andhra Pradesh coasts on 8th December, provide support to young fruit plants, banana, propping up in sugarcane and staking in vegetables to protect them from lodging. Fishermen are advised not to venture into Sea along & off Andhra Pradesh coast.
 - **Kerala:**
 - In the Problem Area Zone, continue sowing of rice after seed treatment with pseudomonas. Start harvesting of mature nutmeg fruits. Ensure proper drainage in nutmeg gardens.
 - In the Central Zone, Apply neem based pesticides (3ml per one liter of water) for rice bug. Pesticides application should be done either before 9 am or after 3 pm to avoid its adverse affect on pollination.
 - In the Southern Zone, to control rice bug, spray Malathion 400 ml in 200 litres of water to control rice bug during panicle initiation stage. To control fungal diseases in rubber plants, spray copper oxy chloride or Bordeaux mixture. There is chance of mosaic disease in bhindi. Apply rogour (dimethoate) 1.5 ml / litre of water to control vectors like white fly, green hopper etc.
 - In the Problem Area Zone, control fungal diseases in nutmeg by spraying 1 % Bordeaux mixture. spray starch solution for white fly attack in coconut.
 - In the Northern Zone, for inflorescence die back and button shedding disease in arecanut, Spray Mancozeb 3gm/litre or Bordeaux mixture 1gm/litre. For Spindle bug in arecanut, spray Di-methoate @ 1.5 ml/litre. Spray Flubendiamide @ 1.5 ml in 10 litres of water 2-3 times at weekly interval for shoot and fruit borer in brinjal. Spray Mancozeb @ 3g/l of water at weekly intervals for Downy mildew on cucurbits.
 - In the Central Zone, destroy the affected leaves of banana along with the spodoptera. For severe attack spray Flubendiamide (Fame) 2 ml/10 L of water.
 - **Andhra Pradesh:**
 - In the North Coastal Zone, avoid sowing of groundnut, black gram, green gram and maize. Remove excess water from standing crop fields and already sown fields. Avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide support to young fruit plants and vegetables, arrange for propping in sugarcane crops to prevent lodging due to high winds.

- In the Scarce Rainfall Zone, continue sowing of groundnut up to 15th December under assured irrigated conditions.
- In the Southern Zone, postpone sowing of groundnut and pulses if excess rainfall is received. Harvest mature fruits and vegetables. Provide staking to tomato, bhendi, sugarcane, banana, etc. Remove excess water from paddy field in case of excess rainfall.
- In the North Coastal Zone, spray Chlorpyrifos @ 2.5 ml/litre or Acephate @ 1.5 g/litre for aphids and maruca pod borer in red gram. Spray Acephate @ 1.5 g/litre + Carbendazim @ 1 g/litre for pink ball worm in cotton crop. For sucking pests and leaf webber in groundnut crop, spray neem oil @ 5 ml/litre in clear weather.
- In the Scarce Rainfall Zone, spray Buprofezin @ 1.6 ml/litre or Ethofenpros @ 2.0 ml/litre of water for BPH incidence in paddy. Prevailing conditions are favorable for incidence of spotted pod borer and helicoverpa, spray NSKE @ 5ml/lit to control egg laying and spray Chlorpyrifos 2 ml/lit + Nuvan 1 ml/lit of water for controlling of larvae. For the incidence of bacterial wilt and fungal disease in pomegranate, spray Carbendazim @ 1 g/lit + Streptocyclin 0.5 g/1 lit of water is recommended. For the incidence of pod borer and tobacco caterpillar in Bengal gram crop, spray Novaluron@1ml/lit or Thiodicarb@1.5gm/lit or Rynoxypyr@ 0.2ml/litre of water.
- **Telangana:**
 - In North Telangana Zone, undertake sowing of Rabi rice in nursery beds. Cover entire nursery bed with polythene sheets at night and remove in the morning, to avoid the effect of cool temperatures on germination and growth. Continue sowing of rabi groundnut, Bengal gram and sorghum.
 - In South Telangana Zone, undertake nursery sowing of Rabi rice till 15th December.
 - In North Telangana Zone, spray Methyl-o-demeton or Dimethoate or Malathion 5% @ 2 ml per litre of water for aphids in soghum crop. Spray NSKE 0.5 % solution or neem oil @ 5 ml/litre at bud initiation stage and at flowering stage for Maruca pod borer in red gram; Monocrotophos @ 1.6 ml/ litre of water for leaf folder and Dimethoate @ 2.0 ml or Monocrotophos @ 1.6 ml/ litre for Aphids/Jassids in red gram. Spray monocrotophos @ 1.6 ml/l or Acephate @ 1.5 g/l or Quinalphos @ 2 ml/l or Thiodicarb @ 1 g/litre for spodoptera in Bengal gram crop.
- **Tamil Nadu:**
 - In the Cauvery Delta Zone, in view of realised rainfall, drain out excess rainwater from the paddy fields to improve better aeration in the root zone.
 - In Central Dry Zone, continue nursery bed preparation for summer ragi (Indof-7 and Indof-15 varieties).
 - In Southern Transition Zone, complete harvesting of matured rice, ragi, maize cobs and matured sugarcane. Continue sowing of short duration pulses like horse gram, chickpea, green gram and black gram.
 - In North East Dry Zone, undertake land preparation for transplanting of summer rice. Continue sowing of maize with irrigation.
 - In North East Transition Zone, continue planting of sugarcane (variety Co-86032) crop.
 - In Coastal Zone and Hill Zone, complete harvesting /threshing of matured rice.
 - In the South Zone, to control thrips in chilli crop, spray imidachloprid 17.8 % SL @ 3 ml/ 10 l of water or Dimethoate 30 % EC @1.0 ml/lit. For control of yellow mosaic virus in pulses, spray Dimethoate 30 EC @ 500 ml / ha or Thiamethoxam 75 WS 1 g/ 3 litre and repeat after 15 days, if necessary. For controlling powdery mildew in pulses, spray Carbendazin 500g or wettable sulphur 1500g / ha at initial of the disease and 10 days later. For grey mildew disease in cotton crop, spray with Carbendazim @ 250-375g or wettable sulphur @ 1.25-2.0 kg/ha, repeat after a week.
- **Animal Husbandry**
 - In the Problem Area Zone of Kerala, ensure dry conditions in cattle shed to prevent incidence of foot rot.
 - In North and South Telangana Zones, treat /vaccinate animals against FMD and HS; vaccinate sheep/goat against sheep pox disease and vaccinate poultry birds against Ranikhet disease.
 - In the Southern Zone of Tamil Nadu, cover the cow shed with gunny bags, keep the floor dry and provide dry feed to avoid fungal infection.
 - In Eastern Dry Zone of Karnataka, use nylon mess to control UJI fly in sericulture unit

