



# *National Agromet Advisory Service Bulletin*

*Friday 15<sup>th</sup> March 2019*  
*(For the period 15<sup>th</sup> to 20<sup>th</sup> March 2019)*



*Issued by*  
*India Meteorological Department*

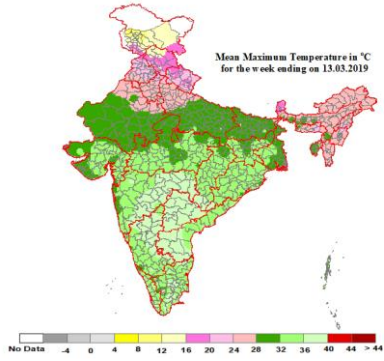
**Weblink For**

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

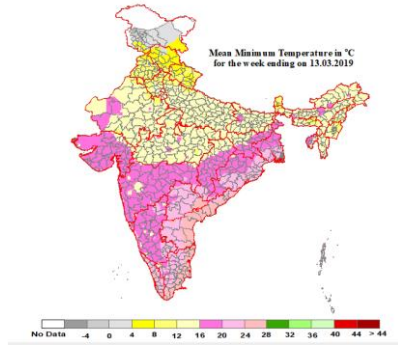
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

**Spatial distribution of weather parameters for the week ending on 13.03.2019**

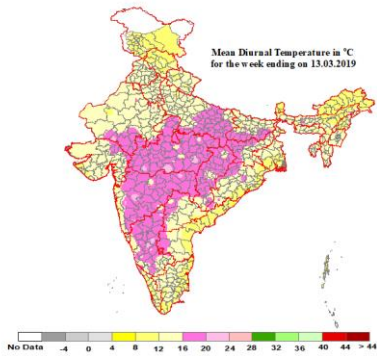
**Mean Maximum Temperature (°C) for the week ending on 13.03.2019**



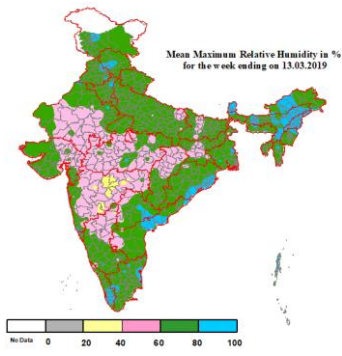
**Mean Minimum Temperature (°C) for the week ending on 13.03.2019**



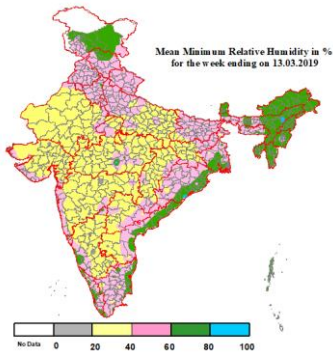
**Mean Diurnal Temperature Variation (°C) for the week ending on 13.03.2019**



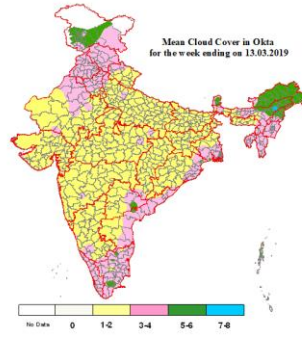
**Mean Maximum Relative Humidity (%) for the week ending on 13.03.2019**



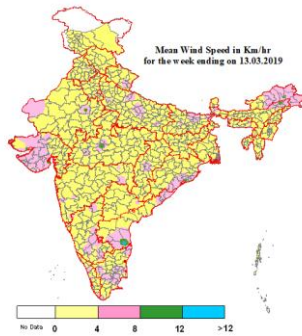
**Mean Minimum Relative Humidity (%) for the week ending on 13.03.2019**



