



National Agromet Advisory Service Bulletin



Thursday 22nd November 2018
(For the period 22nd to 27th November 2018)



Issued by
India Meteorological Department

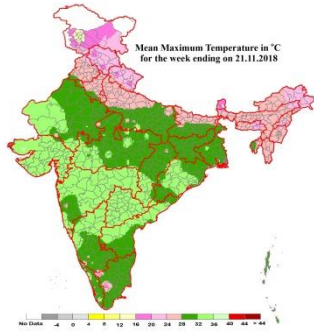
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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

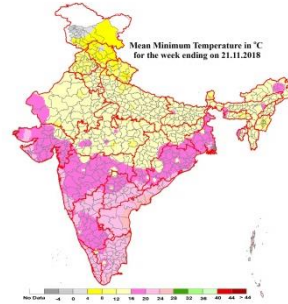
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 21.11.2018

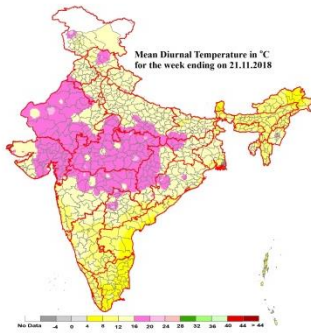
Mean Maximum Temperature (°C) for the week ending on 21.11.2018



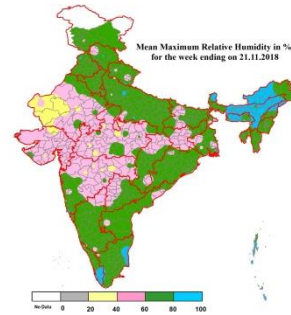
Mean Minimum Temperature (°C) for the week ending on 21.11.2018



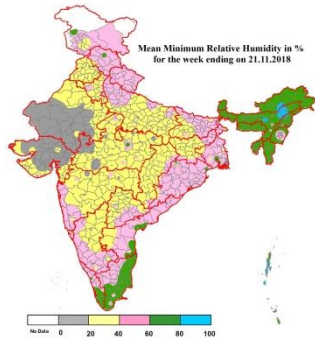
Mean Diurnal Temperature Variation (°C) for the week ending on 21.11.2018



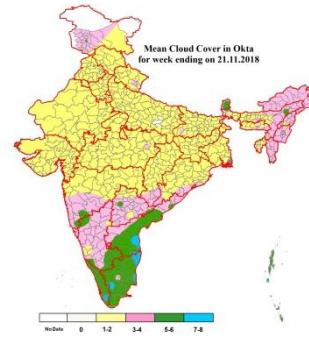
Mean Maximum Relative Humidity (%) for the week ending on 21.11.2018



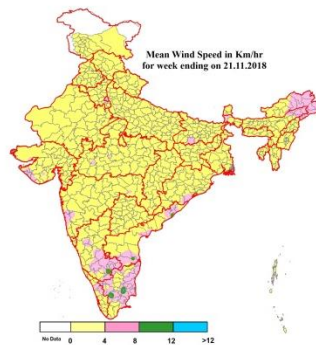
Mean Minimum Relative Humidity (%) for the week ending on 21.11.2018