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

- **Realised Rainfall:** Weather remained dry over the region during the week.
- **Advisories:**
 - As rain/thundershowers would occur at many places over Nagaland, Manipur, Mizoram & Tripura from 9th to 11th December, along with heavy rain at isolated places very likely over south Assam & Meghalaya and Mizoram & Tripura from 9th to 11th December, avoid 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 moderate to dense fog at isolated places very likely over Assam & Meghalaya in the morning hours on 8th 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 plant protection measures.
- **Assam & Meghalaya, Arunachal Pradesh:**
 - In Arunachal Pradesh, harvest mature maize cobs and rice.

- In Barak Valley Zone of Assam, carry out weeding and earthing up operations in rajmah and planting of potato. Plough the land at least 15 days before transplanting the seedlings of Boro rice. Carry out ploughing of main field 15 days before transplanting the seedlings.
- In Lower Brahmaputra Valley Zone of Assam, continue harvesting of Sali rice. Continue sowing of Boro rice till 15th of December. Complete planting of potato by the end of this week with late grown varieties such as Kufri Megha and Kufri Sindhuri. Undertake sowing of ground trailing spring crop of cucumber during December. Undertake cultivation of mushroom species like *Pleurotus florida*, *P. citrinopileatus*, *P. sajorcaju*, *P. cornucope*, *P. sapidus*, *P. ostreatus* and *P. flabellatus*. Undertake harvesting of sugarcane.
- In the Hill Zone of Assam, undertake sowing of Boro paddy varieties like Mahsuri, IR-50, Dinanath, Bishnuprasad, Jyotiprasad, Kanaklata and Dinanath in nursery bed during this month. Undertake land preparation and sowing of lentil varieties like B-77, L-9, L-12, etc.
- In the Central Brahmaputra Valley Zone, continue harvesting of mature Sali paddy. Continue nursery bed preparation and sowing of Boro rice. Continue land preparation/sowing of wheat and rabi pulses. Harvest mature crops of green and black gram and keep in safe place.
- In the Lower Brahmaputra Valley Zone, apply Chloropyriphos 20EC or Dimethoate 30EC, 0.5 lit per 500-700 lit of water per ha for aphid and saw-fly infestation in rapeseed crop. Spray Malathion 50 EC or Fenitrothion 50 EC @ 150-200 ml in 80-90 litres of water per bigha for pod and apion borers in pigeon pea. Spraying should be done 3 times at an interval of 15 days.
- In the Hill zone of Assam, spray Malathion 50Ec @ 2ml/lit if the infestation of aphid/ saw fly in rapeseed and mustard. Alternate application of Ridomil MZ-72 (2g/ lit) and Indofil M-45 2.5g / lit at 15 days interval can prevent the disease of leaf blight in tomato crop. Apray Malathion 50 EC @ 1.5 ml/litre if infestation of leaf eating caterpillars is observed in cole crops on a non rainy day.
 - **Nagaland, Mizoram, Manipur and Tripura:**
 - In Manipur, undertake land preparation for sowing of Rabi maize.
 - In Mizoram, provide staking to coffee and rubber seedlings. Carry out harvesting of mature kharif rice after current spells of rain. Carry out field preparation for cole crops and continue planting of potato, tomato and chilli.
 - In Nagaland, undertake transplanting of seedlings of vegetables like cabbage, cauliflower, broccoli and tomato.
- **Animal Husbandry**
 - In Hill Zone of Assam, immunize cattle against FMD, BQ, Enterotoxaemia and Hemorrhagic Septicemia.
 - In Manipur, vaccinate and de-worm cattle, sheep, goat and pigs. Carry out shearing of sheep during this month. Protect animals/ birds from sudden drop in temperature by covering the walls with hessian cloth/ polythene sheet during night time.