**Mean Cloud Cover (okta) for the week ending on 13.03.2019**

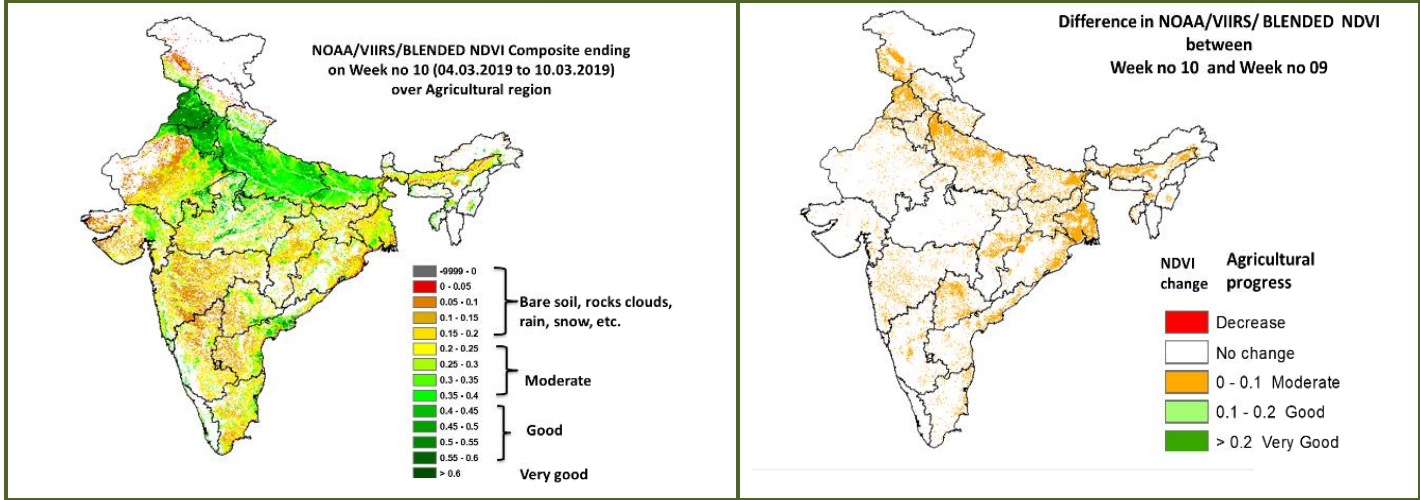


**Mean Wind Speed (km/hr) for the week ending on 13.03.2019**



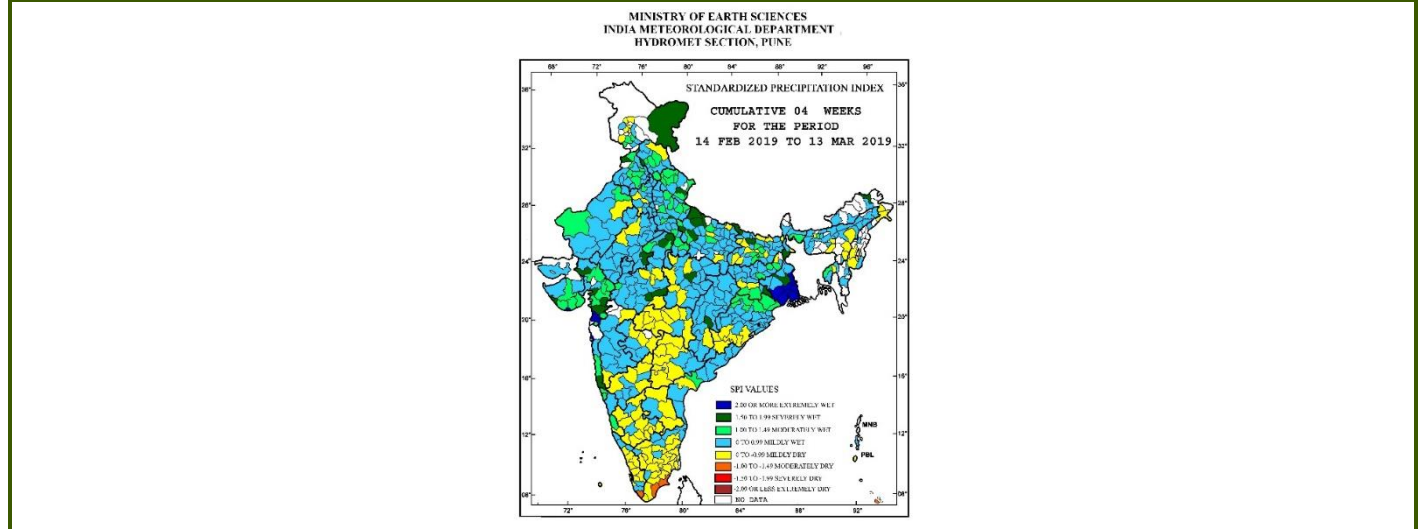


<b>NOAA/VIIRS/BLENDED NDVI composite for the week number 10 (04.03.2019 to 10.03.2019) over Agricultural regions of India</b>	<b>Difference in NOAA/VIIRS/BLENDED NDVI between week number 10 and week number 09</b>
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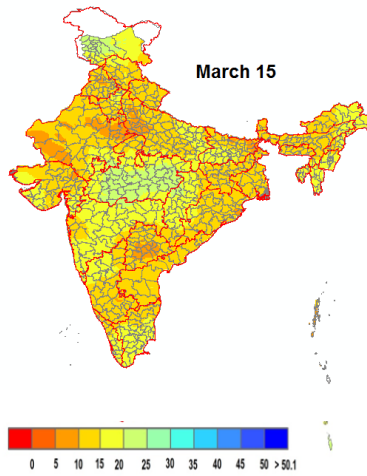
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|--|---|
| <ul style="list-style-type: none"> <li>• Agriculture vigour is good at most places over Punjab; many places over Haryana; at a few places over Uttar Pradesh and at isolated places over Rajasthan, Madhya Pradesh, Coastal Andhra Pradesh, Telangana, Southern Kerala &amp; Jammu region adjoining Punjab. It was moderate over rest of the country.</li> </ul> | <ul style="list-style-type: none"> <li>• Moderate difference in agricultural vigour was noticed at many places over Punjab, Uttar Pradesh, West Bengal &amp; Jammu Kashmir and at a few to isolated places over rest of the country.</li> </ul> |
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<b>Standardised Precipitation Index</b> <b>Cumulative 4 weeks for the period 14<sup>th</sup> February to 13<sup>th</sup> March 2019</b>
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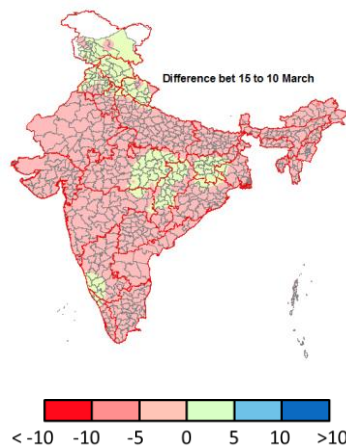
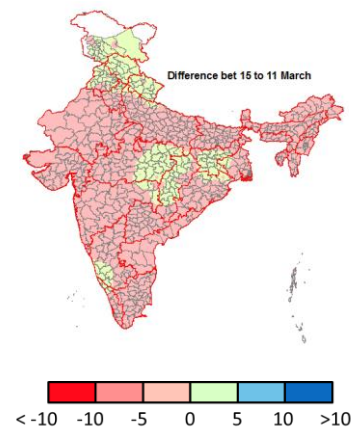
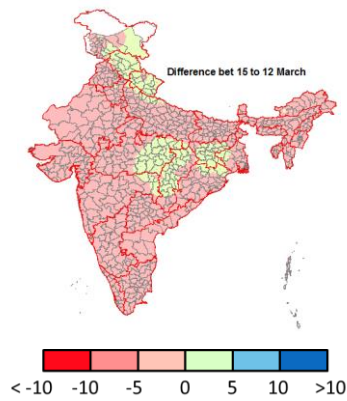
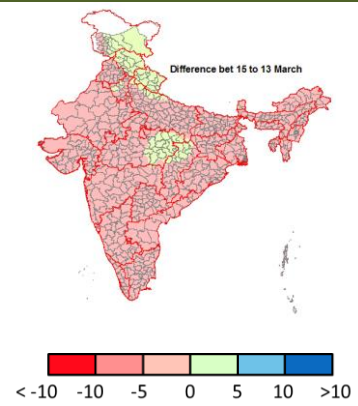
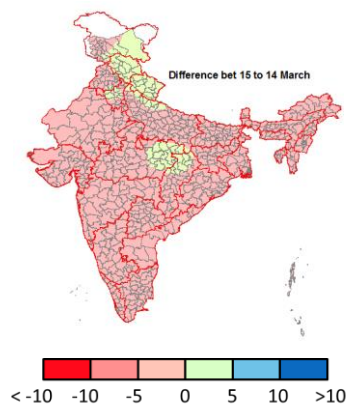


