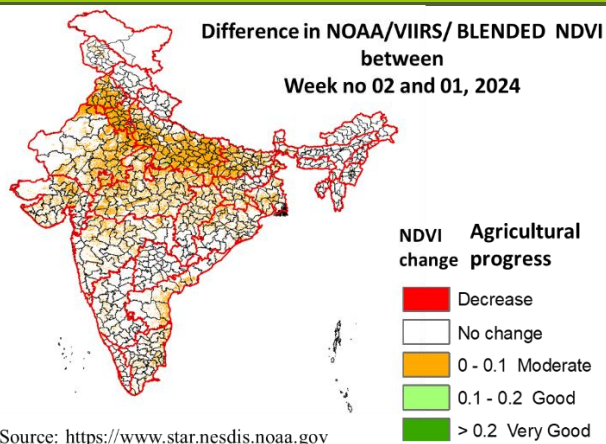
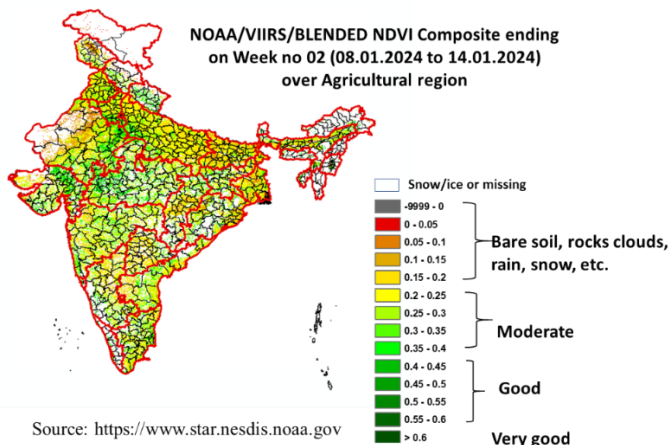




**NOAA/VIIRS/BLENDED NDVI composite for the week number 02 (08.01.2024 to 14.01.2024) over Agricultural regions of India**

**Difference in NOAA/VIIRS/BLENDED NDVI between week number 02 and 01, 2024**



Agricultural vigour was good over many places of Coastal Karnataka & West Madhya Pradesh; at a few places of Uttarakhand, East Rajasthan, Gujarat, North Eastern states (except Assam) & Kerala and at isolated places of Punjab, Haryana, East Madhya Pradesh, Chattisgarh, Odisha, Assam, South Konkan, Goa, Tamilnadu, Andhra Pradesh and in districts of Agra, Mathura, Mahamayanagar, Firozabad of Uttar Pradesh.

Agricultural difference was good at few places of East Rajasthan, Madhya Pradesh & adjoining districts of Uttar Pradesh and at isolated places of Punjab & Haryana

**Weather Forecast for next 5 days upto 0830 hours IST of 24<sup>th</sup> January 2024**

- Fall in minimum temperatures by 2-3°C very likely over many parts of East India during next 3 days and no significant change thereafter.
- No significant change in minimum temperatures likely over rest parts of north India during next 5 days.

**5 Days Rainfall Forecast**

S. No.	Subdivision	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
		Day 1	Day 2	Day 3	Day 4	Day 5
1	ANDAMAN & NICOBAR ISLANDS	ISOL	ISOL	ISOL	DRY	DRY
2	ARUNACHAL PRADESH	ISOL	ISOL	ISOL	ISOL	SCT
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	DRY	ISOL
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	DRY	DRY	DRY
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	ISOL	ISOL	ISOL	ISOL	ISOL
6	GANGETIC WEST BENGAL	DRY	DRY	DRY	DRY	DRY
7	ODISHA	ISOL	ISOL	ISOL	ISOL	ISOL
8	JHARKHAND	DRY	DRY	DRY	DRY	DRY
9	BIHAR	DRY	DRY	DRY	DRY	DRY
10	EAST UTTAR PRADESH	DRY	DRY	DRY	DRY	DRY
11	WEST UTTAR PRADESH	DRY	DRY	DRY	DRY	DRY
12	UTTARAKHAND	DRY	DRY	DRY	DRY	DRY
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	DRY	DRY	DRY
14	PUNJAB	DRY	DRY	DRY	DRY	DRY
15	HIMACHAL PRADESH	DRY	DRY	DRY	DRY	DRY

16	JAMMU & KASHMIR AND LADAKH	DRY	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	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	VIDARBHA	DRY	DRY	DRY	DRY	ISOL
27	CHHATTISGARH	ISOL	DRY	DRY	ISOL	ISOL
28	COASTAL ANDHRA PRADESH & YANAM	DRY	DRY	DRY	ISOL	ISOL
29	TELANGANA	DRY	DRY	DRY	DRY	DRY
30	RAYALASEEMA	DRY	DRY	DRY	DRY	DRY
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	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	ISOL	ISOL	DRY	DRY	DRY
36	LAKSHADWEEP	SCT	SCT	DRY	DRY	DRY

Legend	Category	% Stations
WS	Widespread/Most Places	76-100
FWS	Fairly Widespread/Many places	51-75
SCT	Scattered/ A Few Places	26-50
ISOL	Isolated Places	1-25
DRY	No Rain	0

### Weather Warning during next 5 days

#### 19 January (Day 1):

- ❖ **Dense to very dense fog** very likely in many parts of Punjab, Haryana, Chandigarh, in some parts of Uttar Pradesh and West Rajasthan; in isolated pockets over Uttarakhand and East Rajasthan; **Dense fog** in isolated pockets over Himachal Pradesh, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Gangetic West Bengal, Bihar, Jharkhand, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Cold day to severe cold day** conditions very likely in some parts of Punjab, Haryana-Chandigarh, Uttar Pradesh, Bihar; in isolated pockets of Uttarakhand, Madhya Pradesh and Rajasthan.
- ❖ **Cold wave to severe cold wave** conditions very likely in isolated pockets of Punjab, Haryana & Chandigarh and **cold wave** conditions in isolated pockets over Himachal Pradesh, West Rajasthan, Madhya Pradesh.
- ❖ **Thunderstorm with lightening** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Ground frost** conditions very likely in isolated pockets of Uttarakhand.

#### 20 January (Day 2):

- ❖ **Dense to very dense fog** very likely in some parts of Punjab, Haryana, Uttar Pradesh, in isolated pockets over Uttarakhand and Rajasthan; **Dense fog** in isolated pockets over Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Bihar, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Cold day to severe cold day** conditions very likely in some parts of Punjab, Haryana-Chandigarh, Uttar Pradesh, Bihar; in isolated pockets of Uttarakhand, Madhya Pradesh and West Rajasthan. **Cold day** conditions likely in isolated pockets of East Rajasthan.
- ❖ **Cold wave to severe cold wave** conditions very likely in isolated pockets of Punjab, Haryana and **cold wave** conditions in isolated pockets over Himachal Pradesh, Rajasthan and Madhya Pradesh.
- ❖ **Ground frost** conditions very likely in isolated pockets of Uttarakhand.



### 21 January (Day 3):

- ❖ **Dense to very dense fog** very likely in some parts of Punjab and Haryana; in isolated pockets over Uttarakhand and Uttar Pradesh; **Dense fog** in isolated pockets over Rajasthan, Sub-Himalayan West Bengal & Sikkim, Bihar, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Cold day to severe cold day** conditions very likely in some parts of Bihar; in isolated pockets of Uttar Pradesh. **Cold day** conditions likely in isolated pockets of Haryana-Chandigarh, Punjab & Rajasthan.
- ❖ **Cold wave** conditions in isolated pockets over Punjab, Haryana-Chandigarh and Rajasthan.
- ❖ **Ground frost** conditions very likely in isolated pockets of Uttarakhand.
- ❖ **Squally weather with wind speed 45-55 kmph gusting to 65 kmph** very likely to prevail Southwest Arabian Sea, along and off Somalia Coast. Fishermen are advised not to venture into these areas.