- **Fishery**
 - In the Lower Brahmaputra Valley and In Barak Valley Zones, pond fishes may be affected by EUS disease Apply CIFAX @ 1 litter per hectare for 1 meter water depth to prevent the disease.
 - In the Central Brahmaputra Zone, Apply Potash @ 4-5 mg/lit of water, Sukrena WS @ 1 lit per bigha of water and lime in required doses to protect the fish population against various bacterial diseases prevalent in winter season.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rainfall occurred in Mumbai City, Mumbai Suburban, Raigad, Thane districts in Konkan & Goa, Nandurbar district in Madhya Maharashtra, Dangs, Navsari, Surat, Tapi and Valsad districts in Gujarat Region during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, for cultivation of watermelon, undertake ploughing and clod crushing of land.
 - In Madhya Maharashtra, undertake land preparation for planting of Suru sugarcane (varieties- CO-86032, CO-94012, Phule 0265). Complete sowing of irrigated wheat (varieties- HD-2189, NIAW-301 (Trimbak), NIDW-295 (Godavari), NIAW-917 (Tapowan) or NIAW-34) upto 15th December. Prepare onion seedlings in nursery for summer onion.
 - In Marathwada, apply irrigation in orchards for water stress management. Undertake top dressing of Nitrogen @ 50 kg per hectare in wheat crop one month after sowing.
 - In Vidarbha, undertake nursery preparation and sowing of summer rice. Complete sowing of irrigated wheat (varieties: AKW-1071 (Purna), AKAW 3722 (Vimal), HD-2189 and HD-2360) and linseed (varieties : PKV NL-260 and NL-97). Undertake sowing of fodder crops like berseem, oat & lucerne (lasun ghas).
 - In Marathwada, to control attack of aphids in safflower, spray Acephate (75 %) or Dimethoate @ 1.3 ml per liter of water.
 - **Gujarat:**
 - In South Gujarat Zone, drain out excess water from the crop fields. Provide support to horticulture crops to avoid being uprooted.

- In South Saurashtra Zone, avoid irrigation in pigeon pea, wheat and coriander.
- In Bhal and Coastal Zone, avoid irrigation in the standing crops. Undertake picking of matured bolls of cotton and keep them in safe covered places. Avoid sowing of wheat, chickpea, cumin and vegetable crops. Arrange for adequate drainage to remove excess water from standing crop fields and already sown fields. Provide support to young fruit plants and vegetables; arrange to prevent lodging due to high winds.
- In North Gujarat Zone and North West Zone of Gujarat, avoid sowing of gram, wheat, cumin and vegetable crops. Arrange for adequate drainage to remove excess water from standing crop fields (potato, mustard, castor, fennel). Postpone application of irrigation, fertilizer and plant protection measures in standing crops.
- In Middle Gujarat Zone, carry out late sowing of wheat crop (Lok 1, GW 173, GW 11 and GW-496), cumin and maize.
- In South Gujarat Heavy Rainfall Zone, undertake intercultural operations in pulse crops as per need. Apply irrigation in okra and sugarcane as per need.
- In South Gujarat Zone, atmospheric condition is favorable for sucking pest in cotton; spray Acetamiprid 20 Sp @ 0.004% (2 g/10 litres water) and spray Fenvalerate 20% SC (5ml/10 litres of water) against spotted boll worm.
- **Animal Husbandry**
- In South Gujarat Zone, protect young animals against chillness by providing side curtains in the animal houses. In Gujarat, provide adlib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress. Provide dry fodder to animals twice a day.