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| <ul style="list-style-type: none"> <li>• Extremely/severely wet conditions experienced in many districts of West Bengal; Upper Siang district of Arunachal Pradesh; East Singhbhum district of Jharkhand; West Champaran, Muzaffarpur districts of Bihar; Bahraich, Kannauj, Kheri, Sitapur, Unnao, Kanshiram Nagar districts of Uttar Pradesh; Almora district of Uttarakhand; Amritsar district of Punjab; Una district of Himachal Pradesh; Ladakh (Leh) district of Jammu &amp; Kashmir, Bhind, Gwalior, Harda, Hoshangabad and Katni districts of Madhya Pradesh; Dhamtari district of Chhattisgarh.</li> </ul> | <ul style="list-style-type: none"> <li>• Moderately dry conditions experienced in Ramanathapuram, Toothukudi districts of Tamil Nadu &amp; Puducherry; Trivandrum district of Kerala.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.</li> </ul>   |  |

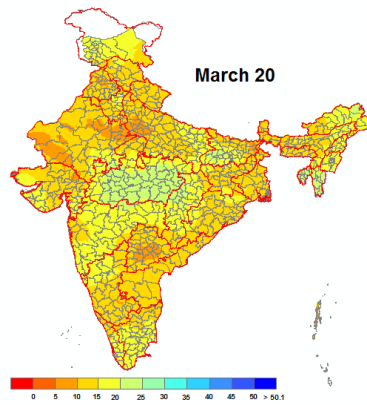
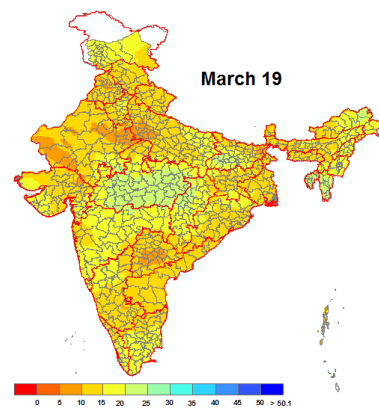
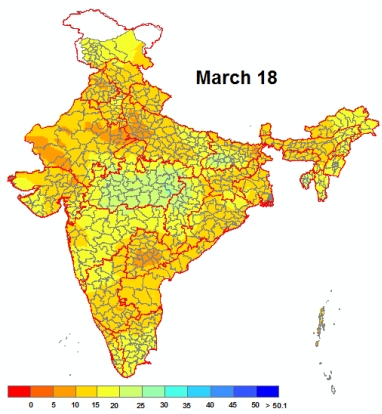
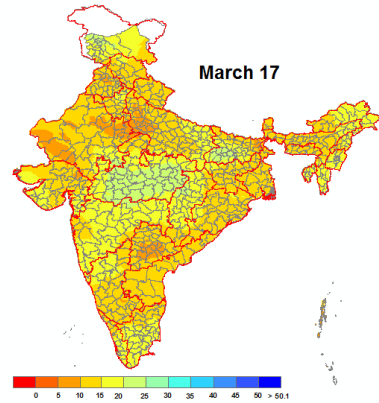
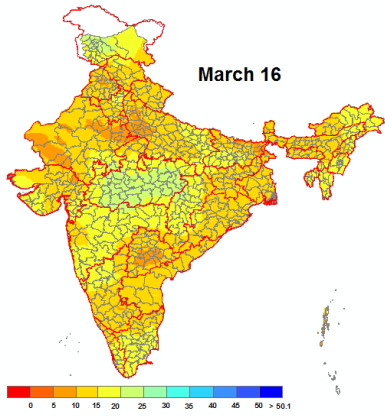
Daily Soil Moisture (mm) for 15<sup>th</sup> March 2019 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 16<sup>h</sup> to 20<sup>h</sup> March 2019 (ending at 0830 IST)  
for 60 cm depth**



## Weather Forecast for next 5 days valid upto 0830 hours of 20<sup>th</sup> March 2019

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- Maximum temperatures likely to rise gradually by 3-4°C over Northwest India during next 4 days.
- No significant change in maximum & minimum temperatures likely over major parts of the country during next 48 hours.

### 5 Day Rainfall Forecast (Mid-day) 15<sup>th</sup> March 2019

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

#### % Station Reporting Rainfall

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

#### Weather Warning during next 5 days

- **15 March (Day 1):** Thunderstorm accompanied with lightning & gusty winds at isolated places very likely over East Madhya Pradesh, Chhattisgarh, Jharkhand, Gangetic West Bengal, Odisha, Arunachal Pradesh.
- **16 March (Day 2):** Thunderstorm accompanied with lightning & gusty winds at isolated places very likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

- **17 March (Day 3):** Thundersquall accompanied with lightning at isolated places very likely over Jharkhand, Gangetic West Bengal and Odisha. Thunderstorm accompanied with lightning & gusty winds at isolated places very likely over East Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Coastal Andhra Pradesh. Heavy rain at isolated places very likely over Odisha.
- **18 March (Day 4):** Thunderstorm accompanied with lightning & gusty winds at isolated places likely over Chhattisgarh, Jharkhand, West Bengal & Sikkim, Odisha, Kerala and Coastal Andhra Pradesh.
- **19 March (Day 5):** Thunderstorm accompanied with hailstorm, lightning & gusty winds at isolated places likely over Jammu & Kashmir and Himachal Pradesh.

#### Weather Outlook for subsequent 2 days from 20<sup>th</sup> to 22<sup>nd</sup> March 2019

- Scattered to fairly widespread rain/snow likely over Western Himalayan Region.
- Scattered to fairly widespread rain/thundershowers likely over Northeast India and isolated to scattered rain/thundershowers over East and southern most peninsular India.
- Dry weather likely over rest of the country.