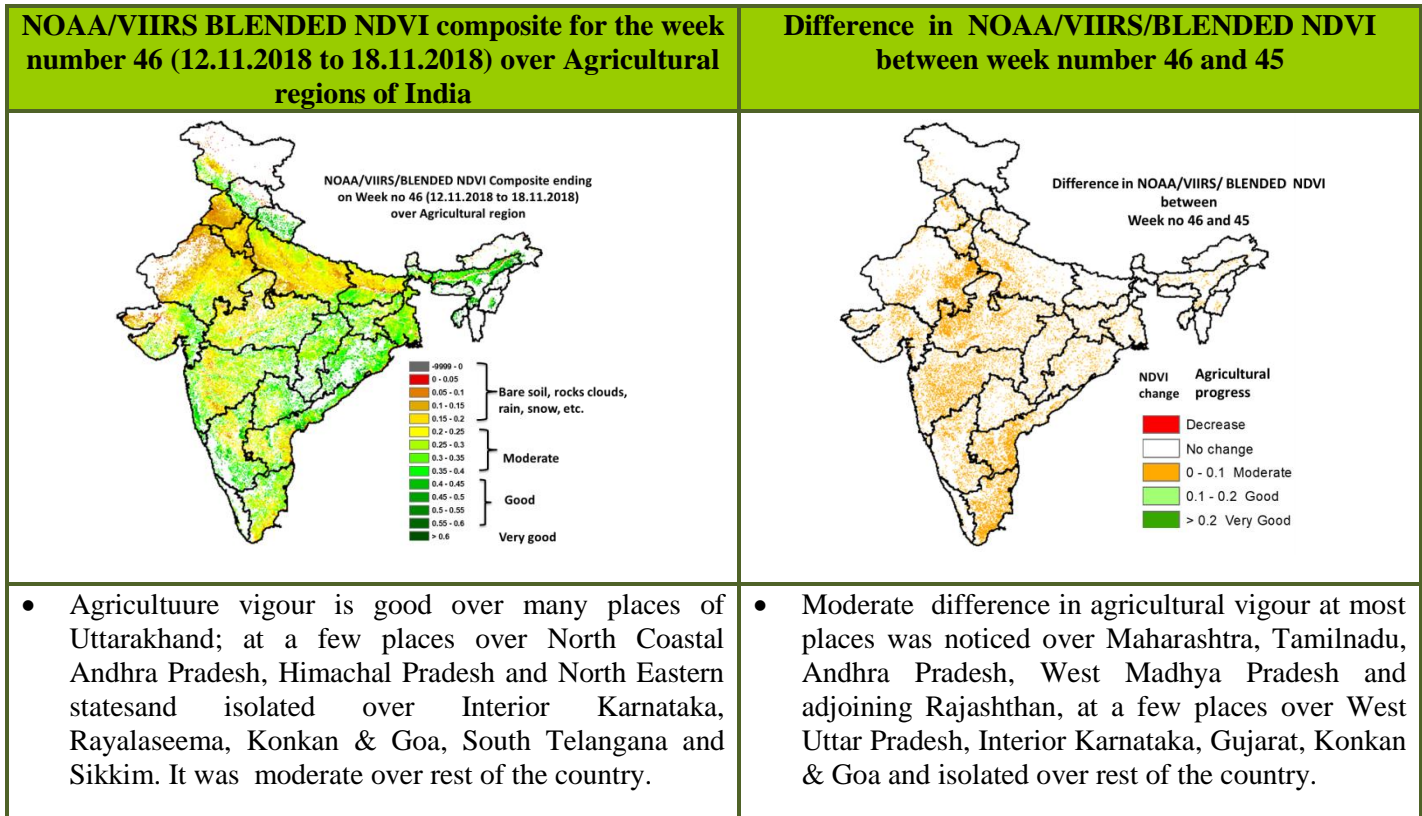


Mean Cloud Cover (okta) for the week ending on 21.11.2018

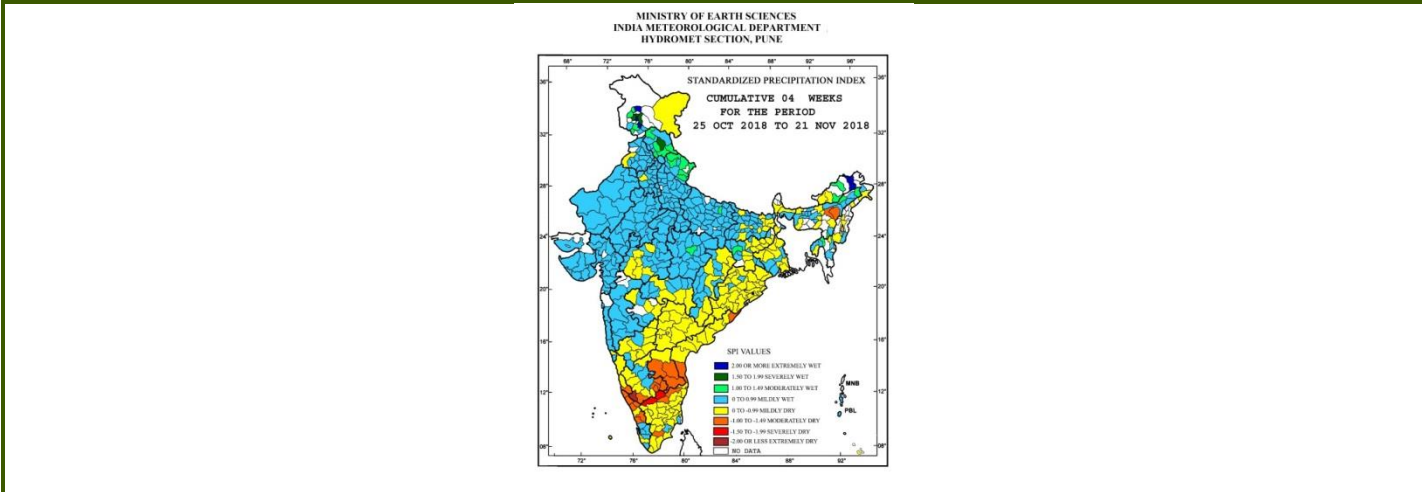


Mean Wind Speed (km/hr) for the week ending on 21.11.2018



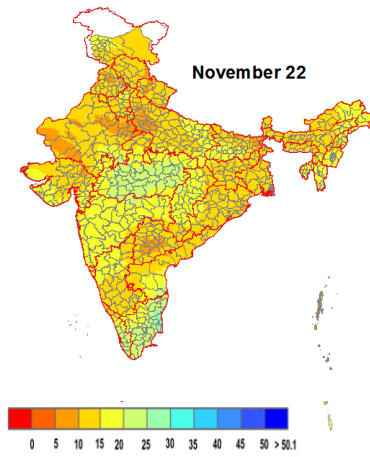


**Standardised Precipitation Index
Cumulative 4 weeks for the period 25th October to 21st November 2018**

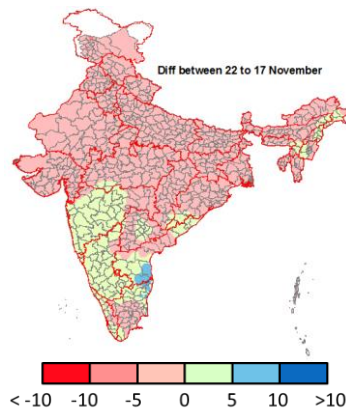
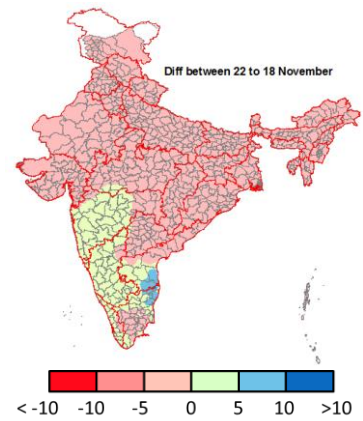
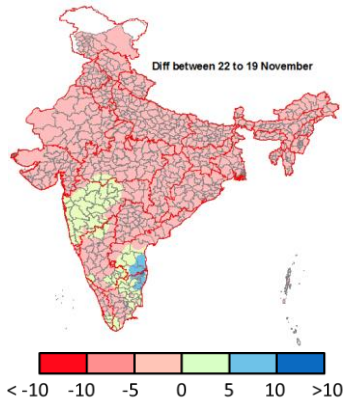
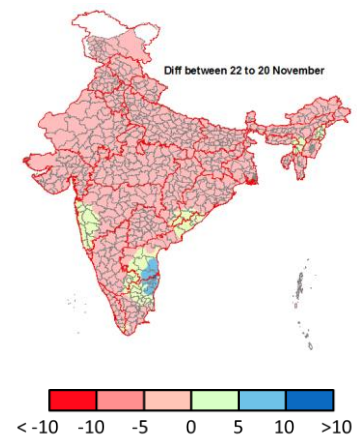
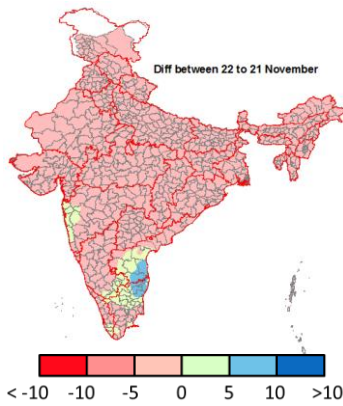