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 and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers would occur at many places over Andaman & Nicobar Islands and Odisha on 8th and 9th, over Gangetic West Bengal on 9th December along with heavy rain at isolated places very likely over Coastal areas of Odisha and West Bengal on 8th, over Odisha and West Bengal on 9th, over Gangetic West Bengal on 10th December, avoid 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 40-50 kmph gusting to 60 kmph very likely along and off Odisha and West Bengal coasts and Sea conditions are very likely to be rough to very rough along & off Odisha and West Bengal coasts on 8th and 9th December, provide support to young fruit plants, banana and staking in vegetables to protect them from lodging. Fishermen are advised not to venture into Sea along & off Odisha and West Bengal coasts.
 - **Odisha:**
 - In North Eastern Coastal Plain Zone, drain out excess water in standing rice crops by making alleys (Pahi). Postpone sowing of rabi crops. Avoid intercultural operations and fertilizer application in *rabi* crops till Monday. Open channels in vegetable and already sown rabi crops to facilitate drainage of excess water.
 - In Eastern Ghat High Land Zone and East and South Eastern Coastal Plain Zone, drain out excess water from standing crop fields. Cover the vegetable nursery with polythene. Harvest the matured crop after current spells of rain and keep harvested produce at safer place. Transplanting of cole crop seedlings in the main field may be done after rain.
 - In West Central Table Land Zone, postpone sowing of pulses (moong, horse gram) groundnut, green pea.
 - In North Central Plateau Zone, avoid harvesting of rice, postpone sowing of groundnut, rapeseed, mustard.
 - In West Central Table Land Zone, due to cloudy sky and light rainfall mustard crop may be affected by aphid. To control, spray Dimethoate @ 20 ml or Imidachlopid @ 3.5 ml per 10 litre of water after current spells of rain.
 - **West Bengal:**
 - In Coastal Saline Zone, complete harvesting Aman paddy crop. Carry out land preparation in harvested paddy field for early variety of potato like Kufri Jyoti, Kufri Lalima, Kufri Anand, Kufri Chipsona, Ashoka etc. Undertake re-sowing of paira crop where it got damaged by rainfall of previous week.
 - In the Hill Zone, continue transplanting of cabbage and cauliflower crops and apply irrigation as per requirement. Carry out harvesting of Mandarin orange. Undertake sowing of mustard and planting of potato. Undertake harvesting of ginger and turmeric seed rhizome.
 - In the Terai Zone and the New Alluvial Zone, continue field preparation in harvested paddy field for early variety of potato like Kufri Jyoti, Kufri Chipsona, Ashoka etc.
 - In New Alluvial Zone, apply Hexaconazole 5% WP + Captan 70% WP @ 1.5 gm per litre of water to prevent rotting due to disease infestation in winter vegetable seedlings on a non rainy day.
 - In Old Alluvial Zone, undertake sowing of wheat after main field preparation. Undertake transplanting of chilli and tomato seedlings to main field.
 - In Old Alluvial Zone, spray Nemastra (Nemastra = 5 kg Neem leaf + 5 liter cow Urine + 2 kg row cow dung)

@10ml/liter of water in the evening hours to control different insects & pests transplanted cabbage, cauliflower, brinjal, etc.

- In Laterite and Red Soil Zone, collect and destroy the infected tomato fruits and spray Quinolphos 25 EC @ 1ml/litre of water at clear weather condition for fruit borer infestation on a non rainy day.
- **Andaman & Nicobar Islands**
- In North and Middle Andaman, make channels in the vegetable field to drain out excess water as rainfall is expected. Harvest the mature banana and provide support to the fruit bearing banana tree to avoid losses due to the wind pace. Harvest the matured areca nut and collect fallen nuts as the wind speed may rise up to 43 km/h.
- In the Nicobar Islands, harvest matured areca nut and collect fallen nuts as the wind speed may rise up to 42 km/h.
- **Animal Husbandry**
- In Old Alluvial Zone of West Bengal, keep the animals in a covered shed area during the night. The bedding/hay in the animal shed must be changed regularly in this winter season for better health of animals.
- In the Hill Zone of West Bengal, provide some extra feed to the livestock to keep their body warm during winter months.
- In the Coastal Saline Zone, arrange more number of chicks per cage, arrange electric bulb whole day in the cages of new born chicks. Apply lime and old news paper in the litter for avoiding moist condition.
- In Andaman and Nicobar Islands, keep goats on raised platform under warm condition as moderate to heavy rainfall is expected.
- **Fisheries**
- In Old Alluvial Zone of West Bengal, apply lime @ 20kg/bigha of pond area and after 4days KMNO₄ @ 250gram/bigha pond to prevent the Ulcer disease in fish.
- In North Central Plateau Zone of Odisha, as the winter is in the starting phase, there is a possibility of “EUS” disease in fish. Farmers are advised to apply ‘Cifax’ @ 400 ml mixed with 40 litre of water in one acre pond area as a preventive measure. The fishes should be fed daily with oil cake bran mixture at the rate of 2-3 % of their total biomass.