#### Salient Advisories

- As thunderstorm accompanied with hailstorm, lightning & gusty winds at isolated places likely over **Jammu & Kashmir** and **Himachal Pradesh** on 19<sup>th</sup> March, use hail net for orchard crops to protect from mechanical damage and provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places.
- As thunderstorm accompanied with lightning and gusty winds at isolated places very likely over **Arunachal Pradesh** on 15<sup>th</sup>, over **Assam & Meghalaya** and **Nagaland, Manipur, Mizoram & Tripura** on 16<sup>th</sup> and 17<sup>th</sup>, over **East Madhya Pradesh** on 15<sup>th</sup> and 17<sup>th</sup>, over **Chhattisgarh** on 15<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup>, over **Vidarbha** on 17<sup>th</sup>, over **Jharkhand** on 15<sup>th</sup> and 18<sup>th</sup>, over **Gangetic West Bengal** on 15<sup>th</sup>, over **Odisha** on 15<sup>th</sup> and 18<sup>th</sup>, over **Bihar** on 17<sup>th</sup>, over **West Bengal & Sikkim** on 18<sup>th</sup>, over **Coastal Andhra Pradesh** on 17<sup>th</sup> and 18<sup>th</sup> and over **Kerala** on 18<sup>th</sup> March, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Undertake propping in sugarcane in Coastal Andhra Pradesh and Chhattisgarh.
- As rain/snow likely at many places over **Jammu & Kashmir** and **Himachal Pradesh** on 19<sup>th</sup>, rain/thundershowers likely at many places over **Arunachal Pradesh** on 15<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup>, over **Assam & Meghalaya** and **Nagaland, Manipur, Mizoram & Tripura** on 18<sup>th</sup> and 19<sup>th</sup>, over **Odisha** and **Jharkhand** on 17<sup>th</sup> along with heavy rain at isolated places very likely over Odisha on 17<sup>th</sup> March, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- In **Middle Gujarat**, undertake sowing of sesame and harvesting of matured wheat crop and capsules of castor. In **North Gujarat**, continue sowing of summer groundnut, pearl millet and sesame crops.
- In Central Brahmaputra Valley of **Assam**, continue land preparation for sowing of *Capsularis* jute and undertake harvesting of matured rapeseed-mustard at the earliest. Continue harvesting of normal sown early varieties of mustard and matured gram and lentil crops in **Chhattisgarh**.
- In Central Brahmaputra Valley of **Assam**, soil and air temperatures are favourable for attack of stem borer in *Boro* rice. If eggs of the pests are noticed, apply 'Darsban' or 'Monocrotophos' at the rate of 2 tea spoon per 5 litres of water after current spells of rain.



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

- **Realised Rainfall:** Rainfall occurred in Kollam and Pathanamthitta districts of Kerala during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with lightning and gusty winds at isolated places very likely over Coastal Andhra Pradesh on 17<sup>th</sup> and 18<sup>th</sup>, over Kerala on 18<sup>th</sup> March, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane in Coastal Andhra Pradesh.
  - **Kerala:**
    - Undertake planting of ginger, turmeric and vegetables as intercrop in irrigated coconut gardens. Apply mulch and protect the plants from the scorching sun. Providing adequate supply of water is essential for proper growth in coconut. Moisture stress leads to stunted growth, immature nut fall and decreased yield. Give irrigation to palms once in a week.
    - As temperature is increasing, it is desirable to bury fresh or dried coconut husk around the coconut palms to conserve soil moisture. The husk can be buried either in linear trenches taken 3 m away from the trunk between rows of palms or in circular trenches taken around the palm at a distance of 2 m from the trunk. The trenches may be of 0.5 m width and depth. The husks are to be placed in layers with concave surface facing upwards and covered with soil. Instead of husk, coir pith can be buried @ 25 kg /palm/year.
    - In High Altitude Zone, this is an ideal time for planting of pepper. Also keep the fields ready for ginger plantation.
    - In Central Zone, there is a chance of aphid attack in vegetables, apply 2% neem oil emulsion or apply 20g Verticillium lecanii per one litre of water in ten days intervals. If aphid attack is severe, apply 3 ml Imidacloprid or 2 g Thiamethoxam per ten litre of water.
    - In Southern Zone, there is a chance of incidence of leaf spot in banana, spray Pseudomonas @ 20 gram per litre of water. To avoid the spread of rhizome rot disease through irrigation water, disinfect the irrigation water with 0.1% bleaching powder (1 g/litre of water) solution. Disinfect implements and tools used in the field with bleaching powder or Phenol.
  - **Andhra Pradesh:**
    - In North Coastal Andhra Pradesh, weather is congenial for incidence of Panicle Mite in rice. Spray Prophenaphos @ 1.6 ml per litre of water.
    - In South Coastal Andhra Pradesh, prevailing dry weather and high temperature, maize crop which is at tasseling stage may face moisture stress. Provide irrigation to the crop.
    - In Rayalaseema, undertake harvesting of rabi groundnut when 70-80 % of groundnut plant leaves, stems turn yellow colour and inside of the pod shell might have turned black colour. Pods which are to be used for sowing purpose should be dried under sun until the moisture content is 9%.
  - **Telangana:**
    - Continue sowing of fodder crops like sorghum, bajra and maize can be taken up for fodder with assured irrigation facilities..
    - Prevailing weather conditions are congenial for the incidence of powdery mildew in mango. Spray Wettable Sulphur @ 3 g or Hexaconazole @ 2ml per liter of water.
  - **Tamil Nadu:**
    - In Cauvery Delta Zone, mainly dry weather condition is expected in the next five days, harvesting of matured *Samba/Thaladi* paddy may be continued .
    - Increasing temperature with wind speed above 10 km/h may cause severe water stress in standing crops. Provide sufficient irrigation to all crops and do mulch to prevent soil moisture. All irrigated standing crops including coconut.
    - In Southern Zone, due to prevailing weather, fruit fly damage in snake and bitter gourds, to control setting of 12 pheromone traps /ha and application of either Malathion or Dimethoate @ 2ml/litre.
    - In High Rainfall Zone, due to hot and dry weather, sucking pest infestation will be high on rose, jasmine and tuberose, spray Prophenaphos @ 2 ml per litre of water.
  - **Karnataka:**
    - In South Interior Karnataka, apply irrigation in coffee (flowering stage) plantation through rain guns or sprinkler irrigation. Continue harvesting of pepper.
    - In North Interior Karnataka, continue deep ploughing in crop harvested fields. Complete harvesting of sorghum, chick pea, safflower crops; undertake harvesting of cabbage crop. Incorporate crop residue in the soil; this facilitates in situ conservation of water during the pre-monsoon rains and also helps to conserve the soil. Apply irrigation in groundnut, sugarcane, mango (mustard size) crop.



