



National Agromet Advisory Service Bulletin

Friday 1st February 2019
(For the period 1st to 6th February 2019)



Issued by
India Meteorological Department

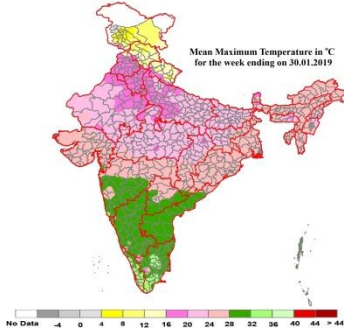
Weblink For

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

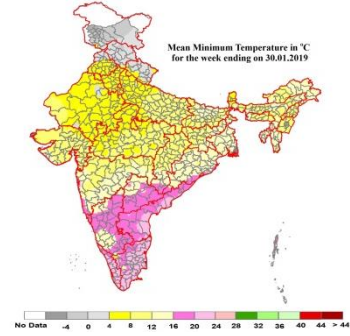
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 30.01.2019

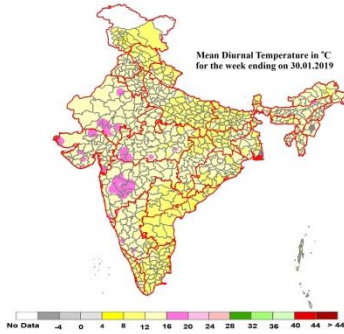
Mean Maximum Temperature (°C) for the week ending on 30.01.2019



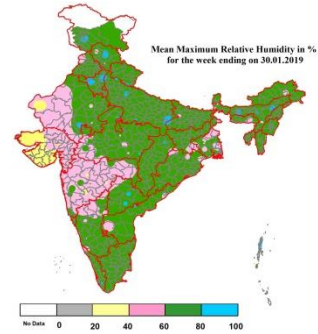
Mean Minimum Temperature (°C) for the week ending on 30.01.2019



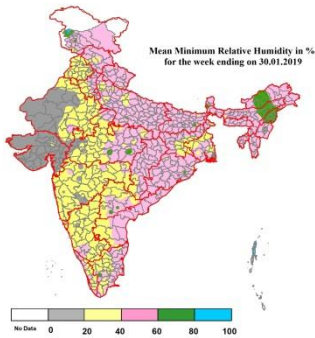
Mean Diurnal Temperature Variation (°C) for the week ending on 30.01.2019



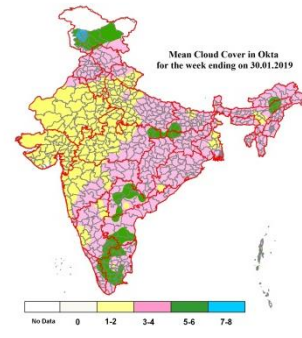
Mean Maximum Relative Humidity (%) for the week ending on 30.01.2019



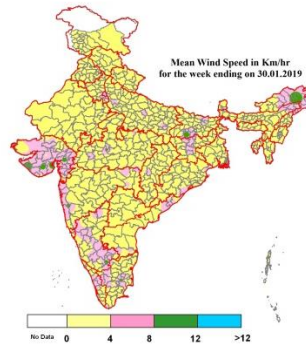
Mean Minimum Relative Humidity (%) for the week ending on 30.01.2019



Mean Cloud Cover (okta) for the week ending on 30.01.2019

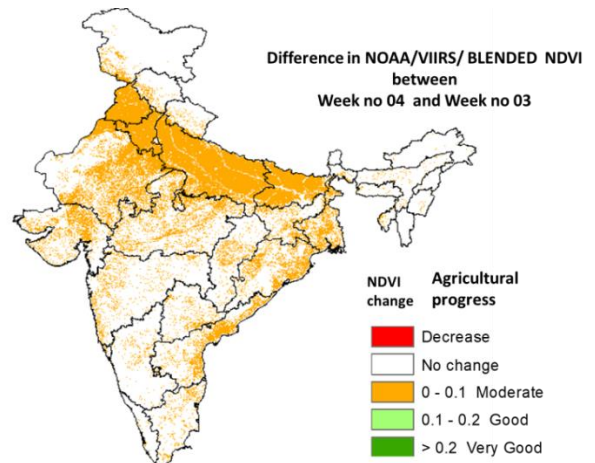
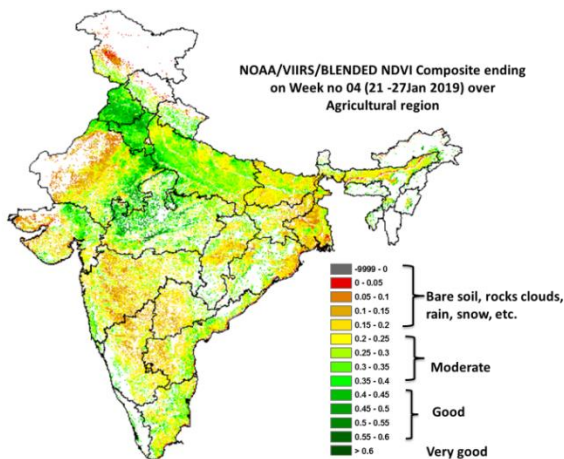


Mean Wind Speed (km/hr) for the week ending on 30.01.2019



NOAA/VIIRS BLENDED NDVI composite for the week number 04 (21 - 27 January 2019) over Agricultural regions of India

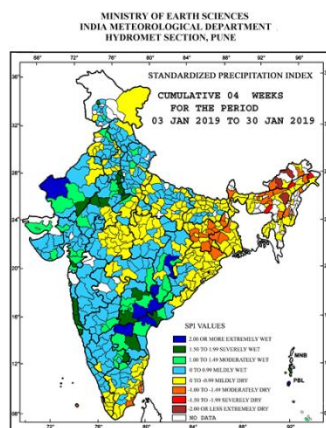
Difference in NOAA/VIIRS/BLENDED NDVI between week number 04 and week number 03



- Agriculture vigour is good at most places over Punjab; at many places over West Madhya Pradesh, East Rajasthan & Haryana; at a few places over North Gujarat & West Uttar Pradesh and at isolated places over Tamilnadu, Coastal Andhra Pradesh, North Chhattisgarh, Southern Kerala, Saurashtra, Coastal Karnataka, East Madhya Pradesh and Jharkhand. It was moderate over rest of the country.

