



National Agromet Advisory Service Bulletin

Friday 31st January 2020

(For the period 31st January to 4th February 2020)



Issued by

India Meteorological Department

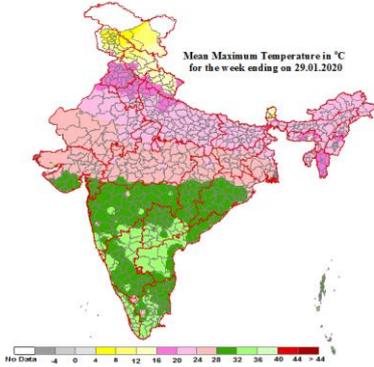
Weblink For

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

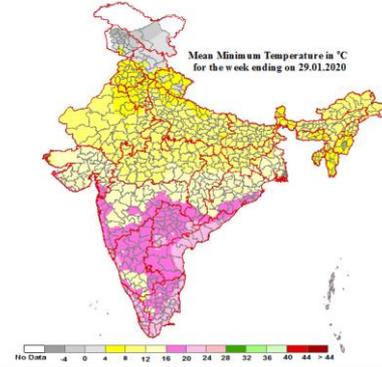
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

spatial distribution of weather parameters for the week ending on 29.01.2020

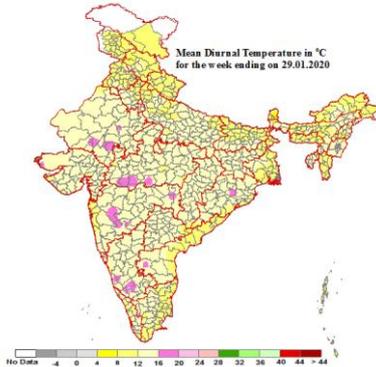
Mean Maximum Temperature (°C) for the week ending on 29.01.2020



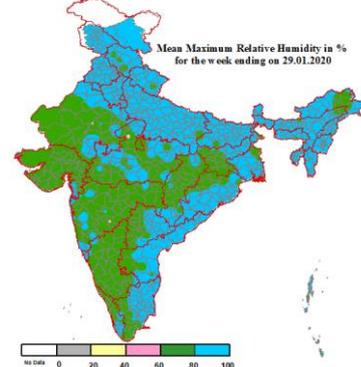
Mean Minimum Temperature (°C) for the week ending on 29.01.2020



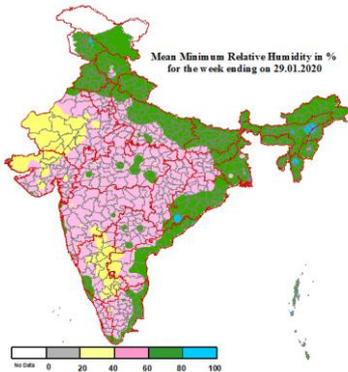
Mean Diurnal Temperature Variation (°C) for the week ending on 29.01.2020



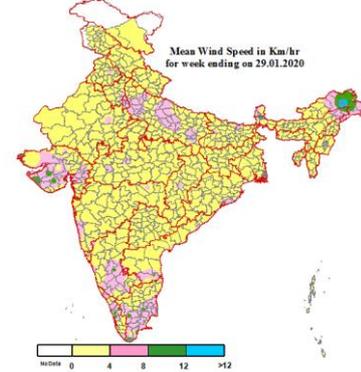
Mean Maximum Relative Humidity (%) for the week ending on 29.01.2020



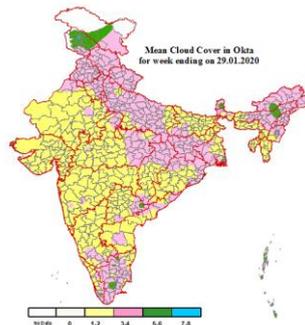
Mean Minimum Relative Humidity (%) for the week ending on 29.01.2020



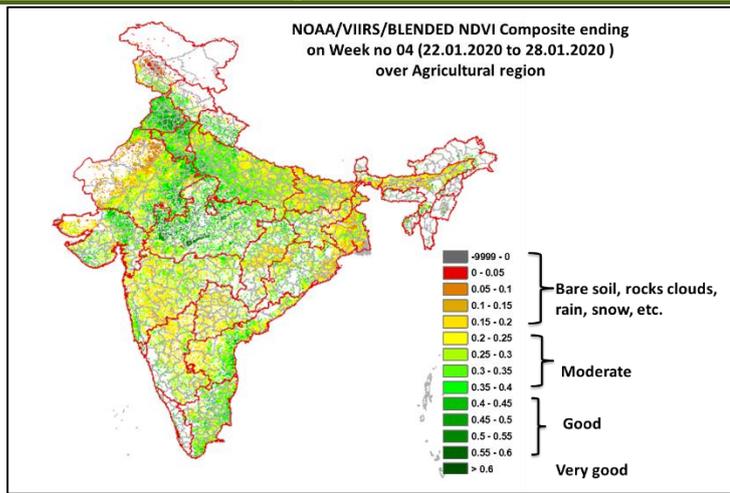
Mean Wind Speed (km/hr) for the week ending on 29.01.2020