- In Coastal Karnataka, continue deep ploughing in harvested rice field.
- In North Interior Karnataka, for management of Brown plant hopper in rice, spray Chloropyriphos 20EC @ 2.0 ml or Monocrotophos 36SL @ 1.5 ml dissolved in one liter of water.
- In South Interior Karnataka, spraying of Trycyclozole @ 0.6 gm/litre or Corbondezim @ 1g/litre against blast disease in rice is advised.
- **Animal Husbandry**
  - In Karnataka, maintain optimum room temperature in sericulture, poultry and dairy unit. Allow animals for grazing early in the morning or later in the evening.
  - In Tamilnadu, in order to mitigate the effect of high temperature on animals, provide adequate cool drinking water, green fodder, addition of electrolytes and vitamin C in drinking water along with feeding management and spray water on gunny bags surrounding the cattle shed and the use of foggers.

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

- **Realised Rainfall:** Rainfall occurred in Kurung Kumey, Upper Siang and Upper Subansari districts of Arunachal Pradesh, Mokokchung district of Nagaland during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with lightning and gusty winds at isolated places very likely over Arunachal Pradesh on 15<sup>th</sup>, over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 16<sup>th</sup> and 17<sup>th</sup> March, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds.
  - As rain/thundershowers likely at many places over Arunachal Pradesh on 15<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup>, over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 18<sup>th</sup> and 19<sup>th</sup> March, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - **Arunachal Pradesh:**
    - Continue sowing maize, pea and early *kharif* vegetables. Take up sowing of soybean and black gram. Carry out harvesting of mature pea, mustard and pineapple after current spells of rain.
  - **Assam:**
    - In Lower Bramhaputra Valley of Assam, continue land/bed preparation for sowing of transplanted early Ahu rice. Continue land preparation/planting of sugarcane. Coconuts harvested during November can be sown in nursery bed for raising seedlings.
    - In Barak Valley Zone of Assam, continue land preparation for sowing of Ahu rice. Plant healthy seedlings of summer vegetables in the field.
    - In North Bank Plain Zone of Assam, continue nursery bed preparation for transplanted Ahu rice. Undertake sowing of the seeds of direct seeded Ahu variety like Banglami, Puthichapali, Nilajee, Hasakumra etc. and complete the sowing as early as possible. Maintain 5 cm water level in the Boro paddy field. Carry out land preparation for summer green gram and black gram.
    - In Upper Bramhaputra Valley of Assam, continue nursery bed preparation for sowing of transplanted Ahu rice. Undertake sowing okra, green gram and black gram in the field. Start land preparation for cultivation of colocasia.
    - In Central Bramhaputra Valley of Assam, take up land preparation for sowing of Capsularis jute, summer pulses and summer vegetables. Harvest matured pods of rapeseed-mustard after current spells of rain.
    - In Lower Bramhaputra Valley of Assam, spray Carbendazim @ 0.5g/litre or Hexaconazole 2ml/litre for sheath blight in Boro rice. after current spells of rain
    - In Central Bramhaputra Valley of Assam, soil and air temperatures are favourable for the attack of stem borer in Boro rice. If eggs of the pests are noticed, apply Darsban or Monocrotophos @ o 2 tea spoonfuls per 5 litre of water in the field after current spells of rain.
    - In Hill Zone of Assam, monitor pod borer in gram crop at flowering/pod formation stage and diamond black moth in cole crops. Install pheromone traps @ 3-4 traps per acre for monitoring of the pest population for diamond back moth in cole crop and pod borer in pea/g after current spells of rain.
    - In North Bank Plain Zone of Assam, apply protective spray of Chloropyriphos 20 EC @1ml/litre of water against potato tuber moth in standing crop as well as against late blight disease after current spells of rain.
  - **Meghalaya:**
    - Continue nursery raising/ transplanting of tomato and capsicum. Continue sowing of okra, cole crops (cabbage, cauliflower, broccoli) and root crops (radish, carrot). Continue harvesting of pea and pineapple.
    - Spray Monocrotophos (Nuvacron) @ 2.5 g/litre of water or Dimethoate (Rogor) @ 1.5 ml/litre of water during flush period to control citrus scales, citrus mealy bugs in Khasi Mandarin and spray Sulfex @ 2.5 g/litre of water for powdery mildew after current spells of rain.

- **Manipur:**
  - Continue nursery raising of pre-*kharif* rice and undertake transplanting of 20-25 days old seedling. Undertake transplanting of 4-5 leave stage cucurbits seedlings, planting of tomato, brinjal and sowing of bhindi. Continue harvesting of matured rapeseed/mustard, pulses and potato after current spells of rain.
- **Mizoram:**
  - Provide drainage to maize, gram, pea, toria and vegetable crops. Harvest mature fruits of strawberry, chilli, brinjal and tomato after current spells of rain.
  - Rust affected Pea plant should be destroyed or burnt. Spray the crop with Dithane M-45 @ 2 kg/ha in 1000 litres of water. Apply 2-3 sprays at 10 days interval after current spells of rain.
- **Tripura:**
  - Continue land preparation for sowing of cow pea, urd/green gram. Maintain 4 to 5 cm standing water in the field of boro rice.
  - To manage the attack of Stock rot in rabi maize at post silking stage, spray Mancozeb 2ml per litre of water after current spells of rain
- **Nagaland:**
  - Undertake sowing of green gram, okra and nursery preparation of Naga king chilli. Apply neem cake @ 250kg/ha after germination in cucurbitaceous vegetables after current spells of rain.
  - Install yellow sticky traps for monitoring white flies and hoppers in bhindi crop at germination stage.
- **Animal Husbandry**
  - In Assam, start rearing chicks during this season. Collect healthy chicks from some reputed hatchery.
  - In Arunachal Pradesh, vaccinate poultry birds against Ranikhet disease at 4 days of birth and give booster dose after 1 month.
  - In Manipur, vaccinate pigs against swine fever after the age of 3 months and vaccinate cattle against FMD.
  - In Tripura, increasing temperature with increasing humidity may cause discomfort to the cattle. Feed more forage at night, feed/graze during cooler hours and feed fresh green fodder. Protein and mineral supplements may be given with the feed between morning and afternoon milking under the shed.
- **Fisheries:**

