



National Agromet Advisory Service Bulletin



Friday 16th February 2018
(For the period 16th to 21st February 2018)

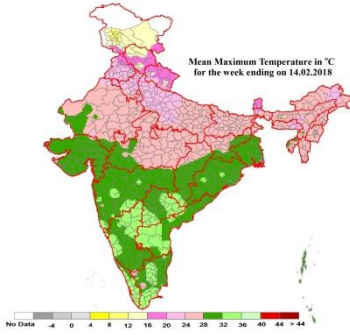


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India Meteorological Department

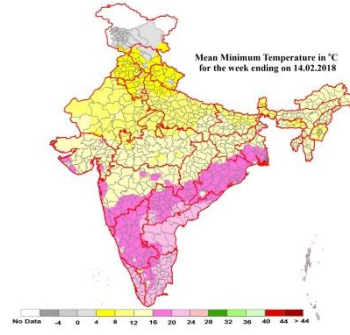
Weblink For
District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending 14.02.2018

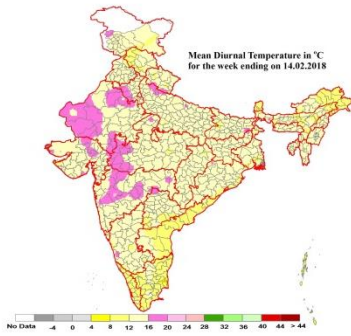
Mean Maximum Temperature (°C) for the week ending 14.02.2018



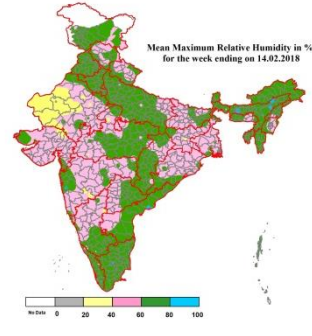
Mean Minimum Temperature (°C) for the week ending 14.02.2018



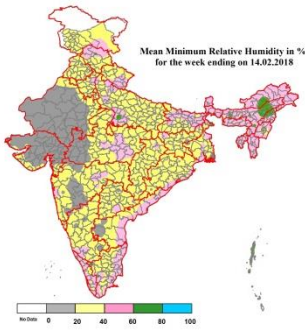
Mean Diurnal Temperature Variation (°C) for the week ending 14.02.2018



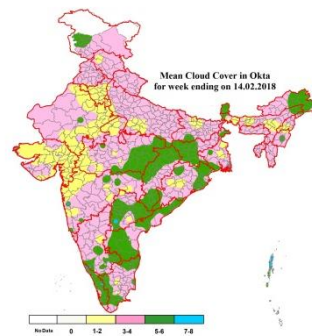
Mean Maximum Relative Humidity (%) for the week ending 14.02.2018



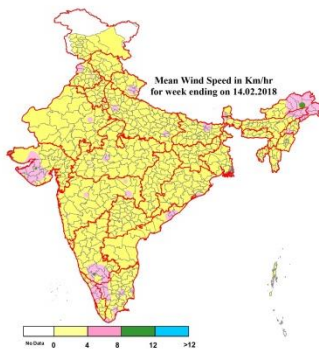
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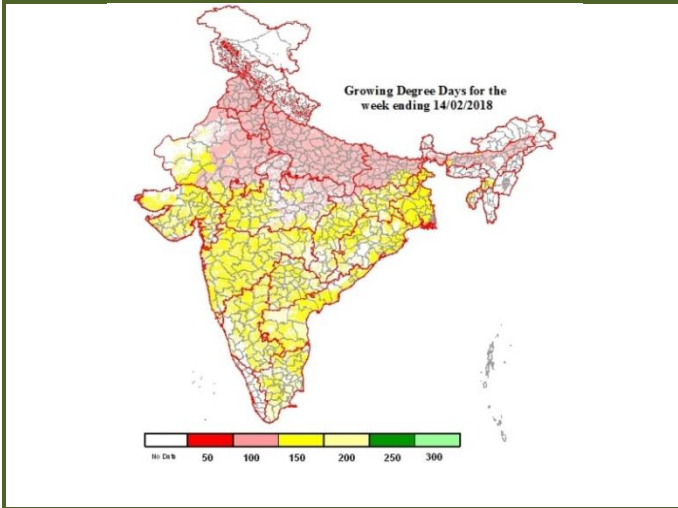
Mean Cloud Cover (okta) for the week ending 14.02.2018



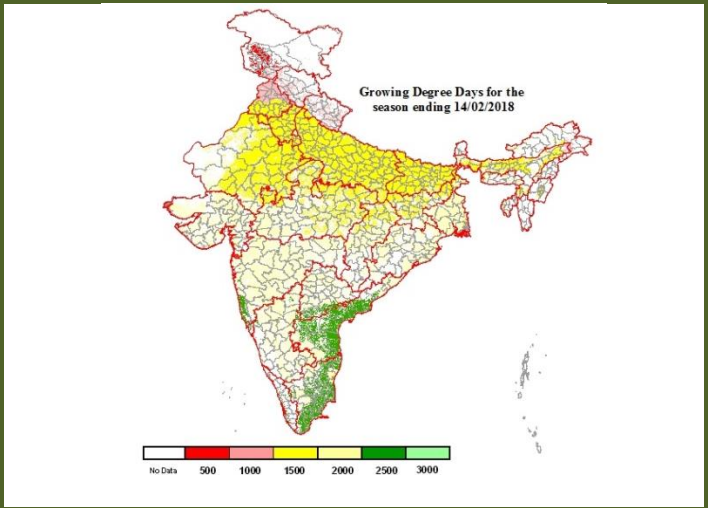
Mean Wind Speed (km/hr) for the week ending 14.02.2018