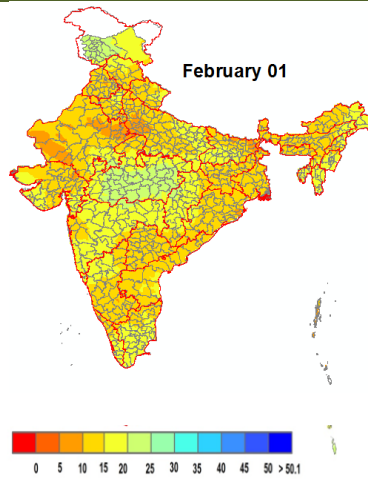
- Moderate difference in agricultural vigour was noticed at most places over Punjab, Haryana, Uttar Pradesh & Bihar; at many places over Rajasthan, West Bengal, Gujarat, West Madhya Pradesh and Coastal Andhra Pradesh and at a few/isolated places over rest of the country.

**Standardised Precipitation Index
Cumulative 4 weeks for the period 3rd January to 30th January 2019**

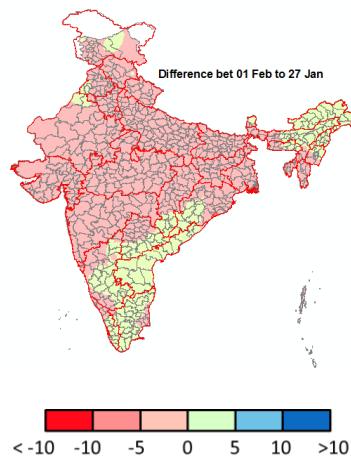
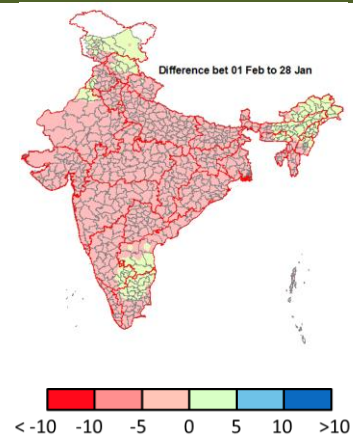
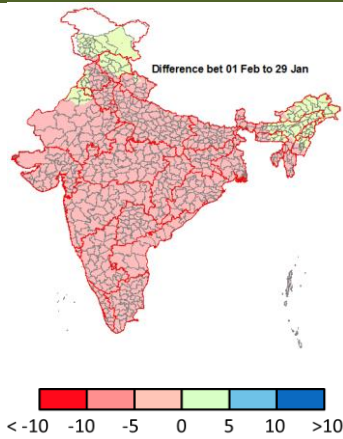
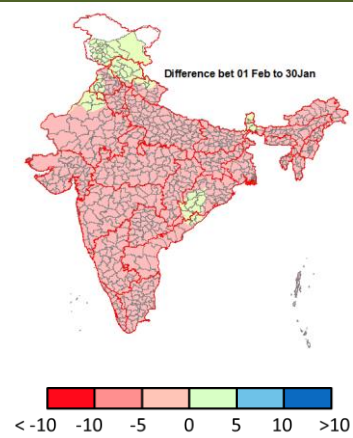
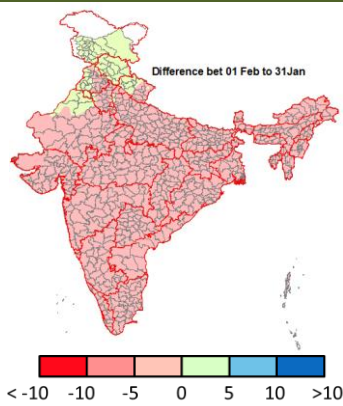


- Extremely/severely wet conditions experienced in few districts of Delhi; Andhra Pradesh; Telangana; North & Middle Andaman, South Andaman districts of Andaman & Nicobar Islands; Mewat, Faridabad districts of Haryana; Kupwara district of Jammu & Kashmir; Jaisalmer, Pali, Ajmer, Bharatpur, Tonk, Dholpur districts of Rajasthan; Navsari district of Gujarat Region; Raipur, Bijapur districts of Chhattisgarh; Kolar district of Karnataka.
- Extremely/Severely dry conditions experienced in few districts of Arunachal Pradesh; Lakhimpur, Karbi Anglong districts of Assam; East Khasi Hills district of Meghalaya; Tamenglong district of Manipur; Mon district of Nagaland.
- Moderately dry conditions experienced in few districts of Arunachal Pradesh; Assam; West Bengal; Jharkhand; Mayurbhanj district of Odisha; Nagapattinam, Ramanathapuram, Tiruvarur, Karaikal districts of Tamil Nadu & Puducherry; Lakshadweep district of Lakshadweep.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

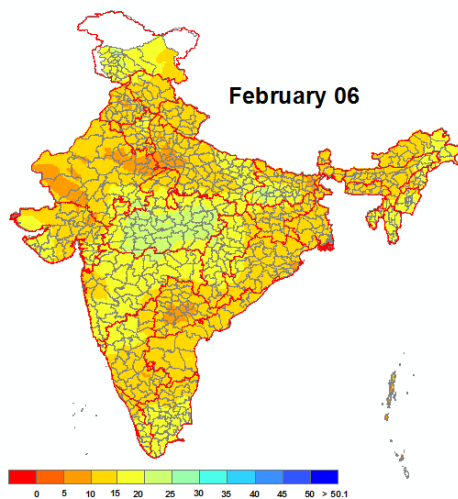
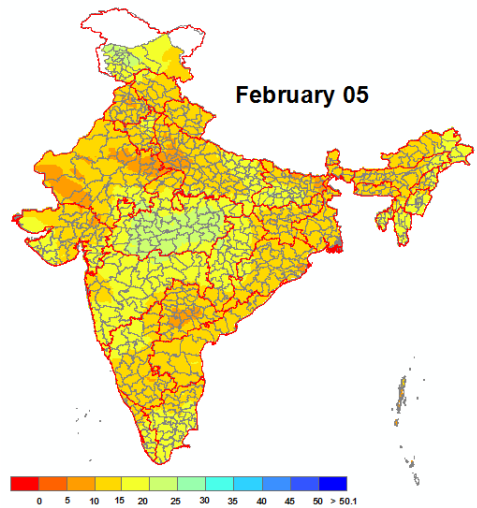
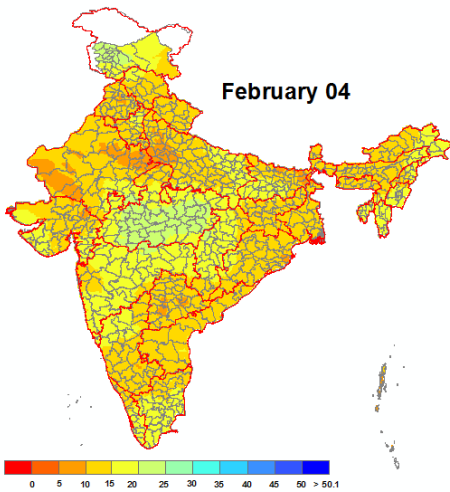
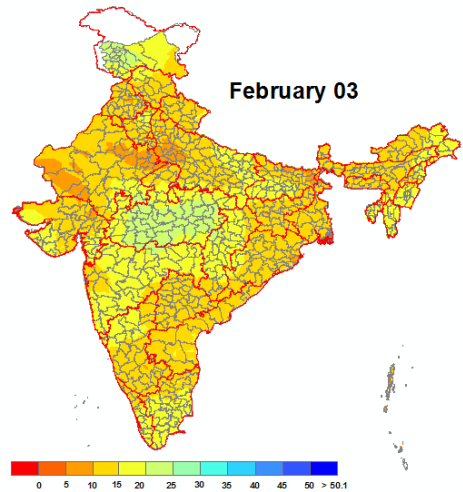
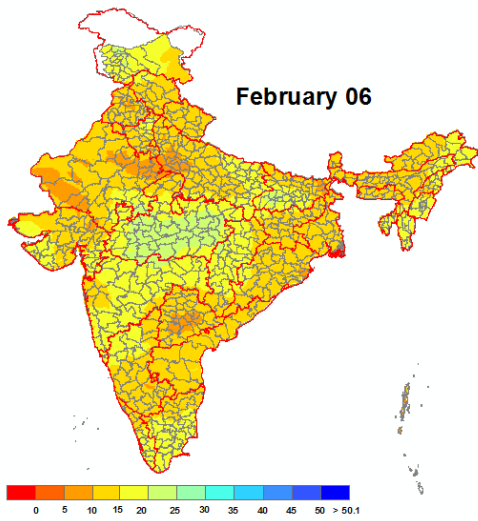
Daily Soil Moisture (mm) for 1st February 2019 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 2nd to 6th February 2019 (ending at 0830 IST)
for 60 cm depth**



