



National Agromet Advisory Service Bulletin

Friday 24th November 2017
(For the period 24th to 29th November 2017)



Issued by
India Meteorological Department

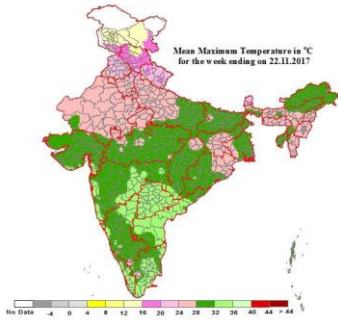
Weblink For

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

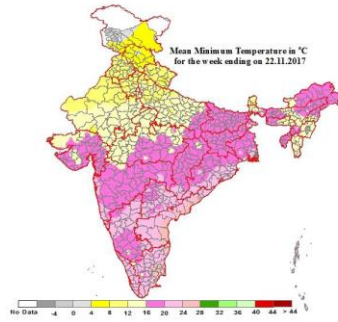
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending 22.11.2017

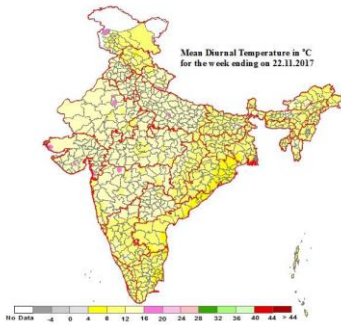
Mean Maximum Temperature (°C) for the week ending 22.11.2017



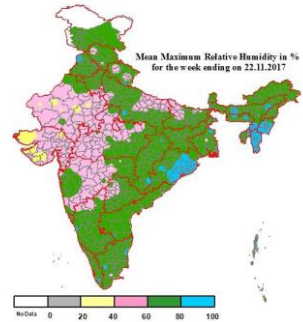
Mean Minimum Temperature (°C) for the week ending 22.11.2017



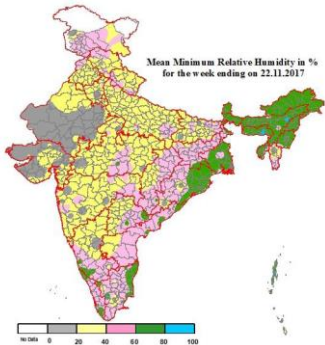
Mean Diurnal Temperature Variation (°C) for the week ending 22.11.2017



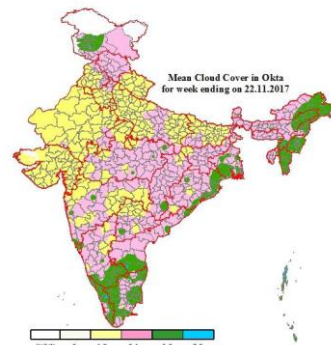
Mean Maximum Relative Humidity (%) for the week ending 22.11.2017



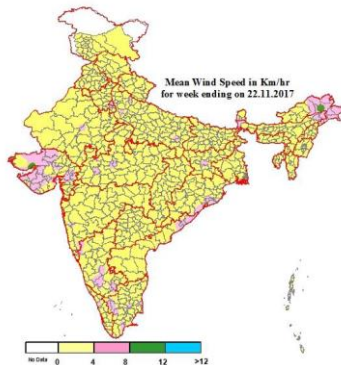
Mean Minimum Relative Humidity (%) for the week ending 22.11.2017



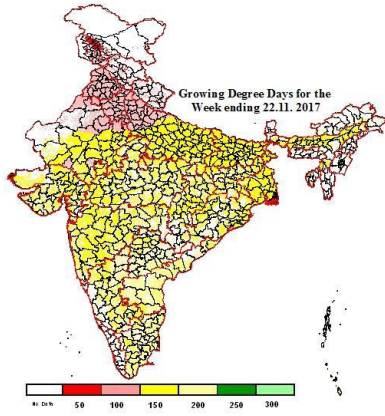
Mean Cloud Cover (okta) for the week ending 22.11.2017



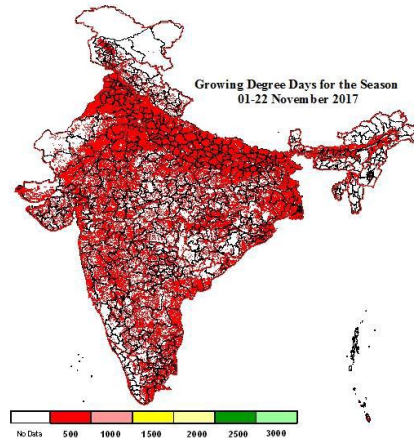
Mean Wind Speed (km/hr) for the week ending 22.11.2017



Growing Degree Days for the week ending 22.11.2017

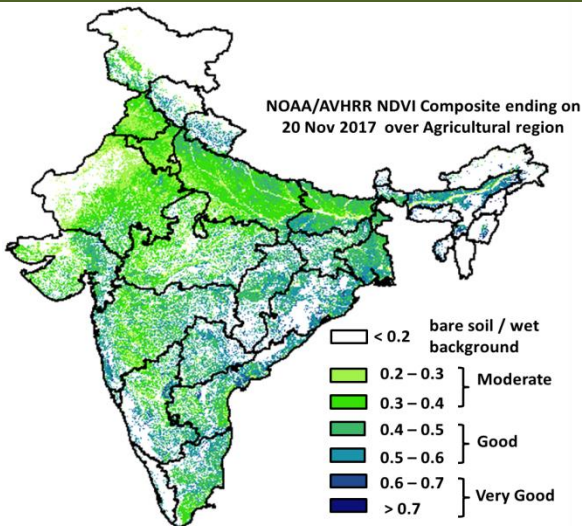


Growing Degree Days for the season ending 22.11.2017

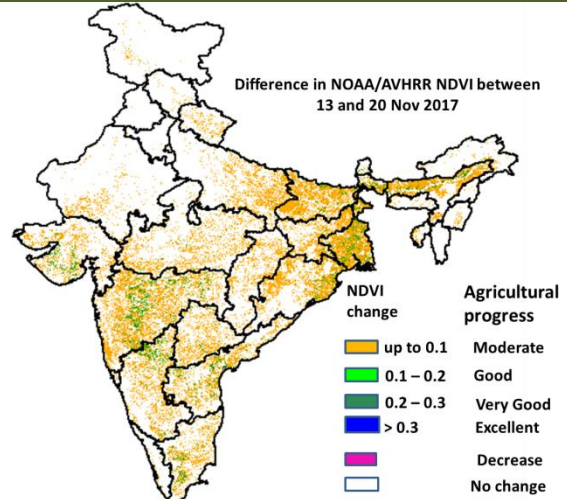


* Base temperature for *Rabi* Season is taken as 05⁰ C

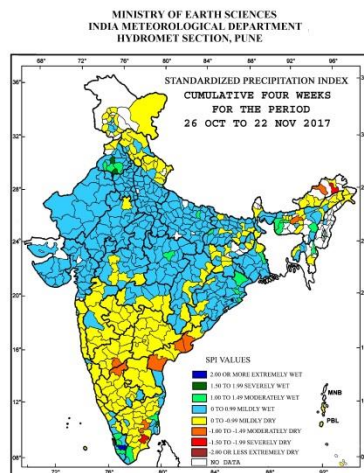
NOAA/AVHRR NDVI composite ending on 20th November 2017 over Agricultural regions of India