### 22 January (Day 4):

- ❖ **Dense to very dense fog** in some pockets over Punjab, Haryana-Chandigarh; in isolated pockets of Uttarakhand and Uttar Pradesh; **Dense fog** in isolated pockets over Rajasthan, Bihar, Jharkhand, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Cold day to severe cold day** conditions very likely in some parts of Bihar; in isolated pockets of Uttar Pradesh.
- ❖ **Cold wave** conditions likely in isolated pockets over Punjab, Haryana-Chandigarh.
- ❖ **Squally weather with wind speed 45-55 kmph gusting to 65 kmph** very likely to prevail Southwest Arabian Sea, along and off Somalia Coast. Fishermen are advised not to venture into these areas.

### 23 January (Day 5):

- ❖ **Dense to very dense fog** in some pockets over Punjab, Haryana-Chandigarh; in isolated pockets of Uttarakhand and Uttar Pradesh; **Dense fog** in isolated pockets over Rajasthan, Bihar, Jharkhand, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Cold day to severe cold day** conditions very likely in some parts of Bihar; in isolated pockets of Uttar Pradesh.
- ❖ **Squally weather with wind speed 45-55 kmph gusting to 65 kmph** very likely to prevail Southwest Arabian Sea, along and off Somalia Coast. Fishermen are advised not to venture into these areas.

### Advisory for Fishermen

- As **squally weather with wind speed 45-55 kmph gusting to 65 kmph** very likely to prevail Southwest Arabian Sea, along and off Somalia Coast during 21<sup>st</sup> to 23<sup>rd</sup> January 2024, **fishermen are advised not to venture into these areas.**

### Salient advisories

- As **cold wave to severe cold wave** conditions very likely in isolated pockets of Punjab, Haryana-Chandigarh during next 48 hours and **cold wave** conditions in isolated pockets over Himachal Pradesh and Madhya Pradesh during next 48 hours, over West Rajasthan during next 72 hours, over East Rajasthan on 20<sup>th</sup> & 21<sup>st</sup> and over Punjab, Haryana- Chandigarh on 21<sup>st</sup> and 22<sup>nd</sup> January 2024 and **Ground frost** conditions very likely in isolated pockets over Uttarakhand during next 72 hours, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/gunny bags.
  - In **Rajasthan**- To protect mustard, wheat, potato, pea crops from cold injury, spray Sulphuric acid or Dimethyl sulpho-oxide @ 1ml per litre of water in 100-125 litre solution per bigha. Cover young Kinnow plant with polyethene and straw.
  - In **Punjab**- Protect young plants by covering them with thatches made of grass and straw. Cover young nursery plants and apply light irrigation to save crops from cold weather. Provide light irrigation to potato.
  - In **Haryana**- Apply irrigation to protect standing crops.

- In **Himachal Pradesh**- Apply light irrigation to vegetables in the evening. Apply mulch in between the rows of vegetables. Apply mulch in ginger and turmeric.
  - In **Uttarakhand**- Wrap banana bunches with porous polythene/cotton cloth to protect them from adverse impacts of cold wind.
- As **dense /dense to very dense fog** very likely in parts of Punjab, Haryana- Chandigarh, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Sub Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya and NMMT during next 3-5 days, monitor the standing crops for incidence and spread of pest diseases; potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
- In **Tripura**, due to foggy and cloudy weather there is chance of blight disease on potato, apply irrigation in the evening which may help to rise soil temperature and spray Carbendazim @ 2 g per litre of water.
  - In **Assam**, prevailing temperature and humidity is favourable for the development of late blight disease in potato and tomato, spray Mancozeb @ 0.25% (25 g in 10 litre of water) as prophylactic measures.
  - In **Himachal Pradesh**- Due to high relative humidity, infection of blight may occur in potato and tomato. If symptoms appear, spray Carbendazim @ 1 g / litre of water or Dithane-M-45 @ 2 g / litre of water.
  - In **Uttar Pradesh**, due to high relative humidity, infection of blight may occur in potato and tomato; If symptoms appear, spray Carbendazim @ 1 g / litre of water or Dithane-M-45 @ 2 g / litre of water.
  - In **Rajasthan**, due to high relative humidity, infection of blight may occur in tomato, if symptoms appear spray Carbendazim @ 1g/ litre of water or DithaneM-45 @ 2 g / litre of water.
- Sowing/Transplanting/Harvesting-
- picking of cotton; harvesting of matured red gram; nursery sowing/transplanting of rice and planting of sugarcane in Andhra Pradesh
  - harvesting of matured groundnut; transplanting of rice and sowing of maize, green gram, black gram, water melon and musk melon in Telangana
  - transplanting of onion in Himachal Pradesh
  - harvesting of matured rice and pepper in Kerala
  - harvesting of matured *Samba* rice, pulses and maize in Tamil Nadu
  - picking of cotton and transplanting of onion in Madhya Pradesh
  - planting of potato and transplanting of brinjal in Chhattisgarh
  - picking of cotton; harvesting of okra, brinjal, tomato and chilli and planting of sugarcane in Gujarat
  - picking of cotton; harvesting of matured pigeon pea, chilli, coffee beans, areca nut, ragi & cowpea and sowing of sowing of tomato, chilli, brinjal, beans and water melon in Karnataka
  - transplanting of *Boro* rice and sowing of spinach, coriander and fenugreek in Assam
  - harvesting of turmeric and ginger; planting of potato in Meghalaya
  - harvesting of matured red gram, ginger and turmeric in interior Maharashtra and transplanting of summer rice in Konkan and East Vidarbha
- Pest & Disease Management-
- In Andhra Pradesh, spray Chlorpyrifos @ 2.5 ml or Novaluron @ 1 ml per 1 litre of water to control Maruca pod borer in red gram at pod initiation stage.
  - In Haryana, spray Dithane M-45@ 600-800 g in 250 to 300 litres of water and spray 2-3 times per acre at 15 days interval to control white rust disease in mustard.
  - In Karnataka, spray Emamectin Benzoate @ 2g per litre of water to manage pod borer in chickpea.
  - In Assam, spray Thiamethoxam @ 1.5 ml/litre of water to control aphid and saw-fly infestation in rapeseed & mustard.
  - In Chhattisgarh, spray Mancozeb 63% + Carbendazim 12% WP @ 2g per litre of water for control of purple blotch of onion.

## Detailed Agromet Advisories

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

**Realised Rainfall:** Significant rainfall occurred in Tirunelveli district of Tamilnadu. Mainly dry weather prevailed over rest of the region.

#### Advisories:

##### Tamil Nadu

- In Western Zone, by utilizing dry days complete harvesting of matured samba paddy. Also undertake planting of early season sugarcane as earliest possible, in order to harvest higher productivity
- In Cauvery Delta Zone, undertake sowing of rice fallow pulses.
- In South Zone, undertake harvesting of pulses, maize.
- In North Western Zone, undertake sowing of cowpea as intercrop in between the rows of banana to control the weeds and conserve the moisture while planting the banana.
- In High Altitude Hilly Zone, weather is congenial for wilt in pepper, apply Copper Oxychloride @ 0.2 % (soil drenching) or potassium phosphonate @ 0.3% or Metalaxyl @ 0.1 % during rain free period.
- In High Rainfall Zone, foliar application of water-soluble micronutrient mixture @ 0.5 g/litre of water during 30, 45 and 60 days after planting may be done to increase garlic bulb yield.
- In Karaikal and Puducherry, weather is favourable for the outbreak of blast, brown spot, false smut and grain discoloration in paddy, as a prophylactic measure to manage diseases in rice; spray *Pseudomonas fluorescence* or *Bacillus subtilis* @ 0.5% (5 g /ml per litre) commencing from 45 DAT at 10 days' interval for 3 times.