- Extremely/severely wet conditions experienced in few districts of Arunachal Pradesh; Jammu & Kashmir; Kullu district of Himachal Pradesh.
- Extremely/Severely dry conditions experienced in Krishnagiri district of Tamil Nadu & Puducherry; Chamarajanagar, Kodagu districts of Karnataka.
- Moderately dry conditions experienced in few districts of Andhra Pradesh; Nagaon, Karbi Anglong districts of Assam; Dharmapuri, Vellore, Virudhunagar districts of Tamil Nadu & Puducherry; Dakshin Kannada, Bangalore Rural, Bangalore Urban, Kolar, Mysore, Chickballapur districts of Karnataka; Cannur, Kozhikode, Palakkad, Thrissur, Kasargod, Wynad districts of Kerala.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

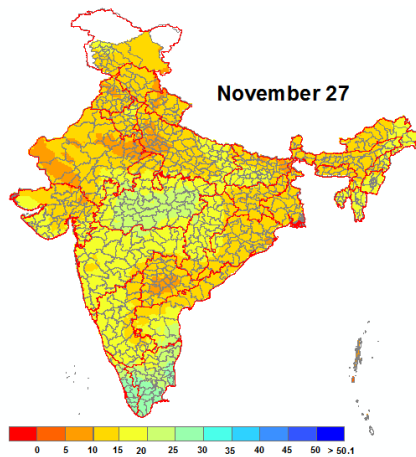
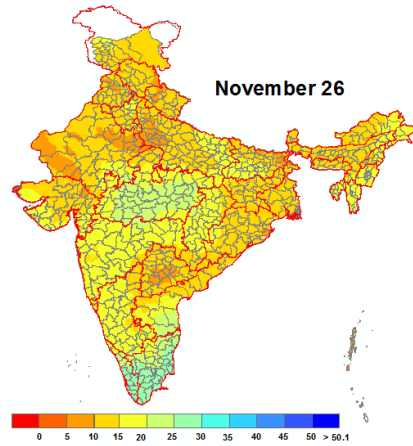
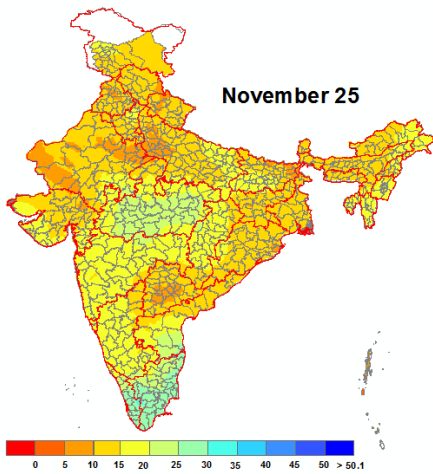
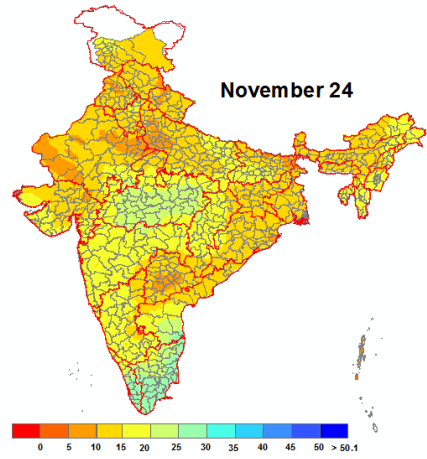
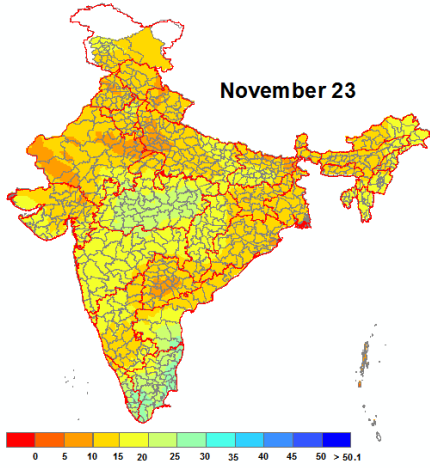
Daily Soil Moisture (mm) for 22nd November 2018 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 23rd to 27th November 2018 (ending at 0830 IST)
for 60 cm depth**



Weather Forecast for next 5 days valid upto 0830 hours of 27th November 2018

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- Moderate to dense fog in morning hours likely at isolated places over Assam & Meghalaya during next 3 days and shallow to moderate fog thereafter. Shallow to moderate fog in morning hours likely at isolated places over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura during next 5 days.
- No significant change in minimum temperature likely over northwest India during next 24 hours and fall by 2-3°C thereafter. No significant change in minimum temperatures likely rest parts of the country during next 3-4 days.

5 Day Rainfall Forecast (Mid-day) 22nd November 2018

Met-Sub-Division	22-Nov Today	23Nov Fri	24Nov Sat	25Nov Sun	26Nov Mon
1. Andaman & Nicobar Islands	SCT	ISOL	ISOL	ISOL	ISOL
2. Arunachal Pradesh	DRY	DRY	DRY	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	DRY	DRY	ISOL	ISOL	DRY
6. Gangetic West Bengal	DRY	DRY	DRY	DRY	DRY
7. Odisha	DRY	DRY	DRY	DRY	DRY
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	ISOL	ISOL	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	ISOL	DRY	DRY	DRY
15. Himachal Pradesh	ISOL	ISOL	DRY	DRY	DRY
16. Jammu & Kashmir	SCT	ISOL	DRY	DRY	DRY
17. West Rajsthan	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. Marathwada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal Andhra Pradesh	SCT	ISOL	DRY	DRY	DRY
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	FWS	SCT	ISOL	ISOL	DRY
31. Tamilnadu & Puducherry	WS	SCT	SCT	ISOL	ISOL
32. Coastal Karnataka	SCT	SCT	ISOL	ISOL	ISOL
33. North Interior Karnataka	ISOL	ISOL	DRY	DRY	DRY
34. South Interior Karnataka	SCT	SCT	ISOL	ISOL	DRY
35. Kerala	FWS	FWS	SCT	SCT	ISOL
36. Lakshadweep	SCT	FWS	SCT	SCT	ISOL

% Station Reporting Rainfall

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

Weather Warning during next 5 days

- **22 November (Day 1):** Heavy to very heavy rain at isolated places very likely over south Rayalaseema and Tamilnadu & Puducherry and heavy at isolated places over south Coastal Andhra Pradesh and South Interior Karnataka.
- **23 November (Day 2):** Heavy rain at isolated places very likely over Tamilnadu & Puducherry and Kerala.
- **24 November (Day 3):** No weather warning.
- **25 November (Day 4):** No weather warning.
- **26 November (Day 5):** No weather warning.