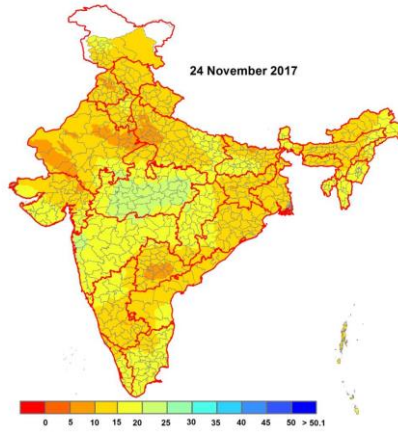
Difference in NOAA/AVHRR NDVI between 13th and 20th November 2017



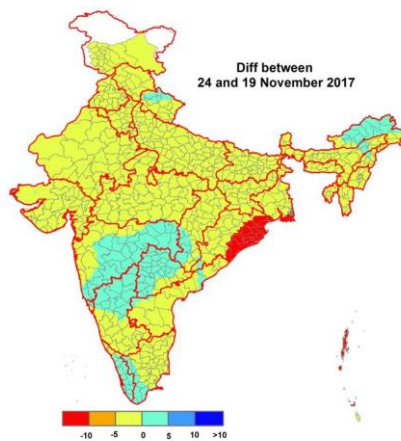
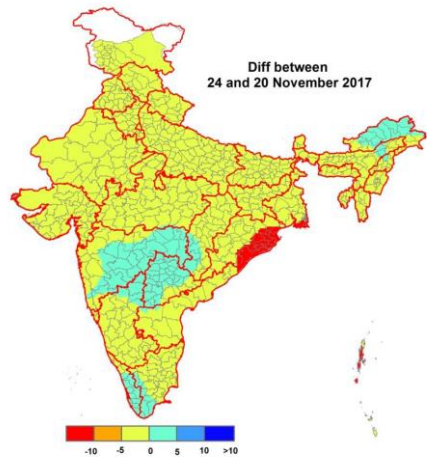
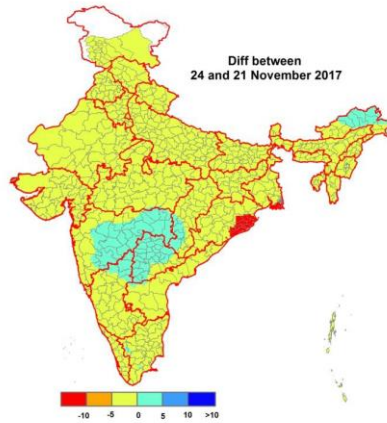
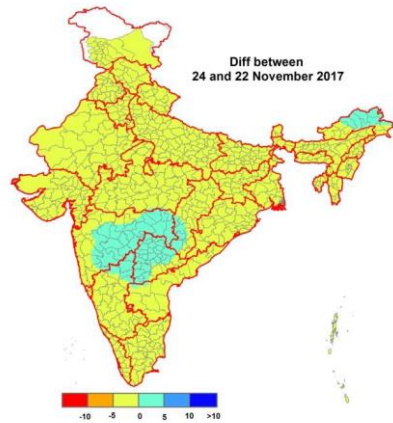
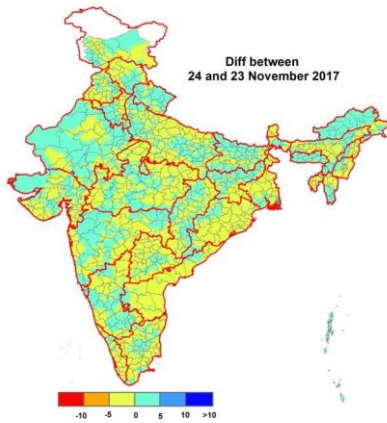
**Standardised Precipitation Index
Cumulative 4 weeks for the period 26th October to 22nd November 2017**



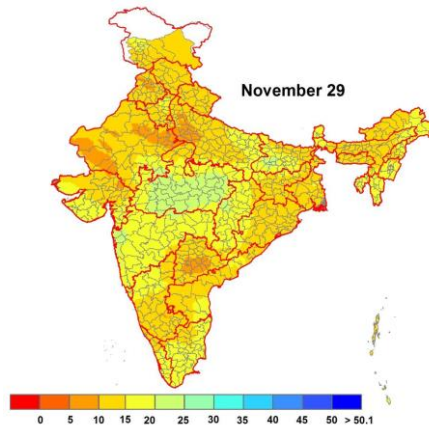
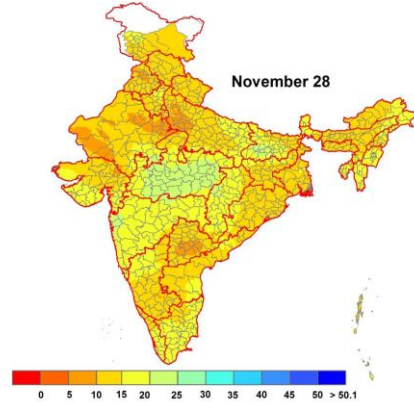
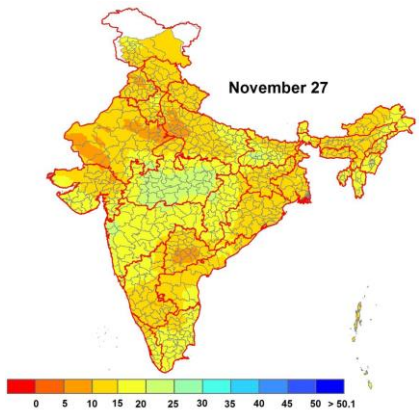
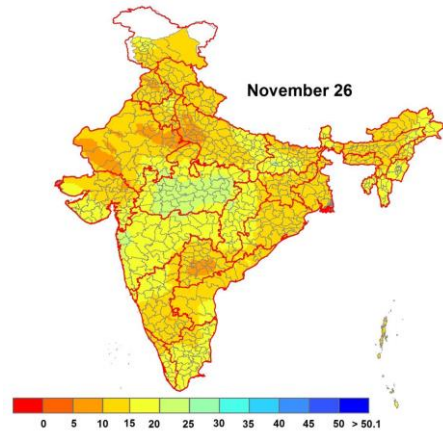
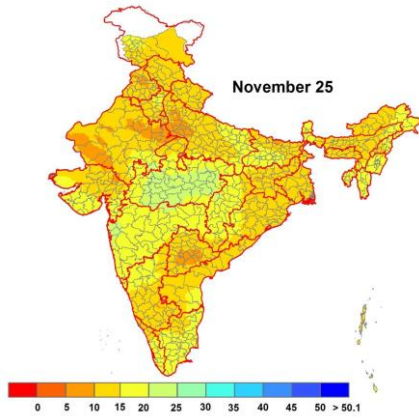
Daily Soil Moisture (mm) for 24th November 2017 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 25th November to 29th November 2017 (ending at 0830 IST)
for 60 cm depth**



