



National Agromet Advisory Service Bulletin

Friday 21st February 2020
(For the period 21st to 25th February 2020)



Issued by
India Meteorological Department

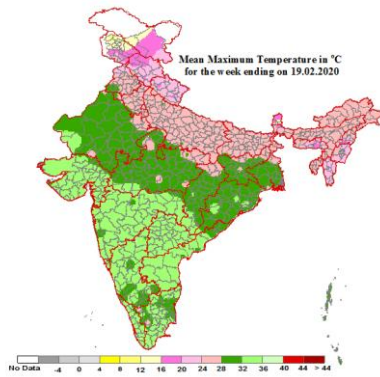
Weblink For

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

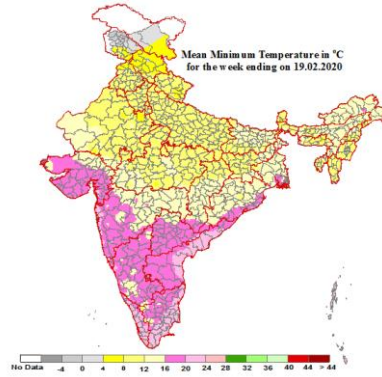
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

spatial distribution of weather parameters for the week ending on 19.02.2020

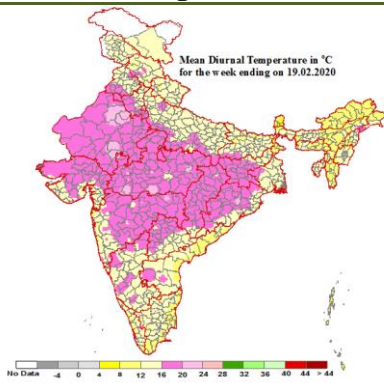
Mean Maximum Temperature (°C) for the week ending on 19.02.2020



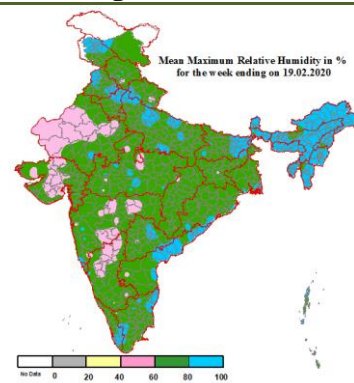
Mean Minimum Temperature (°C) for the week ending on 19.02.2020



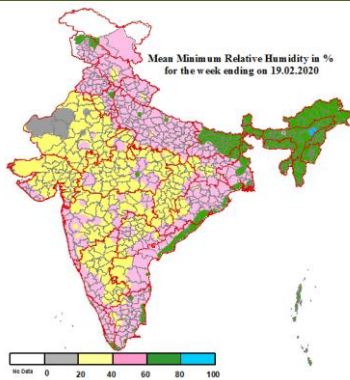
Mean Diurnal Temperature Variation (°C) for the week ending on 19.02.2020



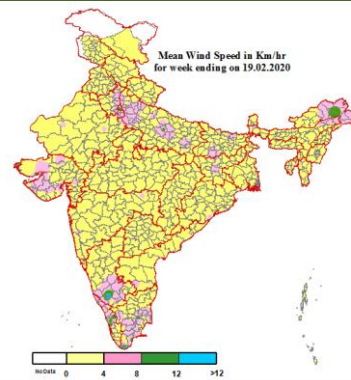
Mean Maximum Relative Humidity (%) for the week ending on 19.02.2020



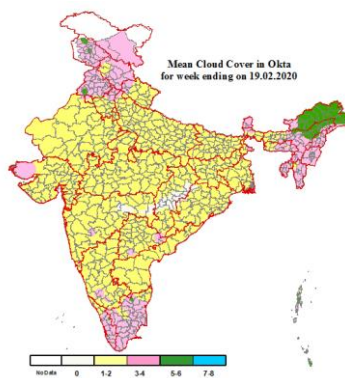
Mean Minimum Relative Humidity (%) for the week ending on 19.02.2020