Weather Outlook for subsequent 2 days from 27th to 29th November 2018

- Isolated to scattered precipitation likely over Western Himalayan region; and isolated rainfall likely over extreme south peninsular India, Lakshadweep and Andaman & Nicobar Islands.
- Dry weather likely over the rest of the country.

Salient Advisories

- As rain/thundershowers likely at most places over **Tamil Nadu** on 22nd, at many places over **Kerala** on 22nd and 23rd, over **Royalaseema** on 22nd along with heavy to very heavy rain at isolated places very likely over south Royalaseema and Tamilnadu & Puducherry on 22nd, heavy rain at isolated places over south Coastal Andhra Pradesh and South Interior Karnataka on 22nd and over Tamilnadu & Puducherry and Kerala on 23rd November, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safe places.
- In **Tamilnadu**, drain out excess water from standing crop fields in Cauvery Delta Zone and Southern Zone. Provide adequate drainage to recently sown millets and Bengal gram crops in Western Zone.
- As moderate to dense fog in morning hours likely at isolated places over **Assam & Meghalaya** during next 3 days and shallow to moderate fog thereafter. Shallow to moderate fog in morning hours likely at isolated places over **Arunachal Pradesh** and **Nagaland, Manipur, Mizoram & Tripura** during next 5 days, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
- In Western Zone of **Tamil Nadu**, weather conditions are favourable for blast incidence in rice, farmers are advised to monitor the crops and spray initially with Tricyclozone @ 1g/litre of water followed by second spray with Carbendazim @ 1g /litre of water. Undertake plant protection methods after current spells of rain.
- In Tamil Nadu, those who rear poultry birds in deep litter system should avoid dampness in litter material to avoid coccidiosis. If dampness is observed, replace it with fresh litter material or apply 5 kg of lime powder per 100 sq ft area.

Detailed Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Idukki, Kasargod, Kozhikode, Malappuram, Wayand, all districts of Tamil Nadu except Dharmapuri, Vellore and Krishnagiri, in Nellore and Prakasham districts of Coastal Andhra Pradesh, Gadag and Koppal districts of North Interior Karnataka, Chitradurga, Davangere and Tumakuru districts of South Interior Karnataka during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at most places over Tamil Nadu on 22nd, at many places over Kerala on 22nd and 23rd, over Royalaseema on 22nd along with heavy to very heavy rain at isolated places very likely over south Royalaseema and Tamilnadu & Puducherry on 22nd, heavy rain at isolated places over south Coastal Andhra Pradesh and South Interior Karnataka on 22nd and over Tamilnadu & Puducherry and Kerala on 23rd November, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safe places.
 - **Kerala:**
 - In High Altitude Zone, short duration vegetable crops like Amaranthus, cow pea etc. can be cultivated in the interspaces of newly planted banana crop. Spray 1% Bordeaux mixture as a prophylactic measure to control leaf spot in banana after current spells of rain.
 - In Northern zone, drench the coconut palm basin (2m radius) with 40 litres of 1% Bordeaux mixture or soil drenching of Hexaconazole/contaf 25ml/25 litre of water once in 4 months.

- In Central Zone, there is a chance of attack of aphids in cowpea. apply 2% Neemoil emulsion or apply 20 g Verticillium Lecanii per one litre of water in 10 days intervals. If aphid attack is severe, apply 3 ml Imidacloprid or 2 g Thiamethoxam per 10 litre of water after current spells of rain.
- **Andhra Pradesh:**
- In South Coastal Andhra Pradesh, continue sowing of pulses groundnut and Bengal gram. Undertake picking of cotton on non rainy days.
- In Rayalaseema, the present weather conditions are favourable for blast and sheath blight in nurseries and transplanted rice crops. To control blast spray tricyclozole 75% @ 0.6 g or isoprothoulane 40% @ 1.5 ml or Kasugamicine 3 L @ 2.5 ml./litre of water and to control blight disease spray Hexaconazole @ 2 ml or Validamicine @ 2 ml or Propiconazole @ 1 ml/litre of water.Undertake plant protection measures after current spells of rain.
- Weather is favourable for incidence of Cut worm, Neck Blast , BPH & WBPH in rice in North Coastal Andhra Praedsh, For control, spray Chlorpyrifos @ 2.5 ml/litre of water + Nuvaan @ 1 ml per litre of water for cutworm, Tricyclazole @ 0.6 per litre of water two times at weekly interval for control of neck blast and Monocrotophos 2.2 ml or Acephate @ 1.5 g or Ethofenprox 1.5 ml and if highly effected Pymetrozine 0.6 g per litre of water for BPH & WBPH.
- **Telangana:**
- Undertake nursery sowing of rice. In view of prevailing dry weather, if the cotton crop is at boll development stage, where ever the irrigation facilities available, give one irrigation for better yield.
- Prevailing weather conditions are congenial for the incidence of Thrips in cotton. To control, spray Fipronil @ 2 ml per liter of water in Northern Telangana zone.
- The prevailing weather conditions are congenial for incidence of Panicle Mite and Grain Discoloration, BPH and Blast on rice. To control, spray Dicofol @ 5ml + Propiconazole @ 1 ml or Spiromesifen @ 1 ml + Propiconazole @ 1 ml per litre of water for panicle mite, Acephate @ 1.5 g or Buprofezin @ 1.6 ml per liter of wate r for BPH and Tricyclazole @ 0.6 g or Isoprothiolane @ 1.5 ml or Kasugamycin @ 2.5 ml per litre of water in South Telangana zone.
- **Tamil Nadu:**
- Drain out excess water from standing crop fields in Cauvery Delta Zone and Southern Zone. Provide adequate drainage to recently sown millets and Bengal gram crops in Western Zone. Very high cloud cover and high humidity is favorable for disease incidence, farmers are advised to monitor the standing crops and adopt prophylactic measure at the suitable time.
- In Southern Zone, high to very high cloud cover and high humidity is favourable for disease incidence. So, farmers are advised to monitor the crop and adopt prophylactic measure at the suitable time.
- In Western Zone, weather conditions are favourable for blast incidence in rice, farmers are requested to monitor and spray initially with Tricyclozone @ 1g /litre followed by second spray with 1g Carbendazim/litre of water. Also due to continuous wet weather vegetative growth is observed in mango and to induce flowering spray Paclobutrazole 10g ai or 1% KNO₃. Undertake plant protection methods after current spells of rain.
- **Karnataka:**
- In North Interior Karnataka, complete sowing of Bengal gram, sunflower, chickpea, safflower and wheat. Continue picking of cotton bolls. Complete harvesting of matured groundnut and maize crops. Clipping in chickpea is advised in 35 to 40 days old crop which helps in increasing the yield. Weather is congenial for taking up pruning in grape orchards. Spare some land exclusively for fodder crops or give preference for grain cum fodder crops.
- In Coastal Karnataka, continue picking of cotton.
- In South Interior Karnataka, in clear weather, undertake harvesting of rice, ragi, arecanut and pepper. Complete harvesting of matured groundnut, maize and sugarcane crops. Protect the harvested onion and other harvested produce from rain. Complete sowing of sunflower, chickpea, safflower, field bean, cowpea, ragi, maize, Bengal gram, finger millet, horse gram, green gram, black gram crops.
- In Coastal Karnataka, for the control of Katte Roga in Black pepper spray 1% Bordeaux mixture solution and pour 5 liters of 0.2 % Copper Oxychloride solution to the root of the vine.
- In South Interior Karnataka, due to cloudy weather there is chance of incidence of thrips and mites in chilli crop; to control, spray Roger @ 1.7 ml + Dicotal @ 2.5 ml/litre of water on a non rainy day.
- **Animal Husbandry**
- In Tamil Nadu, those who rear poultry birds in deep litter system should avoid dampness in litter material to avoid coccidiosis. If dampness is observed replace it with fresh litter material or apply 5 kg of lime powder per 100 sq ft area.
- In Karnataka, maintain the optimum room temperature in Sericulture, Poultry and Dairy unit by providing electric bulb for creating warm room temperature.