Growing Degree Days for the week ending 14.02.2018

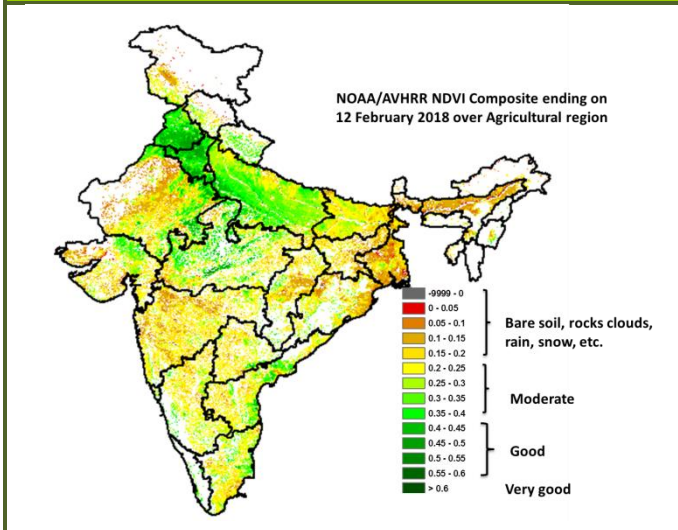


Growing Degree Days for the season ending 14.02.2018

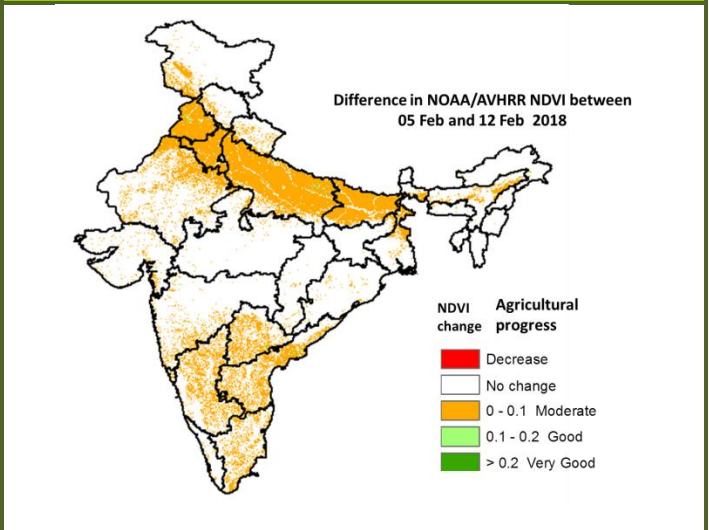


* Base temperature for *Rabi* Season is taken as 05⁰ C

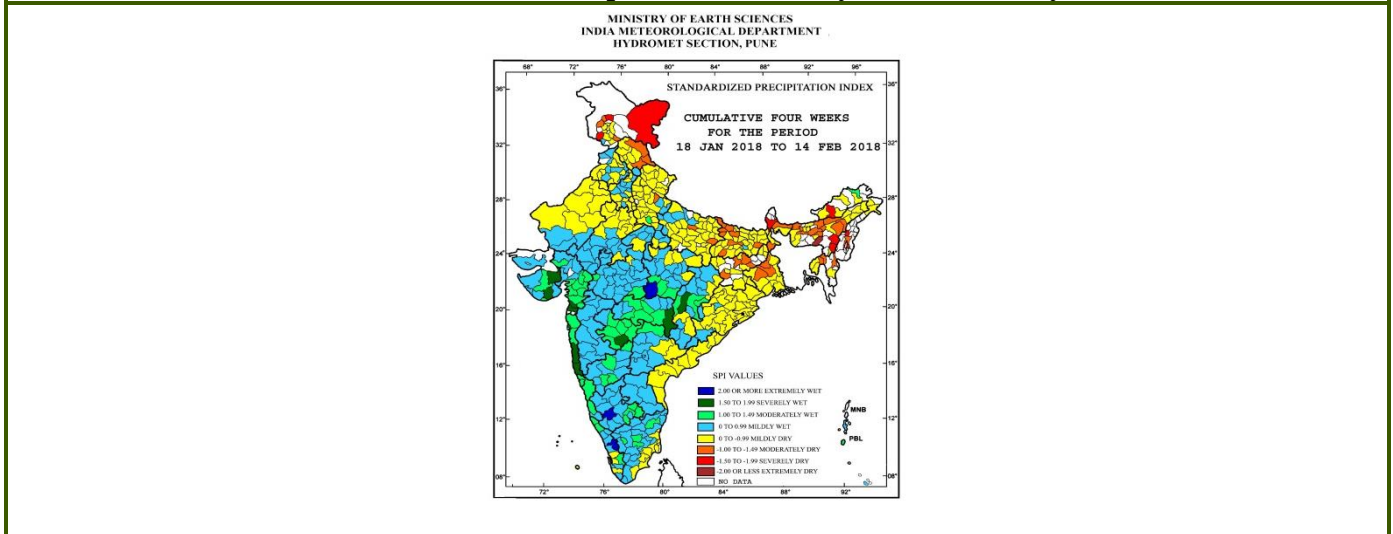
NOAA/AVHRR NDVI composite ending on 12th February 2018 over Agricultural regions of India



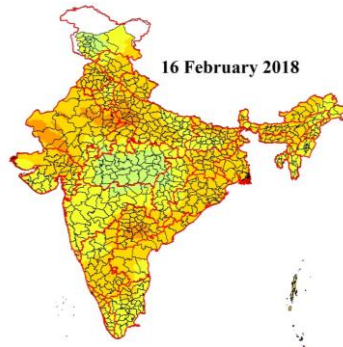
Difference in NOAA/AVHRR NDVI between 5th February and 12th February 2018



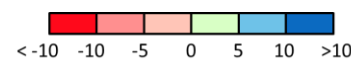
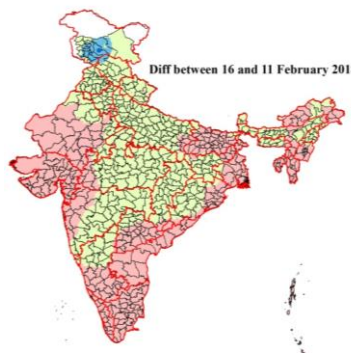
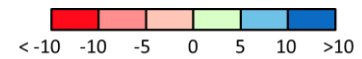
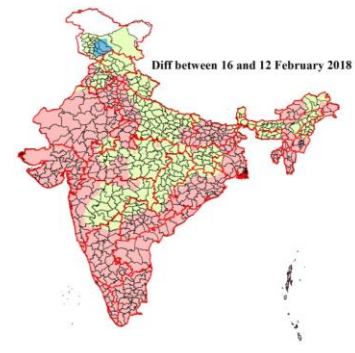
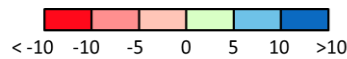
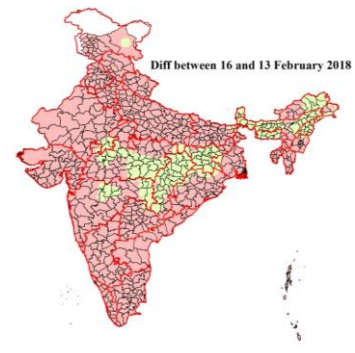
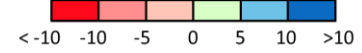
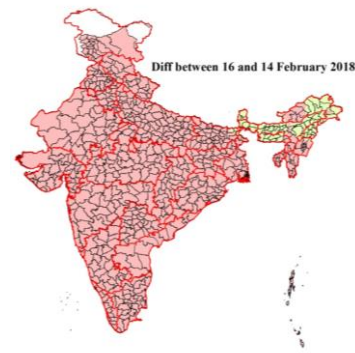
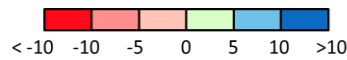
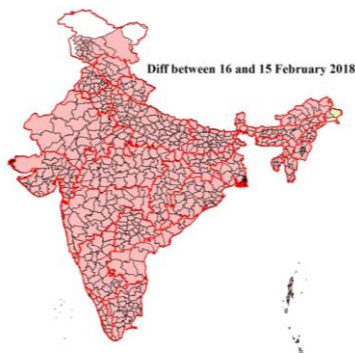
**Standardised Precipitation Index
Cumulative 4 weeks for the period 18th January to 14th February 2018**