Weather Forecast for next 5 days valid upto 0830 hours of 29th November 2017

- Meteorological subdivision wise detailed of 5 days rainfall forecast is given in Table below.
- No significant change in minimum temperature very likely over Northwest India during next 24 hours and rise by 1-2°C thereafter.
- No significant change in minimum temperature likely over rest parts of the country during next 3 days.
- Shallow to moderate fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, North Rajasthan and Uttar Pradesh in the morning hours of 26th, 27th & 28th November.

5 Day Rainfall Forecast (Mid day) 24th November 2017

Met-Sub-Division	24-Nov Today	25Nov Sat	26Nov Sun	27Nov Mon	28Nov Tue
1. Andaman & Nicobar Islands	FWS	FWS	FWS	FWS	FWS
2. Arunachal Pradesh	ISOL	ISOL	ISOL	ISOL	ISOL
3. Assam & Meghalaya	DRY	DRY	DRY	DRY	ISOL
4. N. M. M. & T.	ISOL	ISOL	DRY	DRY	ISOL
5. S.H. West Bengal & Sikkim	ISOL	ISOL	ISOL	ISOL	ISOL
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	DRY	DRY	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	DRY	DRY	DRY	DRY
15. Himachal Pradesh	DRY	DRY	DRY	DRY	ISOL
16. Jammu & Kashmir	ISOL	ISOL	SCT	ISOL	ISOL
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. Vidharbha	DRY	DRY	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal Andhra Pradesh	ISOL	DRY	ISOL	ISOL	ISOL
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	DRY	DRY	ISOL	DRY	DRY
31. Tamilnadu & Puducherry	ISOL	ISOL	SCT	SCT	SCT
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	DRY	DRY	DRY	DRY	DRY
34. South Interior Karnataka	DRY	DRY	DRY	ISOL	DRY
35. Kerala	ISOL	ISOL	ISOL	SCT	SCT
36. Lakshadweep	ISOL	ISOL	ISOL	SCT	WS

% 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

- **24 November (Day 1):** Cold wave conditions very likely to prevail at isolated places over Uttar Pradesh, Haryana, Chandigarh & Delhi and East Rajasthan. Moderate to dense fog very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **25 November (Day 2):** Heavy rain very likely at isolated places over south Tamilnadu. Moderate to dense fog very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **26 November (Day 3):** Heavy rain very likely at isolated places over south Tamilnadu. Moderate to dense fog very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

- **27 November (Day 4):** Heavy rain likely at isolated places over south Tamilnadu.
- **28 November (Day 5):** No Weather Warning.

Weather Outlook for subsequent 2 days from 29th November to 1st December 2017

- A fresh Western Disturbance is likely to effect Western Himalayan region from 29th November.
- The present low pressure system over southeast & adjoining eastcentral Bay of Bengal is likely to move across Comorin area and emerge into Arabian Sea.
- A fresh low pressure area is likely to develop over southeast Bay of Bengal around 29th November.
- Rain at most places likely over Andaman & Nicobar islands, at a few places likely over southern most peninsular India and northeast India.
- Weather is likely to be dry over the remaining parts of the country.

Salient Advisories

- As heavy rain at isolated places very likely over **South Tamilnadu** on 25th, 26th and 27th November, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
- In the Problem Area Zone of **Kerala**, continue wet sowing of rice after seed treatment with Pseudomonas.
- In the Western Zone of **Tamil Nadu**, continue sowing of Bengal gram under rain fed situation considering the available soil moisture.
- As moderate to dense fog at isolated places in the morning hours very likely over **Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** from 24th to 26th November, shallow to moderate fog at isolated places very likely over **Punjab, Haryana, Chandigarh & Delhi, North Rajasthan** and **Uttar Pradesh** in the morning hours of 26th, 27th & 28th November, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
- As cold wave conditions very likely to prevail at isolated places over **Uttar Pradesh, Haryana, Chandigarh & Delhi** and **East Rajasthan** on 24th November, the young as well as the newly planted fruit plants should be covered with thatches or kullies made of sarkanda or farm waste materials to protect them from cold damage.
- Under the prevailing weather conditions, sowing of following *rabi* crops are advised in different States/Agroclimatic Zones as given below:
 - **Wheat:** Continue sowing of long duration wheat till end of November in Punjab. Continue sowing in Bhal and Coastal Zone of Gujarat, in Irrigated North Western Plain Zone, in Southern Plain Zone and in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, in Jammu & Kashmir and in Madhya Pradesh under sufficient soil moisture condition. Complete sowing of irrigated wheat (varieties: AKW-1071 (Purna), AKAW 3722(Vimal), HD-2189 and HD-2360) in Madhya Maharashtra and Marathwada.
 - **Bengal gram:** Continue sowing of gram in Jharkhand, Madhya Pradesh, Chhattisgarh, Rayalseema, Telangana, Rajasthan (Western Plain Zone) and Punjab. Complete sowing of gram in Vidarbha.
 - **Mustard/rapeseed:** Continue sowing in Assam, Manipur, Gangetic West Bengal and Odisha, continue sowing of mustard (Varieties: Pusa Bold, ACN-9) in East Vidarbha.
- As dry/mainly dry weather would prevail, continue harvesting of matured rice in Uttar Pradesh, Bihar, Odisha, Jharkhand, in North Telangana Zone and Sali rice in Assam. Continue picking of cotton in Gujarat, Maharashtra, Punjab and Haryana.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in Alappuzha, Ernakula, Kollam, Kottayam, Pathanamthitta, Thiruvananthapuram, Thrissur and Wayanad districts of Kerala, Kanniyakumari, Krishnagiri, Nilgiris and Tirunelveli districts of Tamil Nadu, Srikakulam and Vizianagaram districts of Coastal Andhra Pradesh during the week and weather remained mainly dry/dry over rest of the region.