- **Realised Rainfall:** Rainfall occurred in Anjaw, East Siang, Kurung Kumey, Lower Dibang Valley, Papumpara, Upper Siang Upper Subansari and West Siang districts of Arunachal Pradesh, Chirang, Dhemaji, Lakhimpur, Sonitpur and Tinsukia districts of Assam during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As moderate to dense fog in morning hours likely at isolated places over Assam & Meghalaya during next 3 days and shallow to moderate fog thereafter. Shallow to moderate fog in morning hours likely at isolated places over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura during next 5 days, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
 - **Arunachal Pradesh:**
 - Continue harvesting of soybean and kharif rice at the earliest. Continue sowing of pea/gram in rice fallow and transplanting of *rabi* vegetables.
 - Spray Sulfex @ 2g/litre water to control powdery mildew attack on black gram and green gram at vegetative stage.
 - **Assam:**
 - Complete planting of potato at the earliest. Transplant seedlings of cauliflower, knolkhol, tomato, brinjal and radish in the main field at 30-35 DAS and due to prevailing dry spell, farmers are advised to provide light irrigation on every alternate day for better establishment and smooth growth. Mulching may be done after irrigation. Continue sowing of rapeseed and mustard, pea, and *rabi* pulses. Continue land preparation and sowing of wheat; continue harvesting of Sali rice and nursery bed preparation/sowing of *Boro* rice in Assam.
 - Due to favourable weather incidence and spread of Gundhi bug is observed in Sali rice at milking stage. Since clear with rain free weather is predicted in the coming 5 days, spray Malathion 5% dust @ 3kg per bigha to control the pest.
 - **Meghalaya:**
 - Continue transplanting of cole crops, root crops and cucurbits. Avoid irrigation in ginger and turmeric fields at rhizome maturity stage. Undertake sowing of pea.
 - Spray Hexaconazole @ 1ml/litre of water at 15 days interval for control of sheath blight and sheath rot in Sali paddy.
 - **Manipur:**
 - Continue sowing of mustard and rapeseed, pea, lentil, soybean, groundnut, black gram, rice bean etc. and nursery raising to land preparation for transplanting of onion.
 - **Mizoram:**
 - Continue harvesting of Upland rice, sowing of radish and leafy mustard and nursery preparation of tomato, crucifer, onion, brinjal and chilli.
 - Due to high humidity the problem of citrus canker get aggravated in acid lime leading to excessive fruit drop. Spray copper oxychloride 180 gms with Spreptocycline 6 gms in 60 liters of water to control canker.
 - **Tripura:**
 - Undertake nursery bed preparation for sowing of *Boro* rice. Continue sowing of *rabi* legumes like toria, sesame, lentil and planting of potato.
 - **Nagaland:**
 - Complete transplanting of vegetable crops like cabbage, tomato, radish and broccoli. Continue harvesting of TRC/WRC rice.
 - In the present weather conditions monitor cabbage caterpillar in cabbage. Hand picking and destruction of egg mass and young larvae or apply 4% Neem Seed Kernel Extract (NSKE) and spray 0.05 % Malathion or quinalphos in heavy infestation.
- **Animal Husbandry**
 - In Assam, in winter livestock are prone to respiratory diseases and debility. So provide good quality food and necessary supplements to keep them fit. Protect animals from cold weather, keep in well bedded shed. Goats are preferably being kept in raised platform. Keep poultry litter about 3-5 inches height. Care should be taken not to restrict ventilation.
 - In North Eastern States, to protect poultry birds from cold winds, gunny bags or plastic sheath curtains should be installed on the side walls of shed house and bedding material (litter) should be increased by six inches. Care should be taken not to restrict ventilation.
- **Fishery**
 - In Lower Brahmaputra Valley Zone of Assam, to protect the fish population against various diseases prevalent in winter season apply 1 kg turmeric along with 10 kg lime for 1 bigha pond and mix it uniformly in water.