Mean Wind Speed (km/hr) for the week ending on 19.02.2020

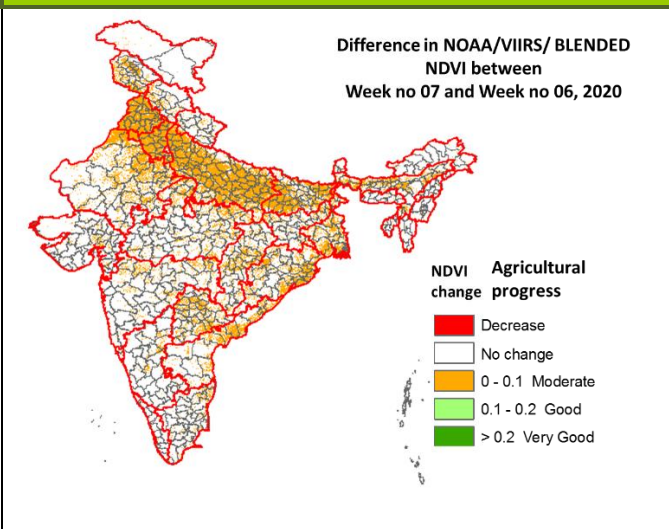
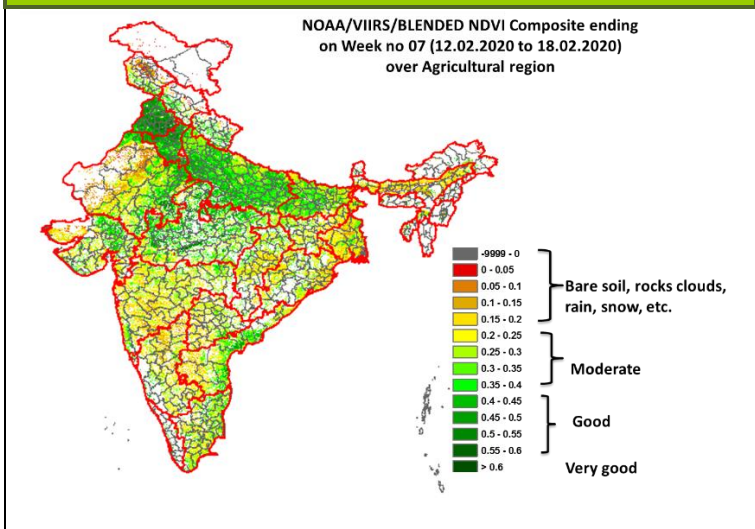


Mean Cloud Cover (okta) for the week ending on 19.02.2020



NOAA/VIIRS/BLENDED NDVI composite for the week number 07 (12.02.2020 to 18.02.2020) over Agricultural regions of India

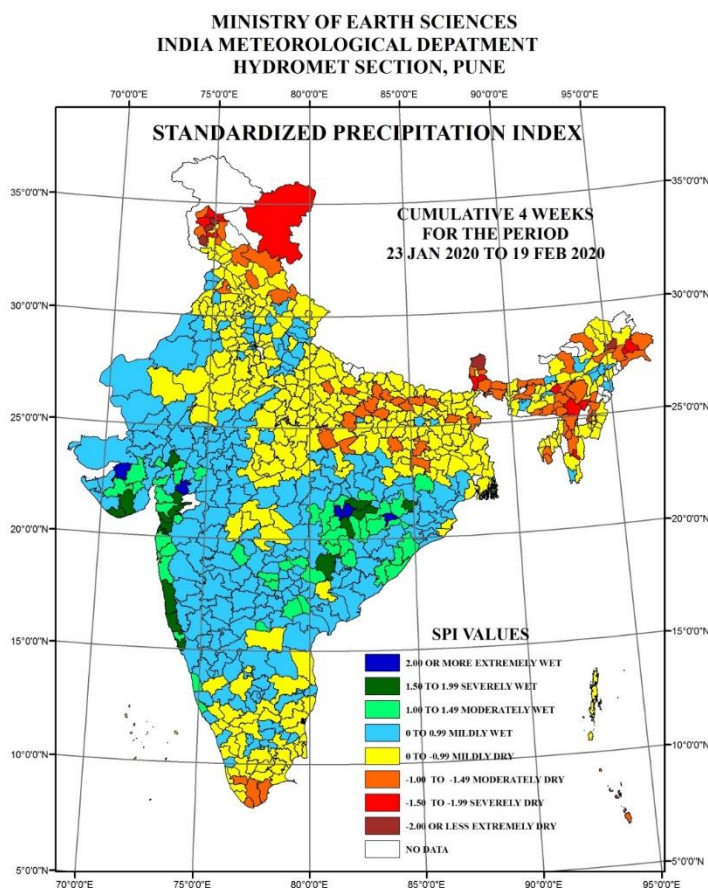
Difference in NOAA/VIIRS/BLENDED NDVI between week number 7 and week number 6