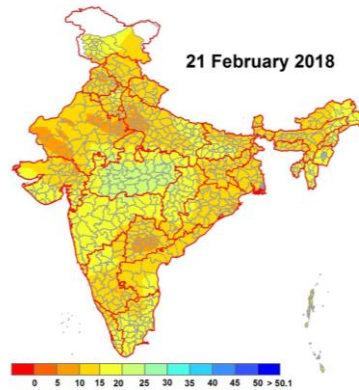
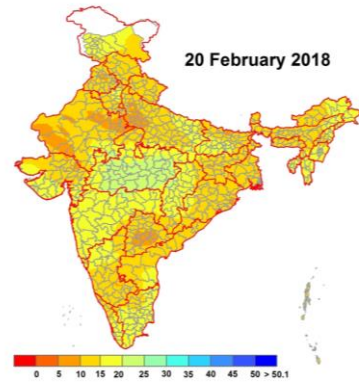
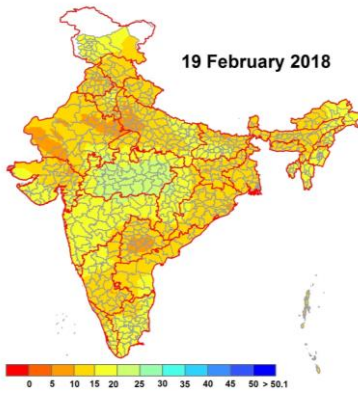
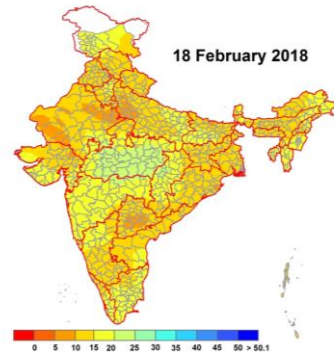
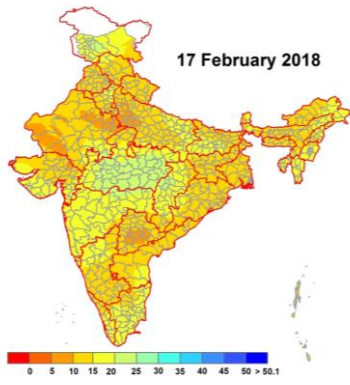
Daily Soil Moisture (mm) for 16th February 2018 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 17th to 21st February 2018 (ending at 0830 IST)
for 60 cm depth**



Weather Forecast for next 5 days valid upto 0830 hours of 21st February 2018

- Meteorological subdivision wise detailed 5 days rainfall forecast is given in Table below.
- The maximum and minimum temperatures are very likely to rise by 2-3°C over most parts of the country during next 72 hours.
- Strong surface winds speed reaching upto 30 kmph very likely to prevail over Gangetic plains during next 48 hours.

5 Day Rainfall Forecast (Mid day) 16th February 2018

Met-Sub-Division	16-Feb Today	17Feb Sat	18Feb Sun	19Feb Mon	20Feb Tue
1. Andaman & Nicobar Islands	DRY	DRY	DRY	DRY	DRY
2. Arunachal Pradesh	ISOL	ISOL	ISOL	ISOL	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	DRY	DRY	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	DRY	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	DRY	DRY	DRY	DRY
15. Himachal Pradesh	ISOL	DRY	DRY	DRY	DRY
16. Jammu & Kashmir	SCT	DRY	DRY	DRY	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. Marathwada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	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	DRY	DRY	DRY
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	DRY	DRY	DRY	DRY	DRY
34. South Interior Karnataka	ISOL	DRY	DRY	DRY	DRY
35. Kerala	ISOL	DRY	DRY	DRY	DRY
36. Lakshadweep	ISOL	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

- No weather warning during the period.

Weather Outlook for subsequent 2 days from 21st to 23rd February 2018

- Rain/snowfall at isolated to scattered places likely over Jammu & Kashmir, Himachal Pradesh and Uttarakhand.
- Isolated rainfall activity likely over Arunachal Pradesh and Andaman & Nicobar Islands.
- Weather likely to be dry over remaining parts of the country.

Salient Advisories

- The hailstorm during 11th to 13th February in Maharashtra caused damage in *Rabi* jowar, red gram, Bengal gram, safflower, sunflower, grapes, sweet lime, papaya, vegetables grown in Jalna, Beed in Marathwada, orange, gram in Buldhana, Washim, Amaravati and Akola in Vidarbha; *Rabi* jowar, Bengal gram, onion, vegetables in Dhule, Nandurbar districts in Madhya Maharashtra. The following measures are suggested:
 - In orchards, clean up the debris and fallen fruits from orchards and trim off broken stems and leaves of plants to avoid further spread of pest and diseases.
 - Application of fungicide to prevent rot from entering before the wounds are able to seal in damaged.
 - Apply a layer of mulch around the base of the plant to help it survive in summer.
 - If some plants are too heavily affected and fixing hail damage is not possible. These plants should be removed and replaced with new plants.
 - If standing crop has not been fertilized, application of fertilizer to the impacted plants can help them to regrow and develop new foliage.
 - Harvest the lodged matured crops as early as possible.
- Continue transplanting of summer rice in **South Interior Karnataka** and **Odisha**. In Western Plain Zone of **Punjab**, continue sowing of maize and planting of spring sugarcane. Undertake sowing of green gram and black gram in **Odisha** and **Madhya Pradesh**.
- As dry weather would prevail, apply irrigation in wheat at grain filling stage and at dough stage in barley in Sub Humid Southern Plain and Aravalli Hill Zone of **Rajasthan**. Apply irrigation in chickpea and vegetables in **Gujarat**. Apply second irrigation in gram at branching stage and in wheat at dough stage in **West Madhya Pradesh**.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rainfall/snow occurred in all districts of Himachal Pradesh except Kinnaur and Shimla, all districts of Jammu & Kashmir except Bandipore, Kargil and Ladakh(Leh), Rainfall occurred in Gurdaspur, Ropar, Nawashahar, Mohali districts of Punjab, Chandigarh and Yamunanagar districts of Haryana, Firozabad district of West Uttar Pradesh during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Jammu & Kashmir:**
 - In Sub Tropical Zone, continue transplanting of cucurbits, tomato, brinjal and chilli. Due to the presence of sufficient moisture in the soil, apply second dose of urea @ 2.0 kg/kanal in normal and late sown wheat.
 - In Cold Arid Zone, continue intercultural practices like weeding and hoeing after applying vermicompost/Farm Yard Manure in vegetables in polyhouses. Continue harvesting of Chinese cabbage, palak, pakchoi, kale, spinach and lettuce in protected structures at weekly interval.
 - In Intermediate Zone, in lower mid hills continue early nursery sowing of summer vegetables under protected structures (Poly house, Poly tunnel etc.). Undertake preparation of seedling of cucurbits in poly bags. Undertake harvesting of matured mushroom crop during early morning.
 - In Valley Temperate Zone, continue nursery bed preparation for raising of vegetables and cucurbits in polyhouse.
 - In Sub Tropical Zone, there are chances of outbreak of aphids in late sown mustard crop, spray Imidacloprid @

0.3 ml/litre of water or (Dimethoate) rogor 30 EC @ 1ml/litre of water.

▪ **Uttarakhand:**

- In Sub Humid Sub Tropic Zone, apply second dose of nitrogen as top dressing in wheat crop. Undertake transplanting of onion and tomato.
- In Hill Zone, continue preparation of seedlings of vegetables like brinjal, capsicum, tomato etc. in polyhouse. Continue preparation of seedlings of early cucurbitaceous crops in small polythene bags.
- In Bhabar and Tarai Zone, continue harvesting of sugarcane and mustard. Undertake planting of spring sugarcane and sowing of sunflower and maize. Undertake field preparation for sowing bottle gourd, bitter gourd, ridge gourd and pumpkin.
- In Bhabar and Tarai Zone, there are chances of attack of fruit borer in gram and lentil crops at flowering stage, spray Malathion 50 EC @ 2.0 litre/ha or Quinalphos 25 EC @ 1.5 litre/ha in 500-600 litre of water.