In Assam, prepare ponds for new batch of fishes. Dry up the bottom of the ponds for 15-20 days and remove the upper layer of the bottom soil followed by ploughing and addition of lime. After 7-15 days of application of lime, add cow dung and other fertilizers in consultation with fishery extension officer.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
  - As thunderstorm accompanied with lightning and gusty winds at isolated places very likely over Jharkhand on 15<sup>th</sup> and 18<sup>th</sup>, over Gangetic West Bengal on 15<sup>th</sup>, over Odisha on 15<sup>th</sup> and 18<sup>th</sup>, over Bihar on 17<sup>th</sup>, over West Bengal & Sikkim on 18<sup>th</sup>, thundersquall accompanied with lightning at isolated places very likely over Jharkhand, Gangetic West Bengal and Odisha on 17<sup>th</sup> March, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds.
  - As rain/thundershowers likely at many places over Odisha and Jharkhand on 17<sup>th</sup>, along with heavy rain at isolated places very likely over Odisha on 17<sup>th</sup> March, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safe places.
- **Odisha:**
  - Summer paddy crop is at tillering to PI stage (five to eight weeks) in main field. Maintain 5 cm water level at PI stage. Sugarcane crop is at germination (one to three weeks) stage in main field. Undertake harvesting of matured mustard and harvest the rabi pulse crops if 90% pods mature immediately as rain is expected during next two days. Go for sowing of summer sesamum, mung, urd, green gram and black gram after necessary seed treatment.
  - In case of chilli thrips, apply Ethion 50% EC @ 400ml/acre or Imidacloprid 17.8% SL @ 60 ml/acre. In case of fruit and shoot borer in brinjal, go for application of 60ml Coragen 20 SC in 200 litres of water/acre. In case of fruit borer in tomato, apply 80 ml Spinosad 14.5SC in 200 litres of water/acre after current spells of rain.
- **Bihar:**
  - Harvest mature mustard crop in clear sky. Dig out matured potato tubers from the field immediately. Continue land preparation/sowing of Elephant foot yam, green gram and black gram. Continue land preparation for sowing of summer vegetables. Continue sowing of summer maize and sunflower.
  - To protect the mango from the infestation of powdery mildew, spraying of sulphur based fungicide @1.0ml/litre of water on the foliage of the trees is advised. Spray Profenofos @1ml per litre or Imidacloprid @1ml per 4 litres of water to control thrips infestation in onion crop.

- **Jharkhand:**
  - Maintain 4-5 cm water level in paddy field and carry out weeding at 21 days after transplanting. Due to possibility of rainfall, postpone irrigation to wheat crop at ear head initiation to milking stage. Take up cultivation of summer vegetables if irrigation facility is available. Continue sowing of improved Pant Lobeya-2 variety of summer cowpea. Continue sowing of improved mung variety SML-688. Continue land preparation and sowing of okra (bhindi). When early-sown potato plant leaves became yellow, harvest the crop and keep the tubers in shed at a height of 1.2 to 2 ft for hardening of tuber skin.
  - To control fruit borer in tomato and shoot & fruit borer in brinjal, fix pheromone traps @ 12 nos. per acre or spray Imidachlorpid @ 1 ml/litre of water after current spells of rain. If ear head of wheat crop is affected with loose smut disease (in which ear head appears black and does not bear any grain), destroy it carefully after hand picking and burning. This operation is essential for those who will use this crop produce as seed during next year.
- **West Bengal:**
  - In Sub-Himalayan West Bengal, carry out mulching in large cardamom. Harvest mature pods of garden pea crop and mature cabbage, cauliflower and other cole crops. Postpone irrigation to mustard and potato crops. Carry out land preparation for planting og ginger and turmeric in the main field.
  - In Gangetic West Bengal, maintain proper water level in Boro paddy field. Carry out intercultural operations in onion. Provide staking to summer vegetable seedlings. Undertake land preparation and sowing of 'chaiti mung' or black gram. Make arrangements for draining out excess water from sunflower field. Restrict irrigation to wheat crop at its final growth stage. When groundnut crop is at the age of 35-40 DAS, spray nutrient solution Groundnut rich @ 38g/litre of water at clear weather condition for improving pod filling.
  - In Sub-Himalayan West Bengal, for management of winter vegetable pest at early vegetative stage, spray Chlorpyrifos 50% + Cypermethin 5% @ 1.5 ml/litre of water. To control diamond back moth on cruciferous vegetables, spray Dinotefaran 20 SG @ 1g/litre of water.
  - In Gangetic West Bengal, spray Tricyclozole 75WP@ 1g/litre of water for blast disease in Boro paddy. For fruit fly in pointed gourd at vegetative stage, apply Malathion 50 EC 1 ml/litre of water at late afternoon on a non rainy day.
- **Andaman & Nicobar Islands:**
  - In Andaman Islands, deploy pheromone traps and light traps @ 4/acre in tomato to attract the fruit borer adult moths as the weather is conducive for growth of this pest. Spray DAP @ 2 % (20 g/litre) in pulses during flowering stage for uniform flowering.
  - In Nicobar Islands, clear the crown of coconut tree and remove the old bunches to avoid the attack of rhinoceros beetles.
- **Animal Husbandry**
  - In Bihar, animals may be provided mineral mixture @ 50 – 60 grams to adult and 30-40 grams to growing animals every day to boost their immunity.
  - In Odisha, provide sufficient clean drinking water to cattle. Go for timely vaccination.
  - In Jharkhand, disease PPR in goat and sheep flourish due to cold weather. Vaccinate animals with PPR vaccine @ 1ml S/C. To provide protection to poultry birds against Ranikhet disease, apply 2 drop F-1 strain in nose of one day old chick. After 8 to 10 week apply R2B (Mukteshwer strain) vaccine after consultation with the veterinary doctor.
  - In West Bengal, to reduce morbidity and mortality rate in poultry, take care of day old chicks with proper brooding, ventilation and management.
  - In Andaman & Nicobar Islands, keep the pig inside shed and provide cool drinking water to avoid heat stress. Provide cool, clean water and shade to chicks to protect from heat.
- **Fisheries**
  - In Odisha, provide feed @ 2-3 % of body mass of fish. Go for false netting to get good growth of fish. To correct acidity, apply 100 kg lime and Cifax 500 ml per acre meter of water.
  - In West Bengal, for control of Ulcer disease, apply 13 kg Lime per bigha fish pond. After 7 days, apply 1.3 kg bleaching powder per bigha fish pond. In order to avoid bird menace, give net covering over the fish pond. For new pond preparation cultivate Dhaincha.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
  - **Maharashtra:**
    - As thunderstorm accompanied with lightning and gusty winds at isolated places very likely over Vidarbha on 17<sup>th</sup> March, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds.