Agriculture vigour was good at many parts of Haryana, Punjab, West Uttar Pradesh & West Madhya Pradesh; at few parts of East Uttar Pradesh, East Madhya Pradesh, Coastal Andhra Pradesh, Kerala and at isolated pockets of Uttarakhand, Bihar, North Eastern states, East Rajasthan, Gujarat, Northern part of Chattisgarh, Odisha, Telangana, Coastal Karnataka, Konkan and Tamilnadu.

Good difference in agricultural vigour has been observed at isolated palces of Odisha, Coastal Andhra Pradesh and Telanagana. It was moderate over rest of the country.

Standardised Precipitation Index Cumulative 4 weeks for the period 23rd Jan to 19th Feb 2020



- Extremely/Severely wet conditions exist in Valsad, Narmada, Navsari, Tapi, Aravalli, Chhota Udepur, Amreli, Gir Somnath, Morbi districts of Gujarat; Ratnagiri, Sindhudurg districts of Maharashtra; Deogarh, Sonepur districts of Orissa; Union Territory Dadara & Nagar Haveli; Dhamtari, Durg, Mahasamund, Raipur, Bijapur, Baloda Bazaar districts of Chhatisgarh; South Goa district of Goa.
- Moderately dry conditions exist in Anjaw, Changlang, East Kameng, Upper Subansiri districts of Arunachal Pradesh; Cachar, Goalpara, Nagaon, Barpeta, Karbi Anglong, Tinsukia, Dhemaji, Hailakandi, Baksa, Chirang districts of Assam; Bhagalpur, Darbhanga, Muzaffarpur, Saran, Siwan districts of Bihar; Chamba, Lahaul & Spiti, Mandi districts of Himachal Pradesh; Anantnag, Poonch, Kupwara, Ramban districts of Jammu; Pathanamthitta districts of Kerala; Satna, Sidhi districts of West Madhya Pradesh; Imphal West, Senapati districts of Manipur; East Khasi Hills, Jaintia Hills districts of Meghalaya; Aizwal, Kolasib districts of Mizoram; Kohima districts of Nagaland; Jalandhar districts of Punjab; Kanyakumari, Tirunelveli, Toothukudi districts of Tamilnadu; South Tripura districts of Tripura; Allahabad, Azamgarh, Deoria, Faizabad, Ghazipur, Gorakhpur, Jaunpur, Lucknow districts of Uttar Pradesh; Cooch Behar, Jalpaiguri, Malda districts of West Bengal; Nicobar districts of Andaman & Nicobar Islands; West Sikkim, East Sikkim districts of Sikkim; Hazaribag, Palamu, Ranchi districts of Jharkhand; Uttarkashi district of Uttarakhand.
- Extremely/Severely dry conditions exist in East Siang, Lohit districts of Arunachal Pradesh; N. C. Hills, Morigaon districts of Assam; Baramula, Ladakh (Leh), Badgam, Srinagar, Bandipore, Kulgam, Ganderwal, Rajouri districts of Jammu; Serchhip district of Mizoram; Paren district of Nagaland; Darjeeling district of West Bengal; North Sikkim district of Sikkim.
- Moderately wet to mildly dry conditions were experienced in remaining districts in the country.

Weather Forecast for next 5 days valid upto 0830 hours of 26th February, 2020

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- ◆ Gradual fall in minimum temperatures by 2-3°C over West India during 2-3 days and no significant change in minimum temperatures over est of the country.
- ◆ Shallow to moderate fog likely in isolated parts over Odisha and West Bengal & Sikkim during next 48 hours.