##### Kerala

- In High Altitude Zone, undertake harvesting of paddy. Provide propping to standing banana crop.
- In Problem Area Zone, continue harvesting of pepper. To control coriand bugs attacking tender nuts, spray Spiromesifen 240 SC@ 8 ml diluted in 10 litre of water. Prevent insecticide from falling on inflorescence in pollination.
- In Central Zone, to control and prevent bacterial leaf blight in paddy, dissolve 20 g of cow dung in one litre of water and spray supernatant liquid by mixing with 20g of pseudomonas in one litre of water. If the attack is severe, spray Streptocycline @ 6 g in 30 litres of water.
- In Southern Zone, in order to control sucking pests in tomato, spray KVK Reksha @ 6g/ litre by an interval of 10 days at early morning or late evening.

##### Karnataka

- In North Interior Karnataka, picking of cotton may be taken up some time after sunrise and the cotton should be sundried before storing. Harvesting of pigeon pea may be taken up on priority. Continue harvesting of chilli and sundry before bagging. Undertake harvesting of groundnut and early-sown chickpea. Sorghum crop is at grain filling stage; apply protective irrigations for proper development of grains. To manage pod borer in chickpea, take up spraying of Emamectin benzoate @ 2g per litre of water.
- In South Interior Karnataka, continue harvesting coffee beans, areca nut, ragi. Continue sowing of tomato, chilli, brinjal, radish, okra, beans, banana, watermelon, carrot, onion, etc. Sudden drop in minimum temperature affects floral induction in mango; spray Pacloburtrazol as plant growth retardant which restricts the vegetative growth. To manage Banana skipper in banana, spray Chlorpyrifos 20 EC @ 2ml per litre of water. For the management of Late blight in tomato, spray Curzate @ 2g per litre of water.
- In Coastal Karnataka, undertake earthing up in early-sown groundnut at 15 days, 30 days & 45 days. Continue sowing of watermelon after seed treatment with Bavistin. Irrigate plantations of areca nut, coconut and black pepper; provide mulching for soil moisture conservation. Spray Monocrotophos @ 1.5ml per litre of water to manage Tea mosquito bug in cashew.

##### Animal Husbandry

- In Karnataka, carry out regular vaccination of farm animals for the control of FMD. Cover the sides of the poultry sheds with cloth to prevent chicks from being exposed to wind chill; remove the wet litter material;

ensure proper cross ventilation to avoid ammonia accumulation.

### **Andhra Pradesh:**

- In the state due to prevailing dry weather for the past few days, provide irrigation to the crops. Undertake intercultural operations like weeding, spraying and fertilizer application etc.
- In Kurnool district, undertake harvesting of red gram.
- In Chittoor district, dip the three budded sets required for 1 acre in the solution of Carbendazim @ 150 g of in 300 litres of water and 600 ml Malathion and keep the sets in solution for 15 minutes before planting sugarcane.
- In Krishna district, continue nursery sowing of rice. Undertake transplanting of 3-4 week old rice nurseries.
- In Ananthpur district, in mango if flowering is delayed, farmers are advised to spray KNO<sub>3</sub> or Multi K @ 10g + urea @ 5g per litre water.
- In Nellore district, spray micronutrients viz., ZnSO<sub>4</sub> (0.5%), FeSO<sub>4</sub> (0.2%), CuSO<sub>4</sub> (0.2%) and H<sub>3</sub>BO<sub>3</sub> (0.1%) 3, 5 and 7 months after planting (MAP) to increase yield and quality of Banana.
- In Guntur district, due to present weather conditions there is possibility of discoloration of cotton, so after picking of cotton do proper drying before packing.
- In Prakasam district, present red gram crop is at pod formation to pod development stage. To control pod fly, spray Monocrotophos@ 1.6 ml or Dimethoate@ 2 ml or Profenophos@ 2 ml or Thiacloprid@ 0.7 ml or Deltamethrin @ 0.9 ml with one litre water.

### **Telangana**

- In the state due to prevailing dry weather for the past few days, provide irrigation to the crops at critical growth stages to avoid moisture stress. Undertake intercultural operations like weeding, spraying and fertilizer application etc.
- In Southern Telangana, undertake harvesting of *rabi* groundnut.
- In Jagtial, Karimnagar, Peddapalli and Rajanna Sircilla districts, continue nursery sowing of rice and undertake sowing of sesame.
- In Khammam district, to control sedges and broadleaf weeds in direct seeded rice, spray Triafamone + Ethoxysulfuron @ 90 g per acre based on intensity of weeds at 15 to 20 days after sowing.
- In Warangal rural, Jangoan, jayshnakra and Mahabubabad districts, sow the vegetables crops like Tomato, cluster bean from January to February; ridge gourd, snake gourd up to January and cucumber up to March, under sufficient irrigated water conditions only.
- In Nagarkurnool, Mahabubnagar, Jogulamba and Narayanpet districts, undertake sowing of green gram, black gram, water melon, musk melon and cucurbits with assured irrigation facility.
- In Nizamabad and Kamareddy districts, continue transplanting of rice.
- In Adilabad and Nirmal districts, prevailing weather conditions are congenial to spodoptera incidence in Bengal gram, spray Novaluron @ 1 ml per litre of water.

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

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

### **Advisories:**

- As **dense fog** very likely in isolated pockets of Assam & Meghalaya and NMMT during next 3-5 days, monitor the standing crops for incidence and spread of pest diseases; potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.

### **Arunachal Pradesh**

- Considering forecast of light rain in some places, farmers must be very cautious while harvesting rice crop. Do not keep the harvested crop in the field and shift to proper shelter. After rain, harvesting should be done after 1-2 days of bright sunny days. Maintain proper mulching with locally available materials around the base of the plants to maintain proper soil temperature and moisture. Remove and dispose all the dead and decaying plant parts to avoid microbial attack.

## Assam

- In Hill Zone, continue transplanting of *Boro* rice. Undertake sowing of spinach, coriander and fenugreek. Provide light irrigation which helps in starting of pod filling in the lentil crop. Install pheromone traps @ 3-4 traps per acre for monitoring of diamond back moth in Cole crop, pod borer in pea and fruit borer in tomato.
- In Lower Brahmaputra Valley Zone, undertake replanting the dead hills within 7-10 days of transplanting of *Boro* rice. For effective control of stem borer in the rice field, spray with Fipronil 5 SC @ 50 g a.i./ha. To control the fall army worm attack in maize, spray Emamectin benzoate 5 SG @ 0.4g/litre or Spinosad 15 SC @ 0.3 ml/litre or Chlorantraniliprole 18.5 SC @ 0.4 ml/ litre.
- In Upper Brahmaputra Valley Zone, complete transplanting of *Boro* rice and continue cole crops. Due to favourable weather condition, there is chance of outbreak of late blight disease in potato crop, spray Copper Oxychloride 50 WP (2g per litre of water) at 7-10 days interval.
- In Barak Valley Zone, continue transplanting of *Boro* rice. Due to low night temperature and fog, aphid and saw-fly infestation may be observed in the rapeseed & mustard crops, apply Thiamethoxam @ 1.5 ml/litre of water. To control fruit & shoot borer infestation in brinjal, apply Emamectin Benzoate 5 SG @ 220 g/hectare.
- In Central Brahmaputra Valley Zone, continue transplanting of *Boro* rice. Apply second irrigation at heading stage (70-75 days after sowing) of wheat. Irrigation should be avoided when ground water table remains within 50 cm of the root zone. In wheat crop, blight and loose smut disease may occur, apply Carbendazim @ 1g/litre of water for blight disease and for loose smut, uprooting and burn the affected plants.
- In North Bank Plain Zone, continue transplanting of *Boro* rice. Prevailing minimum temperature is favourable for aphid & saw fly attack in rapeseed & mustard. apply Dimethoate 30EC or Chlorpyrifos @ 2ml/litre in 500-700 litre/ha for hand sprayer & 200-250 litres/ha for power sprayer.