• **Advisories:**

- As heavy rain at isolated places very likely over South Tamilnadu on 25th, 26th and 27th November, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
- **Kerala:**
 - In the Problem Area Zone, undertake wet sowing of rice after seed treatment with *Pseudomonas* and continue harvesting of Nendran bananas.
 - In the High Altitude Zone, continue harvesting of green ginger pepper, arecanut and cardamom.
 - In the Central Zone, prevailing weather condition is congenial for occurrence of leaf folder in mundakan rice (second crop). To control, spray 2ml fame/10 litres of water.
 - In the Southern Zone, to control blast disease in rice spray tebuconazole 250EC 750 ml/ ha. In tomatoes and brinjal there is the possibility for leaf curl virus and Septoria leaf spot. Apply combination spray of Imidacloprid (Confidor) 0.3 ml and Mancozeb (Indofil M45) 3 g / 1 litre of water.
 - In the Northern Zone, spray the bunches with Calyxin (@1ml per litre of water mixed with a sticking agent Agrowet @ 1ml/litre for nut fall/button shedding in coconut. Spray Flubendiamide @ 1.5 ml in 10 litres of water 2-3 times at weekly interval for shoot and fruit borer in brinjal. Spray the solution of Llamda Cyhalothrin insecticide 3ml + Copper Oxychloride fungicide 5g dissolved in 5 litres of water for mosquito bug-blight disease in cashew plantation.
- **Andhra Pradesh:**
 - In the North Coastal Zone, continue sowing of groundnut after seed treatment. Undertake sowing of rice fallow pulses like black gram (varieties PU- 31, LBG 752 , LBG 787 , TBG 104) and green gram (varieties LGG -460, LGG - 410, WGG 37, GGG – 1).
 - In the Krishna Godavari Zone, continue land preparation for sowing of chickpea.
 - In the Scarce Rainfall Zone, continue sowing of groundnut under assured irrigated conditions.
 - In the Southern Zone, undertake sowing of groundnut during this month under irrigation with suitable varieties like Dharani, Narayani, K6, K7 and K8 Bold, Kadiri Amaravathi, Bheema, etc.
 - In the High Altitude Tribal Zone, harvest paddy in clear weather. Carry out sowing of cabbage and mustard. Use yellow sticky traps for aphids and hoppers in niger crop.
 - In the Scarce Rainfall Zone, incidence of fusarium wilt is observed in Rabi Bengal gram. To avoid further spread of fusarium wilt, drench with Bavistin @2 g/litre of water. Install Pheromone traps immediately at the field level @ 4 - 6 per acre to monitor the incidence of Pink boll worm in cotton crop. For incidence of spotted pod borer and helicoverpa in Red Gram, spray NSKE @ 5ml/litre to control egg laying and Chlorpyrifos 2 ml/litre + Nuvan 1 ml/litre of water for controlling of larvae.
 - In the Krishna Godavari Zone, spray Monocrotophos 1.6 ml or Quinolphos 2.0 / litre of water for leaf webber in red gram. Spray Chlorpyrifos 2.5 ml or Monocrotophos 1.6 ml/ litre of water for flea beetles in black/green gram. After 120 days of sowings, spray two times of synthetic pyrethroid products like Cypermethrin 1.0 ml or Lamda – Cyhelothrin 1.0 ml per litre of water for prevention of pink ballworm in cotton.
 - In the Southern Zone, spray chloripyriphos @ 2.5 ml. (or) cartaphydrochloride @ 2 g. (or) acephate @ 1.5 g./L of water for leaf folder in *Rabi* paddy.
- **Telangana:**
 - In North Telangana Zone, continue harvesting of kharif rice. Continue land preparation for sowing of rabi rice, groundnut, Bengal gram and Rabi sorghum.
 - In South Telangana Zone, undertake nursery sowing of Rabi rice till 15th December.
 - In North Telangana Zone, spray Profenofos @ 2 ml, Thiodicarb @ 1.5 g /Triazophos @ 2 ml /1 litre of water for pink ballworm in cotton. Spray NSKE 0.5 % solution or neem oil @ 5 ml/litre at bud initiation stage and at flowering stage for Maruca pod borer; Monocrotophos @ 1.6 ml/ litre of water for leaf folder and Dimethoate @ 2.0 ml or Monocrotophos @ 1.6 ml/ litre for Aphids/Jassids.
 - In South Telangana Zone, prevailing weather conditions are congenial for increase in blast (leaf, neck and spikelet) disease in rice. To control, spray Isoprothiolane @ 1.5 ml or Kasugamycin @ 2.5 ml or Tricyclozole @ 0.5 g per litre of water twice at 7-10 days interval. Spray Chlorpyrifos @ 2.0 ml or Acephate @ 1.5 g per litre of water at 10-15 days after sowing of maize crop. If maize crop is at 25-30 days stage apply Carbofuran 3G granules @ 3-4 kgs per acre in leaf whorls.
- **Tamil Nadu:**
 - In the Cauvery Delta Zone, provide adequate drainage facilities to drain the excess rainwater present in the paddy fields to improve better aeration in the root zone.
 - In the High Rainfall Zone, harvest banana bunches and store them in a dry place. Provide proper drainage to pineapple field.
 - In the Western Zone, continue sowing for bengal gram under rain fed situation considering the available soil moisture. Detrashing and double line propping may be done to the late season sugarcane crop to avoid lodging due to moisture and light wind. Garden land banana may be planted utilizing the realized rainfall.
 - In the Cauvery Delta Zone, spray Propiconazole @ 1 ml/litre of water for sheath blight and Profenofos 50 E.C. 400