▪ **Himachal Pradesh:**

- In High Hill Temperate Dry Zone, keep the poly house closed to maintain optimum temperature. Apply fertilizers and complete the preparation of beds in apple orchard.
- In Sub-Montane and Low Hill SubTropical Zone, continue intercultural operations in *rabi* vegetables. Undertake nursery preparation of summer vegetables. Undertake preparation of seedlings of cucurbits in polythene bags.
- In Mid Hills Sub Humid Zone, apply half dose of nitrogen fertilizers in onion and garlic. Continue field preparation for sowing of summer vegetables like tomato, capsicum bhindi, gourd etc.
- In Sub-Montane and Low Hill Tropical Zone, for control of aphid in mustard crop, spray Rogar or Quinalphos @ 2.0 ml/litre of water.

▪ **Punjab, Haryana & Delhi:**

- In Western Zone of Punjab, as dry weather would prevail, apply irrigation in wheat, mustard, vegetables and fruit crops.
- In Western Plain Zone of Punjab, continue sowing of maize and planting of spring sugarcane. Continue harvesting of matured vegetables. Continue transplanting of brinjal, capsicum and chilli. Undertake transplanting of muskmelon, water-melon, bottle-gourd, pumpkin etc.
- In Undulating Plain Zone of Punjab, continue planting of sugarcane and sowing of spring maize. Continue transplanting of chilli and tomato and raising of cucurbit seedlings.
- In Central Plain Zone of Punjab, continue sowing of spring maize. Spray Manganese Sulphate 0.5 % solution if wheat crop shows manganese deficiency symptoms. If wheat crop shows deficiency of sulphur, broadcast 100 kg of Gypsum/acre and irrigate the field.
- In Western Zone of Haryana, apply light irrigation in vegetables and young fruit plants. Apply irrigation in wheat as per requirement of the crop.
- In Delhi, continue field preparation for sowing of early crop of ladies finger- A-4, Parbani Kranti and Arka anamika cultivars. Prepare seedling of early cucurbitaceous crops in small polythene bags in poly houses. Undertake sowing of French bean, cluster bean, summer radish. Undertake transplanting of young seedlings of tomato, chilli and cole crops.
- In Undulating Plain Zone of Punjab, monitor the wheat crop for incidence of yellow rust. If symptoms are noticed, spray Native @ 120g or Tilt @ 200ml per litre of water for control.
- In Western Zone of Punjab, as per partly cloudy sky is expected in 4-5 days which favour appearance of yellow rust in wheat. Monitor the crops, as soon as the disease appears, spray the crop with Tilt or Bumper or Markzole @ 200 ml in 200 litres of water per acre. Repeat the spray at 15 days interval.
- In Western Zone of Haryana, due to prevailing high humidity there are chances of infestation of alternaria blight/powdery mildew disease in Mustard crop, if observed, then spray Mancozeb/Indophil M 45 @ 600 g in 300 litre of water per acre.

▪ **Uttar Pradesh:**

- In Allahabad, Fatehpur districts of Central Plain Zone, undertake land preparation for cultivation of summer Moong and select high yielding varieties viz. k-851 and JM-721. Undertake sowing of okra, bitter gourd and bottle gourd.
- In Varanasi district of Central Plain Zone, continue sowing of cucurbit crops. Continue harvesting of matured cabbage and cauliflower. In Kanpur district, continue nursery sowing of vegetables like tomato and chilli. Undertake sowing of maize and black gram. Apply irrigation in wheat as per requirement. Undertake sowing of okra and cucurbits.
- In Bundelkhand Zone, continue nursery sowing of vegetables like cabbage, cauliflower, brinjal, tomato, chilli etc. and sowing of vegetables like spinach, fenugreek, coriander and carrot. Apply irrigation in late sown wheat 40-45 DAS.

▪ **Rajasthan:**

- In Sub Humid Southern Plain and Aravalli Hill Zone, apply irrigation in wheat at grain filling stage and at dough stage in barley. Continue nursery preparation for summer vegetables like tomato, brinjal and chilli and field

- preparation for sowing of summer groundnut. Undertake sowing of okra and cucurbits.
- In Irrigated North Western Plain Zone, undertake planting of sugarcane. Apply 3rd irrigation in wheat and in gram at pod formation stage.
- In Bikaner district of Arid Western Plain Zone, in timely sown wheat, provide 5th irrigation at milk stage and also provide 3rd irrigation in barley crop 85-90 days after sowing. In late sown wheat, provide the 4th irrigation at flowering stage.
- In Flood Prone Eastern Plain Zone, continue digging of matured tubers of potato.
- In Semi Arid Eastern Plain Zone, methi, pea, cumin and coriander are likely to be affected by powdery mildew attack. Spray Karathion @ 1.0 ml or Calaxin @ 1.0 ml per litre water or dust Sulphur @ 25 kg per hectare.
- In Arid Western Plain Zone, in gram, to prevent Heliothis infestation, spray Quinolphos 25 EC @ 1200 ml/ha or Indoxcarb @ 200 ml/ha along with water at the time of flowering and repeat the spray if required.
- **Animal Husbandry**
- In Jammu & Kashmir, give special care to young calves as they are more sensitive to pneumonia. Protect the pregnant and milch animals from cold and feed them mineral mixture regularly. To avoid cracking or fissuring of teats in cold dry weather, clean the teats with warm water and apply ghee or butter after every milking. Put some bedding material like puaal etc. to keep animals warm. Provide dry bedding during night. Do not allow animals to leave khurli early in morning directly to open area. In Poultry keep the chicks warm by providing artificial light in the poultry sheds.
- In Punjab, provide dry bedding and protect all the dairy animals from direct cold. Provide curtains at windows in poultry sheds and deworm the chicks regularly.
- **Apiculture:**
- In Jammu & Kashmir, protect bee colonies from extreme weather conditions through proper packing. Need based sugar feeding is recommended. Inspect colony at regular intervals.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region.
- **Advisories:**
 - **Odisha:**
 - In Mid Central Table Land Zone, as dry weather would prevail, maintain optimum water level in *rabi* rice. Rising temperature along with cloudy weather favours the aphid infestation. To control, spray Neem oil 500ppm @ 5ml/litre of water.
 - In Western Undulating Zone, as dry weather is prevailing, apply irrigation to vegetables and in summer rice. Continue planting of sugarcane.
 - In North Eastern Coastal Plain Zone, in jajpur district, yellowing of leaves are noticed in groundnut at flowering to pegging stage in some areas. Yellowing of leaves may appear in sulphur deficient areas if gypsum is not applied earlier. To control it, spray liquid Sulphur (S-20%) @ 5ml/litre. Yellowing of leaves also caused by bud necrosis & rosette leaf viral disease transmitted by thrips & aphids, respectively. If the insects appear with yellowing of plants, spray Thiomethoxam 25WG @ 60g/acre or Acephate+Imidacloprid @ 750 g/acre. Also due to abrupt rise and fall in temperature last week, there is possibility of attack of Tobacco caterpillar (*Spodoptera litura*). The forecasted weather is also favourable for its proliferation. This is a polyphagous pest. So following integrated approach should be started. Use Pheromone trap using Spodo lure to monitor adult population of the insect and provide Bird perching in the fields.
 - In Eastern Ghat High Land Zone, continue sowing of summer green gram and black gram. Prepare the main field for transplanting and undertake transplanting at three week stage of seedling.
 - In Western Undulating Zone, transplanted onions are at four to six week stage in main field. Thrips infestation may occur during this crop stage and in the prevailing weather condition. Spray Acephate 75% SP 400g or Imidacloprid 17.8% SL 50ml or Thiomethaxome 25%WG 60g mixing in 200litre of water per acre.
 - **Bihar:**
 - In South Bihar Alluvial Zone, as dry weather would prevail, apply irrigation in the pea crop before flowering stage and in normal sown wheat.
 - In North East Alluvial Zone, continue transplanting of cauliflower, cabbage, broccoli in raised bed.
 - In North East Alluvial Zone, due to prevailing foggy weather, incidence of blight may occur in potato. If symptoms appear then spray Carbendazim @ 1 gm/litre of water or Dithane-M-45 @ 2 gm/litre of water.
 - **Jharkhand:**
 - In South Eastern Plateau Zone, undertake transplanting of summer rice. Before transplanting, seedling should be dipped in the solution of 25 ml Chlorpyrifos + 1-2 % urea (10 g/litre of water) prepared in 25 liter of water for 4-5 hours. For transplanting, use 21-25 days old seedling and before transplanting, puddle the soil with 3 to 5 cm of standing water.
 - In Central and North Eastern Plateau Zone, continue transplanting of summer rice. If irrigation facility is