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

- **Realised Rainfall:** Rainfall occurred in South Andaman and Nicobar districts of Andaman & Nicobar Islands and North Sikkim districts of Sub-Himalayan West Bengal during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Odisha:**
 - Medium duration paddy is at grain maturity to harvesting stage. Drain our water from the field and carry out harvesting of matured crop. Carry out harvesting of mature maize and ragi crops. Continue land preparation/sowing of wheat. Undertake sowing of high yield varieties of garlic. . Go for pyra cropping of lathyrus, green gram, black gram and green pea at saturated condition in field. This is right time to sow potato tubers @ seed rate 6-8 q/acre with each 25 g size. Treat the seed material with 10 liters of water mixed in 20 g Mancozeb and 1 g Streptocyclin mixture for 30 minutes. Harvest mature groundnut crop without delay. Irrigate vegetable crops as per the requirement. Taking the advantage of store soil moisture due to recent rain, start land preparation and sowing of groundnut, mustard and toria crop to get optimum yield. Complete the field preparation for transplanting cole crops and tomato.
 - To control fruit and shoot borer in brinjal, spray Neem based pesticide 1500 ppm @ 600ml/acre at initial stages. Later on go for alternate spray of Spinosad 45%SC@70ml/acre and Thiodicarb @2 50g/acre at 15 days interval. For caterpillar attack in groundnut field, spray Quinalphos 20% EC @ 2 ml/litre of water.
 - **Bihar:**
 - Continue land preparation for timely sowing of rabi crops such as lentil, pea, rai, toria, garlic, coriander, sunflower, rajma and methi. Continue nursery sowing of rabi onion. Continue land preparation/planting of potato. Temperature and other Agro-meteorological conditions are congenial for sowing of wheat. Recommended wheat varieties under irrigated conditions are: PBW-343, PBW-443, K-9107, HD-2733, HD-2824, HUW-206, HUW-468, K-307, CBW-38, DBW-39). Complete the sowing of late variety of rai such as Rajendra rai picheti (RAURD-9403), Rajendra anukul (RAURD-1002) and Rajendra suflam (RAURDL-02-01) till the end of November. Weeding is advised in 20-25 days old rai crop. Plant to plant spacing should be maintained at 12-15 cm by thinning. Present weather is suitable for sowing of gram. Pusa-256, KPG-59(Udai),KWR-108,pant G-186 and Pusa-372 varieties of gram are recommended for sowing in north Bihar region. Complete the sowing of rabi maize by the end of this month. Continue sowing of gram (varieties Pusa-256, KPG-59 (Udai), and Pusa-372).
 - Monitor cutworm in 15-20 days old maize, pea, lentil and kidney beans crop. For management, flood the field to bring the caterpillars out of cracks so that they are picked up by birds. In case of severe damage, spray Chlorpyrifos 20 EC @ 2.5 ml per liter of water. For sucking insect/pests such as white fly, leaf hopper and aphid in vegetables crop, spray Imidacloprid 17.8 % SL @ 0.3ml/liter of water.
 - **Jharkhand:**
 - Harvest mature crop of late rice varieties. After threshing, dry the grains and store them at moisture level 8-10%. Undertake timely sowing of irrigated condition improved varieties of wheat like HUW-468, DBW-39, K-9107, K- 1006, K307, Birsa Genhu – 3, HD- 2967, HD-2733, etc. and un-irrigated condition cultivate improved wheat varieties like C- 306, K -8027, HDR 77, K-8962, HD-2643(Ganga), etc. Prepare land for sowing of Rye varieties Shivani, Pusa bold, NRCHB 101 and Pusa Mustard 25 and Yellow Mustard improved varieties NRCYS 05-02. Take up sowing of improved varieties of gram, table pea, lentil and linseed. Cultivate improved varieties of tomato, cabbage, cauliflower, onion and potato.
 - For leaf eating insects in vegetable crops, spray Imidachlorpid @ 1g or Kung fu @ 2 ml per liter of water. For control of mites, jassids and hoppers in Okra, Chilli and cucurbitaceous crops, apply neem oil having concentration of 1500 ppm @ 3 ml per litre of water or chemicals like Omite or Rogar @ 2ml per litre of water. For control of leaf blight in pulse crop, spray Indofil M 45 @ 2 g per litre of water.
 - **West Bengal:**
 - In Sub-Himalayan West Bengal, continue field preparation for planting of potato, garden pea and cole crops. Carry out careful roguing and destruction of infected plants in ginger and turmeric fields. Continue sowing of lentils after harvesting of Aman rice. Continue sowing of winter vegetable seeds in the nursery bed. Before sowing treat the seed bed with fungicide Copper-oxychloride @ 4g/litre of water.
 - In Gangetic West Bengal, where 80% grains are found mature, complete harvesting Aman paddy otherwise yield will reduce due to false smut attack. Continue transplanting of seedlings of winter vegetables. Apply light irrigation as per the requirement. Continue sowing mustard, gram and field pea. Continue planting potato. Continue sowing of rabi onion, rabi garlic, coriander, fenugreek, turnip, spinach and radish. Apply irrigation to rice crop. Continue transplanting of seedlings of cauliflower, cabbage, broccoli and tomato on raised beds. Carry out land preparation for lentil crop. Complete the sowing of gram and pea at the earliest.
 - In Sub-Himalayan West Bengal, to control Downey mildew of cucurbits, spray Metaloxy + Mancozeb @ 2.5 g/litre of water. For Aphid, hoppers, white fly and thrips in chilli crop, apply Imidacloprid 17.8 SL @ 1ml/5

litres or Thiomithoxam 0.3 SG @ 1g/3 litres of water.