- ml/ acre on a non-rainy day for leaf folder incidence in the samba rice due to prevailing weather conditions.
- In the South Zone, to control the sucking pest and shoot fly in cotton and sorghum crops, spray Dimethoate 30 EC 500 ml/ha or Neem Seed Kernel extract 5%. and in pulses crops, spray Chlorpyrifos 20 EC @ 1.25 litre / ha or Quinolphos 25 EC @ 1.5 litre /ha for control of horned caterpillar.
 - In the Western Zone, spray Propiconazole @ 1 ml or Carbendazim 1 g or COC 2.5 g or Mancozeb 2.5 g / litre of water for leaf blotch disease in turmeric. Spray Thiamethoxam @ 100 g/ha or Phosalone @ 2ml / litre of water for Gal midge incidence in rice.
 - In the Southern Zone, apply Carbaryl 10 D @25 kg/ha or Malathion 5 D @25 kg/ha on 3rd and 18th day after panicle emergence.
 - In the High Altitude Hilly Zone, drainage facilities should be created in the paddy field to drain off excess water.
 - In the North Western Zone, undertake cultivation of tapioca.
 - In the High Rainfall Zone, drench pepper vines with 0.2% Copper Oxchloride @ 5 to 10 litres per vine.
- **Karnataka**
- In North Dry Zone, continue sowing of diccicum wheat crop under sufficient moisture condition. Undertake intercultural operations in already sown *rabi* crops.
 - In North East Dry Zone, continue planting of sugarcane by taking 9 months old sugarcane setts. Complete harvesting of rice and continue first picking of early sown cotton.
 - In North East Transition Zone, continue plantation of sugarcane (variety Co-86032) crop.
 - In Coastal Zone and Hill Zone, complete harvesting /threshing of matured rice in clear weather.
 - In Eastern Dry Zone, undertake harvesting of maize and groundnut. Complete sowing of ragi (Indaf-9, GPU- 45 & 66, PR- 202), cowpea (KBC-1, TVX-944 and PKB-4 for vegetable purpose), sunflower (Morden, KBSH-1,41,44 & 52 and Niger (KBN-1, No-71) and in black soils - Bengal gram (Annigeri-1, J.J-11, KAK-2, Vishal), field bean (HA-1, 3, 4) under optimum moisture condition.
 - In Southern Transition Zone, continue harvesting of matured maize cobs and arecanut.
 - In Southern Dry Zone, due to cloudy weather thrips menace was noticed in rice crop; to manage this, spray Roger @ 1.5 ml/liter of water.
 - In Central Dry Zone, to control Army worm in ragi, maize, red Gram, and other minor millet crops, spray Chlorpyrifos @ 2.0 ml 20 EC/liter of water.
 - In North East Dry Zone, infestation of myrid and mealy bug was noticed in late sown cotton (boll development stage); spray Monocrotophos @ 2 ml or Profenophos @ 2 ml/litre of water.
 - In Hill Zone, infestation of stem borer is likely in ginger, turmeric and cardamom; for control, spray Monocrotophos @ 1.2 ml or Chloropyrifos @ 2 ml/litre of water.
- **Animal Husbandry**
- In the Problem Area Zone of Kerala, avoid moist conditions in cattle shed to prevent incidence of foot rot.
 - In North and South Telangana Zones, treat /vaccinate animals against FMD and HS; vaccinate sheep/goat against sheep pox disease and vaccinate poultry birds against Ranikhet disease.
 - In the Cauvery Delta Zone of Tamil Nadu, to protect the animals from cold weather, hang gunny bags from sunset to sunrise at spots from where frosty air enters shed.
 - In the Southern Zone of Tamil Nadu, de-worm goats in November to prevent mortality and weight loss.
 - In North Dry Zone of Karnataka, vaccinate (ET vaccine) sheep and goats against Enterotoxemia.
 - In southern Dry Zone of Karnataka, foot and mouth disease was noticed in animals in different taluks of Mysore District; to manage this disease, provide medicine and vaccination under the guidance of veterinary doctors. In North East Transition Zone, for effective management of livestock ectoparasites, application of Flumethrin 1% is recommended.

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

- **Realised Rainfall:** Rainfall occurred in Karimganj and N.C.Hills districts of Assam, Serchip district of Mizoram during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As moderate to dense fog at isolated places in the morning hours very likely over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura from 24th to 26th November, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
- **Assam & Meghalaya, Arunachal Pradesh:**
 - In Meghalaya, continue sowing of seeds/transplanting of seedlings of cauliflower, broccoli and cabbage. Continue sowing of pea in high altitude. Continue land preparation and sowing of rapeseed and mustard. Harvest tender pods of French beans, rajmash and cow pea. Carry out harvesting of soybean.
 - In the North Bank Plain Zone of Assam, continue harvesting of Sali rice. Undertake nursery bed preparation and sowing of Boro paddy varieties like Mahsuri, IR-50, Dinanath, Bishnuprasad, Jyotiprasad and Kanaklata. Continue

land preparation and sowing of rapeseed and mustard. Carry out thinning and weeding after 15-20 days from sowing. Continue planting of early varieties of potato. Undertake sowing of Rabi pulses and vegetables.

- In Barak Valley Zone of Assam, continue land preparation for sowing of rajmah and planting of potato. Provide irrigation to transplanted seedlings of Cabbage, cauliflower, Knolkhol. Cover the seedlings of Boro rice with polythene sheet to help seedling growth and development. Carry out ploughing of main field 15 days before transplanting the seedlings.
- In Lower Brahmaputra Valley Zone of Assam, continue harvesting of Sali rice. Continue seed-bed preparation for Boro rice. Continue sowing of rapeseed. Carry out transplanting of 30-35 days old Cauliflower, Cabbage, Broccoli and Knolkho crops. Undertake land preparation for wheat varieties like Sonalika, UP-262, K-7410 and HDR-77. Complete planting of potato by the end of this week with late grown varieties such as Kufri Megha and Kufri Sindhuri.
- In Upper Brahmaputra Valley Zone of Assam, undertake harvesting of Sali rice and mature pods of black/green gram. Undertake seed bed preparation and sowing of Swarnabh, Dinanath, Kanaklata, Jyotiprasad, Bishnuprasad, etc. varieties of Boro rice. Complete planting of potato tubers in the main field in this week. Complete the sowing of toria in this week. Apply light irrigation in the early sown rabi vegetable field.
- In the Central Brahmaputra Valley Zone, continue harvesting of mature Sali paddy. Continue nursery bed preparation and sowing of Boro rice. Undertake Sowing of improved wheat varieties viz., Sonalika, DBW-14, HUW-468, UP-262 and K7416 within November to mid December. Continue land preparation for sowing of wheat, rabi pulses (lentil, rajmah, pea, lathyrus), oil seeds (linseed and niger), rape seed and mustard. Thinning and weeding of already sown oilseed and pulse crops may be done within 15-21 days of sowing.
- In the Lower Brahmaputra Valley Zone, apply Imidachloropid @ 1ml/5 litre of water or Thiomethoxam @ 1g/3 litre water for aphid, hoppers, white fly in chilli crop.
- In Upper Brahmaputra Valley Zone of Assam, apply Trichogramma chilonis around 3-4 times @ 20,000 numbers per bigha, at an interval of 10 days to control shoot and fruit borer in brinjal.
- **Nagaland, Mizoram, Manipur and Tripura:**
- In Manipur, continue sowing of rapeseed/mustard, field pea, black gram and lentil when the field is slightly wet. Continue land preparation/sowing of coriander. Continue transplanting of 25-30 days old seedlings of tomato, cabbage and cauliflower. Carry out transplanting of 45-60 days old seedlings of onion. Continue sowing of potato tubers. Undertake planting of garlic bulblets in prepared beds.
- In Mizoram, provide staking to Khasi Mandarin, coffee and rubber seedlings. Carry out harvesting of mature kharif rice. Carry out thinning, weeding and earthing up in maize, toria, black gram and green gram crops and provide irrigation at 3 days interval. Carry out nursery bed preparation for cole crops, onion, capsicum, chilli, brinjal and tomato. Undertake sowing of French bean.
- In Nagaland, continue sowing of toria and provide mulching to *Rabi* maize. Undertake transplanting of mature seedlings of vegetables like cabbage, cauliflower, broccoli and tomato.
- In Tripura, complete planting of potato. Carry out transplanting of Rabi legumes like toria, sesame, lentils, etc.
- **Animal Husbandry**
- In Hill Zone of Assam, immunize cattle against FMD, BQ, Enterotoxaemia and Hemorrhagic Septicemia.
- In the Barak Valley Zone of Assam, use lime powder as calcium source up to 2 kg per 100 kg of feed for Layer birds and provide them light during the night time to have more egg production.
- In the Central Brahmaputra Valley Zone, vaccinate cattle, goat and pigs against BQ, HS and FMD. Vaccinate poultry birds against Ranikhet disease.
- In Manipur, vaccinate and de-worm cattle, sheep, goat and pigs. Carry out shearing of sheep during this month. Protect animals/ birds from sudden drop in temperature by covering the walls with hessian cloth/ polythene sheet during night time.
- In Tripura, vaccinate poultry birds against Ranikhet disease, cattle against FMD and HS and 3 month old pigs against swine fever.
- **Fishery**
- In the Lower Brahmaputra Valley and In Barak Valley Zones, pond fishes may be affected by EUS disease Apply CIFAX @ 1 litter per hectare for 1 meter water depth to prevent the disease.
- In the Central Brahmaputra Zone, Apply Potash @ 4-5 mg/lit of water, Sukrena WS @ 1 lit per bigha of water and lime in required doses to protect the fish population against various bacterial diseases prevalent in winter season.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, undertake nursery preparation and sowing of *rabi* rice. Use 50 kg seeds per ha for coarse variety and 40 kg seeds/ha for fine variety. Continue sowing of short duration crops like cowpea, *wal* and *kulthi* on residual