available, undertake sowing of maize with recommended dose of fertilizer. Undertake sowing of summer green gram.

- In Western Plateau Zone, continue harvesting of matured toria in clear weather and keep in safe places.
- In South Eastern Plateau Zone, lentil crops sown in the mid of November is at flowering to pod formation stage and present weather is very conducive for the occurrence of wilt disease. Hence, spraying of Carbendazim @ 1 g per lt. water twice at weekly interval is suggested.
- **West Bengal:**
 - In Coastal Saline Zone, complete transplanting of Boro rice. Keep proper water level in the field. Continue sowing of green gram.
 - In the New Alluvial Zone, undertake sowing of one-time-cutting purpose spinach, coriander and fenugreek in present weather conditions.
 - In Laterite and Red Soil Zone, apply light irrigation to wheat crop at late jointing flowering stage and to potato at tuber bulking stage.
 - In the Old Alluvial Zone, continue transplanting Boro rice. In early transplanted Brinjal fields, install sex pheromone traps @ 4-5 traps/bigha for brinjal fruit and shoot borer management Carry out spraying of Sulphar or Sulfex (Liquid) @ 2ml per liter of water for flower initiation in mango and litchi.
 - In Laterite and Red Soil Zone, spray Imidachlopid @ 1 ml/1.5 litres of water for aphids in mustard crop at pod development stage.
 - In the New Alluvial Zone, install pheromone trap @ 3-4 traps per acre, if flowering has reached 20-25% for protection against pod borer in the gram crop at pod formation stage. Install “T” shaped bird perches in and around crop field controlling insect population.
 - In the Hill Zone, apply Acetamiprid 20% SP @ 0.2g/litre of water in the evening to control aphids in mustard crop at Siliqua formation stage.
 - In the Terai Zone, apply Imidachloropid @1ml/5litres of water or Thiomethoxam @1g/3litres of water for aphids, hoppers, white fly; apply Propergite 2.5 ml/litre of water for yellow mite and apply Flubenamide 39.35% SC @ 4 ml/tank to control sucking pest in chilli crop.
 - In Old Alluvial Zone, spray Neem oil 1% @ 3 ml/ litre water with sticker at evening hour in Cucurbitaceous vegetables as preventive measure of sucking pests.
- **Andaman & Nicobar Islands:**
 - In North and Middle Andaman, apply Acephate @ 2 ml/litre to control Aphids in vegetables and apply Neem oil @ 30 ml/litre of water along with Teepol @ 0.5 ml/litre after onset of fruits to control pod borer in beans during rain free days.
 - In the Nicobar Islands, collect the drop out coconuts from the community garden and dry it for copra production.
- **Animal Husbandry**
 - In Odisha, vaccinate the animals against Foot and Mouth diseases. In case of any disease outbreak, keep the affected animals in strict isolation from other animals.
 - In the Terai Zone of West Bengal, vaccinate cattle and buffalo against FMD and pox. Vaccinate sheep and goat against pox virus and protect them against Contagious Caprine Pleuro Pneumonia (CCPP) during cold climate.
 - In South Eastern Plateau Zone of Jharkhand, as the environment is most suitable for proliferation of ectoparasites, ectoparasite repellents should be sprayed in the cattle shed especially in small ruminant shed. Concentrate supplement should be given to the milch animals as per their milk production. Provide mineral blocks in the shed so that animal licks and get more calcium and other minerals. Sprinkle some concentrate mixture on chopped Sorghum stover in order to increase the intake and meet the nutrient requirement of the animal.
 - In the Andaman & Nicobar Islands, provide electrolytes 1% with drinking water to the piglets during sunny times to prevent heat stress.
- **Fisheries**
 - In the Andaman & Nicobar Islands, feed the fingerlings of Indian major carp with rice bran and ground nut oil cake at 1:1 ratio at the rate of 5 % of body weight.
 - In the Old Alluvial Zone of West Bengal, apply CIFAX @ 1 liter/ha pond area, per meter water or Sukrena W.S. @ 500-1000ml /Acre pond area respectively to control Ulcer disease of fish.
 - In the Coastal saline Zone of West Bengal, Increase oxygen supply in water by aerator. Keep the water weed free and clean.
 - In the North Central Plateau Zone of Odisha, during winter season, 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.