## Meghalaya

- In Meghalaya, continue planting of potato. Undertake seedbed for sowing of capsicum in high altitude region. Continue harvesting of turmeric and ginger.

## Nagaland

- In Nagaland, apply mulching to the fruits and vegetables to increase soil temperature and conserve soil moisture. Continue harvesting of green pea, kidney beans/ rajma, potato, onion, cole crops and ginger. Hand pick and kill the leaf eating caterpillar and install yellow sticky trap @4-5 nos./acre to trap winged adults to control aphids in mustard crop during reproductive stage.

## Mizoram

- Continue sowing of vegetable crops like chilli, brinjal, *bhendi*, cluster bean. Insects such as thrips and diseases such as blight may attack onion and garlic plants as a result of the fluctuating humidity, low temperature and fog, spray Lambda Cyhalothrin 5 EC @ 6 ml + Tebuconazole @ 10 ml in 10 litres of water.

## Tripura

- In Tripura continue transplanting of *Boro* rice. Current weather conditions are very much favorable for potato late blight disease, spray Mancozeb @ 2 ml/litre. Spray Azadirachtin 5% Neem Extract Concentrate 5 ml/10litre of water or Trichlorofon 50 % EC 1 ml/litre of water at 10 to 15 days' interval against diamond black moth attack in cauliflower.

## Manipur

- In Manipur, continue transplanting of late variety of cole crops. Cover field of potato with straw as mulch. Spray Imidacloprid @ 1ml/ 3litre water or Fipronil @ 2ml/litre water or Spinosad 48 SC @ 300ml/ ha against thrips infestation in potato during vegetative to flower initiation and spray Mancozeb 2 g/litre at 45, 60 and 75 days after planting against late blight and early blight.

## Animal Husbandry

- In Northeastern states, take preventive measures to protect the poultry from cold injury. Keep the coops clean and dry; use dry paddy straw as litter material and cover the sides of the coop with thick cloths during night. Provide slightly warm water to the new chicks. Cover poultry house with gunny bags/polythene sheets to prevent the exposure to cold air. Heating through artificial light during night may also be provided to the



chicks which are less than 21 days old.

### **Fishery**

- As the water level of ponds are going down, fishery owners may arrange for partial harvesting of marketable sized fish (>700 gm). Measures should be taken to prevent EUS disease through liming. To control EUS, dip treatment in 500 ppm Potassium Permanganate solution may be practiced.

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

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

### **Advisories:**

- As **dense /dense to very dense fog** very likely in parts of Bihar, Jharkhand, Sub Himalayan West Bengal & Sikkim and Odisha during next 3-5 days, monitor the standing crops for incidence and spread of pest diseases; potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.

### **Bihar**

- In North East Alluvial Zone, apply 2<sup>nd</sup> or 3<sup>rd</sup> irrigation in timely-sown wheat as per the requirement; apply Nitrogen fertilizer in the form of Urea (65 kg Urea per hectare) after the third irrigation. Regularly monitor for blight disease in potato crop; if infestation occurs, spray Dithane M-45 @ 2.5g or Ridomil @ 1.5g per litre of water; to control cutworm infestation, spray Chlorpyrifos 20EC @ 2.5 kg in 1000 litres of water for one-hectare crop.
- In North West Alluvial Plain Zone, monitor for termite infestation in late-sown wheat crop; if infestation is observed, apply a mixture of 20 kg sand with Chlorpyrifos 20 EC @ 2 litres/hectare in the evening hours. Monitor for infestation of fruit borers in tomato; if infestation occurs, install pheromone traps @ 3-4 traps per acre.
- In South Bihar Alluvial Zone, undertake, carry out mulching in vegetable crops i.e. cauliflower, radish, pea, tomato, brinjal, chilli and capsicum. There is a chance of sucking pest attack in chilli crop; to control, apply Imidacloprid @ 1ml per litre of water under clear weather condition.

### **Jharkhand**

- In South Eastern Plateau Zone, apply Nitrogen @ 50 kg per hectare as top dressing in maize crop which is about 50-55 days old; apply irrigation in the field after earthing up. In present weather condition, monitor mustard crop for aphid infestation; if aphid population is above ETL, spray Imidacloprid @ 0.25ml or Dimethoate 30% @ 1ml of per litre of water.
- In Central & North Eastern Plateau Zone, prepare the field for planting improved varieties of cucurbitaceous vegetables like pumpkin, bitter gourd, cucumber, bottle gourd, etc. Carry out second weeding in green gram crop at 60 DAS; to get good yield, apply Urea solution twice at an interval of 10 days at the time of pod formation.
- In Western Plateau Zone, constantly monitor timely sown onion crop for thrips and purple blotch as the current weather conditions are favourable; as a preventive measure, spray Dithane M-45 @ 3g per litre of water with Teepol @ 1g/litre. Carry out nipping in gram crop at 30-40 DAS and before flowering stage.

### **Odisha**

- In Western Undulating Zone, for healthy production of paddy seedlings, apply 13-15 kg DAP and 10-12 kg MoP along with 200 kg of FYM and 200g Zn per 10 decimal as basal dose; if seedling blight infestation is noticed, spray Carbendazim 50% WP @ 2g/litre of water. To control weeds in groundnut crop, apply Imazethapyr 10% SL @ 3ml/litre of water within 15 DAS. Onion crop is at peak vegetative stage; carry out hoeing, weeding and application of second top dressing (Urea @ 35 kg/ac + MoP @ 18 kg/ac) followed by earthing up and irrigation.
- In East and South Eastern Coastal Plain Zone, provide light irrigation to vegetables and standing crops during morning hours. Cover the recently planted cole crops with paper pockets during night time to prevent from low temperature stress. Prepare wet nursery seed beds for paddy; irrigate the nursery field and puddle it 2-3

times followed by planking; apply 200 kg of FYM, 4 kg of DAP, 2.5 kg of MoP and 1 kg of Zinc sulphate during last puddling. Carry out planting of sugarcane crop; to prevent red rot disease, select resistant varieties like CO-7219, CO-8371, CO-8013, CO-8014, CO-6907, CO-7601 and CO-7602.