Weather Forecast for next 5 days valid upto 0830 hours of 6th February 2019

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- Minimum temperatures likely to fall by 2-3°C on 2nd & 3rd February and rise thereafter over Gujarat state. Minimum temperatures are likely to rise by 2-3°C over Central & adjoining peninsular India during next 2-3 days. No significant change in minimum temperatures likely over rest of the country during same period.

5 Day Rainfall Forecast (Mid-day) 01 February 2019

Met-Sub-Division	01-Feb Today	02Feb Sat	03Feb Sun	04Feb Mon	05Feb Tue
1. Andaman & Nicobar Islands	ISOL	ISOL	ISOL	ISOL	ISOL
2. Arunachal Pradesh	ISOL	ISOL	ISOL	DRY	DRY
3. Assam & Meghalaya	DRY	DRY	DRY	DRY	DRY
4. N. M. M. & T.	DRY	DRY	DRY	DRY	DRY
5. S.H. West Bengal & Sikkim	ISOL	ISOL	ISOL	DRY	DRY
6. Gangetic West Bengal	ISOL	DRY	DRY	DRY	DRY
7. Odisha	DRY	DRY	DRY	DRY	DRY
8. Jharkhand	ISOL	DRY	DRY	DRY	DRY
9. Bihar	ISOL	DRY	DRY	DRY	DRY
10. East Uttar Pradesh	DRY	DRY	DRY	DRY	ISOL
11. West Uttar Pradesh	ISOL	DRY	DRY	DRY	SCT
12. Uttarakhand	SCT	DRY	DRY	ISOL	FWS
13. Haryana, Chd & Delhi	ISOL	DRY	DRY	DRY	SCT
14. Punjab	ISOL	DRY	DRY	ISOL	FWS
15. Himachal Pradesh	SCT	ISOL	DRY	FWS	WS
16. Jammu & Kashmir	FWS	ISOL	ISOL	FWS	WS
17. West Rajsthan	ISOL	DRY	DRY	ISOL	ISOL
18. East Rajasthan	ISOL	DRY	DRY	ISOL	ISOL
19. West Madhya Pradesh	DRY	ISOL	ISOL	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	ISOL	DRY	DRY	DRY
25. Marathwada	DRY	ISOL	DRY	DRY	DRY
26. Vidharbha	DRY	ISOL	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal Andhra Pradesh	DRY	DRY	DRY	DRY	DRY
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. Tamilnadu & Puducherry	ISOL	DRY	ISOL	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	DRY	DRY	DRY	DRY	DRY
34. South Interior Karnataka	DRY	DRY	DRY	DRY	DRY
35. Kerala	ISOL	DRY	DRY	DRY	ISOL
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

- **01 February (Day 1):** Dense to very dense fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and West Uttar Pradesh and Dense fog very likely at isolated places over northwest Madhya Pradesh. Cold wave conditions in isolated pockets very likely over Odisha and Gujarat State.
- **02 February (Day 2):** Dense to very dense fog at isolated places over Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and West Uttar Pradesh Cold wave conditions in isolated pockets very likely over Gujarat State.
- **03 February (Day 3):** Dense fog at isolated places over Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and West Uttar Pradesh

- **04 February (Day 4):** No weather warning.
- **05 February (Day 5):** No weather warning.

Weather Outlook for subsequent 2 days from 6th to 8th February 2019

- Widespread rain/snow with isolated heavy falls likely over western Himalayan region. Scattered to fairly widespread rain/thundershowers likely over northern plains and adjoining central and east India.
- Isolated rainfall likely over Kerala, Lakshadweep and Andaman & Nicobar Islands.
- Dry weather likely over the rest of the country.

Salient Advisories

- As dense to very dense/dense fog is very likely at isolated places over **Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and West Uttar Pradesh** from 1st to 3rd, dense fog at isolated places very likely over northwest Madhya Pradesh on 1st February, monitor the standing crops for incidence and spread of pest and diseases in potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
- As cold wave conditions in isolated pockets very likely over **Gujarat** on 1st and 2nd and over **Odisha** on 1st February, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from cold winds, cover young fruit plants with straw/polythene sheets/gunny bags. Cover banana bunches with porous polythene bags. To overcome cold injury and for better nursery growth in rice, cover the nursery beds with polythene sheet during night and remove in the morning. Irrigate the nursery every day in the evening and let the water out in the morning.
- As rain/snow likely at most/many places over **Jammu & Kashmir** on 1st, 4th and 5th, over **Himachal Pradesh** on 4th and 5th, over **Uttarakhand** on 5th, rain/thundershowers at many places over **Punjab** on 5th February, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. In Valley Temperate Zone of **Kashmir**, provide drainage channels in wheat, saffron and vegetable fields wherever there is probability of water/snow accumulation during winter months.
- In **South Gujarat**, prevailing weather is conducive for rust disease in wheat. For control, spray Carbendizim 250 g + Mancozab @1kg/ha in 200 litres of water.
- As cold wave conditions in isolated places very likely over **Gujarat** on 1st and 2nd and over **Odisha** on 1st February, keep animals inside the sheds during night and provide dry bedding to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the cold condition. In Poultry, keep the chicks warm by providing artificial light in the poultry sheds.