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

- **Realised Rainfall:** Rainfall occurred in Upper Siang district of Arunachal Pradesh during the week and weather remained mainly dry/dry over the rest of the region.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Arunachal Pradesh, continue harvesting of mature crop of ginger/turmeric on clear day taking care that the rhizome is not damaged. Continue harvesting of potato and mature crop of cabbage and cauliflower. Cover newly emerged banana bunches with locally available sack to protect from cold/frost.
 - In Meghalaya, continue harvesting of cabbage and cauliflower at mature stage. Provide irrigation to pea, lentil, chickpea, rapeseed and mustard crops at vegetative stage and provide staking at 30th day from sowing. Continue nursery raising/transplanting of tomato and capsicum crops.
 - In Lower Brahmaputra Valley Zone of Assam, maintain 5-7 cm irrigation water in the Boro rice main fields. Undertake land preparation for summer green gram/black gram. Continue harvesting of mustard crop when 75-80% siliquae turn yellow. Undertake harvesting mature potato crop.
 - In the Hill Zone of Assam, monitor rice crop at seedling stage for the presence of thrips on leaves during morning hours. Continue transplanting of onion seedlings not more than six week old.
 - In the Upper Brahmaputra Valley Zone, undertake land preparation for sowing of black gram and green gram. Undertake land preparation for okra, Ridge gourd and Sponge gourd.
 - In the Barak Valley Zone, undertake weeding in Boro paddy at 20 and 40 days from transplanting. Carry out land preparation for okra, ridge gourd and sponge gourd. Apply irrigation every alternate day to cabbage, cauliflower and knoll khol crops at fruiting stage. Apply one irrigation in rapeseed and mustard fields at the time of 50% flowering stage which helps to increase the productivity of the crop.
 - In the Central Brahmaputra Valley Zone, apply one irrigation at 7-10 days of transplanting in Boro paddy to facilitate gap filling of dead hills and maintain 5±2 cm of standing water in the field up to 7-10 days before harvest. Undertake land preparation for summer vegetables, Capsularis jute, summer Green gram and Black gram. Undertake sowing of pointed gourd. Apply second irrigation to wheat crop at vegetative, ear head stage (70-75 days after sowing).
 - In the North Bank Plain Zone, undertake land preparation for direct-seeded Ahu rice. Collect the seeds of varieties like Banglami, Rangadoria, Ahu joha, Rasi etc. Undertake sowing should be started during March-April. Undertake land preparation for sowing of summer green gram and black gram from mid-February to March. Undertake land preparation for ridge gourd, cucumber, bitter gourd, okra etc.
 - In the Hill Zone of Assam, spray Propiconazole 25 EC (Tilt 25 EC) @ 0.1 % for protection against yellow rust, powdery mildew and karnal bunt disease in wheat crop at heading stage.
 - In the Barak Valley Zone, to control the attack of stem borer @ tillering stage in rice field, spray Chlorpyrifos 50 EC @ 2 ml per litre of water.
 - In the Central Brahmaputra Valley Zone, apply Dimethoate 30EC or Chloropyrifos 20EC @ 1ml per litre of water during afternoon hours to control aphids in wheat crop at vegetative and ear head stage.
 - **Nagaland, Mizoram, Manipur and Tripura:**
 - In Manipur, in pre-kharif rice nursery, maintain water level just to submerge the aerial sprouts and later increase the water level. Provide light irrigation to rabi maize at vegetative to pre-flowering stage and to rapeseed and mustard at Siliqua formation to maturity stage. Transplant tomato seedlings and 4-leaf stage cucurbit seedlings raised under low cost polyhouse. Apply light watering to already transplanted seedlings. Use mulching materials like paddy straw to protect young cucurbit plants from cold. Undertake sowing of French bean and okra crop.
 - In Mizoram, continue harvesting of ginger, turmeric, early cole crops, brinjal, tomato and chilli. Harvest mature cobs of maize. Apply irrigation once in a week to green/black gram, soybean and toria at pod/siliqua stage. Provide alternate day irrigation to coffee at blooming stage and strawberry at fruit formation to harvesting stage.
 - In Tripura, continue transplanting of the young seedlings of summer brinjal and tomato to the main field. Apply irrigation and provide mulching to *Rabi* maize crop at tasselling stage. Apply light irrigation to cole crops and tomato.
 - In Nagaland, provide mulching to lentil and linseed crops at vegetative stage. Harvest ripened fruits of Khasi Mandarin.
 - In Manipur, Spray Cypermethrin or Fenvelerate (0.01%) followed by Carbyl (0.1%) at an interval of one week for control of leaf hopper in mango.
 - In Nagaland, spray Neem seed kernel extract at @ 500 g per ha twice at 10 days interval for cut worm in cabbage and cauliflower at maturing stage.
- **Animal Husbandry**
 - In Manipur, provide artificial heating to poultry birds and vaccinate them against coccidiosis and Ranikhet diseases. Vaccinate pigs against swine fever and cattle against FMD, Haemorrhagic Septicaemia, Black Quarter.
 - In the Barak Vally Zone of Assam, for Blister disease attack in goat wash affected area with Potassium Permanganate (PP) and consult nearby Veterinary Dispensary for antibiotic cream and further treatment.

- In the Hill Zone and Central Brahmaputra Valley Zone of Assam, vaccinate poultry birds against Ranikhet disease.
- **Fishery**
- In the Barak Valley Zone of Assam, an extra dose of Lime @ 200 kg per ha may be applied in the fish pond to prevent the outbreak of EUS (ulcer disease).
- In the North Bank Plain Zone, apply Potash @ 4-5 mg/litre of water, Sukrena WS @ 1 litre 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:** Rainfall occurred in Bhandara, Chandrapur, Gadchiroli, Washim and Wardha districts of Vidarbha during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - The hailstorm during 11th to 13th February in Maharashtra caused damage in *Rabi* jowar, red gram, Bengal gram safflower, sunflower, grapes, sweet lime, papaya, vegetables grown in at Jalna, Beed in Marathwada, orange, gram in Buldhana, Washim, Amaravati and Akola in Vidharbha; *Rabi* jowar, Bengal gram, onion vegetables in Dhule, Nandurbar districts in Madhya Maharashtra. The following measures are suggested:
 - In orchards, clean up the debris and fallen fruits from orchards and trim off broken stems and leaves of plants to avoid further spread of pest and diseases.
 - Application of fungicide to prevent rot from entering before the wounds are able to seal in damaged.
 - Apply a layer of mulch around the base of the plant to help it survive in summer.
 - If some plants are too heavily affected and fixing hail damage is not possible. These plants should be removed and replaced with new plants.
 - If standing crop has not been fertilized, application of fertilizer to the impacted plants can help them to regrow and develop new foliage.
 - Harvest the lodged matured crops as early as possible.
 - In North Konkan, in transplanted rice, maintain 5 cm water level at tillering stage. Apply irrigation in groundnut crop at 10-12 days interval.
 - In Madhya Maharashtra, continue harvesting of matured gram and jowar and keep the produce in safer place. Complete sowing of summer groundnut and vegetables crops before 15th February. Complete planting of papaya by end of February. In Western Ghat Zone, considering dry weather, apply irrigation to wheat, gram, fruit orchards & vegetable crops. Complete harvesting of matured jowar & gram.
 - In Marathwada, as dry weather is prevailing, undertake harvesting of matured Bengal gram, citrus fruits. Apply irrigation in ambe bahar pomegranate and citrus orchard.
 - In Vidarbha, complete harvesting of matured gram. Continue sowing of summer sesame (Variety-NT-11) and summer groundnut (Variety-TAG-24, TG-26, SB-11).
 - In Western Ghat Zone of Madhya Maharashtra, due to cloudy weather, there may be incidence of powdery mildew in mango, gawar, bhendi, tomato, chilli, fenugreek (methi), for its control spray water soluble sulphur 80% @ 20 g or Dinocap 48% EC @ 5 ml or Penconazole 10% EC @ 5 ml per 10 liters of water.
 - **Gujarat:**
 - In South Gujarat Zone, apply irrigation to vegetable crops as there is increase in temperatures. Spray 0.5% Zinc Sulphate or 0.2% Ferrous Sulphate in banana crop for higher yield and good fruits quality. Spray 2% Potassium Nitrate in mango crop for effective control of mango fruit dropping and higher flower setting.
 - In South Saurashtra Zone, continue harvesting of matured pigeon pea and coriander. Apply irrigation in chickpea at regular interval. For the control of leaf webber in fruit/leafy vegetable crops, sowing of trap crop (castor and galgota) around the vegetable crops is recommended.
 - In North Gujarat Zone, undertake land preparation for sowing of groundnut and sesame. Continue sowing of vegetable (okra, cluster bean and bottle gourd) crops. Stop irrigation in potato one week before harvesting. Provide irrigation to gram (pod filling stage) crop.
 - In North Saurashtra Zone, undertake sowing of groundnut and land preparation for sowing of sesame; undertake sowing of sesame when minimum and maximum temperature rises to 19°C and 30°C respectively. Continue transplanting of brinjal, sowing of cluster bean, gourds and watermelon. Continue harvesting of matured coriander.
 - In Bhal and Coastal Zone, continue harvesting of matured spikes of castor and picking of matured bolls of cotton. Apply light irrigation in mustard (pod development stage) and cumin in clear sky.
 - In South Gujarat Heavy Rainfall zone, continue transplanting of summer rice. Carry out weeding in pulses as per need and earthing up in cole crops. Ploughing in sapota orchards is recommended to remove weeds.
 - In Middle Gujarat Zone, continue harvesting of matured capsules of castor crop.