- In West Central Table Land Zone, complete the nursery preparation of paddy; apply well decomposed FYM on wet bed after sowing of seed to keep it warm. Mustard crop is in flowering stage; to control aphids and mustard sawfly, spray Imidacloprid @ 0.3ml or Thiamethoxam @ 0.3g and Chlorpyrifos @ 0.5-2ml (as per severity of attack) per litre of water. To control diamond back moth in cauliflower, spray Spinosad 45 SC @ 0.5ml or Fipronil 5% SC @ 2ml per litre of water.
- In North Eastern Ghat Zone, maintain a thin film of water for proper establishment and early growth of rice seedlings. Late-sown garden pea crop is in flowering stage; pea thrips may be seen sucking the flowers, stems and pods; to control, apply Roger 0.03% or Malathion 0.1% to the crop. Potato crop is in early vegetative stage; if fruit borer infestation prevails, spray Chlorantraniliprole 18.5% S.C @ 80ml/acre or Flubendiamide 39.5 % M/M S.C @ 40ml/acre or Indoxacarb 14.5% S.C. @ 200ml/acre.
- In North Central Plateau Zone, complete the sowing of *rabi* crops. Mustard and toria crops are in pod filling stage; carry out top dressing of Urea. To control fruit borer in tomato, spray Flubendiamide @ 5g/10 litres of water. To control aphid infestation in cabbage, spray Dimethoate 30% EC @ 6ml/10 litres of water or Malathion 50% EC @ 1.5ml/litre of water.
- In North Western Plateau Zone, complete the nursery preparation of paddy by the end of January. To control leaf spot in chilli crop, spray Abamectin 1.9% @ 2ml or Ethion @ 2ml per litre of water. Carry out weeding in 25 to 30 days old sweet potato crop; apply Potassium @ 37.5 kg per acre.
- In Mid Central Table Land Zone, cover the vegetables nursery to avoid poor germination due to low temperature. Carry out transplanting of 25-30 days old paddy seedlings at a spacing of 20 x15 cm, plant 2-3 seedlings per hill for high yielding varieties; apply 35 kg DAP, 30 kg MoP and 8 kg Urea per acre during last puddling. There may be chances of white rust disease in mustard, to control, spray Metalaxyl @ 2g/litre of water.
- In South Eastern Ghat Zone, to control weeds in maize crop, spray Tembotrione 34.4% SC @ 115ml/acre in 200 litres of water at 20-25 DAS. Carry out top dressing of Urea @ 35 kg/acre for mustard and 22 kg/acre for toria at 21 DAS. To increase yield in cauliflower, spray Borax (10.5% B) @ 3g/litre of water at 30 and 50 DAS. There are chances of early blight infestation in tomato; if observed, spray Azoxystrobin 18.2% + Difenconazole 11.4% SC @ 1ml/litre of water or Captan 50% WP @ 2.5g/litre of water.
- In North Eastern Coastal Plain Zone, continue land preparation for sowing pulses like green gram, black gram and pea; sow the seeds after treating with Carboxin + Thiram @ 2g/kg of seed. Irrigate the mustard and rapeseed crops; carry out hoeing and weeding (wherever necessary) at 3 weeks stage; carry out thinning before top dressing to maintain optimum plant population. To reduce incidence of leaf blight in newly planted coconut saplings, spray Metalaxyl + Mancozeb @ 2g/litre of water.
- In Eastern Ghat High Land Zone, complete the nursery raising of paddy; for productions of healthy seedlings, apply 160 kg FYM along with 3.5 kg DAP, 2.7 kg MoP, 2.1 kg Urea and 160g Zinc for 8 decimal area as basal dose. Carry out top dressing of Urea @ 35 kg/acre in maize crop at 20-25 DAS. Apply 43 kg Urea and 20 kg MoP per acre in brinjal at 40 DAT followed by earthing up and irrigation.

## **West Bengal & Sikkim**

### **Sub-Himalayan West Bengal**

- In Hill Zone, mustard crop is at flowering stage; present moist and cold weather is favorable for white rust infestation; to control, spray Metalaxyl 8% + Mancozeb 64% @ 37g in 15 litres of water during bright sunny days.
- In Old Alluvial Zone, rice crop is at seedling growth stage; cover the bed with polythene sheet to protect seedlings from cold weather. Fall armyworm infestation may arise in maize crop; to control, spray Emamectin Benzoate 7g/15 litres of water or Emamectin Benzoate + Novaluron 5-6g/15 litres of water during evening time; carry out hand weeding in 20-21 days old plants; to protect the crop from cold injury,

apply appropriate amount of Potash; apply Nitrogen @ 3 kg/*bigha* at knee high stage.

- In Terai Zone, to control weeds in wheat crop where the plants are 30-35 days old, spray Sulfosulfuron 75 WG @ 3-3.5g/*bigha*. To control weeds in maize crop, spray Atrazine 50% WP 1-2 kg/500-700 litres of water per ha. Mustard crop is in vegetative stage; apply Urea @ 9 kg/*bigha* at 30-35 DAS; apply light irrigation before fertilizer application; spray SSP to overcome Sulphur deficiency.

#### **Gangetic West Bengal**

- In Coastal Saline Zone, *boro* paddy (late-sown variety) is at seedling growth stage; to prevent blast infestation, apply Tricyclazole @ 0.5g per litre of water. Prepare field for transplanting early sown *boro* paddy; during land preparation of main field, follow the dose of basal fertilizer as Urea @ 9 kg/*bigha*, SSP @ 54 kg/*bigha* and MoP @ 11 kg/*bigha*. Lentil and Lathyrus crops are at vegetative stage; to control rust and downey mildew due to foggy weather, apply Dithane M-45 @ 2.5g or Chlorothalonil @ 2ml per litre of water.
- In New Alluvial Zone, *boro* paddy is in seedling growth stage; root rot attack is found where seeds were sown in the field with rotten mud; apply Gypsum or Zinc with Potash fertilizer. Weather is suitable for sowing of winter cabbage, cauliflower, tomato, chilli and brinjal; prepare the land thoroughly; before sowing, treat seeds with Trichoderma viride @ 5g or Mancozeb 75% W.P. @ 2.5g per litre of water. In **24-Pargana-North** district, to control collar rot infestation in lentil crop, spray Mancozeb @ 2g/litre of water. In **Murshidabad** district, to manage cut worm in maize crop, apply Chlorpyrifos 1.5% dust at the root zone.
- In Laterite and Red Soil Zone, seedling blight may occur in the case of *boro* rice due to low temperature; irrigate the field in the afternoon and drain the water in the morning. If there is aphid attack at the vegetative stage in mustard crop, spray Imidacloprid @ 1ml/1.5 litres of water.

#### **Andaman and Nicobar Islands**

- Carry out sowing of green gram and black gram seeds at 30 X 10 cm spacing. Make pits at 2 X 2 m spacing and sow gourds (pumpkin, bottle gourd, bitter gourd, etc.). After applying FYM 12 t/ha, carry out transplanting of brinjal at 75 X 60 cm spacing. To avoid produce loss, harvest all the matured cloves before buds get opened or when buds are pinkish tinge developed. Harvest black pepper when one or two berries in few spikes turn orange or red; sun-dry for 5-7 days.

#### **Animal Husbandry**

- In Andaman and Nicobar Island, to control outbreak of coccidiosis, provide Amprolium in the water provided to poultry.
- In West Bengal, do not allow grazing at early morning; vaccinate cow and goats against FMD (Foot & mouth disease).
- In Odisha, provide sufficient green grass. Lactating animals should be provided with concentrate mix for better production. Keep the poultry house clean and damp-free.
- In Jharkhand, provide anthelmintic drugs to cattle of all ages. Administer vaccine to protect goats against PPR disease.

#### **Fishery**

- In West Bengal, due to low-temperature in winter, metabolic rate decreases and the food intake capacity of fish is reduced; use low protein diets with a protein percentage of around 20% and fat percentage within 3-4%; it is also necessary to reduce/stop adding organic manures such as cow dung, poultry droppings in the ponds as the rate of decomposition of organic manures declines due to poor microbial activity during winters.

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

**Realised rainfall:** Weather remained mainly dry over the region.

#### **Advisories:**

##### **Maharashtra**

- In **Konkan**, as dry weather is expected during next 5 days, continue harvesting of black pepper. Apply irrigation to rice nursery, lablab bean, vegetables and orchards. Maintain 2-3 cm water level in rice fields. Undertake land preparation for sowing of summer *okra* and groundnut. Due to dry and cold weather during

last week, attack of hoppers, thrips and powdery mildew may observed on mango inflorescence, spray Lambda Cyhalothrin 5%EC @ 6 ml + Hexaconazole @ 5 ml per 10 litres of water at the time of flower bud initiation. There is possibility of incidence of powdery mildew in chilli. if incidence is noticed, spray Hexaconazole 5% @ 5 ml per 10 litres in water.