moisture in the harvested rice field at *vapsa* condition. Undertake sowing of water melon (Sugar baby variety) on raised beds. Prepare nursery sowing of tomato, brinjal and chilli *rabi* season.

- In Madhya Maharashtra, complete sowing of wheat. Undertake late sowing (Niphad-34 variety) where 2 to 3 irrigations are available. For irrigated late sowing use varieties like NIAW-34 and AKAW-4627. Use varieties like NIDW-15 and AKDW-2997-16 under limited irrigation availability. Complete the planting of preseasonal sugarcane upto the 30th November. Continue sowing of Chickpea (Varieties: Vijay, Digvijay, Vishal Samadhan & Virat (Kabuli Chana) with proper moisture.
- In Marathwada, in view of prevailing dry weather, apply irrigation to wheat, safflower, gram, vegetables and orchards. Apply sprinkler irrigation to gram and safflower. Undertake hoeing and weeding in wheat, safflower, gram and vegetables. For better fruit development in citrus, spray 10 PPM GA (1 g GA per 100 liter of water) + 1 % Urea (1 kg urea per 100 liter of water).
- In East Vidarbha, complete harvesting of matured rice. Complete sowing of irrigated wheat (varieties: AKW-1071 (Purna), AKAW 3722(Vimal), HD-2189 and HD-2360) and linseed (Varieties : PKV NL-260 and NL-97). Complete sowing of gram (varieties: Chaffa and Vijay, Jaki 9218 and Kabuli). Continue land preparation and sowing of mustard (Varieties: Pusa Bold, ACN-9).
- In Marathwada, to control attack of aphids in safflower, spray Dimethoate @ 10 ml per 10 liter of water. To control attack of Helicoverpa armigera in gram, spray Quinalphos or Chlorpyrifos @ 20 ml per 10 liter of water.
- In Konkan, there may be attack of leaf eating caterpillars, shoot borer, midge fly and leaf cutting beetle in new mango flush, if incidence is noticed spray Dimethoate 25 EC @ 12 ml or Monocrotophos 36 WSC @ 11 ml per 10 litres of water.
- In Madhya Maharashtra, to control fruit borer in tomato, spray Quinalphos @ 20 ml or Chlorantraniliprol @ 3 ml/ 10 litres water at 8-10 days interval.

▪ **Gujarat:**

- In North Gujarat Zone, continue sowing of gram, wheat, cumin, fenugreek crops. Undertake inter-culturing and weeding operations in vegetables like brinjal, chilli, tomato, cabbage and cauliflower. Undertake harvesting of matured sorghum.
- In South Gujarat Zone, undertake sowing of corn varieties/hybrids like G.Makai-3, HQPM-1, GAYMH-1, GAWMH-2, vin orange, amber.
- In South Gujarat Heavy Rainfall Zone, complete sowing of *rabi* pulses like Indian bean, gram, green gram crops. Continue planting of sugarcane.
- In Middle Gujarat Zone, continue sowing of wheat (GW-496, GW-503, GW-273, GW-322), maize (Ganga safed-2, GM-6), coriander and planting of potato. Undertake intercultural operations in pigeon pea before flowering. Undertake picking of matured bolls of cotton
- In South Saurashtra Zone, carry out weeding and intercultural operations in timely sown chickpea. Continue picking of matured bolls of cotton, matured clusters of castor and continue sowing of cumin, wheat, garlic crops.
- In North Saurashtra Zone, continue sowing of wheat, cumin crops.
- In Bhal and Coastal Zone, complete sowing of chickpea, cumin, mustard and wheat. Apply irrigation in cotton and castor. Undertake weeding and intercultural operations in vegetable crops.
- In North West Zone of Gujarat, continue picking of matured bolls of cotton, sowing of wheat, cumin and nursery preparation of cabbage. Carry out intercultural operations in castor.
- In South Gujarat Zone, continue sowing of wheat, gram crop and planting of sugarcane. Spread plastic or fodder in vegetable field for maintaining soil moisture.
- In North West Zone of Gujarat, weather conditions are favourable for outbreak of thrips pest in chillies and tomato; to control, spray Mithyl-o-Dematone 25 E.C. or Dimethoate 30 E.C. @ 10 ml/10 liters of water. Weather condition is favorable for outbreak of fruit fly pest in ber; to control, spray Canithione 50 E.C. @ 10 ml or Malathione 50 E.C. @ 20 ml + 10 litres water.
- Weather condition is favorable for infestation of mealybug in cotton in South Gujarat Zone; spray Profenophos 50 EC @ 20 ml/10 liters of water.

• **Animal Husbandry**

- In Gujarat, provide adlib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress. Provide dry fodder to animals twice a day.

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

- **Realised Rainfall:** Rainfall occurred in Nicobar and North & Middle Andaman districts of Andaman & Nicobar Islands, Balasore, Bhadrak, Katak, Dhenkanal, Gajapati, Ganjam, Jagatsingpur, Jajpur, Kandhamal, Kendrapada, Keonjhar, Khurda, Mayurbhanj, Nayagarh, Puri and Rayagada districts of Odisha, Bankura, Hoogly, Hawrah, Kolkata, Nadia, South 24 Paraganas, North 24 Paraganas, East Medinapore and West Medinapore districts of Gangetic West Bengal during the week and weather remained mainly dry/dry over rest of the region.