Detailed Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in Guntur district of Coastal Andhra Pradesh, J. Bhupalpally, Jagtial, Jangaon, Jogulamba Gadwal, Karimnagar, Khammam, Mahabubabad, Nagarkurnool, Nalgonda, Peddapalle, Ranjanna Sircilla, Siddipet, Suryapet, Wanaparthy and Warangal-Urban districts of Telangana during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Kerala:**
 - In pepper gardens, inter cultural operations can be done without causing injury to the plants. Give shade to young plants. Provide mulching to protect moisture. Harvesting is in progress. Covering the harvested spikes

with sack may help easy separation of berries.

- Provide adequate irrigation in coconut gardens as moisture stress conditions leads to stunted growth, immature nut fall and decreased yield. Coconut palms are seen affected by red palm weevil. Remove the affected parts from crown and apply one ml Imidacloprid per one litre of water at spindle leaf area. In Southern Zone, there is a chance of leaf rot in coconut, cut & remove affected leaves, spray 1% Bordeaux mixture / 2% *Pseudomonas fluorescens*.
- Short duration vegetable crops like Amaranthus, Cow pea etc. can be cultivated in the interspaces of newly planted banana. Apply first dose of fertilizers (50:65:65g NPK per plant). Spray 1% Bordeaux mixture as a prophylactic measure to control leaf spot in banana.
- **Andhra Pradesh:**
 - In North Coastal Andhra Pradesh, complete sowing of sesamum. Delay in sowing may lead to incidence of phyllody.
 - In Rayalaseema, weather is congenial for incidence of Leaf spot on groundnut. Spray Mancozeb@2g and Carbendazim@1g or Hexaconazole@2ml per litre of water.
 - In Rayalaseema, weather conditions are favourable for leaf hopper and anthracnose in mango. Spray Lambda cyhalothrin 5% EC @ 1 ml. + Kantaf 2 ml. or Saf 1.5 g of water + Potassium Nitrate KNO₃ @ 5g per litre of water.
- **Telangana:**
 - In Telangana, utilizing the realized rainfall, take up sowing of summer Greengram, Blackgram and Sesamum under assured irrigation.
 - In Telangana, prevailing low temperature and foggy weather is congenial for the incidence of Blast disease in rice. Spray Tricyclazole @ 0.6 g or Isoprothiolane @ 1.5 ml or Kasugamycin @ 2.5 ml per litre of water twice in 10-15 days interval.
- **Tamil Nadu:**
 - Since higher wind speed associated with low relative humidity leads to more evaporation therefore irrigation may be given to early planted sugarcane. Further mulching may be done to avoid more evaporation. In ratoon crop shredder can be used to spread the sugarcane trash uniformly thereby evaporation may be prevented.
 - In North Eastern Zone, continue sowing of fallow pulses, black gram and also green gram. Also, as a prophylactic measure to manage diseases in rice; foliar application of *Pseudomonas fluorescence* @ 0.5% (5 g/ml per litre) may be done commencing from 45 DAT with 10 days interval for 3 times.
 - In High Altitude Hilly Zone, to protect the horticulture crops from low temperature, mulching technique can be done. In High Rainfall Zone, due prevailing dry weather condition Irrigation should be given to all horticultural crops.
 - In Coastal Zone, there are chances of bacterial leaf blight in rice spray Copper hydroxide 77 WP @ 2.5g/ litre or 20% fresh cow dung extract or 5 % Neem Seed Kernel Extract.
- **Karnataka:**
 - In North Interior Karnataka, undertake transplanting of rice and new plantation of sugarcane as per availability of water. Apply irrigation in wheat, sorghum, chickpea, sugarcane crops and mango orchards. Undertake intercultural operations in safflower crop.
 - In Coastal Karnataka, apply irrigation in the arecanut gardens to avoid the cold injury.
 - In South Interior Karnataka, undertake transplanting of rice crop where seedlings are ready, sowing of summer ragi and continue planting of sugarcane. Continue harvesting of matured red gram crop and pepper.
 - In North Interior Karnataka, to manage sucking pests in late sown safflower, spray Thiamethacom 25 WG @0.2 g or Acephate 75 SP @1 g or Dimethoate 30 EC @1.75 ml, dissolved in one liter of water.
 - In South Interior Karnataka, spray water soluble Sulphur @ 5 g/liter of water or spray a mixture of neem oil @20 ml + garlic solution 20 g + soap powder solution 5 g per liter of water to the coconut flower and fruit bunch against mite incidence.
- **Animal Husbandry**
 - In Karnataka, maintain the optimum room temperature in sericulture, poultry and dairy unit by providing electric bulb.
 - In Tamilnadu, due to chillness, there are chances of reduced weight of the livestock, farmers could offer some extra concentrate to the maintaining body weight, provide good lighting, ventilation and provide dry bedding to protect the young animals from chillness. Night temperature is below 22°C in Western Zone of Tamilnadu, hence, poultry farmers are advised to protect the birds by hanging jute bags in the side walls of the poultry shed. In Southern Zone, farmers are advised to prevent chick from Ranikeht disease, vaccinate 6 Week old chicks and RDVK vaccination confers immunity for 1 to 3 years.