- In Madhya Maharashtra, as dry weather is expected during next 5 days, undertake harvesting of pigeon pea, apply irrigation to sorghum, wheat, vegetables and fruit orchards, undertake intercultural operations in wheat, gram and sorghum. Continue land preparation for sowing of summer groundnut. Due to cloudy and humid weather in the last week, aphid infestation observed in wheat, spray Thiamethoxam 25% WG 1 g per 10 litres of water per ha, fall army worm infestation observed in maize, spray Lambda Cyhalothrin 9.5% ZC 5 ml per 10 litres of water. Onion crop is affected by thrips and blight, spray Lambda Cyhalothrin 6 ml or Tebuconazole 10 ml + Sticker 10 ml per 10 litres of water, incidence of early blight and various fungal infections observed in tomato, spray Mancozeb 25 g or Tebuconazole 10 ml or Metalaxyl + Copper Oxychloride 25 g per 10 litres of water. Due to temperature fluctuation there is possibility of infestation of sap sucking pests, thrips and blight disease on onion, for its control spray Lambda Cyhalothrin 5% EC 6 ml + Tebuconazole 10 ml per 10 litres of water.
- In Marathwada, as dry weather is expected during next 5 days, undertake harvesting of ginger & turmeric and threshing of pigeon pea, preparatory tillage operations for summer groundnut. Apply irrigation to rabi sorghum, safflower and wheat. Due to cloudy weather during last week, infestation of pod borer is observed in timely sown chickpea, spray 5 % NSKE or Quinalphos 25% EC @ 20 ml or Emamectin Benzoate 5 % @ 4.5 gm per 10 litres of water. Infestation of downy mildew in cucurbits crop may observed, spray Azoxystrobin 23% SC @ 2.5 g per 10 litres of water.
- In **Vidarbha**, as mainly dry weather is expected during next 5 days, continue harvesting of matured pigeon pea. Continue transplanting of summer rice. Undertake sowing of summer groundnut, sesame, sunflower, watermelon & muskmelon with assured irrigation. Apply need-based protective irrigation in sorghum, wheat, linseed, mustard, safflower, vegetables and fruit orchards as per requirement. As light rainfall at isolated places expected on 23<sup>rd</sup> January, undertake picking of cotton and harvesting of matured pigeon pea & vegetables as early as possible and store the harvested produce at safer places. Due to cloudy weather during last week, incidence of pod borer (*Helicoverpa*) is observed in chickpea, spray Azadirachtin 1500 PPM @ 25 ml or Quinalphos 25% EC @ 20 ml per 10 litres of water. Infestation of rust and leaf blight is noticed in wheat, spray Mancozeb 75 % WP @ 20 to 25 g per 10 litres of water. As mainly dry weather is expected during next 4 days.

## **Gujarat**

- In Middle Gujarat, carry out picking of cotton and matured fruits of tomato, chilli & brinjal. To control leaf spot disease in bidi tobacco, spray Hexaconazole 5 SC @ 10ml or Propineb 70 WP @ 30g or Carbendazim 50 WP @ 5g in 10 litres of water. To control wilt disease in chick pea, spray Carbendazim 50WP @ 10g in 10 litres of water.
- In North Gujarat, apply light irrigation to standing crops during evening hours to minimize the effect of cold weather. To protect crop against sucking pests like jassid, thrips and aphid spray Imidachlopride 30.5 % SC @ 4 ml in 10 litres of water. To control of aphid in mustard, spray Phosphamidon @ 3ml or Dimethoate @ 10ml in 10 litres of water. To control blight in cumin, spray Mancozeb @ 35g in 10 litres of water and 25 ml concentrated desi soap solution.
- In South Gujarat, planting of sugarcane may be done before month of February. Carried out harvesting of okra, brinjal, tomato and chilli as per the tenderness of fruit. To control pod bore in pigeon pea or chickpea, spray Chlorantraniliprole 18.5 SC @ 3ml or Flubendiamide 20 WG @ 5g or Indoxacarb 14.5 SC @ 8ml or Lufenuron 5.4 EC @ 12ml in 10 litres of water. To control fruit and shoot borer in brinjal, spray Neem oil @ 50ml or Beauveria bassiana @ 50g or Profenophos @ 30ml in 15 litres of water.
- In Saurashtra & Kutch, carry out timely picking of cotton. Carried out land preparation for summer groundnut. To control gum disease in fennel do not over irrigate as well as over use of chemical fertilizer. Carryout land



preparation for sowing of summer crops viz. sesame, green gram, groundnut, watermelon, bajra etc. To control aphid infestation in chickpea and coriander, spray Thiamethoxam @ 5 g/ 10 litre of water.

#### **Animal Husbandry**

- In Gujarat, feed animals with a mixture of green grass + hay + minerals + dry feed. Newly born calves should be protected from cold condition. All milch animals should be kept in cattle sheds during night and their udders must be properly cleaned with Zinc oxide or boric powder. Vaccination is recommended against Hemorrhagic Septicemia. FMD vaccination should be done. Carried out Sowing of maize for the fodder purpose.

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

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

#### **Advisories:**

##### **Madhya Pradesh**

- As **cold wave** conditions in isolated pockets over Madhya Pradesh during next 48 hours, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/gunny bags.
- As **dense fog** very likely in isolated pockets of Madhya Pradesh during next 24 hours, monitor the standing crops for incidence and spread of pest diseases; potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
- In Satpura Plateau Zone, cotton crop is attaining boll opening stage; keep the field neat & clean for picking cotton. Keeping in view of weather conditions, irrigate the mustard crop which is about 55-60 days old. Postpone irrigation to gram crop at flowering stage to prevent flower drop; if the crop is at pod formation stage, install bird perches to control pod borers.
- In Malwa Plateau Zone, carry out thinning and weeding in late-sown mustard crop. Continue transplanting of onion. If symptoms of termite are noticed in wheat crop, apply a mixture of 20 kg sand and 2 litres of Chlorpyrifos 20 EC in the evening hours followed by irrigation.
- In Jhabua Hills Zone, continue picking of early-sown brinjal, spinach, cluster bean, cucurbits, okra, chilli, etc. Apply second irrigation to wheat crop at jointing stage (35-40 DAS) and third irrigation at head initiation stage (50-55 DAS); spray nano urea @ 1.25 litres/ha. Timely irrigate vegetable pea, potato, garlic, cauliflower, cabbage, radish, fenugreek, spinach, etc. and apply recommended dose of fertilizers.
- In Nimar Valley Zone, do not irrigate chickpea crop during the flowering stage; spray 19:19:19 NPK @ 75g/pump for more flowering. To control root aphids and stem borer in wheat crop, spray Thiamethoxam 12.6% + Lambda cyhalothrin 9.5% ZC @ 200ml per hectare. Spray Fipronil 5% EC @ 400ml/acre in 200 litres of water for the control of thrips in onion.
- In Bundelkhand Zone, due to foggy weather and increased humidity, potato and tomato crops may be affected by late blight; to control, spray Tebuconazole @ 1.5g per litre of water. Apply irrigation to the vegetables and other standing crops.

##### **Animal Husbandry**

- In Madhya Pradesh, to control ectoparasites, use Butox and also deworming to cattle; feed the animals with 50-60g of salt mixed in water. Vaccinate goats against PPR disease.