5 Day Rainfall Forecast (MID-DAY)

21th February 2020

Met-Sub-Division	21-Feb Today	22Feb Sat	23Feb Sun	24Feb Mon	25Feb Tue
1. Andaman & Nicobar Islands	ISOL	ISOL	DRY	DRY	DRY
2. Arunachal Pradesh	ISOL	ISOL	SCT	SCT	SCT
3. Assam & Meghalaya	DRY	ISOL	ISOL	SCT	FWS
4. N. M. M. & T.	DRY	DRY	ISOL	ISOL	SCT
5. S.H. West Bengal & Sikkim	ISOL	ISOL	SCT	SCT	FWS
6. Gangetic West Bengal	DRY	ISOL	ISOL	SCT	FWS
7. Odisha	DRY	DRY	ISOL	SCT	FWS
8. Jharkhand	ISOL	SCT	FWS	FWS	SCT
9. Bihar	ISOL	ISOL	FWS	FWS	FWS
10. East Uttar Pradesh	SCT	ISOL	SCT	SCT	SCT
11. West Uttar Pradesh	SCT	ISOL	ISOL	DRY	DRY
12. Uttarakhand	FWS	ISOL	SCT	ISOL	ISOL
13. Haryana, Chd & Delhi	SCT	ISOL	DRY	DRY	DRY
14. Punjab	ISOL	DRY	DRY	DRY	DRY
15. Himachal Pradesh	ISOL	ISOL	ISOL	DRY	DRY
16. J & K and Ladakh	ISOL	DRY	DRY	DRY	DRY
17. West Rajsthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	ISOL	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	ISOL	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	ISOL	ISOL	ISOL	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. Marathwada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	ISOL	ISOL	ISOL
27. Chhattisgarh	ISOL	ISOL	ISOL	SCT	SCT
28. Coastal A. P. & Yanam	DRY	DRY	DRY	DRY	DRY
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. T.N.,Puducherry & Karaikal	SCT	SCT	ISOL	ISOL	DRY
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 & Mahe	ISOL	ISOL	DRY	DRY	DRY
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 Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

21 February (Day 1): ♦ **Thundersquall (speed reaching 50-60 kmph)** accompanied with **lightning & hail** very likely at isolated places over Uttarakhand. **Thunderstorm** accompanied with **hail, lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over West Uttar Pradesh; with **hail, lightning & gusty wind (speed reaching 30-40 kmph)** at isolated places over East Uttar Pradesh and Haryana, Chandigarh & Delhi and with **lightning** at isolated places over Punjab, Madhya Pradesh and Tamilnadu, Puducherry & Karaikal.

♦ **Strong wind (speed reaching 45-55 kmph)** very likely to prevail over Gulf of Mannar and Comorin area. Fishermen are advised not to venture in the above areas.

22 February (Day 2): ♦ **Thunderstorm** accompanied with **lightning** very likely at isolated places over Bihar, Jharkhand and Tamilnadu, Puducherry & Karaikal.

♦ **Strong wind (speed reaching 45-55 kmph)** very likely to prevail over Gulf of Mannar and Comorin area. Fishermen are advised not to venture in the above areas.

23 February (Day 3): ♦ **Thunderstorm** accompanied with **lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over East Uttar Pradesh and with **lightning** at isolated places over Uttarakhand, East Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand and Gangetic West Bengal..

24 February (Day 4): ♦ **Thunderstorm** accompanied with **lightning & gusty wind (speed reaching 30-40 kmph)** likely at isolated places over East Uttar Pradesh and with **lightning** at isolated places over Uttarakhand, Chhattisgarh, Bihar, Jharkhand, West Bengal & Sikkim, Odisha and Assam & Meghalaya.

25 February (Day 5): ♦ **Thunderstorm** accompanied with **lightning & gusty wind (speed reaching 30-40 kmph)** likely at isolated places over Assam & Meghalaya and with **lightning** at isolated places over Chhattisgarh, West Bengal & Sikkim, Odisha, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura.

Weather Outlook for subsequent 2 days from 26th to 28th February, 2020

- Light to moderate rain/snow at isolated places likely over Western Himalayan region. Light to moderate rainfall at isolated/scattered places likely over eastern and northeastern states.
- Weather likely to be mainly dry over rest of the country.

Salient advisories

➤ Advisory for Desert Locust:

- On arrival/attack of locusts in Sriganaganagar and Hanumangarh districts of Rajasthan, inform immediately to locust control room, Suratgarh at 09969341927, 09588849282 or to Deputy Director (Extension), Sriganaganagar at 0154 2422345, 09928116968.
- In Arid Western Plain Zone of Rajasthan, where there is attack of locusts in Bikaner and Jaisalmer districts, apply Chloropyriphos (50%) 1 ml/litre or (20%) 2.5 ml/litre of water in standing crops.