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

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

- **Advisories:**
 - **Arunachal Pradesh**
 - Continue sowing early/local maize and cowpea. Undertake harvesting of pea.
 - Cover tomato plants during night with polyethene/cloths and place 2-3 inch crop residue mulch around the base of the plant.
 - **Assam:**
 - Complete transplanting of the *Boro* rice in the main field at the earliest. Apply irrigation in the *boro* rice fields to maintain standing water of 5±2 cm depth. Gap filling may be done within 7 to 10 days after transplanting. Continue sowing of okra, ridge gourd and sponge gourd.
 - In Upper Brahmaputra Valley of Assam, undertake land preparation for early planting of sugarcane setts.
 - Prevailing weather (temperature and humidity) is favourable for development of late blight disease in potato and tomato. Therefore farmers are advised to spray the crop with Mancozeb @ 0.25% (25 g in 10 litres of water) as prophylactic measures against late blight.
 - In Hill Zone of Assam, in view of falling both maximum and minimum temperature, farmers are advised for light irrigation at evening time to protect the crop from probable frost.
 - In Lower Brahmaputra Valley of Assam, spray Mancozeb @ 0.25% (i.e., 1.25 to 1.5 kg per 500 to 600 litre of water per hectare on wheat crop at heading stage).
 - In Upper Brahmaputra Valley of Assam, spray Chlorpyrifos 20 EC or Quinalphos 25 EC (70-80 ml per 70-80 litre of water per bigha against stem borer attack on rice).
 - Due to low temperature coupled with heavy fog, there is chance of attack of saw fly and aphid in the field of rapeseed/mustard at vegetative stage. Spray Chlorpyrifos 20 EC or Dimethoate 30 EC or Ragor @ 2 ml per litre of water. Farmers are advised not to spray any insecticide during the flowering stage, which may kill the pollinated insects lead to reduce the yield.
 - In Hill Zone of Assam, monitor onion crop against infection of thrips disease. Spray Imidacloprid @ 0.5 ml per litre of water with sticky material (Tipol 1.0 gram/litre).
 - **Meghalaya:**
 - Continue nursery raising/ transplanting of tomato and capsicum and harvesting of cole crops (cabbage, cauliflower, broccoli), root crop (radish, carrot), ginger and turmeric.
 - **Manipur:**
 - Continue nursery raising of pre- *kharif* rice.
 - Spray Imidacloprid @ 0.25 ml/ litre of water to the infected patches in rapeseed/ mustard against pod borer. Spray Cypermethrin 20 EC@1ml/litre of water against aphid attack in potato at tuber initiation stage if attack is above ETL.
 - **Mizoram:**
 - Apply Carbaryl 0.2 per cent or Malathion 0.15 per cent suspension containing sugar or jaggery @10 g/litre at fortnightly intervals on citrus fruits at flowering and fruit initiation stage. Spray 2% any Sulphur based fungicide to save vegetable plant (tomato, crucifer, onion, brinjal and chill) to save from powdery mildew and white rust disease attack.
 - **Tripura:**
 - Complete transplanting of *Boro* rice.
 - There is chance of attack of aphids in the field of toria, sesame, lentil. Spray Monocrotophos @ 2ml per liter of water.
 - There is chance of fungal diseases like late blight in potato. Spray Metalexyle 8% with Mancozeb 64% or Cymoxinyle 8%+ Mancozeb 64% @ 2.5 gm per litre of water in the potato field if attack is above ETL.
 - **Nagaland:**
 - Continue harvesting of cabbage/ winter vegetables timely as it may split if not harvested in time. Undertake preparation of seedlings of cucurbitaceous vegetable.
 - In the present weather conditions, spray plant product extract like Neem on toria/ mustard crop at podding stage.
- **Animal Husbandry**
 - In Central Brahmaputra Valley Zone of Assam, vaccinate cattle and buffalo against FMD, Black Quarter and Haemorrhagic Septicemia. Sheep and goat should be vaccinated with PPR and Enterotoxemia. Deworming according to body weight prior to vaccination gives better immune response.
 - In North Eastern States, vaccinate the poultry birds to control the Ranikhet & Gumboro diseases during this period. Artificial lighting should be provided in the poultry house to raise the temperature and to keep the house comfortable for the birds.
- **Fishery**
 - In Barak Valley Zone of Assam, during this period fishes may be infected by fungal and bacterial disease. To overcome this, treated the infectious fishes with Potassium Permanganate (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 North Sikkim district of Sikkim during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Odisha:**
 - As cold wave conditions in isolated pockets very likely over Odisha on 1st February, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from cold winds, cover young fruit plants with straw/polythene sheets/gunny bags. Cover banana bunches with porous polythene bags. To overcome cold injury and for better nursery growth in rice, adopt the following measures: cover the nursery beds with polythene sheet during night and remove in the morning. Irrigate the nursery beds every day in the evening and let the water out in the morning.
 - Paddy crop is at sowing to three week stage in nursery. Prepare the main field and undertake transplanting of three week seedlings. Apply well rotten FYM @ 2 ton before final land preparation and 25kg DAP with 20kg MOP per acre in short duration variety and 35kg DAP and 25 kg MOP per acre in medium duration variety before transplanting. Take up harvesting of mature tomato, cabbage and cauliflower. Continue harvesting the matured arhar pods and dry it under the sun for 3-4 days. Provide mulching in carrot field to protect plants direct exposure of sunlight and conserve moisture. Take up sowing of sesamum varieties like Uma, Kanak, Vinayak, Kalika, Nirmala, Prachi, etc. Treat the seeds with Thiram @3g/kg or Bavistin @1.5/kg of seeds two days before sowing. Do not disturb the soil in oilseed field after flowering commences.
 - Green gram and black gram crops are at vegetative stage to flowering stage (four to six week) stage. Spray 60ml Imidacloprid 17.8% SL or 50ml Thiomethaxome 25%WG mixing with 200 litres of water per acre crop area for aphids and spray wettable Sulphur 600g/acre @ 3g/litre water for powdery mildew. Fruit borer may infest cabbage, cauliflower and tomato. Spray Fipronil 5% SL 400 ml or Emamectin Benzoate 5% SG 80 g or Indoxacarb14.5% SC 200 ml mixing in 200 litres of water per acre crop. Spray 400 ml Dimethoate or 50 ml Imidachloprid/acre to control thrip infestation in onion crop.
 - **Bihar:**
 - Give 3rd irrigation in the timely sown wheat crop which is in 60-65 days stage. Give light irrigation in late sown wheat crop, which is in 21-25 days (Crown Root Initiation) stage if soil moisture is not sufficient. Land preparation is advised for sowing of summer vegetables such as okra, pumpkin, cucumber, sponge gourd ridge guard, bitter guard, etc. For healthy production of vegetables, apply of 15-20 ton FYM during land preparation. In view of dry weather, carry out harvesting of matured crops of elephant foot yam and turmeric on priority basis.
 - Current weather is conducive for the attack of rust and blight diseases in wheat crop. Apply Mancozeb @ 2.5 to 3 gm per litre of water on a clear sunny day against the disease. Apply Mancozeb @ 2.0 gm per litre of water on a clear day to control stem rot in potato. Monitor infestation of fruit borer in tomato crop. In severe cases of infestation, spray Indoxacarb 14.5 SC @ 1ml/2.5 litres of water or Spinosad 48 EC @ 1ml/4 litres of water is advised.
 - **Jharkhand:**
 - Complete the land preparation and transplant 12-15 days old summer rice seedlings. Maintain water level in the field. Cultivate high yielding maize varieties like Birsa Makka-1, Birsa Vikash Makka-2, Suwan-1(Hybrid), HQPM (Hybrid) with recommended dose of fertilizer. Avoid irrigation to the gram crop which is in flowering stage. Early to medium duration variety of potato matures within 80-120 days. Stop irrigation to such crops and remove the upper leaves/parts (Dehauling) of the crop, before 7 – 10 days of digging. After digging of potato farmers may sow the spring mung in case having limited irrigation facility and if they have good irrigation facility, they may go for cultivation of summer vegetable like cauliflower, cabbage, tomato, bhindi, brinjal, chilli or cucurbitaceous vegetables. Late sown toris crop is at maturity stage. Harvest the crop when siliqua turns golden yellow in colour. Before threshing, dry the harvested material in sun.
 - Timely sown pulse crops like pea, lentil, gram etc. are at pod formation stage. If the crops are attacked by pod borer insect, spray insecticide Monocrotophos @ 1 ml per litre of water. However, if the farmers are interested to sell green pods of gram / pea, spray bio-insecticide like Delfin @ 2 gm per litre of water. It is the time of bearing flowers in mango and litchi tree. Spray insecticide like Monocrotophos 36 E.C. @ 2 ml per litre of water and mix the fungicide Bavistin in the solution @ 1 gm per litre of solution as a preventive measure against various disease and insects. For vigorous flowering and fruiting PGR Meeraulan @ 1 ml per liter of solution may be added in the solution.
 - **West Bengal:**
 - In Sub-Himalayan West Bengal, provide light irrigation to large cardamom, potato and mustard. Carry out pruning of dry and overcrowded branches of Mandarin orange trees. Harvest mature cabbage, cauliflower and other cole crops. Carry out operations like earthing up, weeding and draining out of excess water in ginger and turmeric fields.