Mean Cloud Cover (okta) for the week ending on 29.01.2020

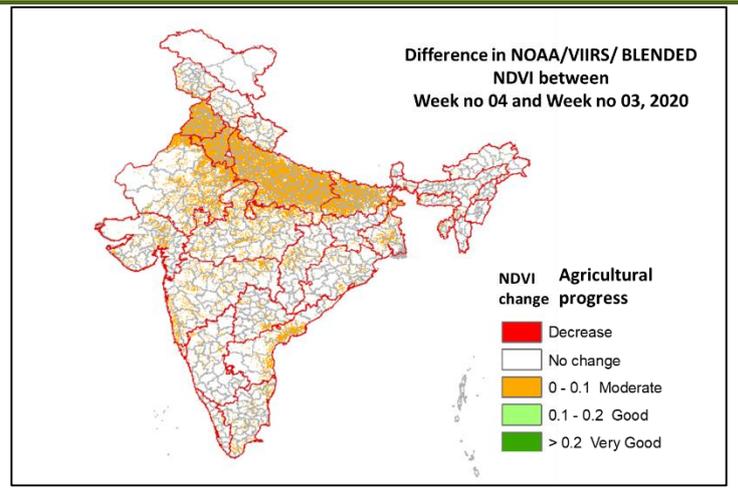


NOAA/VIIRS/BLENDED NDVI composite for the week number 04 (22.01.2020 to 28.01.2020) over Agricultural regions of India



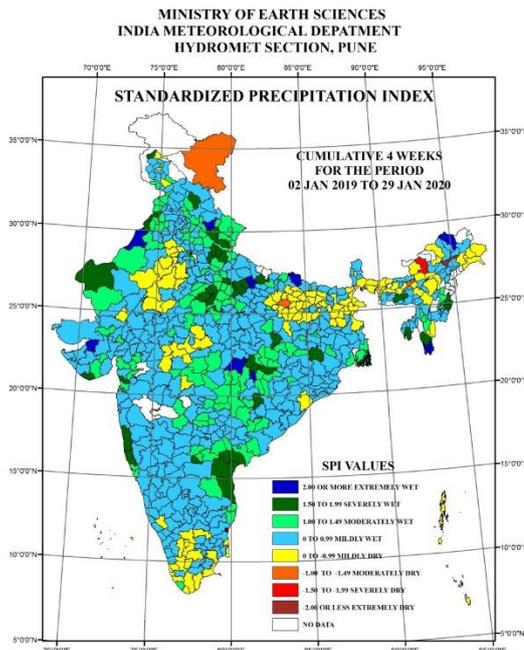
Agriculture vigour was good at many parts of West Madhya Pradesh & Punjab; at few parts of Haryana, Uttarakhand, East Rajasthan, East Madhya Pradesh, Gujarat, Tamilnadu, Kerala & Coastal Karnataka and at isolated parts of West Uttar Pradesh, Chattisgarh, Odisha, North Eastern States, Jharkhand, Coastal Andhra Pradesh and Konkan.

Difference in NOAA/VIIRS/BLENDED NDVI between week number 04, 2020 and week number 03, 2020



Good difference in agricultural vigour has been observed at isolated palces of Bihar, Uttar Pradesh, Punajab and Haryana. It was moderate over rest of the country.

Standardised Precipitation Index Cumulative 4 weeks for the period 2nd Jan. to 29th Jan. 2020



- Extremely/Severely wet conditions exist in Guntur, Nellore, Prakasam districts of Andhra Pradesh; Upper Siang district of Arunachal Pradesh; West Champaran district of Bihar; Navsari, Gir Somnath, Morbi districts of Gujarat; Kullu district of Himachal Pradesh; Kupwara district of Jammu; Bhind, Datia, Gwalior, Balaghat districts of West Madhya Pradesh; Ratnagiri, Sindhudurg districts of Maharashtra; Ukhrul district of Manipur; West Khasi Hills district of Meghalaya; Lawngtlai, Lunglei, Saiha districts of Mizoram; Ferozepur district of Punjab; Sri Ganganagar, Jaisalmer districts of Rajasthan; South Tripura district of Tripura; Barabanki, Gonda, Kannauj, Kanpur City, Lucknow, Unnao, Bareilly, Moradabad, Rampur, Sambhal districts of Uttar Pradesh; West Singhbhum district of Jharkhand; Nainital, Garhwal Pauri, Garhwal Tehri district of Uttarakhand; Durg, Kowarda, Baloda Bazaar, Bemetara, Surajpur, Kondagaon districts of Chhattisgarh; Jogulamba Gadwal district of Telangana.
- Moderately dry conditions exist in Darrang district of Assam; Leh district of Union Territory Ladakh, Ghazipur district of Uttar 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 5th February, 2020

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-below.
- ◆ No significant change in temperatures over the country except east India where likely to fall 2-3°C during next 2-3 days.
- ◆ Shallow to moderate fog in the morning hours likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 24 hours.