- In North Gujarat Zone, due to cloudy weather there is possibility of occurrence of pod borer in gram; if infestation is above ETL, spray Quinalphos @ 20 ml / 10 litres of water, for control.
- In South Gujarat Zone, in sapota crop, spray Quinalphos 20 ml + Mancozeb @15 gm/10 liters of water against infestation of bud borer and leaf spot in sapota.
- In North Saurashtra Zone, heavy attack of thrips is observed in garlic due to migration from harvested cotton field; for control, spray neem seed extract 5% and spray Pofenofos @ 20 ml and Lambda-Cyhalothrin @ 14 ml/10 liters of water alternatively at 10 days interval.
- In Middle Gujarat Zone, due to change in weather, there are chances of sucking pest infestation in the vegetable crops; for effective control of sucking pest spray Dimethoate 30 EC @10 ml/10 liters of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rainfall occurred in Balaghat, Chhindwara, Jabalpur, Mandla, Narsinghpur, Seoni, Siddhi and Umaria districts of East Madhya Pradesh, Betul district of West Madhya Pradesh, Balod, Bemetara, Durg, Raipur, Rajnandgaon and Surguja districts of Chhattisgarh during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - In Nimar Valley Zone, apply 4th irrigation in wheat at 80-85 DAS. Continue sowing of green gram, black gram and groundnut.
 - In Kymore Plateau and Satpura Hill Zone, apply irrigation in late sown wheat followed by urea application.
 - In Grid Zone, continue nursery sowing of summer vegetables. Undertake harvesting of matured toria and mustard.
 - In Bundelkhand Zone, continue sowing of vegetables like bitter gourd, pumpkin, okra etc.
 - In Satpura Plateau Zone, continue planting of spring sugarcane and sowing of groundnut and maize. Undertake harvesting early varieties of gram.
 - In Central Narmada Valley Zone, apply 2nd top dressing of urea in normal sown and 1st top dressing of urea in late sown wheat crop. Continue intercultural operations in vegetables. Apply second irrigation in gram at branching stage (65-75 DAS).
 - In Malwa Plateau Zone, undertake sowing of cucurbits, chilli, tomato and brinjal crops in the nursery. Continue transplanting of onion and intercultural operations in vegetables.
 - In Jhabua Hill Zone, apply irrigation in wheat at dough stage. Apply irrigation and recommended dose of fertilizers in winter vegetables. Continue nursery preparation for vegetables like tomato, chilli, brinjal, cauliflower, cabbage and cucurbits. Continue digging up of matured rhizomes of ginger. Continue harvesting of matured mustard and gram.
 - In Satpura Plateau Zone, for control of purple blotch of onion, spray Saaf fungicide @ 2 g per litre of water.
 - In Malwa Plateau Zone, there are chances of termite attack in wheat, apply mixture of 20 kg sand with Chlorpyrifos 20 EC @ 2.0 litre in evening hours.
 - **Chhattisgarh:**
 - In North Hill Zone, continue nursery sowing of summer vegetable crops (cauliflower, cabbage, tomato, brinjal, chilli, Continue planting of sugarcane. Continue harvesting of matured mustard. Undertake harvesting of matured tubers of early varieties of potato.
 - In Chhattisgarh Plain Zone, complete sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc.
 - In Bastar Plateau Zone, for control of powdery mildew disease in pea crop broadcast Sulphur (200 mes) dust @ 25 - 30 kg/ha.
- **Animal Husbandry**
 - In Madhya Pradesh, provide mineral mixture and fresh and clean water to birds. Vaccinate the poultry birds to prevent Ranikhet disease. Get all the animals vaccinated against foot and mouth disease (FMD).
 - In Chhattisgarh, feed the cattle with dried fodder chaff cutting mixed with legume fodder such as Berseem, Lucerne etc.

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

- **Realised Rainfall:** Rainfall occurred in Idukki and Pathanamthitta districts of Kerala, Namakkal, Theni, Thiruvannamalai and Virudhnagar districts of Tamil Nadu during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Kerala:**
 - In the Problem Area Zone, for paddy at reproductive stage in areas where water for irrigation is assured and where acidity is high, drain and re-flood rice fields every 15 days. Continue harvesting of mature nutmeg fruits.

Continue harvesting of pepper when some of the berries in the spike turn red. Provide irrigation to banana and coconut as per requirement. Undertake planting of brinjal and tapioca.

- In the Central Zone, undertake planting of pepper vines in nursery beds for rooting.
- In the Southern Zone, provide shade to small rubber and coconut plants. Apply irrigation to banana, coconut and vegetable crops. Undertake harvesting of Mundakan rice. Cow pea and other vegetables can be raised after harvesting rice.
- In the Problem Area Zone, apply diluted cow-dung slurry, biogas slurry, cow's urine, vermi wash etc to vegetables @ 8-10 days interval. Irrigate vegetable gardens at least once in two days. Give shade to seedlings. In case of sucking pests apply neem oil emulsion @ 65 ml/litre of water in cow pea and 25ml/litre of water in cucurbits.
- In the Central Zone, remove and destroy affected and decayed fruits of bitter gourd. Use special pheromone traps like cue lure (6 nos/Acre) for vegetable fruit fly. If the attack is not reduced, spray mixture of Malathion 2 ml per one litre of water + jaggery 10 g at flowering and fruit initiation stages.
- In the Southern Zone, to control leaf eating caterpillar in cool season vegetables, spray any neem based pesticide. For control of fungal disease in rubber tapping panel, apply Copper Oxy-Chloride or Bordeaux mixture. Apply lime on the stem of 2- 3 year old plants.
- In the Northern Zone, apply Azadiractin 3000ppm stock after diluting in water @ 3ml/litre for rice bug in paddy at grain filling stage. For better result, add and stir one to two ml of Malathion 50EC per litre of the diluted Azadiractin solution before applying. Carry out spraying in the evening hours, immediately after sunset. Spray the solution of Lambda Cyhalothrin insecticide 3 ml + Copper Oxychloride fungicide 5g dissolved in 5 litres of water Mosquito bug – blight disease complex in cashew plantation at flushing stage.

▪ **Andhra Pradesh:**

- In the North Coastal Zone, continue planting of sugarcane after sett treatment with Propiconazol @ 1.0 ml/litre for 15 minutes before planting.
- In the Southern Zone, the present weather conditions are favourable for stem borer attack in paddy. To control, spray Chlorpyrifos @ 2.5 g or Acephate @ 1.5 g per litre of water. Due to dry weather prevailed in the district there is possibility of incidence of thrips attack in groundnut at flowering to pegging stage. Spray Monocrotophos @ 1.6 ml. or Imidachloprid @ 0.3 ml/litre of water to control the incidence of bud necrosis.
- In the Scarce Rainfall Zone, at tillering to panicle initiation stage, BPH incidence and leaf folder in paddy is observed in some parts of district. Farmers are advised to spray Buprofezin 1.6 ml or Ethofenpros @ 2.0 ml per litre of water. For the control of leaf folder in paddy, farmers are advised to spray Chlorpyrifos @ 2 ml/litre for control. Incidence of sucking pests is observed in some parts of the district in groundnut crop. Farmers are advised to spray Dimethoate @ 2ml/litre of water or Thiomethoxam @ 40g/acre for control.
- In the Krishna Godavari Zone, spray Chlorpyrifos @ 500 ml or Quinalphos @ 400 ml or Novaluron @ 200 ml or Acephate @ 200 g per acre for pod borer in chickpea at pod development – maturity stage. Spray Tricyclozole @ 120 g or isoprothiolin @ 300 ml or kasugamycin @ 400 ml per acre for leaf blast in rice at active tillering stage.
- In the North Coastal Zone, spray Dimethoate @ 2.0 ml/litre for sucking pest; Chlorpyrifos @ 2.5 ml/litre + Dichlorvos @ 1.0 ml/litre for Maruca pod borer and Carbandezam @ 1 g/litre or Kerathane @ 2 ml/ litre for Powdery mildew in rice fallow pulses at pod development stage. Spray Chlorpyrifos @ 2.5 ml /litre of water for stem borer in *Rabi* paddy at tillering stage. Spray Carbendazim @ 1 g/litre of water in ragi crop at tillering stage.