• **Advisories:**

▪ **Odisha:**

- In North Central Plateau Zone, as dry weather would prevail, undertake harvesting of rice. Utilising the realised rainfall, prepare the land for sowing of mustard and Wheat. Collect good varieties of wheat like Kalyansona, Sonalika and UP 262 @ 40kg/acre. Present weather conditions are favorable for sowing of Linseed, Gram and Pea. Hence, farmers are advised to sow as Paira or sole depending upon moisture status of the soil. Before sowing, seeds should be treated with fungicide followed by Rhizobium culture @ 20g/kg seed to enhance nodulation.
- In Mid Central Table Land Zone, complete the planting of winter vegetables and groundnut as soon as possible. Continue harvesting of rice.
- In West Central Table Land Zone, now it is optimum time for sowing of groundnut and sunflower. Go for land preparation. Grow high yielding varieties of groundnut like Smruti, TAG-27, TAG – 24 and JL-24. Treat the seeds with 1.5 g Carbendazim or 3 g Thiram/kg of seeds one week before sowing. Drain the water from the rice fields 7 to 10 days before the expected harvest date as draining hastens maturity and improves harvesting conditions. Undertake harvesting when 80% of the panicles turn straw colour.
- In Mid Central Table Land Zone, in the prevailing weather, there may be attack of YMV in okra. To control, first rogue the infested plants and then spray Imidacloprid@80ml/acre or Thiomethoxam@80g/acre. Install yellow sticky trap in the crop field.

▪ **Jharkhand:**

- In South Eastern Plateau Zone, undertake land preparation and sowing of mustard. Improved varieties of like – Pusa bold, Shivani, Varuna, Kranti, JD 6 and Sedge 2 etc. can be undertaken by treating the seed with Bavistin @ 2g per kg seed.
- In Western Plateau Zone, farmers wishing to cultivate wheat after harvesting of rice are advised to sow the seed immediately. They have to select one of the late Irrigated varieties like N.W.-1014, Raj-3765 or H.W.-2045.
- In Western Plateau Zone, in one month old potato crops, apply urea @ 40 kg per acre after earthing up and irrigate the crop at an interval of 10-15 days. Attack of Blight disease (in which, small shining brown spots appear on leaves) in crop is expected in the prevailing weather. Spray immediately the fungicide Saaf (2 gm per litre of water) or Redomyl (1.5 gm per litre of water) to control the disease as and when symptoms appear.

▪ **West Bengal:**

- In Coastal Saline Zone, continue sowing mustard varieties like agrani, panchali, b-9etc. Carry out land preparation in harvested paddy field for early variety of potato like Kufri Jyoti, Kufri Lalima, Kufri Anand, Kufri Chipsona, Ashoka etc. Cultivate Nirmal, Ratan variety of lathyrus as these variety can tolerate soil salinity.
- In the New Alluvial Zone, undertake sowing of early variety of mustard like agrani, panchali, b-9etc if moisture level in the field is proper. Carry out land preparation in the harvested paddy field for sowing of potato varieties like Kufri Jyoti, kufri lalima, kufri anand, kufri chipsona, Ashoka etc. Undertake sowing of lentil.
- In the Hill Zone, continue transplanting of cabbage and cauliflower crops and apply irrigation as per requirement. Carry out harvesting of Mandarin orange. Continue regular harvesting of mature round chilli fruits. Do not apply irrigation to rice crop at dough stage.
- In New Alluvial Zone, apply Hexaconazole 5% WP + Captan 70% WP@ 1.5 gm per litre of water to prevent rotting due to disease infestation in winter vegetable seedlings.
- In Old Alluvial Zone, undertake sowing of wheat after main field preparation.
- In Laterite and Red Soil Zone, complete field preparation and undertake sowing of wheat and potato.
- In Old Alluvial Zone, to suppress the wilt pathogen of brinjal, transplant Marigold as intercrop or spray Copper Oxy-Chloride @ 2 gram per litre of water. Spray Neem oil 1% @ 3 ml/litre of water in the evening hour as preventive measure for transplanted cabbage, cauliflower, etc.
- In Laterite and Red Soil Zone, collect and destroy the infected tomato fruits and for, fruit borer infestation, spray Quinolphos 25 EC @ 1ml/litre of water at clear weather condition .

▪ **Andaman & Nicobar Islands**

- In North and Middle Andaman, grow seedlings of vegetables on raised bed after treatment of seeds with bio-control agent/ Carbendazim @ 1 g/kg of seed under the rain shelter. Improve drainage facility in the vegetable field to avoid stagnation of water.
- In the Nicobar Islands, improve drainage facility in the vegetable field to avoid stagnation of water.

• **Animal Husbandry**

- In Mid Central Table Land Zone of Odisha, vaccinate calves above three months and sheep and goat above two months against Foot and Mouth disease. Go for deworming in animals. For the control of tick, spray Deltamathrin or Amitaz 20 ml/10 litres of water.
- In Old Alluvial Zone of West Bengal, keep the animals in covered shed/area during the night. Feed clean and hygienic water to dairy animals.
- In Hill Zone of West Bengal, vaccinate poultry birds with Ranikhet disease vaccine at 5-7 days and booster RD Lasota at 2nd day.

- In the Andaman and Nicobar Islands, keep the poultry birds (day old chicks) under light preferably of 60 watt bulb at 1 ft above the floor.
- **Fisheries**
- In the Old Alluvial Zone, apply Rice bran & Mustered oil cake (1:1) @ 3-2% of the total body weight of fish finger stocked in the pond as a supplementary feed.
- In North Central Plateau Zone of Odisha, as the winter is in the starting phase, there is a possibility of “EUS” disease in fish. Farmers are advised to apply ‘Cifax’ @ 400 ml mixed with 40 litre of water in one acre pond area as a preventive measure. The fishes should be fed daily with oil cake bran mixture at the rate of 2-3 % of their total biomass.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry over the region during the week.
- **Advisories:**
 - **Madhya Pradesh:**
 - In Central Narmada Valley Zone, continue sowing of chickpea, wheat, barley, mustard and alsin, planting of potato and garlic and harvesting/threshing of matured rice crop.
 - In Bundelkhand Zone, continue sowing of wheat, chickpea, pea, linseed, lentil, green vegetables (fenugreek, spinach, coriander) and turnip. Continue planting of potato and nursery preparation for onion. Apply irrigation in mustard crop.
 - In Nimar Valley Zone, continue nursery preparation for onion and select varieties GW-322, GW-366, HI-1544 for sowing of wheat.
 - In Malwa Plateau Zone, apply first irrigation in early sown wheat at CRI stage. Undertake earthing up in potato. Continue sowing of gram and pea and nursery sowing of onion.
 - In Jhabua Hill Zone, continue sowing of wheat, vegetable crops like vegetable pea, fenugreek, spinach, radish and planting of onion. Complete sowing of gram. Undertake transplanting of winter vegetables.
 - In Gird Zone, continue planting of potato and sowing of chickpea and pea.
 - In Kymore Plateau and Satpura Hill Zone, continue transplanting of vegetables and sowing of mustard, lentil and garden pea. Undertake sowing of wheat. Undertake harvesting of matured rice.
 - **Chhattisgarh:**
 - In Chhattisgarh Plain Zone, continue sowing of chickpea, safflower, linseed and lentil crops etc.
 - In Bastar Plateau Zone, continue sowing of wheat, gram, pea, linseed and lentil crops and nursery preparation for *rabi* vegetables (cabbage, cauliflower, brinjal, tomato and chilly). Continue field preparation for planting of *rabi* colocasia and bunda.
 - In North Hill Zone, undertake sowing of wheat. Continue harvesting/threshing of matured rice. Continue sowing of mustard, green pea, gram. Continue transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal etc. Continue planting of potato and garlic and nursery sowing of onion.
- **Animal Husbandry**
 - In Madhya Pradesh, vaccinate the poultry birds to prevent Ranikhet disease. Vaccinate the goat against PPR disease. Provide green fodder, fresh and clean water three times a day to cattle. Use malathion/Cleaner/Butox 2ml/litre of water on whole body of animals to prevent from the ticks and lice.
 - In Chhattisgarh, low temperature condition may adversely affect the milk production and performance of domestic animals; give protein enriched diet to the animals. Keep animal indoor. Provide supplementary wormicide medicine in feed of poultry birds.