5 Day Rainfall Forecast (MID-DAY)

31st January 2020

Met-Sub-Division	31-Jan Today	01Feb Sat	02Feb Sun	03Feb Mon	04Feb Tue
1. Andaman & Nicobar Islands	DRY	ISOL	ISOL	DRY	DRY
2. Arunachal Pradesh	SCT	SCT	ISOL	DRY	DRY
3. Assam & Meghalaya	ISOL	ISOL	DRY	DRY	DRY
4. N. M. M. & T.	ISOL	DRY	DRY	DRY	DRY
5. S.H. West Bengal & Sikkim	ISOL	ISOL	ISOL	DRY	DRY
6. Gangetic West Bengal	DRY	DRY	DRY	DRY	ISOL
7. Odisha	ISOL	SCT	ISOL	DRY	ISOL
8. Jharkhand	DRY	DRY	DRY	DRY	FWS
9. Bihar	DRY	DRY	DRY	DRY	ISOL
10. East Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
11. West Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
12. Uttarakhand	ISOL	ISOL	DRY	DRY	ISOL
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	DRY	DRY	DRY	DRY
15. Himachal Pradesh	ISOL	DRY	DRY	DRY	ISOL
16. Jammu & Kashmir	ISOL	DRY	DRY	ISOL	SCT
17. West Rajsthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	DRY	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	ISOL	ISOL
20. East Madhya Pradesh	DRY	DRY	DRY	ISOL	SCT
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	DRY	DRY	DRY	DRY	DRY
25. Marathawada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	ISOL	DRY	DRY	ISOL
27. Chhattisgarh	DRY	ISOL	ISOL	DRY	SCT
28. Coastal A. P. & Yanam	ISOL	ISOL	ISOL	DRY	DRY
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. T.N., Puducherry & Karaikal	DRY	DRY	DRY	DRY	DRY
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	DRY
35. Kerala & Mahe	DRY	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

31 January (Day 1): ♦ **Dense to very dense fog** very likely at few places over Punjab, Haryana, Chandigarh & Delhi and dense fog at isolated places over West Uttar Pradesh and Odisha.

♦ **Thunderstorm** accompanied with **lightning** very likely at isolated places over Arunachal Pradesh.

♦ **Cold wave conditions** very likely at isolated places over Punjab, Haryana, East Rajasthan and Kutch.

♦ **Cold day conditions** very likely at isolated places over West Madhya Pradesh and Punjab.

01 February (Day 2): ♦ **Dense to very dense fog** very likely at few places over Punjab, Haryana, Chandigarh & Delhi and dense fog at isolated places over West Uttar Pradesh.

♦ **Thunderstorm** accompanied with **lightning** very likely at isolated places over Odisha, Arunachal Pradesh and Sikkim.

02 February (Day 3): ♦ **Dense fog** very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh.

♦ **Thunderstorm** accompanied with **lightning** very likely at isolated places over Odisha.

03 February (Day 4): ♦ **Dense fog** likely at isolated places over Punjab and Haryana, Chandigarh & Delhi.

04 February (Day 5): ♦ **Thunderstorm** accompanied with **lightning** likely at isolated places over East Madhya Pradesh, Chhattisgarh and Jharkhand.

Weather Outlook for subsequent 2 days from 5th to 7th February, 2020

- ♦ Isolated rain/snow likely over western Himalayan region and scattered to fairly widespread rain/thundershower very likely over east and adjoining central India.
- ♦ Weather likely to be dry over the rest of the country.

Salient advisories

➤ **Advisory for Desert Locust:**

- On arrival/attack of locusts in Sriganganagar and Hanumangarh districts of Rajasthan, inform immediately to locust control room, Suratgarh at 09969341927, 09588849282 or to Deputy Director (Extension), Sriganganagar at 0154 2422345, 09928116968.
- In Arid Western Plain Zone of Rajasthan, where there is attack of locusts in Bikaner and Jaisalmer districts, apply Chloropyrifos (50%) 1 ml/litre or (20%) 2.5 ml/litre of water in standing crops.
- In Haryana, farmers are advised to keep vigil and immediately contact the nearest Krishi Vigyan Kendra, if they notice the locust.

➤ **As Thunderstorm** accompanied with **lightning** likely at isolated places over Arunachal Pradesh on 31st Jan. & 1st Feb, over Odisha on 1st & 2nd Feb, over East Madhya Pradesh, Chhattisgarh and Jharkhand on 4th Feb., provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

➤ As **Dense to very dense fog** very likely at a few places over Punjab, Haryana, Chandigarh & Delhi on 1st, dense fog at isolated places over West Uttar Pradesh on 1st & 2nd Feb., over Punjab, Haryana, Chandigarh

& Delhi on 2nd Feb., monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for blight disease. If symptoms are noticed, undertake plant protection measures.

- As **rain/thundershowers** likely at many places over Jharkhand on 4th Feb., avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
- Undertake sowing/ transplanting of following crops:
 - In North Coastal Zone of Andhra Pradesh, undertake transplanting of rice .
 - Continue sowing of rice fallow pulses viz., black gram and green gram in Cauvery Delta Zone of Tamil Nadu.
 - Continue planting of sugarcane in South Interior Karnataka and Odisha.
 - Continue sowing of pre-kharif rice in Manipur.
 - Continue sowing of long duration varieties of sunflower in Western Zone of Punjab.
 - Continue sowing of summer groundnut in Maharashtra.
- In Undulating Zone of **Punjab**, monitor the potato crop regularly. If symptoms of late blight are observed, spray Indofil M-45/Mass M45/Markzeb/Kavach @ 500-750g using 250-350 liters of water per acre at 7 days interval.

Detailed Agromet Advisories

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

Realised Rainfall : Weather remained dry over the region.

Advisories:

Kerala

- In Problem Area Zone, there are chances of occurrence of anthracnose disease in cow pea, drench pits of cow pea with copper oxy chloride 4g/ litre before planting as a prophylactic measure.
- In High Altitude Zone, undertake land preparation for *punja* rice. Select short duration varieties for the summer crop.
- In Southern Zone, undertake harvesting of paddy. In Central Zone, weather is congenial for white fly attack in chilli, apply 2% neem oil garlic emulsion or spray 20g Lecanicillium lecanii per one litre of water in ten days intervals.