▪ **Telangana:**

- In North Telangana Zone, maintain shallow depth of water (2-3 cm) during tillering stage of paddy crop. Follow alternate wetting and drying (AWD) method of irrigation. Give irrigation to Maize crop at sensitive stages like before flowering, flowering & milking. Provide irrigation during flowering and grain filling stages in sorghum crop and provide enough irrigation at pegging to pod development stage in groundnut crop. Undertake sowing of sesame crop up to mid-February.
- In South Telangana Zone, prevailing dry weather conditions are favorable for incidence of aphids in maize. To control, spray Chlorpyrifos @ 2 ml or Acephate @ 1.5 g per litre of water. Incidence of Diamond Back Moth is noticed in cabbage and cauliflower. To control, spray Acephate @ 1.5 g or Spinosad @ 0.3 ml per litre of water before 15 days of harvesting of the crop.
- In North Telangana Zone, spray Tricyclazole @ 0.6 g or Isoprothiolane @ 1.5 ml or Kasugamycin @ 2.5 ml per litre. Spray Chlorothalonil @ 2 g or Pyraclostrobin @ 1g/litre of water for early blight in tomato crop. Spray Flubendamide @ 0.3 ml/litre of water at 28 and 35 days for stem borer in tomato crop. Spray Myclobutanil @ 1 ml/litre of water for powdery mildew in bhindi crop.

▪ **Tamil Nadu:**

- In the High Rainfall Zone, maintain 5 cm standing water for rice crop which is at flowering stage. Undertake sowing of pulses (black gram and green gram) in rice fallow areas utilizing the residual soil moisture. Provide support to banana crop to avoid lodging.

- In the North Western Zone, carry out second weeding, apply gypsum (160kg/acre) and do earthing up operation in groundnut crop at flowering and peg formation stage.
- In the Cauvery Delta Zone, rice varieties ADT 43 and ADT 45 are suitable for summer paddy cultivation. Undertake harvesting of late Samba rice and Thaladi paddy.
- In the Western Zone, apply irrigation to soil moisture based crops. Apply frequent irrigation to recently planted sugarcane to avoid early shoot borer attack. Provide adequate support to 5 months old banana and sugarcane.
- In the Southern Zone, to manage Purple blotch disease in Onion select disease free bulb for planting, and treat the seeds with Thiram @ 4 g/kg of seeds. Drain the field should well. Apply three foliar sprayings with 25 gm of Copper oxychloride or 20 gm Chlorothalonil per litre of water.
- In the South Zone, prevailing weather condition is favourable for Bacterial leaf blight incidence in rice crop at panicle initiation stage. Apply two sprays of Copper Hydroxide 77 WP @1.25 kg/ha 30 DAP & 45 DAP. To control Cotton aphids at boll bursting stage, spray Dimethoate 30 EC 500ml/ha or Acetamiprid 20% SP 50 g/ha. To control Cotton mealy bug spray Dimethoate or Profenophos 2 ml/litre of water.
- In the North Eastern Zone, to control blast in rice, spray Carbendazim 50 WP or Tricyclozole 75 WP or Metominostrobin 20 SC or Azoxystrobin 25 SC @ 1 gram or 1 ml in 1 litre of water. To control the incidence of sucking pest in the vegetable crops, spray neem seed kernel extract 5 %.
- In the North Western Zone, spray Imidacloprid pesticide @ 0.6 ml/litre of water to control sucking pest in groundnut crop.
- In the Western Zone, for control of sucking pest in vegetables, spray 5% neem seed kernel extract in the morning and evening hours.
- **Karnataka:**
- In Southern Dry Zone, continue nursery bed preparation for sowing of ragi (KMR-304, 301, Indof -9, GPU-28) and for rice (MTU-1000, 1001, KRH-4, IR-64 varieties).
- In Southern Transition Zone, continue transplanting of summer rice. Undertake planting of sugarcane and harvesting of matured coconut.
- In North East Transition Zone, undertake new plantation of improved sugarcane variety Co-86032. Complete harvesting of pigeon pea.
- In North Transition Zone, continue picking of cotton, harvesting of wheat (sown in 2nd week of October), early sown sorghum and early sown Bengal gram. Provide supplementary irrigation to late sown sorghum (grain filling stage), wheat (grain filling) and late sown Bengal gram crop.
- In North East Dry Zone, continue planting of sugarcane. Complete harvesting of red gram, Bengal gram and safflower. Apply irrigation to wheat crop.
- In North Dry Zone and Central Dry Zone, continue harvesting of matured fruits of chili.
- In Southern dry Zone, there is a possibility of occurrence of powdery mildew and hoppers in mango crop; for control, spray wettable Sulphur @ 3g/litre and Rogar @1.5ml/litre of water respectively.
- In Hill Zone of Karnataka, for control of mites in coconut, spray water soluble Sulphur @ 5g/litre of water or spray a mixture of neem oil (20 ml) + garlic solution @20 gm + soap powder solution @ 5 g per litre of water to the coconut flower and fruit bunch.
- In Eastern Dry Zone, spray Lamda Cyhalothrin 5 EC @ 0.5 ml/litre of water or Sulphur dust (SULTAF) 80 W @ 3g/litre of water against the powdery mildew disease in mango crop.
- In North Transition Zone, due to low minimum temperature there is a chance of development of powdery mildew in mango; for control, spray Phosphamidon 86 WSC @ 0.5 ml with Hexaconzole 5 EC @1 g per litre of water.
- In North Dry Zone, to manage, sucking moth in pomegranate, install pheromone traps in the field; spray DDVP @1 ml dissolved in one liter of water, during night time.
- In North Transition Zone, due to low minimum temperature forecast there is a chance of development of powdery mildew in mango; for control, spray Phosphamidon 86 WSC @0.5 ml with Hexaconzole 5 EC @1g /litre of water.
- In Central Dry Zone, to manage sucking pests in safflower, spray Thiamethacom 25 WG @ 0.2 g or Acephate 75 SP @ 1 g or Dimethoate 30 EC @ 1.75 ml dissolved in one litre of water.
- **Animal Husbandry**
- In the Northern Telangana Zone, vaccinate poultry birds against Ranikhet disease, cattle against FMD and Hemorrhagic Septicemia diseases and sheep/goat against sheep pox disease.
- In the Southern Zone of Tamil Nadu, provide half quantity of greens and straw in the morning and half in the evening after milking. Feed cow with mixture of young foliage and dry grass with hay. Give silage after the end of milking. Give concentrate feed in the morning and evening with equal distribution.
- In Eastern Dry Zone of Karnataka, maintain the optimum room temperature in sericulture, poultry and dairy unit. In North Dry Zone, give de-worming medicine to livestock.