- In Gangetic West Bengal, collect and destroy the affected fruits and plant parts of brinjal. Spray Neem Seed Kernal Extract solution @ 50 ml/litre of water. Spray Acephate @ 1 g per litre of water for white fly in cabbage, cauliflower and tomato. Spray Dimethoate 30% EC @ 1ml/litre of water at clear weather condition for thrips in chilli crop.
- **Andaman & Nicobar Islands:**
- In the Andaman Islands, harvest the matured paddy and dry it as the weather is conducive. Raise nursery of tomato @ 500 g/ha of seeds in the tray or in the field with good drainage facility.
- **Animal Husbandry**
- In Odisha, provide clean drinking water to cattle and keep the sheds clean. Don't allow urine or excreta to deposit in and around the shed to prevent flies. Provide vaccination at regular interval.
- In Bihar, give protein enriched diet to the animals. Do not keep animals in open at night. Hygiene should be maintained at the place where animals are kept.
- In Jharkhand, keep animals in a covered shed/area during night to protect them from a sudden drop in temperature. Keep the animal bedding dry. Vaccinate against FMD, Haemorrhagic Septicaemia (HS), Black Quarter (BQ), Enteroxemia during this month. To prevent poultry birds from cold, cover the windows and doors with gunny sheet and if the all chicken comes under the brooder, increase the temperature by addition of more bulbs in brooder.
- In West Bengal, vaccinate cattle against FMD. Keep the cow shed clean and dry. Vaccinate poultry birds against Ranikhet disease. Considering the fall in night temperatures, keep the new born chicks under bulb.
- Calf should be feed with calf starter for 3-4 days after birth. This will enhance digestive system and help to maintain body heat during winter.
- **Fisheries**
- In Odisha, provide feed @ 2-3 % of body mass of fish. Go for false netting to get good growth of fish. To correct acidity, apply 100 kg lime and Cifax 500 ml per acre meter of water.
- In West Bengal, apply cow dung @ 100kg/bigha monthly basis in fish culture pond to enhance the growth of phytoplankton which will be consumed by fish.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rainfall occurred in South Goa district of Konkan & Goa, Satara district of Madhya Maharashtra during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - In South Konkan, continue land preparation for sowing of *rabi* rice. Continue preparatory tillage operations for *rabi* groundnut. Continue sowing of *kulthi*, *chavli* and *wal*. In North Konkan, continue land preparation for *rabi* rice and groundnut.
 - In Madhya Maharashtra, continue harvesting of matured *kharif* rice. Undertake intercultural operation like hoeing in 20 days old gram. Continue picking up of cotton. Undertake transplanting of onion, at the time of transplanting dip roots of onion seedlings in Dithane M- 45 @ 2.5 g or Carbendazim @ 1 g per litre solution.
 - In Marathwada, continue picking of cotton. For late sowing of wheat crop use 125 to 150 kg/ha seed rate. Apply protective irrigation to gram, safflower, vegetables and orchards.
 - In West Vidarbha, continue picking of cotton. Undertake intercultural operations like weeding in safflower and chickpea. For delayed sowing of irrigated wheat. Undertake seed treatment with Carbendazim @ 2.5 g/kg seed. In East Vidarbha, continue sowing of gram, wheat and linseed. Continue harvesting of matured varieties of rice.
 - In Vidarbha, to control pod fly in pigeonpea, spray Quinolphos 25% EC @ 20 ml in 10 litres of water. In pigeonpea to manage the initial incidence of pod borer (*helicopterpa*) spray 5% neem seed extract; for incidence above ETL level (10-20 larvae/plant), spray Chlorantraniliprole 18.5% SC @ 2.5 ml or Emamectin benzoate 5% SG @ 3 g in 10 litres of water.
 - **Gujarat:**
 - In Middle Gujarat, continue sowing of wheat, maize and coriander crops. Deep plough the field 2-3 times and make furrow at 45 cm for sowing of potato. Continue picking of matured cotton bolls. Apply irrigation in cluster bean crop at pod development stage.
 - In South Gujarat, continue sowing of wheat, sorghum, gram, green gram, Indian bean, pea, lentil and corn crops. Carry out intercultural operations in pigeon pea crop.
 - In North Gujarat, continue sowing of cumin, wheat, potato, gram and fenugreek crops and transplanting of cabbage crops. Continue picking of matured cotton bolls.
 - In Saurashtra & Kutch, continue sowing of wheat, garlic, chickpea, mustard, coriander and cumin crops and transplanting of cabbage crop. Continue picking of matured cotton bolls.

- In Middle Gujarat, spray insecticides like Methyl-o-Ddemeton 25 EC or Dimethoate 30 EC @ 15 ml in 10 liters of water after well mixing against leaf curl in tobacco crop.
- In Saurashtra & Kutch, under present weather condition, to prevent dropping of squares, flowers and immature bolls of cotton crop, spray 30 PPM Naphthalene Acetic Acid solution (Planofix 7.5 ml/10 liters of water).
- **Animal Husbandry**
- In Gujarat, provide ad lib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry over the region during the week.
- **Advisories:**
 - **Madhya Pradesh:**
 - In East Madhya Pradesh, continue sowing of gram, lentil and linseed. Continue planting of potato and garlic. Continue nursery preparation for *rabi* vegetables. Continue sowing of carrot, beetroot, radish, spinach, fenugreek etc. Complete sowing of early maturing varieties of wheat up to 25th November. Apply first irrigation in wheat crop where it has reached CRI stage.
 - In West Madhya Pradesh, continue sowing of wheat and gram. Continue harvesting of green chilli, okra and cucurbit crops. Continue sowing of garlic. Continue planting of sugarcane and potato. Undertake thinning in mustard.
 - In Satpura Plateau Zone, in brinjal, tomato and bhindi crops attack of fruit borer has been observed, to control use Pheromone Trap @ 20 Nos/ha.
 - In Central Narmada Valley Zone, to control Purple blotch attack in onion crop, apply Copper Oxy Chloride @ 40 g and Streptocyclin @ 2 g per 15 litres of water.
 - **Chhattisgarh:**
 - Continue harvesting of matured rice crop. Continue sowing of lathyrus or linseed crops. Continue planting of potato and garlic and seed bed preparation for onion. Continue sowing of wheat and gram. Continue transplanting of cauliflower, tomato, brinjal, chilli etc. in the main field. In Plain Zone, continue nursery sowing of tomato, brinjal, chilli and capsicum.
 - In Bastar Plateau Zone, continue harvesting of matured rice. Continue sowing of wheat and gram. Continue nursery preparation for *rabi* vegetables. Undertake earthing up in banana.
- **Animal Husbandry**
 - In Madhya Pradesh, newly borne calves should be prevented from cold. For this floor should be covered with paddy straw litter which provides a thermal mulch. All milk animals should be kept in specially protected and safe cattle sheds during night.
 - In Chhattisgarh, due to decrease in temperature and its possible adverse effects, dairy farmers are advised to keep the animals in the cattle shed with concrete/brick roof. Give protein enriched diet to the animals.