Andhra Pradesh

- In North Coastal Zone, undertake transplanting of rice and harvesting of sugarcane.
- In Scarce Rainfall Zone, present weather conditions are favourable for *spodoptera* and tikka leaf spot incidence in groundnut. Keep bird perches @ 10 per acre and spray Thiodocarb@1.5g/l or Quinalphos @2 ml/l or Chlorophenapyr@2ml/l for spodoptera control. To control tikka leaf spot, spray Mancozeb @ 400 g + Carbendazim @ 200 g (or) Hexaconazole @ 400 g per acre.
- In Krishna Godavari Zone, weather conditions are conducive for incidence of Stemborer in rabi paddy, to control spray Monocrotophos @ 36 SL 1.6 ml or Chlorpyriphos 20 EC @ 2.5 ml or Phosphamidon 40 SL@ 2.0 ml, or Acephate 1.5g or Cartap Hydro Chloride 2.0g or Chlorantriliniprole 0.4ml or /litre of water.
- In Southern Zone, the present weather conditions are favourable for leaf spot and powdery mildew occurrence in pulses. To control spray Mancozeb @ 2.5 g. (or) Chlorothalonil 2 g. (or) Carbendazim @ 1 g. (or) Thiophenate methyl 1 g./L of water.

Telangana

- Continue sowing of Sesame till 1st fortnight of February
- In Southern Telangana prevailing weather conditions are congenial for incidence of leaf spot disease in

Groundnut. To control, spray Mancozeb + Carbendazim @ 2.0 g or Chlorothalonil @ 2.0 g or Tebuconazole @ 1.0 ml or Carbendazim @ 1.0 g per litre of water

- North Telangana Zone, prevailing weather conditions are congenial for maruca and helicoverpa in redgram. Spray Chlorpyrifos @2.5 ml or Novaluron @ 0.75 ml along with Dichlorvos @ 2 ml per liter of water.

Tamil Nadu

- In Cauvery Delta Zone, weather is congenial for smut on rice, prophylactic spraying of fungicides viz., Probenconazole (200 ml/acre) or Copper hydroxide (500 g/acre) at the time of booting and milky stages may be adopted.
- In Western Zone, weather is congenial for ear head bug incidence in paddy crop hence farmers are requested to monitor the crop carefully if required spray dichlorvos @ 2ml/liter of water.
- In Karaikal and Pondicherry, for rice fallow pulses, black gram variety ADT 3 @ 25 kg/ha may be used for sowing till 31st January, greengram variety, ADT 3 @ 25 kg/ha shall be used for sowing till second week of February.
- In High Rainfall Zone, weather is congenial for brown spot in rice, Spray Metominostrobin @ 500 ml/ha.

Karnataka

- In South Interior Karnataka, undertake transplanting of rice seedlings. Continue harvesting of matured red gram, pepper and matured rhizomes of ginger and turmeric. Clear the weeds in Mango, Guava, Sapota orchards and put it under the basin as mulch.
- In Coastal Karnataka, complete threshing of rice. Undertake deep ploughing in harvested rice fields. For control of powdery mildew in mango orchards, spray Carbendazim @ 1 gm/liter of water or Hexaconazole @ 1ml / liter of water.
- In North Interior Karnataka, continue harvesting of pigeon pea crop. Provide irrigation to sorghum and wheat crops. For the control of aphids in safflower, spray Dimethioate (roger) @ 1.7ml /litre of water. Continue land preparation for planting of sugarcane.

Animal Husbandry:

- In North-eastern Zone of Tamilnadu, cattle, sheep & goat should not be allowed to graze near ponds or dry lakes to prevent fluke infestation. If there are lice and flea infestation in sheep, goat or calves ectoparasiticides like Fipronil spray or any medicated dip is recommended.
- In Karnataka, there is chance of occurrence of bacterial diseases in poultry birds due to sudden fall of temperature. Provide rice & wheat grains to birds. Cover the sides of poultry house with curtains to avoid chilling effect. Provide favourable climatic conditions suited to the silkworms at different stages. The optimum temperature for chawki rearing is 27-28°C and humidity 85- 90 %, below that condition the physiology of silkworm is affected.

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

Realised Rainfall: Weather remained mainly dry over the region.

Advisories:

Arunachal Pradesh

- **As Thunderstorm** accompanied with **lightning** likely at isolated places over Arunachal Pradesh on 31st Jan.&1st Feb., provide mechanical support to banana, young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- In Arunachal Pradesh, spray Redomil (3gm/ litre of water), Bavistin (1 gm per litre of water) keeping the nozzle in upright position against Late Blight infestation in potato, if infestation is above ETL. Spraying of Bavistin @ 1 gm per litre of water is advised against white-rust in mustard.