##### **Chattisgarh**

- In **North Hill Zone**, continue planting of improved varieties of *rabi* potato. Apply mulching and light irrigation to protect potato, tomato, leafy vegetables, vegetables seedlings and banana, papaya, moringa plants against low temperatures. Don't keep harvested rice and other farm produces in open places. Spray Dithane M-45 or Ridomil @ 2.5g per litre of water for control of blight in potato. Irrigate late sown wheat crop at 40-50 days age, after second dose of urea. For control of powdery mildew in pea, spray Sulfex @ 3g/litre water. For control of purple blotch of onion, spray Saaf fungicide @ 2g per litre of water. Spray Indoxacarb 14.5 SC @ 353-400 ml /ha for control of pod borer in pigeon pea.
- In **Bastar Plateau Zone**, continue planting of potato and transplanting of brinjal after necessary seed treatment. Use mulch in line sown *rabi* crops. In view of decreasing temperature, cover the vegetable

seedlings with mulches such as polythene or crop residues in night. Arrange irrigation in 55 to 60 days old wheat crop and give second dose of nitrogen. For control of leaf blight in mustard, spray Mancozeb @ 3 g/litre or Propiconazole @ 1 ml per litre at 15 days interval for 2-3 times.

- **In Chhattisgarh Plain Zone**, to mitigate the adverse effect of prevailing low temperatures, irrigate cauliflower, cabbage, tomato, peas, chilli and brinjal crops regularly after carrying out weeding and hoeing. For the management and monitoring pod borer of pigeon pea, install pheromone traps and T-shaped pegs (for birds to sit); change the pheromone septa every 15 days. Spray Indoxacarb 14.5 SC @ 353-400 ml /ha for control of pod borer in pigeon pea.

#### **Animal Husbandry**

- In **Chhattisgarh**, to protect cattle from cold temperature, keep the animals in the cattle shed with concrete/brick roof. Provide fresh drinking water to milch animals; avoid giving extremely cold water. If windows are not installed in the cattle and poultry house gunny bags should be hanged to prevent cold air. Cattle (milch and non milch) must be fed with mineral mixture @ 25-30g per day.

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

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

#### **Advisories:**

- As **cold wave to severe cold wave** conditions very likely in isolated pockets of Punjab, Haryana- Chandigarh during next 48 hours and **cold wave** conditions in isolated pockets over Himachal Pradesh during next 48 hours, over West Rajasthan during next 72 hours, over East Rajasthan on 20<sup>th</sup> & 21<sup>st</sup> and over Punjab, Haryana- Chandigarh on 21<sup>st</sup> and 22<sup>nd</sup> January 2024 and **Ground frost** conditions very likely in isolated pockets over Uttarakhand during next 72 hours, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/gunny bags.
- As **dense /dense to very dense fog** very likely in parts of Punjab, Haryana- Chandigarh, Himachal Pradesh, Uttarakhand, Uttar Pradesh and Rajasthan during next 3-5 days, monitor the standing crops for incidence and spread of pest diseases; potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.

#### **Uttar Pradesh**

- In Western Plain and Tarai Zone, apply second irrigation to mustard at silique development stage. For control of Mahu in mustard crop, spray Thiamethoxam 25 WG @ 125 g in 800 litres of water per hectare. Due to high relative humidity, infection of blight may occur in potato and tomato; if symptoms appears, spray Carbendazim @ 1 g / litre of water or Dithane-M-45 @ 2 g / litre of water. Apply light irrigation in wheat to protect against frost. To get good ratoon, harvest the main sugarcane crop upto 25<sup>th</sup> February. Apply mulching in cauliflower, onion, garlic, chilli, tomato, capsicum, brinjal to protect from frost.
- In SW Semi-arid Zone and Central Plain Zone, apply second irrigation in wheat at tillering stage, 40-45 days after sowing. Apply second irrigation in mustard 55-65 days after sowing, before flowering. To prevent aphid pest in mustard crop, apply Chlorpyrifos 20% EC@ 1 litre/ha or Monocrotophos 36% SL @ 500 ml/ha in 600-700 litres of water. Irrigate the gram crop before it flowers. For control of outbreak of cutworm (caterpillar insect) in chick pea, spray Chlorpyrifos 50% EC + Cypermethrin 5% EC @ 2 litres / ha in 500-600 litres of water.
- In Bundelkhand Zone, to control of rodents in wheat crop, apply Zinc phosphide or Aluminium phosphide. Second irrigation may be done at 50-55 days after sowing in timely sown wheat crop. For control of aphid attack in mustard and lentil crop, spray one of the following insecticides on the appearance of aphid; Emamectin Benzoate @ 0.2g, Imidacloprid 17.8% @ 0.25 ml, Thiamethoxam 25 WG @ 0.2 g, Dimethoate 30 EC @ 1 ml per litre of water. To control caterpillar in chick pea crop, apply Quinalphos 25 EC@ 1 litre or Emamectin Benzoate@ 200 g/ha with 500- 600 litres of water.
- In North Eastern Plain zone, if termite infestation is observed in in late sown wheat, apply mixture of 20kg

sand with Chlorpyrifos 20EC@2 litres/hectare in the evening hour. For monitoring pod borer in gram, install Pheromone trap @ 3-4 traps per acre, if flowering has reached 10-15%. “T” shaped bird perches in and around crop field may be installed for controlling insect population. If aphid population reaches above ETL in mustard, spray Imidacloprid @ 0.25 ml per litre of water. Due to high relative humidity, infection of blight may occur in potato and tomato; monitor crop, if symptoms appears, spray Carbendazim @ 1 g / litre of water or Dithane-M-45 @ 2 g / litre of water.

- In Eastern Plain and Vindhya Zone, undertake weeding and light irrigation in standing crops. In mustard crop, if insect population of aphid reaches above ETL, spray Imidacloprid @ 0.25 ml per litre of water. Due to high relative humidity, infection of blight may occur in potato and tomato; monitor crop, if symptoms appears, spray Carbendazim @ 1 g / litre of water or Dithane-M-45 @ 2 g / litre of water.

### **Punjab**

- In Punjab, protect young plants from cold wave by covering them with thatches made of grass, straw. Cover young nursery plants and give light irrigation to save crops from cold weather.
- In Western Zone, weather is favorable for incidence of yellow rust in wheat, if symptoms are noticed, spray Caviet @ 200g or Tilt or Bumper @ 200 ml in 200 litres of water/acre. Provide light irrigation to potato. The late and early blight of potato may be checked by spraying the crop with Indofil M 45/Kavac @ 500-700 g/acre. Aphids attack can be reduced by spraying Metasystox 25 EC@ 300 ml in 100 litres of water per acre.
- In Undulating Plain Zone, apply irrigation to crops. Avoid irrigation to sarson /raya to manage sclerotinia stem rot. Observe 12-16 widely scattered plants from an acre and if aphid population is above ETL, spray Thiamethoxam 25 WG @ 40 g or Dimethoate 30 EC @ 400 ml or Chlorpyrifos 20EC @ 600 ml in 80-125 liters of water per acre.
- In Sub Montanae Undulating Plain Zone, undertake transplanting onion nursery. Regularly survey wheat crop for occurrence of yellow rust symptoms, spray Caviet /Opera /Tilt Bumper/Markzole @ 0.1% or Nativo @ 0.06%. Avoid irrigation to sarson /raya during the period to manage sclerotinia stem rot.
- In Central Plain Zone, avoid irrigation to raya during the period to manage Scleractinia stem rot. Late blight infection has occurred or is likely to be infected in potato, give 2 sprays of Ridomil Gold 60 WP 700 grams or Sectin 60 WG 700 grams or Curzate M-8 700 grams or 250 ml Revus 250 SC per acre at 10 days interval. Subsequently give one spray of Indofil M45/Kavach @500-700g or Copper oxychloride 50 WP@750-1000g per acre using 250-350 litres of water.
- In Western Plain Zone, undertake sowing of sunflower. Carry out thinning and weeding in late sown mustard. Weather is congenial for aphid incidence in mustard/raya crop. Apply light irrigation to sugarcane. Harvest early maturity varieties of sugarcane. Avoid irrigation to sarson /raya to manage Sclerotinia stem rot.