- In Gangetic West Bengal, apply water to the paddy nursery bed at night and drain it in the next morning to protect the seedlings from turning yellowish. Complete the transplanting of seedlings by the end of this week. Prepare land and collect seeds for sowing sunflower. Before sowing treat the seed by soaking for 10 hours with Thirum/Captan@3g/kg of seed to ensure proper germination.
- In Sub-Himalayan West Bengal, for the management of winter vegetable pest at early vegetative stage spray Chlorpyrifos 50% + Cypermethin 5% @ 1.5 ml/liter of water. To control alternaria blight of mustard, spray Mancozeb @ 2.5g/liter of water or Iprodione @ 1g/liter of water.
- In Gangetic West Bengal, apply a mixture of Thiamethoxin and Mancozeb@ 3g/liter of water or a mixture of Diomithomorf and Mancozeb @ 3g/litre of water for leaf blight in potato at tuber formation stage. The weather condition may favour yellow rust and blight disease in wheat crop at late jointing stage. Spray Mancozeb @ 2.5-3 ml/litre of water at clear weather condition. Spray Imidacloprid @ 1ml/1.5litre of water at clear weather condition for aphid attack in mustard crop at pod initiation stage.
- **Andaman & Nicobar Islands:**
 - In Andaman Islands, do soil application of Pseudomonas and Trichoderma @ 2.5 kg/ha in bhendi. Spray 3 % Neem oil to control caterpillar in leafy vegetables as the weather is conducive, for the growth of such pest.
 - In Nicobar Islands, make basin around the coconut and harvest rain water as good amount of rainfall is expected.
- **Animal Husbandry**
 - In Bihar, vaccinate animals against FMD, PPR, Haemorrhagic Septicaemia, Enterotoxaemia, Black Quarter etc. Milch animal should be fed with oilcakes and jaggery to maintain body temperature.
 - In Odisha, clean the shed and deworm the animals. Give them mineral mixture along with salt regularly and provide wheat grains, jaggery etc. @ 10%-20% in the daily ration during winter season to meet the energy requirement of the animals. Poultry birds are prone to respiratory infection and CRD (Chronic Respiratory Diseases). Provide the warm housing and good ventilation.
 - In Jharkhand, vaccinate cattle against FMD and pigs against swine fever. To prevent the birds from cold, cover the windows and doors with gunny sheet.
 - In West Bengal, protect livestock against FMD and poultry birds against Ranikhet disease. For broiler farming keep the brooding temperature at 95° Fahrenheit and reduce temperature by 5° Fahrenheit weekly. For broiler farming keep the room temperature at 70-85 ° Fahrenheit.
- In Andaman & Nicobar Islands, provide cool drinking water with electrolyte to poultry birds to reduce heat stress. Keep the goat under dry clean shelter to avoid pneumonia or breathing problem.
- **Fisheries**
 - In Odisha, during this season, there is a possibility of “EUS” disease in fish. Apply ‘Cifax’ @ 400 ml mixed with 40 litre of water in one acre pond area as a preventive measure. The fishes should be fed daily with oil cake bran mixture at the rate of 2-3 % of their total biomass.
 - In West Bengal, apply Lime (Calcium Carbonate) depending on water pH. Lime should be broadcasted in split doses. Do health check-up of fish by periodical netting. Diseased fish should be isolated from main stock and should be treated with potassium permanganate and sodium chloride based on the severity of infestation. Keep the pH of pond water between 7.5-8.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rainfall occurred in Gadchiroli district of Vidarbha during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - In South Konkan, apply light irrigation to groundnut. Maintain water level of 5 cm in *rabi* rice. Apply irrigation to groundnut
 - In Madhya Maharashtra, undertake harvesting of matured sorghum. Continue sowing of summer groundnut. Apply irrigation to standing crops like gram, wheat, orchards and vegetables.
 - In Marathwada, apply irrigation to wheat and safflower using sprinkler. Undertake harvesting of early sown matured chick pea.
 - In West Vidarbha, apply irrigation to safflower, wheat and gram. Continue sowing of summer groundnut and sesame. In East Vidarbha, continue sowing of summer groundnut and sesame. Continue transplanting of 22-25 days old summer rice seedlings.
 - In Vidarbha, to control aphids in wheat, spray Thiamethoxam 25 WG @ 50 g or Diamethoate 30 EC @ 750 ml / ha in 500 litres of water.
 - In Konkan, for control of bunchy top disease in banana, remove the diseased plants along with the rhizomes and destroy them. To control attack of aphids in banana, spray Dimethoate @ 15 ml per 10 liters of water.