- In South Konkan, maintain 10 cm water in rice fields. In North Konkan, maintain 5 cm water level in rice fields. Apply irrigation to vegetable crops and orchards.
- In Madhya Maharashtra, undertake intercultural operation in maize. Also apply Urea @ 45.2 kg per ha in 45 days old crop. Continue harvesting of matured wheat. Apply irrigation to *summer* groundnut as per requirement of crop.
- In Marathwada, continue harvesting and threshing of wheat and safflower. Keep the harvested produce in safer place. Undertake mulching with dried leaves in sugarcane fields. Apply irrigation to vegetables and orchards.
- In West Vidarbha, continue harvesting of matured wheat and safflower. Keep harvested produce in safer place. In East Vidarbha, undertake harvesting and threshing of matured wheat.
- In Madhya Maharashtra, for control of tikka/leaf spot in groundnut, spray Mancozeb @ 2.5 g or Carbendazim @ 1 g in 1 liter of water.
- **Gujarat:**
  - In North Gujarat, continue sowing of summer groundnut (G.G.-2 or T.G.-37), pearl millet (GHB-526, GHB-558), sesame (Gujarat Til 3), green gram (Gujarat mung -3 or Gujarat mung- 4) and cowpea (Gujarat cowpea - 3 or 5, Pusa Falguni) crops. Carry out weeding and intercultural operations in timely sown groundnut. Apply first irrigation after 18 to 20 days after sowing. Continue sowing of fodder (sorghum and maize) crops. Carry out weeding in citrus orchard.
  - In Saurashtra & Kutch, continue sowing of sesame, pearl millet, green gram and cowpea crops. Carry out weeding and intercultural operations in timely sown groundnut crop. Stop irrigation in wheat crop after hard dough stage to maintain grain quality. Continue harvesting of matured wheat, chick pea, coriander and castor crops.
  - In Middle Gujarat, undertake sowing of sesame (Gujarat Til 2 or 3) crop. Undertake harvesting of matured wheat crop and capsules of castor.
  - In South Gujarat, to control water evaporation from sugarcane fields, spread dry leaves of sugarcane in between two rows of sugarcane. Continue harvesting of matured pigeon crop. Undertake deep ploughing of fields after harvesting of *rabi* crops. As there is increase in temperature apply irrigation in vegetable and fruit crops.
  - In Saurashtra & Kutch, if population of Diamond back moth insects in cabbage and cauliflower is above ETL, spray Spinosad @ 3.0 ml/10 litres of water.
- **Animal Husbandry**
  - In Gujarat, for the control of tick and other parasites, spray Deltamethrin or Aemitz @ 2 ml / litre of water.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
  - As thunderstorm accompanied with lightning and gusty winds at isolated places very likely over East Madhya Pradesh on 15<sup>th</sup> and 17<sup>th</sup>, over Chhattisgarh on 15<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup> March, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane in Chhattisgarh.
  - **Madhya Pradesh:**
    - In East Madhya Pradesh, apply irrigation in wheat, gram and vegetables. Continue direct sowing for vegetables like pumpkin, bitter gourd, etc. Continue digging up of matured tubers of potato. Continue sowing of okra, maize (baby corn, sweet corn), moong, urad, groundnut and sunflower. In Kymore Plateau and Satpura Hill Zone, continue field preparation for sowing of summer vegetables. Undertake sowing of okra.
    - In West Madhya Pradesh, undertake transplanting of tomato, chilli and brinjal. Continue harvesting of matured gram and mustard. Continue digging up of matured tubers of potato. Continue sowing of green gram and black gram. Continue sowing of cucurbitaceous crops, musk melon and water melon. Continue digging up of matured bulbs of onion and garlic. Continue harvesting of matured wheat.
    - In Central Narmada Valley Zone, there are chances of attack of powdery mildew at flowering/fruit setting stage in mango, spray Sulphex @ 3.0g per litre of water.
  - **Chhattisgarh:**
    - Continue harvesting of timely sown early varieties of mustard and digging up of matured tubers of early and medium varieties of potato. Continue harvesting of matured gram and lentil crops. Apply irrigation in wheat and vegetables. Farmers having irrigation facility may complete the transplanting of summer rice by end of March. Continue inter-culture, fertilizer application, earthing followed by irrigation in sugarcane crop at knee height stage. Complete sowing of summer moong, til and groundnut crops. Continue sowing of leafy vegetables. Continue sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, sponge gourd, okra etc.
    - In Bastar Plateau Zone, undertake harvesting of matured wheat. Continue sowing of summer moong, urad and sunflower. Continue sowing of okra, cowpea and coriander and planting of summer sweet potato, arvi and



bunda.

- In Plain Zone, cucurbitaceous vegetables are affected by red pumpkin beetle, for control, spray Savin @ 2 g/litre of water at root zone on a non rainy day.
- **Animal Husbandry**
- In Madhya Pradesh, keep animals in dry and shaded place and provide green fodder, fresh and clean water three times a day .Provide mineral mixture and fresh and clean water to birds.
- In Chhattisgarh, special attention should be given to milch animals with regard to feed and water looking to high temperature. Give lot of clean water to the animals and keep them in the shaded place.