Assam & Meghalaya

- In Hill Zone of Assam, continue main field preparation for transplanting *Boro* paddy seedlings. Apply irrigation at flowering and siliquae development stages in rapeseed & mustard. Monitor cole crops regularly for leaf feeders; if pest population is above ETL, spray of B.t. @ 1.0 g/ litre of water or Spinosad @ 1 ml / 3 litre of water.
- In Lower Brahmaputra Valley Zone, complete transplanting of summer rice at the earliest. Maintain standing water at 5±2cm depth after 2-3days of transplanting. spray 2 gm Bavistin /litre of water for control blast disease in wheat crop at CRI , vegetative, ear head and flowering.
- In Upper Brahmaputra Valley Zone, apply irrigation in *Boro* rice to maintain 5-7 cm water level; if moderate infestation of stem borer is observed, spray Chlorpyrifos 20 EC or Quinalphos 25 EC (70-80 ml per 70-80 litres of water per bigha). Due to favourable weather conditions, incidence of wilt disease may be observed in the pulses crops such as chick pea, lentil, etc.; drench the soil with Bavistin @ 1ml/litre of water as soon as wilt symptoms are observed.
- In Barak Valley Zone, at tillering stage of *Boro* rice crop, there may be chance of stem borer infestation. Spray Chlorpyrifos 50 EC @ 1.5 ml per litre of water to control the pest. For aphids and Epilachna beetle infestation in potato, application of Malathion 50 EC @ 1.5 litre in 500 litre of water is recommended.
- In Central Brahmaputra Valley Zone, the dead hills are to be replanted within 7-10 days of transplanting of *Boro* rice. Maintain 5±2 cm of standing water in the field after 2-3 days of transplanting of *Boro* rice. Apply Dimethoate 30EC or Chlorpyrifos @ 2ml/litre with a spray volume of 500 - 700 litre/hac for hand sprayer and 200-250 litre/hac for power sprayer..
- In North Bank Plain Zone, complete transplanting of *Boro* rice seedlings at the earliest. Minimum temperature below 12.5 degree Celsius is favourable for infestation of aphids and sawfly in rapeseed and mustard; apply Dimethoate 30EC or Chlorpyrifos @ 2ml per litre of water with a spray volume of 500-700 litres/ha for hand sprayer & 200-250 litres/ha for power sprayer. Present weather is favourable for appearance of late blight in potato; spray Mancozeb @2.5g/litre of water.
- In Meghalaya, complete nursery bed preparation for sowing of tomato and brinjal. In case of heavy infestation of cabbage butterfly and aphids in mustard/ rapeseed at flowering/pod filling, spray Azadirachtin 0.03 EC @ 5ml/litre. Spray fungicide Mancozeb @ 2.5g/1litre of water, spray at older leaves to avoid wider spread of leaf spot. Spray fungicide (Metalaxyl + Mancozeb @ 2.5g/1litre of water) to manage white rust of mustard. Maintain proper soil moisture in carrot / raddish at vegetative stage. Apply irrigation to cole crops to maintain proper soil moisture. Undertake harvesting of ginger and turmeric.

Manipur, Mizoram, Tripura and Nagaland

- In Manipur, continue nursery raising for sowing of pre-*kharif* rice.
- In Mizoram, continue harvesting of turmeric. Carry out intercultural operations near the base of the potato plants; apply irrigation at 2-3 days interval; use straw mulch for better soil moisture conservation. To manage leaf blight disease in maize, spray aproach (Methoxy-acrylates) @ 2 g/litre of water.
- In Tripura, continue transplanting of *Boro* rice seedlings and follow the SRI techniques. Spray Monocrotophos @ 2ml per litre of water at an interval of 15 days against aphids infestation in the field of rabi legumes (toria, sesame, lentil etc.). Cloudy weather condition is conducive for fungal diseases like blight in potato; spray Mancozeb (Indofil M-45) @ 2.5gm per litre of water in potato fields at least twice at an interval of 10 days. Maintain moisture in the field of *rabi* maize through irrigation. Mulching is essential to retain the moisture for longer period with the locally available material.

- In Nagaland, undertake land preparation for sowing of *kharif* maize. Farmers are advised to install pheromone traps @ 3-4 traps per acre for monitoring of the pest population for diamond back moth in cole crop, pod borer in pea and fruit borer in tomato.

Animal Husbandry

- In Lower Brahmaputra Valley Zone of Assam, vaccinate poultry birds against Ranikhet disease during this period.

Fishery

- In Barak Valley Zone of Assam, during the time fishes may be infected by fungal and bacterial disease. To overcome this, treated the infectious fishes with Potassium Permanganent (2 mg/100ml of water) or common salt (3 gm/ 100 ml of water).

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

Realised Rainfall: Rainfall occurred in West Singhbhum district of Jharkhand. Weather remained dry/mainly dry over rest of the region.

Advisories:

- As **Thunderstorm** accompanied with **lightning** likely at isolated places over Odisha on 1st & 2nd Feb. and over Jharkhand on 4th Feb, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Odisha

- Complete transplanting rice seedlings. Continue planting of sugarcane. Go for nursery raising of cole crops for late planting. Undertake sowing of maize (in uplands), lentil, field pea, green gram, black gram and chickpea. Complete the sowing of summer groundnut and sunflower by this week. Carry out hoeing & weeding in earlier sown groundnut and sunflower crops. Undertake harvesting of mustard. Incidence of pod borer occurred in gram and pea; spray 50 ml Imidacloprid or 400 ml Dimethoate or Metasystox in 200 litre water/acre.

Bihar

- Continue transplanting of onion seedlings. Undertake land preparation for sowing of summer vegetables (okra, pumpkin, cucumber, sponge gourd ridge guard, bitter guard). Apply irrigation in maize and wheat crops. In case of infestation of aphid in mustard crop, spray Imidachloropid @ 0.25 ml or Dimethoate 30% @ 1 ml of /liter of water. For the control of early and late blight in potato spray Redomil @ 2g/litre of water.