▪ **Gujarat:**

- As cold wave conditions in isolated pockets very likely over Gujarat State on 1st and 2nd February, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from cold winds, cover young fruit plants with straw/polythene sheets/gunny bags. Cover banana bunches with porous polythene bags.
- In Middle Gujarat, apply irrigation in wheat (milking stage) crop. Carry out hand weeding in chick pea crop.
- In North Gujarat, apply light irrigation in gram, wheat (milking stage) crops. Continue picking of matured clusters of castor.
- In South Gujarat, for higher flowering in mango crop, spray 0.5 % urea solution.
- In Saurashtra & Kutch, complete harvesting of pigeon pea and continue picking of matured clusters of castor. Apply irrigation in wheat, coriander and vegetable crops. After irrigation, apply supplement dose of Nitrogen in wheat crop.
- In North Gujarat, apply sand @100 kg/ha treated with Chloropyrifos 35 EC @ 2.3 litres dissolved in 5 liters of water to control termite in wheat crop. Apply light irrigation after sand application.
- In South Gujarat, for effective control of rust disease in wheat crop, spray Carbendizim 250 g + Mancozeb @1kg/ha in 200 litres of water. Spray Quinalphos @20ml +Mancozeb @15 g/10 liter of water in sapota crop against infestation of bud borer and leaf spot disease.
- In Middle Gujarat, spray Mencozeb 0.2% @ 25 gram in 10 litres of water for control of blight disease in potato crop.
- In North Saurashtra, under present weather condition, spray Hexaconazole @15 ml/10 liters of water to prevent blight and powdery mildew infestation in coriander.
- **Animal Husbandry**
- In Gujarat, protect the animals from cold wind; keep them inside the shed at night time. Provide adlib warm water to lactating animals. In poultry, keep the chicks warm by providing artificial light in the poultry sheds and use curtain at the windows.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rainfall occurred in Anuppur, Balaghat, Chhindwara and Rewa districts of East Madhya Pradesh, Balod, Baloda Bazar, Bijapur, Bilaspur, Mahasmond and Raipur districts of Chhattisgarh during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - As dense fog at isolated places very likely over northwest Madhya Pradesh on 1st February, monitor the standing crops for incidence and spread of pest and diseases, potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
 - In East Madhya Pradesh, continue weeding in late sown wheat followed by application of urea. Continue earthing up and application of nitrogenous fertilizer in potato. Continue harvesting of matured pods of green pea.
 - In West Madhya Pradesh, for protection of crops against frost, apply light irrigation in crops by sprinkler at night, or spray Thiourea @ 0.5 g/litre or soluble/ wettable Sulphur @ 3.0 g/litre at 15 days interval. Apply irrigation in wheat, gram, mustard, garlic and vegetables. Continue harvesting of matured pods of green pea. In Jhabua Hill Zone, continue harvesting of green chilli, okra, beans, cucurbits and fenugreek. Undertake nursery preparation for cucurbitaceous crops, musk melon, water melon, tomato, chilli, brinjal, etc. in low tunnel method.
 - In Satpura Plateau Zone, present weather conditions are suitable for the infestation of aphids in mustard, spray Imidacloprid @ 0.5 ml/litre of water.
 - In Jhabua Hill Zone, for control of termite attack in wheat field apply Chloropyrifos 20 EC @ 3.5 litre/ha with irrigation water.
 - In Vindhya Plateau Zone, there is possibility of outbreak of thrips due to cloudy weather in the garlic crop. For control, spray Chloropyrifos 20 EC @ 1.5 litres per hectare.
 - **Chhattisgarh:**
 - Continue harvesting of timely sown early varieties of mustard when silique turns into bright yellow colour and digging up of matured tubers of early and medium varieties of potato. Apply irrigation in wheat, gram and vegetables. Continue seedling preparation of cucurbits in polythene bags. Continue planting of spring sugarcane. Undertake sowing of spring moong if irrigation facility is limited and sowing of summer vegetables like cauliflower, cabbage, tomato, bhindi, brinjal, chilli etc. if irrigation facility is good.
 - In Bastar Plateau Zone, continue field preparation for planting of sugarcane. Apply irrigation in wheat.
 - In Plain Zone, if Yellow Vein Mosaic (YVM) disease is observed in pulses then destroy the affected plants and spray Metasystox or Rogor insecticide @1 ml/litre of water.
 - In Bastar Plateau Zone, for control of pod borer in pigeon pea, spray Indoxacarb @ 300 g/ha. dissolved in 500

liters water.

- **Animal Husbandry**
- In Madhya Pradesh, newly borne calves should be protected from cold. For this floor should be covered with paddy straw litter which provides a thermal mulch. Feed the cattle with dried fodder chaff cutting mixed with legume fodder such as Berseem, Lucerne etc.
- In Chhattisgarh, provide concentrate feed to cattle mixed with dry and green fodder and ensure for feeding enriched diet having protein, carbohydrate, fat, vitamins etc.

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

- **Realised Rainfall:** Rainfall/snow occurred in Doda and Kulgam districts of Jammu & Kashmir, Almora, Bageshwar, Chamoli, Pithorgarh, Rudraprayag and Uttarkashi districts of Uttarakhand, Rainfall occurred in Basti and Sant Ravidas Nagar districts of East Uttar Pradesh during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As rain/snow likely at most/many places over Jammu & Kashmir on 1st, 4th and 5th, over Himachal Pradesh on 4th and 5th, over Uttarakhand on 5th, rain/thundershowers at many places over Punjab on 5th February, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - As dense to very dense/dense fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and West Uttar Pradesh from 1st to 3rd February, monitor the standing crops for incidence and spread of pest and diseases, potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
 - **Jammu & Kashmir:**
 - In Sub Tropical Zone, drain out excess water from the wheat, mustard and vegetable fields under water stagnation condition. As rainfall is expected, postpone application of plant protection measures against insect, pest and diseases in mustard and gobi sarson.
 - In Sub Tropical Zone, weather is favourable for outbreak of alternaria blight, spray mancozeb @ 0.25% after current spells of rain.
 - In Intermediate Zone, apply top dressing of urea in normal sown and late sown wheat crop after cessation of rainfall. Undertake nursery sowing of summer crops like cucumber, bottle guard, bitter guard, tomato, brinjal, chilli etc. under poly house. Protect the seed crops of winter vegetables like cabbage, cauliflower, knol khol broccoli etc. from frost by applying light irrigation.
 - In Valley Temperate Zone, provide drainage channels in wheat, saffron and vegetable fields wherever there is probability of water accumulation during winter months.
 - Weather is congenial for the infestation of yellow rust in wheat crop. If observed, apply Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/litre of water) after current spells of rain.
 - **Uttarakhand:**
 - In Bhabar and Tarai Zone, Carry out weeding operation in wheat and pulses after current spells of rain. Undertake land preparation for planting of spring season sugarcane. Undertake harvesting of matured mustard crop after current spells of rain.
 - In Hill Zone, maintain proper drainage in vegetable fields. Carry out thinning and weeding operations in mustard crop after current spells of rain. Undertake nursery preparation of tomatoes, capsicum, brinjal, and cucurbitaceous crops in poly house.
 - In Sub-Humid Sub-Tropic Zone, undertake weeding in wheat crop and harvesting of matured sugarcane crop after current spells of rain.
 - **Himachal Pradesh:**
 - In Sub-Montane and Low Hills Sub-Tropical Zone, undertake planting of onion bulbs in 30X10 cm spacing for harvesting green onion. Carry out intercultural operations in carrot, radish and broccoli fields and mustard crop after current spells of rain.
 - In Sub-Montane and Low Hills Sub-Tropical Zone, if symptoms of yellow rust appears in the wheat crop in the form of yellow powder/stripes on the leaves, then spray fungicides tilt (Propiconazole) 25 EC/folicure (Tebuconazole) 25 EC/bayletan 25 WP @ 0.1% i.e. 30ml or 30 g per 30 litres of water per kanal after current spells of rain and repeat the spray after 15 days interval.
 - Weather is congenial for incidence of aphids in mustard crop. In early stage cut and destroy the infested part of the plant. If insect population reaches above ETL than spray Rogar or Quinalphos @ 2.0 ml/litre water. To control attack of white rust on mustard crop, spray Dithane-M-45 @ 2 g/ litre of water after current spells of rain.
 - **Punjab, Haryana & Delhi:**
 - In Punjab, to protect young fruit plants from cold, cover young fruit plants/vegetables with Sarkanda/rice straw/polythene sheets/gunny bags. Continue thinning and weeding in late sown mustard. Complete sowing of