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

- **Realised Rainfall:** Weather remained dry over the region.
- **Advisories:**
 - As rain/snow would occur at most places over Jammu & Kashmir, Uttarakhand and Himachal Pradesh on 11th and 12th December, rain/thundershowers would occur at most places over Haryana, Chandigarh & Delhi and West Rajasthan on 11th, at many places over East Rajasthan on 11th December, along with heavy rain or snow at isolated places likely over Jammu & Kashmir on 11th and 12th, over Himachal Pradesh on 11th and over Uttarakhand on 12th December. Heavy rain at isolated places likely over Punjab, Haryana, Chandigarh & Delhi on 12th December, avoid 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.
 - **Jammu & Kashmir:**
 - In Valley Temperate Zone, provide drainage channels in the fields of wheat, oats, pea, lentil, berseem, Brown sarson crops wherever there is probability of water accumulation during winter month. Undertake transplanting of onion, turnip, radish and carrot. Continue planting of garlic.
 - In Sub Tropical Zone, continue sowing of late varieties of wheat (varieties:WH-1021, PBW-590, PBW-373, Raj-3077, Raj-3765, DBW-16). Continue weeding and hoeing in mustard, chickpea and lentil crops. Postpone irrigation in mustard, wheat, vegetables and orchards. Undertake earthing up in potato.
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, postpone irrigation in wheat and vegetable crops as good rainfall is expected. Continue sowing of late varieties of wheat. Complete weeding and hoeing in mustard, chickpea and pea. Complete transplanting of onion and planting of garlic.
 - **Uttarakhand:**
 - In Hill Zone, complete earthing up in potato, complete intercultural operations in vegetables before commencement of rain.
 - In Bhabar and Tarai Zone, continue transplanting cabbage and cauliflower. Complete intercultural operations in vegetables before commencement of rain.
 - **Punjab, Haryana and Delhi:**
 - In Undulating Plain zone of Punjab, continue late sowing of wheat, nursery sowing of onion, tomato and chilli. Cover young fruit plants and nursery plants with thaches/Sarkanda to save from low night temperature.
 - In Western Semi Arid Zone of New Delhi, complete sowing of wheat at the earliest. Continue sowing of leafy vegetables and onion. Continue transplanting of matured seedling cauliflower, cabbage and broccoli.
 - **Himachal Pradesh:**
 - In High Hill Temperate Dry Zone, make beds in apple orchard. Continue sowing of seeds of Chinese cabbage,

spinach and coriander in poly house.

- In Solan Shimla, Bilaspur and Sirmour districts of Mid Hills Sub Humid Zone, continue transplanting of onion. Continue cultivation of mushroom (Mix the seed of button mushroom in bags @ 1 kg/10kg FYM and slightly press the bags and make 15-20 holes surrounding the bags and put in growing chambers).
- **Rajasthan:**
 - In Sub Humid Southern Plain and Aravali Hill Zone, continue weeding and hoeing in vegetables and mustard.
 - In Flood Prone Eastern Plain Zone, continue earthing up in potato.
 - In Irrigated North Western Plain Zone, complete sowing of wheat by 15th December. Apply irrigation in sugarcane, mustard and gram.
 - In Semiarid Eastern Plain Zone, continue sowing of late varieties of wheat.
 - In Semiarid Eastern Plain Zone, there are chances of aphid attack on mustard & barley. Dust Malathion 2% @ 25 kg per hectare. If, facility of water exists, then spray Malathion 50 EC @ 1 ml per liter water on a non rainy day.
- **Animal Husbandry:**
 - In Semiarid Eastern Plain Zone of Rajasthan, due to cold winds milch and baby animals are likely to be affected with infection of respiratory tracts, medicines like Cproflaxin, Anorflaxin or Sulpha may be given under the guidance of Veterinary Doctor.
 - In Jammu & Kashmir, in cattle shed ensure proper heating arrangements during night hours to avoid stress due to low temperature. Cover the windows and doors by gunny bags. Cover the poultry shed with gunny bags in order to protect the birds from cold weather.

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