Jharkhand

- As **rain/thundershowers** likely at many places over Jharkhand on 4th Feb., avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
- Undertake nursery raising of summer rice and harvesting of rapeseed. After digging of early potato, undertake cultivation of summer vegetables like cauliflower, cabbage, chili, tomato, lady's finger and cucurbitaceous vegetables (sponge gourd, bottle gourd, bitter gourd, cucumber, pumpkin etc).

West Bengal

- In Sub-Himalayan West Bengal, if sufficient moisture is available, wheat can be sown using Zero Tillage machine. Prepare main land for transplanting of Boro rice. To control alternaria blight in mustard spray Mancozeb @ 2.5g/liter of water. Spray Dinoteferun 20% SG @ 0.5g/liter of water in aphid affected mustard field.
- In Gangetic West Bengal, complete transplanting of rice seedlings, sowing of sunflower and harvesting of matured mustard, potato. There are chances of blight infestation in sunflower crop after light rain and cloudy weather; Apply SAF @ 2gm/liter of water as preventive measure.

Andaman & Nicobar Islands

- Undertake transplanting of seedlings of cauliflower and cabbage in raised beds. Foliar spray of Panchkavya 1% in pulse crop for better flowering and yield is suggested. Undertake earthing up in standing vegetable crops and provide light irrigation if required. Observe for slug caterpillar in coconut as the weather is conducive for such pest.

Animal Husbandry

- Vaccinate animals against foot and mouth diseases (FMD). Keep poultry shed dry and warm. Provide 60 watt electric bulbs in poultry sheds during night as cold weather is likely to continue.

Pisciculture

- In Odisha, the temperature is rising continuously which is favourable condition for growth of fishes; add cow dung and lime in the pond as natural foods and also use alternative feeds like Rice Bran and Mustard cake (each of 5 kg /acre area of pond per day).

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

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

Advisories:

Maharashtra

- In Konkan, farmers are advised to continue transplanting of rice seedlings. To control leaf curl (Bokdya/Churda Murda) in chilli, spray Mancozeb @ 2 g per liter of water. In view of prevailing dry weather conditions, apply irrigation to groundnut, vegetables and orchards. To control red pumpkin beetle in watermelon, spray Dimethoate 30% EC @ 15 ml per 10 liter of water.
- In Madhya Maharashtra, farmers are advised to continue sowing of summer groundnut. Continue planting of suru sugarcane. Continue sowing of watermelon (varieties : Sugar Baby, Arka Manik and Arka Jyoti). For control of rust in wheat, spray Mancozeb @ 1.5 kg in 500 liters of water. To control aphids in inflorescence of mango, spray Imidacloprid 17.8 SL @ 3 ml per 10 litres of water. To control aphids in safflower, spray Acetamiprid 20 SP @ 2 ml per 10 liters of water.
- In Marathwada, farmers are advised to undertake plantating of sugarcane. To control stem fly in wheat, spray Cypermethrin 10 % EC @ 10 ml per 10 liters of water.
- In Vidharbha, farmers are advised to continue sowing of summer groundnut. Continue sowing of water melon (varities : Asahi Yamato, Sugar baby, ArkaManik and Pusabedana) and musk melon (varities : PusaSharbati, PusaMadhuras, HaraMadhu). Continue sowing of summer groundnut (BBF sowing with sprinkler irrigation). To control pod borer in gram (5% pod damage), spray Azadirachtin 300 ppm @ 50 ml per 10 litres of water. Also in view of prevailing dry weather conditions, apply irrigation to wheat, gram (sprinkler irrigation), safflower, vegetables and orchards.

Gujarat

- In Middle Gujarat, carry out picking of matured tomato fruits. Broadcast mixture of Fipronil 5 SC 1.6 litres or Chlorpyrifos 20 EC 1.5 litres and 100 kg sand in standing wheat crop and apply light irrigation for control of termite.
- In Saurashtra & Kutch, apply light irrigation to cucurbits. To prevent blight disease infestation in chickpea spray Mencozeb 2@ 7 gm in 10 liters of water at 10 days interval as precautionary measure.
- In North Gujarat, apply light irrigation to gram crop. Continue harvesting of matured spikes of castor. Weather condition is favourable for incidence of blight disease in potato, fennel and cumin crops; spray Metalaxil MZ @ 20 gm in 10 liters of water in potato; spray Mencozeb (0.25%) @ 30 gm plus 20 ml desi soap solution adding in 10 litres water in cumin crop.
- In South Gujarat, undertake transplanting of rice. Maintain optimum water level in the rice field. Complete nursery sowing of brinjal and chilli. Undertake weeding in pulses crops.

Animal Husbandry:

- In Gujarat, provide adlib warm water to lactating animals, keep young calves indoors during night time to protect from cold, provide 6-8 kg good quality dry roughage with 15-20 kg green fodder to the animals.