sunflower. Complete transplanting of tomato seedlings. Continue sowing of long duration varieties of sunflower. Complete sowing of spring potato in the 2nd fortnight of this month.

- In Haryana, continue transplanting of matured seedlings of tomato, cauliflower, & cabbage in prepared field. In view of changing weather, keep in mind of changing weather before applying irrigation in the wheat crop and undertake intercultural operations for removing weeds.
- In Delhi, continue planting of winter sugarcane at optimum soil moisture for better seed germination. Continue transplanting of onion. Continue transplanting of cauliflower, cabbage, broccoli and tomato. Continue sowing of spinach, coriander, fenugreek. Continue preparation of seedling of early cucurbitaceous crops in small polythene bags in poly houses. Undertake nursery preparation of chilli, tomato and brinjal crops in poly house.
- In Punjab, check aphid damage in mustard and if aphid population is above ETL, spray 40 g Actara 25 WG or 400 ml of Rogor 30 EC or 600 ml Dursban/Coroban 20 EC in 80-125 litres of water per acre. For control of late blight of potato, spray Indofil M-45/Markzeb/Kavach @ 500-700 g in 250-350 litres of water per acre after current spells of rain. Monitor wheat crop for yellow rust, apply spot application of Tilt @ 1ml/liter of water after current spells of rain.
- In Haryana, due to high humidity level prevailed in the air may increase the infestation of aphid in mustard, monitor the mustard crop. Due to high humidity prevailing in the environment or cloudy weather, may occur the infestation of early blight in potato and tomato constant monitor/whistle is required.

▪ **Uttar Pradesh:**

- In East Uttar Pradesh, apply second irrigation on 40-45 days, third on 60-65 days and fourth at 80-85 days in wheat crop. Summer maize can be sown in this month at the distance of 60 X 20 cm. Undertake planting of sugarcane after harvesting of toriya/pea/potato. Continue transplanting of onion. Distance should be 15 to 10 cm in onion crop. Continue planting of spring Sugarcane. In wheat crop give remaining dose of nitrogen i.e 40kg N₂/ha or 88kg urea/ha. Remove weeds from maize crop after 40-50 days of sowing. In tomato crop sown last month apply 40kg nitrogen/ha per hectare (88kg urea/ha). In garlic the second & last dose of urea should be 74kg/ha after 60 days or sowing.
- In West Uttar Pradesh, apply first irrigation after 20-25 days on weeding and second irrigation after 40-45 days of wheat. Nursery preparation should be done for chilli, tomato and brinjal crops in poly house. Transplantation of healthy seedlings of late varieties of cabbage, cauliflower, knolkhol etc. may be done on ridges. Continue thinning and weeding in late sown mustard crop. Continue transplanting of onion seedling. Seedling should not be older than six weeks. Weather is suitable for growing of carrot seed crop in this week. Continue sowing of spinach, coriander, fenugreek. Continue sowing of garlic in raised bed.
- In West Uttar Pradesh, install pheromone traps @ 3-4 traps per acre for monitoring of the pest population for diamond back moth in cole crops, pod borer in pea and fruit borer in tomato. In present weather, wrapping of plastic sheets around mango trunk should be done for preventing climbing of young (nymphs) mealy bugs. Apply grease to seal any cracks in the polythene sheets. Wrapping of plastic sheets around mango trunk should be done for preventing climbing of young (nymphs) mealy bugs.
- In East Uttar Pradesh, due to prevailing foggy weather condition, there is chances of attack of late blight in potato crop, for control, spray Indofil-M-45/Kavach /Antracol @ 500-700 g per acre or Blitox @ 750-1000 g per acre in 250-350 litres of water per acre at weekly interval 2-3 times. Spray Zinc Corborate 200g or Ziram 90%, 2kg/ha for the control of blight in gram. Use Zink Phosphide or Aluminum Phosphide tablet for mass control of rat in wheat crop.

▪ **Rajasthan:**

- Due to cold waves and fall in temperature frost may occur, apply light irrigation in field crops. In cash crops spray of 0.1 percent H₂SO₄ should be done. In Sub Humid Southern Plain and Aravali Hill Zone, undertake field preparation for summer groundnut
- In Southern Humid Plain Zone, farmers are advised to apply third irrigation in wheat at jointing stage. Maize crop may be intercultural and irrigated with top dressing of nitrogen at the knee high stage. Farmers are also advised to be applied irrigation in gram and mustard at the pod formation stage.
- In Arid Western Plain Zone, heliothis infestation in gram, spray Quinolphos 25 EC @ 1200 ml/ha or Indoxicarb @ 200 ml/ha along with water at the time of flowering and repeat the spray if required.
- Methi, pea, cumin and coriander are likely to be affected by powdery mildew attack. In this disease white powder is seen on leaves. Spray Sulfex @ 1.0 ml per litre water or dust sulphur @ 25 kg per hectare.
- In Irrigated Northwestern Plain Zone, to save mustard crop from ground frost, spray 1 ml Sulphuric acid or Dimethyl Sulpho-oxide per litre of water should be done @ 100-125 litre solution per bigha.

• **Animal Husbandary**

- In Uttar Pradesh, protect cattle from cold, animal sheds should be kept dry & warm. Keep animals warm by using dry sack or straw. Provide sufficient light to chicks & keep them warm.

• **Apiculture**

- In Jammu & Kashmir, farmers are advised to migrate the honey bee colonies from hilly regions to plains to avoid mortality due to decline in temperature. Inspect honey bee colonies after every fortnight interval to

maintain cleanliness and to avoid mortality of honey bees due to brood and disease infestation.

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