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

- **Realised Rainfall:** Rainfall occurred in Kullu and Mandi districts of Himachal Pradesh, Bandipore, Baramula and Kupwara districts of Jammu & Kashmir during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Jammu & Kashmir:**
 - In Sub-tropical zone, continue sowing of wheat under irrigated conditions.
 - Hoeing & weeding is recommended in chickpea to conserve soil moisture. Complete the sowing of Pea (var. AP-1, Bonnevillea, Rachna and Arkel) by the end of this week in irrigated areas. Carry out hoeing and weeding operations in 20 days old lentil crop.
 - Carry out hoeing and weeding in mustard crop in order to conserve soil moisture. Undertake sowing of late mustard crop (variety Kranti) in irrigated areas. Irrigate the 35-40 days old early sown mustard crop if it is under irrigated condition. Carry out hoeing, weeding and thinning operations.
 - **Uttarakhand:**
 - Continue sowing of wheat in Bhabar and Tarai Zone. Seeds should be treated before sowing. Carry out weeding in pulses at the interval of 20-25 days and 35-40 days after sowing. Carry out hoeing in snowball cauliflower with the supply of urea. Undertake transplanting of selected root of radish, turnip and carrot in new field for seed production. Undertake sowing of garlic in the valley.
 - To control the leaf spot disease in cole crops, spray solution of Mancozeb @ 2.5 g/litre of water.
 - **Himachal Pradesh:**
 - Undertake field preparation for sowing of *rabi* crops and vegetable in Sub-Montane & Low Hills Sub-Tropical Zone.

- Complete sowing of gram and lentil in lower areas. Carry out thinning and weeding operations in timely sown mustard crop. Undertake transplanting of onion nursery in well prepared fields at the spacing of 15X10 cm. Carry out hoeing and weeding in other winter crops like garlic radish, carrot, spinach etc. Apply light irrigation in all the winter vegetables after 10-15 days intervals.
- To control the wilt disease in pea crop in Mid Hills Sub-Humid Zone, treat the seed with Bavistin 0.5 gm/litre for two hours before sowing.
- **Punjab, Haryana & Delhi:**
- In Punjab, complete the sowing of raya and wheat. Continue harvesting of matured maize, green gram. Continue planting of early varieties of potato and pea. Complete sowing of spinach, radish, turnip and carrot. Continue planting of early varieties of sugarcane. Continue planting of seedlings of onion. Undertake transplanting of tomato.
- In Haryana, continue intercultural operations in vegetables. Continue field preparation for sowing of mustard. Continue harvesting of timely sown bajra, guar, green gram, black gram and picking up of matured cotton bolls. Undertake sowing of mustard, barley, gram, wheat, berseem and oats.
- In Delhi, continue planting of winter sugarcane at optimum soil moisture for better seed germination. Continue sowing of gram and sowing of garlic on raised bed. Continue sowing early mustard, pea and planting of early potato. Continue transplanting of onion. Continue sowing of sarsonsaag, radish, spinach, coriander. Continue transplanting of cauliflower, cabbage, broccoli and tomato. Continue sowing of carrot on raised bed. Continue field preparation for sowing of wheat.
- In Haryana, due to fall in night temperature keep the animals under shed. Provide 50 grams iodized salt and 50 to 100 grams mineral mixture daily with animal feed/fodder to keep them healthy.
- **Uttar Pradesh:**
- In East Uttar Pradesh, undertake sowing of coriander, spinach, radish, carrot, fenugreek, fennel etc. Continue sowing of mustard, gram, lentil, pea and planting of sugarcane, potato, ginger and turmeric. Undertake sowing of wheat and barley.
- In West Uttar Pradesh, continue harvesting of rice as weather is favourable. Continue harvesting of bajra and jowar. Continue sowing of recommended wheat varieties. Apply light irrigation to late-sown toria crop. Continue sowing of recommended varieties of mustard, pea, gram, lentil and winter vegetables like radish, carrot, fenugreek, coriander, etc. Continue nursery raising of recommended onion varieties. Continue transplanting of matured seedlings of brinjal, cabbage, cauliflower, tomato and capsicum. Continue sowing of garlic in raised bed. Undertake earthing up in potato.
- **Rajasthan:**
- In Southern Humid Plain Zone, irrigation may be applied in sugarcane and vegetable crops as per need. Farmers are also advised to go for sowing of rabi maize.
- In Flood Prone Eastern Plain Zone, sowing of wheat may be undertaken at the earliest to facilitate the extended vegetative and reproductive growth phases, it escapes terminal heat damage during maturity phase.
- In Transitional Plain Zone of Inland Drainage, prepare the nursery of late varieties of cabbage and cauliflower, onion and sowing of Rabi green leafy vegetable and beet root, carrot, radish and pea etc.
- In Arid Western Plain Zone, weather conditions are becoming favourable for sowing of mustard and gram. Therefore, arrange seed, fertilizer and chemicals for seed treatment for sowing. Also, harvest mature groundnut and undertake sowing of garlic. Undertake field preparation and sowing of wheat and barley as this is the best optimum time of sowing for wheat and barley when average daily temperature remains between 20-25° C.
- This is the right time for sowing of wheat and barley in Sub Humid Southern Plain and Aravali Hill Zone, For control for termitis in field, use of Quinolphos 1.5% dust 25 kg/ha before last tillage operation.
- **Animal Husbandary**
- In Uttar Pradesh, vaccinate cattle against FMD and BQ. Provide them clean drinking water. Keep poultry houses clean.
- **Horticulture**
- In Jammu & Kashmir, to control the stem rot disease in apple and seed bearing fruits, remove soil from the surrounded area of stem in the affected fruit trees so that sun rays may enter directly in the stem of affected tree. Remove the affected bark. Drenching of 0.3 % Copper-oxychloride per plant should also be done. Spray 5% Urea in the leaves of apple before one week of falling leaves stage.
- In high hills, collect and dry the seeds of wild apricot, peach, apple etc. Undertake sowing after suitable seed treatment. Arrange fertilizers, compost, fungicides/insecticides which are mixed in soil while filling the pits in sufficient quantity. Reserve improved varieties of deciduous plants. Start preparation of basins.

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