CENTRAL INDIA [M.P., CHHATTISGARH]

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

Advisories:

- **As Thunderstorm** accompanied with **lightning** likely at isolated places over East Madhya Pradesh and Chhattisgarh. on 4th Feb, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Madhya Pradesh

- In Malwa Plateau Zone, continue nursery sowing of Rabi onion after seed treatment with Captan @ 2.5 g/kg of seeds. Carry out earthing up in potato crop. For monitoring of pod borer in gram crop, install pheromone traps @ 3-4 traps per acre; if flowering has reached 10-15%, place 'T' shaped bird perches in and around crop field to control insect population.
- In Vindhya Plateau Zone, cover new orchards with hay to protect them from cold weather. Continue transplanting of brinjal seedlings. To check caterpillar population in gram crop, install bird perches @ 40-60 per acre.
- In Central Narmada Valley Zone, spray N P K 19:19:19 water-soluble manure at the rate of 100 g per pump if yellowing due to excessive moisture is observed in standing wheat crop; avoid water logging in the field; apply light irrigation at 20 days interval. Apply Dimethoate 30 EC 500 ml/ha if aphid infestation in mustard crop is found to be above ETL.
- In Bundelkhand Zone, irrigate wheat crop and apply remaining dose of nitrogen fertilizer 3-4 days after irrigation. Spray Mancozeb @ 2.5 ml per liter of water to control blight disease in potato crop.
- In Jhabua Hills Zone, apply third irrigation to wheat crop at booting stage (50-55 DAS) and fourth irrigation at head initiation stage (65-70 DAS) so as to maintain sufficient moisture in the field. Irrigate winter vegetable crops. Irrigate mustard crop at seed formation stage (60-65 DAS) and chick pea crop at pod filling stage (60-70 DAS).

Chhattisgarh

- In Chhattisgarh Plain Zone, irrigate wheat crop at critical stages like CRI, tillering, etc. At 50% flowering stage in mango, give irrigation strictly at an interval of 15 days or more. Irrigate banana and papaya seedlings once a week and give support to the banana plants at the time of flowering. If Yellow Vein Mosaic (YVM) disease is observed in pulses crop, destroy the affected plants and spray Metasystox or Rogar insecticide @ 1 ml/litre of water.
- In Northern Hill Zone, wheat crop is at CRI/tillering stage; irrigate crop and apply nitrogen. Continue transplanting of onion seedlings. Prepare field by the first week of February for planting sugarcane. Apply light irrigation to vegetable crops such as cauliflower, cabbage, tomato, pea, chilli, brinjal, etc., as per soil moisture. To control pod borer in gram, use pheromone traps; spray *neem* extract @ 5% to prevent female insects laying eggs; in case of heavy infestation, spray Quinalphos @ 0.05%.
- In Bastar Plateau Zone, apply irrigation to wheat crop at critical stages. Prepare field for planting sugarcane. Raise seedlings of cucurbitaceous crops in poly bags. To control white fly in tomato crop, apply Thiamethoxam 25 WG 400 g/ha or Acetamiprid 20% WP 100ml/ha.

Animal Husbandry

- Feed the milch animals with a mixture of *gud* and concentrate. Vaccinate cattle against FMD and HS; goat against PPR and poultry birds against Ranikhet disease.

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

Realised Rainfall : Significant rainfall occurred in Gurdaspur, Moga and Taran Taran districts of Punjab, in Doda, Kulgam, Ramban, Reasi and Udhampur districts of Jammu & Kashmir; in most of the districts of Himachal Pradesh except Lahaul & Spiti, Mandi and Una; and in most of the districts of Uttarakhand except

Bageshwar, Champawat, Nainital, Pauri Garhwal and Uttarkashi.

Advisories:

- As **dense to very dense fog** very likely at a few places over Punjab, Haryana, Chandigarh & Delhi on 1st, dense fog at isolated places over West Uttar Pradesh on 1st & 2nd Feb., over Punjab, Haryana, Chandigarh & Delhi on 2nd Feb., monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for blight disease. If symptoms are noticed, undertake plant protection measures.

Jammu & Kashmir

- In Sub-Tropical Zone, spray Mancozeb @2.5gm/litre of water on mustard, if attack of alternaria blight is observed. Monitor the gram crop for wilt and blight attack. If observed, apply Bavistin/ Carbendazim @ 3gm/litre of water. Carry out weeding and hoeing in onion, garlic fields at optimum soil moisture after receipt of rain.
- In Cold Arid Zone, plough fields to retain more moisture during the winter months. It will also help in uprooting of the weeds and decomposition of crop residues. Carry out intercultural practices like weeding and hoeing after applying vermi-compost/FYM in poly-houses. Undertake harvesting of Chinese cabbage, kale, spinach and lettuce in protected structures at weekly interval to avoid loss due to frost.
- In Intermediate Zone, weather is congenial for the infestation of yellow rust in wheat crop. Keep strict vigil on appearance of disease. If observed, apply Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/litre of water). Weather conditions are favourable for the attack of alternaria blight in mustard crop. If observed, apply Mancozeb @ 2.5 g/litre of water and ridomil MZ @ 2.5 g/litre of water alternately. Provide staking to the pea vines and apply irrigation at first flower formation and pod formation stage depending upon the soil moisture conditions.
- In Valley Temperate Zone, provide drainage channels in *rabi* crop fields like wheat, oats, lentils, pea, brown sarson and chicken pea wherever there is probability of water accumulation; keep bunds and irrigation channels clean.