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

- **Realised Rainfall:** Rain/snow occurred in Kullu district of Himachal Pradesh, Baramula, Kulgam, Rajouri and Ramban districts of Jammu & Kashmir during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with hailstorm, lightning & gusty winds at isolated places likely over Jammu & Kashmir and Himachal Pradesh on 19<sup>th</sup> March, use hail net for orchard crops to protect from mechanical damage and provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places.
  - As rain/snow likely at many places over Jammu & Kashmir and Himachal Pradesh on 19<sup>th</sup> March, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - **Jammu & Kashmir:**
    - In Sub Tropical Zone, the weather condition is favourable for yellow rust disease in late sown wheat crop. Farmers are advised to regularly monitor the crop. If noticed, apply Propaconazole (Tilt) @ 25ml in 25 litres of water/kanal conditions and repeat same after 10-15 days during clear weather. Also prevailing weather is congenial for the outbreak of Aschochyta blight and wilt diseases in Gram crop. If the disease is observed, drench the affected spots with Bavistin @ 10ml/litre of water on a non rainy day.
    - In Intermediate Zone, weather conditions are favourable for the attack of alternaria blight in mustard crop. If observed, apply Mancozeb @ 2.5 g/litre of water and Ridomil MZ @ 2.5 g/litres of water alternately on a non rainy day.
  - **Uttarakhand:**
    - In Bhabar and Tarai Zone, to control the late blight disease in tomato, spray Mancozeb @ 2.5g/litre of water or Copper Oxychloride @ 3g/litre of water.
    - In Hill Zone, continue nursery preparation of tomatoes, capsicum, brinjal, and cucurbitaceous crops in poly house.
    - In Sub-Humid Sub-Tropic Zone, continue harvesting of sugarcane crop.
  - **Himachal Pradesh:**
    - In Mid-Hills Sub-Humid Zone, apply half dose of nitrogen fertilizers in onion and garlic after current spells of rain. Pea is pod formation/pod development stage, carry out staking in pea. Continue land preparations for sowing summer vegetables like tomato, capsicum bhindi, gaurd etc. in lower hills areas.
    - In Sub-Montane and Low Hills Sub-Tropical Zone, to control pod borer in gram crop, install Pheromone traps @ 3-4 traps per acre if flowering has reached 10- 15%. Install “T” shaped bird perches in and around crop field to control insect population.
  - **Punjab, Haryana & Delhi:**
    - In Punjab, continue harvesting of matured Rabi crops like Sorghum, Gram, Safflower, during morning hours in clear weather. In Western Zone, prevailing weather is favourable for incidence of Yellow rust in wheat. Monitor the crop fields. If symptoms of yellow rust are noticed, spray the crop with Nativo @ 120g or Tilt or Shine or Compass or Markzole @ 200 ml in 200 litres of water per acre.
    - In Haryana, continue transplanting of matured seedlings of tomato, cauliflower, & cabbage in prepared field. Monitor mustard and vegetable crops for sucking pests.
    - In Delhi, continue planting of sugarcane and complete transplanting of onion. Continue sowing of spinach, coriander, fenugreek. Continue preparation of seedling of early cucurbitaceous crops in small polythene bags and nursery preparation of chilli, tomato and brinjal crops in poly house. Continue sowing of lady finger (A-4, Parbani Kranti and Arka anamika). Monitor the vegetable and mustard crops against attack of aphid. If pest population is above ETL than, spraying of Imidacloprid @ 0.25 to 0.5 ml per litre of water.
  - **Uttar Pradesh:**
    - In East Uttar Pradesh, undertake harvesting of matured barley. Continue planting of spring sugarcane and continue sowing of lady finger, moong and lobia as intercrop in sugarcane. Apply irrigation in onion. Continue sowing of cucurbits crops like bitter gourd, bottle gourd, cucumber, pumpkin, musk melon and water melon. Continue harvesting of rapeseed & mustard. Continue digging of matured potato.

- In West Uttar Pradesh, undertake sowing of green gram. Undertake sowing of lady finger and cucurbits. Continue sowing of French bean, cluster bean, maize and urad. Continue transplanting of young seedlings of tomato, chilli and cole crops. Undertake digging up of matured tubers of potato.
- In West Uttar Pradesh, present temperature is suitable for incidence of powdery mildew disease in cucurbitaceous crops and late pea, spray Carbendazim @ 1.0 g/litre of water.
  - **Rajasthan:**
  - Due to increase in temperature in coming days, water demand will increase in rabi crops. Therefore irrigate the crops as per need on the basis of critical growth stages and when crops show wilting symptoms.
  - In Irrigated North Western Plain Zone, complete planting of sugarcane. Also on availability of free field and two irrigations, farmers are advised to do sowing of summer moong.
  - Harvest the matured crop of gram, mustard and well riped barley. Completely dry grains and store them in gunny bags, drums or kothis after cleaning.
  - In Transitional Plain Zone of Inland Drainage, to prevent mustard crop from blight, downey mildew and white rust, spray Blitox-50 or Mancozeb @ 2 gm/litre of water.
  - In Flood Prone Eastern Plain Zone, it is right time for sowing cucurbitaceous vegetables like melon, bottle gourd, ridge gourd, bitter gourd, pumpkin and smooth gourd etc.
  - **Animal Husbandary**
  - In Uttar Pradesh, provide mineral mixed diet to cattle. Vaccinate cattle against foot and mouth disease. Vaccinate poultry birds against Rainkhet disease.
  - In Semi Arid Eastern Plain Zone of Rajasthan, Foot & Mouth Disease may spread in cows and buffaloes. Vaccinate the animals against FMD. If animal is affected then isolate the affected animal and wash its mouth with 0.1% potassium permanganate solution.
  - **Floriculture**
  - Planting of carnation may be continued in well prepared fields at recommended spacing and with FYM and fertilizers doses. Farmers are also advised to prepare their fields for the planting of gladiolus in Himachal Pradesh.
  - In Jammu & Kashmir, Marigold fields should be kept clean and provision for drainage should be made by making proper channels.
  - **Apiculture**
  - In Sub Tropical Zone of Jammu & Kashmir, shift the bee colonies near mustard field. Keep the colony under cover during night time to protect it from cold.

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