### **Haryana**

- In Haryana, apply irrigation to protect standing crops from ground frost. Keeping weather in mind, keep constant monitoring of Chempa insect in mustard crop. In the initial stage, cut off the affected part and destroy it. If mustard aphid is seen, apply Methyl Dimeton 25 EC or Dimethoate 30 EC@ 250 to 400 ml in 250 to 400 litres of water/ per acre. The weather is favourable for white rust disease in mustard, spray Dithane M-45@ 600-800 g in 250 to 300 liters of water and spray 2-3 times per acre at an interval of 15 days.

### **Delhi**

- In Delhi, continue transplanting of late varieties of cauliflower, cabbage, knolkhol, undertake sowing of spinach, coriander, fenugreek and transplanting of onion seedling. Due to high relative humidity, infection of blight may occur in potato and tomato, monitor crop and if symptoms appears spray Carbendazim @ 1g / litre of water or Dithane-M-45 @ 2g / litre of water. For monitoring of the pod borer in the gram crop, install pheromone trap @ 3-4 traps per acre if flowering has reached 10-15%. “T” shaped bird perches in and around crop field for controlling insect population. In present weather condition, constantly monitor aphid in mustard crop. In early stage cut and destroy the infested part of the plant.

## **Himachal Pradesh**

- In Mid Hills Sub Humid Zone, carry out hand weeding in pulses and oilseeds. Undertake transplanting of onion seedlings. Carry out mulching in between the rows of garden pea. Carry out weeding in cauliflower. Apply light irrigation to vegetables, in the evening, to protect the crop from frost. To control yellow rust in wheat, spray Propiconazole 25 EC (Shine/Tilt 0.1%).
- In Sub-Montane and Low Hills Sub Tropical Zone, apply irrigation to wheat. Apply mulch in between the rows of vegetables. Carry out earthing up operation in potato. Apply mulch in ginger and turmeric. To control downy mildew in cruciferous vegetables, spray Ridomil M-Z @ 25 g per litres of water at 15 days interval.
- In High Hills Sub Temperate Wet Zone, carry out earthing up operation in potato. Carry out hoeing and weeding in garlic. Apply irrigation at an interval of 8-10 days during vegetative growth and 10-15 days during bulb formation and development. Due to high relative humidity, infection of blight may occur in potato and tomato. If symptoms appear, spray Carbendazim @ 1 g / litre of water or Dithane-M-45 @ 2 g / litre of water.

## **UTs of Jammu & Kashmir and Ladakh**

- In Sub Tropical Zone, carry out weeding in onion and garlic. Complete sowing of vegetables (bitter gourd, bottle gourd, pumpkin, chilli, capsicum, brinjal etc.) in poly houses. Apply irrigation to wheat, pea, Gobi sarson and mustard as per requirement. Complete harvesting of potato. If wilt and blight attack is observed in chickpea, spray Bavistin /Carbendazim @ 3g/litre of water.
- In Intermediate Zone, carry out weeding and hoeing in onion and garlic. Rogue out wilt and root rot infected plants in field pea. Keep vigil on appearance of aphid attack on mustard, if observed, install 3 - 5 yellow sticky traps/kanal. Spray neem oil @ 2 ml/litre of water during aphid infestation on clear sunny day.

## **Uttarakhand**

- In Bhabar and Tarai Zone, undertake harvesting of matured late sown rapeseed. Apply irrigation to mustard at flowering and pod formation stage. Carry out weeding and hoeing in late sown barley and vegetable pea. To control alternaria blight in mustard, spray Mancozeb 75% @ 2kg/ha in 800- 1000 litres of water, 2-3 times at an interval of 10 days and in case of white rust occurrence, spray Metalaxyl 35 WS or Ridomil MZ 72 @ 2.5kg/ha in 800-1000 litres of water, 2-3 times at an interval of 10 days.
- In Hill Zone, wrap the banana bunches with porous polythene/cotton cloth to protect from cold wind. Undertake harvesting of broccoli. Carry out weeding in mustard and weeding & hoeing in lentil & vegetable pea. Undertake harvesting of leafy vegetable like fenugreek, coriander, spinach and rye, radish etc. If symptom of blight appears in potato, spray Dithane-M-45 @ 2.0 g / litre of water.

## **Poultry**

- Jammu & Kashmir - In Sub Tropical Zone, ensure adequate lighting and heating within poultry houses. Prevent crowding of chicks. Ensure the availability of clean drinking water. Protect the poultry shed from cold weather by covering it with gunny bags. Install well-insulated windows that function as sun traps during winter.

## **Rajasthan**

- In Semi-Arid Eastern Plain Zone, to protect gram crop from pod borer, spray Quinalphos 25 EC or Malathion 50% EC @ 1 ml per litre water. In case of insect infestation in mustard crop, spray Dimethoate 30 EC @ 1 ml or Imidacloprid 17.8 SL @ 1 ml per litre of water.  
Apply irrigation in vegetables & crops as per the requirement.
- In Arid Western Plain Zone apply irrigation in mustard at green seed stage and keep continuous monitoring of aphid insect in crop.
- In Transitional Plain Zone of Inland Drainage, for termite control in wheat and barley, mix Chlorpyrifos 20 % EC @ 4 litres in 80-100 kg of soil and spread it evenly over one hectare and apply light irrigation. To protect sensitive crops like mustard, coriander, potato, tomato, gram and brinjal, from frost attack, spray dilute Sulphuric acid @ 0.1% at flowering stage or apply light irrigation to these crops.
- In Southern Humid Plain Zone, if attack of aphids is observed in mustard, spray Dimethoate 30 EC @ 1 litre



per hectare. Irrigate wheat crop and *rabi* maize as per requirement.

- In Hyper Arid Partially Irrigated Western Zone, in mustard crop spray 0.1 % solution of Sulphuric acid to protect mustard crop from frost. Protect field crops and orchards from cold wave and frost, spray 0.1% sulfuric acid (1 ml sulfuric acid per litre of water).
- In Flood Prone Eastern Plains Zone, to control early blight of potato, spray Propiconazole@ 0.5ml /litre water or 300ml/ha dissolve in 600 litres water. For control of white rust in mustard, spray with Ridomil MZ 2%. To manage gram pod borer in early stage hand picking should be done.
- In Irrigated Northwestern Plains Zone, to save mustard, wheat, potato, pea crops from ground frost/cold injury, spray Sulphuric acid or Dimethyl sulpho-oxide @ 1ml per litre of water in 100-125 litre solution per bigha. To save young plant of Kinnow from cold wave and frost, cover them with polyethene and straw. Harvest matured sugarcane.
- In Sub-Humid Southern Plains & Aravalli Hill Zone, if low temperature continues for two weeks, white rust infection may start in mustard crop, if rust appears spray Mancozeb @ 0.2%/ha. To control aphid in mustard crop dust Methyl parathion 2% or Malathion 5% dust@ 20-25 kg /ha. Spray 2% urea for proper growth of pods in pea crop. Apply third irrigation in wheat at late jointing stage.
- In Southeastern Humid Plains, complete picking of cotton. In the late sown wheat crop, give the remaining half the amount of nitrogen at the time of first irrigation.

#### **Livestock**

- Make proper arrangements to protect animals from low temperatures. Give food supplements, mix vitamins and energy food material in their feed. Considering the change in weather, keep animals under shed.

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