Himachal Pradesh

- In Sub Montane and Sub Tropical Low Hills Zone, undertake thinning and weeding operation in timely sown mustard crop. To control pod borer in gram crop, install Pheromone trap @ 3-4 traps per acre, if flowering has reached 10- 15%. Install “T” shaped bird perches in and around crop fields to control insect population. To control shoot and fruit borer in brinjal and tomato crops, infested fruits and shoots should be collected and buried inside the soil. Also install pheromone trap @25 per hectare. If pest population is high, spray spinosad 48 EC @ 1 ml /4 litres of water during clear weather.
- In Mild Hills Sub Humid Zone, cover the small pomegranate plants with grass to avoid cold injury. Destroy the infected plant parts and undertake dressing of cut ends.
- In Mid Hills Sub-Humid Zone, undertake stacking in the pea crops so that it grows vertically and pod picking becomes easy.
- In High Hill Temperate Dry Zone, dig up the beds of apples, collect the root penetrating worms and kill them. Then make a solution of Chlorpyrifos (20 EC) 500 ml/100litres of water and irrigate with it.

Punjab, Haryana, Delhi

- In Punjab, protect the nursery as well as vegetable crops like tomato, brinjal and chilli from chilling wind and cold weather. Also, protect young evergreen mango plants from cold weather by preparing thatches using straw, plastic, etc.
- In Western Plain Zone of Punjab, weather is conducive for severe attack of mustard aphid. Monitor the crop regularly, if pest population reaches to ETL, spray the crop with Actara 25 WG @40g /acre.
- In Undulating Zone of Punjab, regularly monitor the potato crop, if symptoms of late blight are observed, spray Indofil M-45/Mass M45/Markzeb/Kavach @ 500-750g using 250-350 liters of water per acre at 7 days interval.

- In Central Plain and Undulating Zone of Punjab, regularly monitor the wheat crop for yellow rust to detect the initial foci of infection only spot application surrounding the infected area should be done with 0.1% Caviet/Opera/Tilt /Shine /Bhumper/Markzole/Stilt/Compass.
- In Western Zone of Haryana, apply irrigation to wheat crop and undertake intercultural operations for removing weeds. Due to high humidity level prevailed in the air, infestation of aphid may increase, monitor the crop regularly. Due to possibility of dry weather, apply light irrigation in Berseem and fodder crop as per the requirement. Due to high humidity, infection of early blight may occur in potato and tomato monitoring the crop constantly.
- In Eastern Zone of Haryana, undertake nursery preparation of tomato crops in poly house. Monitor pod borer in gram, install Pheromone trap @ 3-4 traps per acre, if flowering has reached 20-25%. “T” shaped bird perches in and around crop field to be installed for controlling insect population. In present weather, monitor constantly marigold crop, against inflorescence rotting disease. If symptoms are found, spray Bavistin @ 1 gram/litre water.
- In Delhi, continue transplanting of onion, tomato, cauliflower, cabbage, knolkhol and broccoli crops in raised bed. Undertake sowing of spinach, coriander and fenugreek. Undertake nursery preparation for chili, tomato and brinjal in poly house. Monitor pod borer in the gram crop; install pheromone traps @ 3-4 traps per acre; if flowering has reached 10-15%, install “T” shaped bird perches in and around crop field for controlling insect population.

Uttar Pradesh

- In East Uttar Pradesh, continue transplantation of onion crop. If symptoms of termite appear in wheat crop, apply Chlorpyrifos 20 EC @ 2.0 litre/acre. Due to high relative humidity, infection of blight may occur in potato; spray Carbandazim @ 1.0 g / litre of water Or Indofil-M-45 @500-700gm per acre Or blitox @750 - 1000 gm per acre in 250-350 litre of water 2-3 times at weekly interval. Adopt recommended plant protection control measures for pest and diseases in Bengal gram and chick pea.
- In West Uttar Pradesh, transplant onion seedlings and irrigate immediately after transplanting; for weed control in onion crop, spray Pendimethalin 30% EC @ 3.5 litres / ha in 800 litres of water immediately after planting or just before irrigation. Carry out dressing of urea in the wheat crop. Due to cloudy sky conditions, mustard crop is likely to show outbreak of aphids; spray Chlorpyrifos 20% EC 1.0 liter/ha or Monocrotophos 36% SL; make a slurry in 400 to 450 liters of water at the rate of 500 ml / ha when spraying. There is a possibility of outbreaks of pod borer in gram/chick pea crops; spray Qunalphos 25 EC @ 2 litres per hectare in 500-600 litres of water.

Uttarakhand

- In Bhabar and Tarai Zone, carry out hoeing and weeding operation in pea. Undertake harvesting of yellow mustard.
- In Sub Humid Sub Tropic Zone and Hill Zone, carry out intercultural operations in wheat crop, sugarcane crop and vegetables like cabbage and cauliflower.

Rajasthan

- In Arid Western Plain Zone, weather is congenial for attack of blight in cumin crop, stop irrigating crop and apply 2.0 gram Mancozeb per litre water, if condition sustains then repeat the spray at an interval of 15 days.
- In Semi Arid Eastern Plain Zone, garlic & onion crop is likely to be affected by thrips insect attack, spray Methyl Dematon 25 EC or Melathion 50 EC @ 1.0 ml per litre water.
- In Sub Humid Southern Plain and Aravali Hill Zone, in late sown wheat, spray of Mesosulfuron Methyl 3% @ 12 g/ha + Iodosulfuron-methyl 0.6% WG @24 g/ha at 25-30 DAS. Or Clodinafop 15% @ 60 g/ha + Metsulfuron-methyl 1.0 % WG @ 4 g/ha at 30-40 DAS to control broad & Narrow leave weeds.

➤ In Flood Prone Eastern Plain Zone, to save mustard crop from ground frost, spray of 1 ml Sulphuric acid or Dimethyl sulpho-oxide per litre of water should be done @ 100-125 litre solution per bigha.

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