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

- **Realised Rainfall:** Rainfall occurred in Kinnaur and Kullu districts of Himachal Pradesh, Shopian district of Jammu & Kashmir during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As cold wave conditions very likely to prevail at isolated places over Uttar Pradesh, Haryana, Chandigarh & Delhi and East Rajasthan on 24th November, the young as well as the newly planted fruit plants should be covered with thatches or kullies made of sarkanda or farm waste materials to protect them from cold damage.
 - As shallow to moderate fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, North Rajasthan and Uttar Pradesh in the morning hours of 26th, 27th & 28th November, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
 - **Jammu & Kashmir:**
 - In Sub Tropical Zone, continue sowing of wheat (varieties : PBW-550, HD-2967) under irrigated conditions and (varieties: PBW-644, PBW-396 and WH-1080) in rainfed areas, continue sowing of lentil. Complete the sowing of

- Barley. Continue nursery sowing for onion crop (Pusa Red, Pb. Selection).
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, continue sowing of wheat (var. VL 907, HS 507 and HPW 349) under irrigated/rainfed conditions up to 800 -1000 m amsl, variety PBW-175 up to 1000 m amsl under rainfed condition only and VL 804, HS 507 and HPW 349 under irrigated/rainfed conditions up to 1000 -1350 m amsl in Intermediate (mid to high altitude) areas of the district. Complete sowing of mustard (var. Kranti, RLM 619, Varuna and RH 30) and oats crop (var. Kent and Sabzar). Continue sowing of gram (C-235, Gaurav, K-468, SCS-3 and PBG-1) and pea (var. T-163, PG-2 and Rachna).
 - In Intermediate Zone, apply Carbofuron 3 G @ 1 kg/kanal or Dichlorovos @ 2 ml/liter of water to control cut worm problem in cole crops.
 - **Uttarakhand:**
 - In Sub Humid Sub Tropic Zone, continue harvesting of maize. Undertake nursery sowing of tomato.
 - In Bhabar and Tarai Zone, continue sowing of wheat and barley.
 - **Punjab, Haryana and Delhi:**
 - In Western Zone of Punjab, sowing of long duration varieties of wheat like, PBW 725, PBW 677, HD 3086, WH 1105, PBW 621, HD 2967, WHD 943 and PDW 291 should be completed up to fourth week of November. Use of zero-till drill/strip till, happy seeder machine drill, PAU happy seeder can be made for sowing wheat. For control of loose smut of wheat, treat the seed of all wheat varieties with Raxil Easy/Orius 6 FS @ 13 ml or Vitavax Power @ 120g or Vitavax @ 80g or Seedex / Exzole 2 DS @ 40g per 40 kg seed except durum wheat varieties WHD 943, PDW 291 and Triticale variety TL 2908. In view of the dry weather forecast in next 3-4 days, farmers may irrigate vegetable crops during this week as per requirement. Farmer are advised to irrigate the fruit plants because the newly planted young fruit plants. The young as well as the newly planted fruit plants should be covered with thatches or kullies made of sarkanda or farm waste materials to protect them from cold damage.
 - In Haryana, in Western Zone, as dry weather would prevail, continue picking of cotton. Continue sowing of mustard with varieties RH-30, RH-0749, RH-0406, Varuna, Laxmi etc under sufficient soil moisture conditions.
 - **Himachal Pradesh:**
 - In High Hill Temperate Dry Zone, continue harvesting of oats. Make beds in apple orchard.
 - In Solan Shimla, Bilaspur and Sirmour districts of Mid Hills Sub Humid Zone, undertake weeding and hoeing in radish, spinach, garlic, carrot and turnip. Undertake transplanting of onion. Undertake cultivation of mushroom (Mix the seed of button mushroom in bags @ 1 kg/10kg FYM and slightly press the bags and make 15-20 holes surrounding the bags and put in growing chambers).
 - **Uttar Pradesh:**
 - In Varanasi district of Central Plain Zone, continue sowing of wheat, barley, mustard, planting of potato, sugarcane and transplanting of vegetables. Undertake harvesting of matured rice.
 - In Kanpur district of Central Plain Zone, undertake sowing of wheat. Continue harvesting of matured rice. Continue sowing of winter vegetable like spinach, fenugreek, coriander, carrot, radish etc. continue sowing of mustard, gram, pea and planting of potato.
 - In Bundelkhand Zone and Western Plain Zone, continue sowing of rabi maize, lentil, mustard, pea, gram and wheat and planting of potato.
 - **Rajasthan:**
 - In Irrigated North Western Plain Zone, continue sowing of wheat, pea and lentil. Complete sowing of gram.
 - In Flood Prone Eastern Plain Zone, undertake sowing of late varieties (HD-2285, HD-2236, RAJ 3077, RAJ 1482, RAJ 3765 and LOK 1) of wheat. Apply irrigation in early sown wheat at CRI stage. Undertake weeding and thinning in gram and lentil crop.
 - In Southeastern Humid Plain Zone, continue sowing of rabi maize.
 - In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, continue sowing of wheat and barley. Undertake seed bed preparation for raising nursery of chilli, brinjal and tomato for Rabi season.
 - In Arid Western Plain Zone, continue sowing of wheat and barley. There is chance of saw fly or painted bug in early sown mustard. Apply methyl Parathion 2% or Malathion 5% dust @ 24 kg/ha during morning or evening time and repeat after 15 days if required.
 - **Animal Husbandry:**
 - In Arid Western Plain Zone of Rajasthan, vaccinate the livestock against foot and mouth disease and adopt protection measures against mastitis. Also make arrangements for protection of animals from winter.
 - In Bhabar and Tarai Zone of Uttar Pradesh, vaccination livestock against Foot and Mouth Disease.
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