- **As Thundersquall (speed reaching 50-60 kmph)** accompanied with **lightning & hail** very likely at isolated places over Uttarakhand; **Thunderstorm** accompanied with **hail, lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over West Uttar Pradesh; with **hail, lightning & gusty wind (speed reaching 30-40 kmph)** at isolated places over East Uttar Pradesh and Haryana, Chandigarh & Delhi on 21st, provide mechanical support to banana, young fruit plants and

vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

- **As Thunderstorm** accompanied with **lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over East Uttar Pradesh on 23rd and 24th and over Assam & Meghalaya on 25th; with **lightning** at isolated places over Bihar, Jharkhand from 22nd to 24th; over Tamilnadu, Puducherry & Karaikal over East Madhya Pradesh and Gangetic West Bengal on 23rd, over Uttarakhand on 23rd and 24th, over Assam & Meghalaya on 24th, over Chhattisgarh, West Bengal & Sikkim and Odisha on 24th and 25th and over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on 25th, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at many places over Uttarkhand on 21st; over Jharkhand on 23rd and 24th; over Bihar from 23rd to 25th and over Assam & Meghalaya, West Bengal & Sikkim and Odisha on 25th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- Undertake sowing/ transplanting of following crops:
 - Undertake planting of tapioca in Problem Area Zone and planting of pepper in High Altitude Zone of Kerala.
 - Undertake sowing of summer irrigated sesame, planting of mid season sugarcane and transplanting of *Navarai* season rice in the Western Zone of Tamil Nadu
 - Continue transplanting of rice, brinjal, tomato and chilli seedlings and sowing of ragi in South Interior Karnataka.
 - Undertake sowing of kharif maize, summer green gram and black gram in Lower Brahmaputra Valley Zone of Assam.
 - Undertake land preparation for sowing of cowpea, green gram, etc. in Tripura; continue land preparation for sowing of kharif maize, okra and planting of ginger, potato in Nagaland.
 - Undertake sowing of summer moong bean and urd bean in Jharkhand.
 - Undertake sowing of okra, cluster bean and cowpea and transplanting of brinjal seedlings in North Gujarat,
 - Undertake sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra, etc. in Bastar Plateau Zone of Chhattisgarh.
 - Undertake sowing of maize, bottle gourd and pumpkin and planting of spring season sugarcane in East Uttar Pradesh; continue sowing of maize, black gram, okra and transplanting onion seedlings in West Uttar Pradesh.
 - Undertake sowing of fruit crops like apple, plum, pear, walnut etc. in Bhabar and Tarai Zone of Uttarakhand.

Detailed Agromet Advisories

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

Realised Rainfall : Weather remained dry/mainly dry over the region.

Advisories:

Kerala

- In Problem Area Zone, undertake planting of tapioca during this month; apply irrigation on alternate days during the initial period.
- In High Altitude Zone, it is ideal time for planting of pepper.
- In Central Zone, weather is congenial for white fly in vegetables; apply 2% neem oil-garlic emulsion or spray 20g *Lecanicillium lecanii* per one litre of water at ten days intervals.
- In Southern Zone, continue harvesting of paddy.
- In Northern Zone, weather is congenial for downy mildew in cucurbitaceous vegetables; spray Akomin (@3ml/L) on both surfaces of the leaves, thrice at 15 days interval or spray Pyraclostrobin @.5gm/litre of water.

Andhra Pradesh

- In North Coastal Zone, weather is congenial for mango hopper, spray Imidacloprid @ 0.25 ml Monocrotophos @ 1.6 ml or Chlorpyrifos @ 2.5 ml per litre of water.
- In Scarce Rainfall Zone, weather is congenial for spodoptera and tikka leaf spot incidence in groundnut. Farmers are advised to keep bird perches @ 10 per acre and spray Thiodocarb @ 1.5g or Quinalphos @ 2 ml or Chlorophenapyr @ 2ml per litre of water for spodoptera control; to control tikka leaf spot, spray Mancozeb @ 400 g + Carbendazim @ 200 g (or) Hexaconazole @ 400 g per acre.
- In Krishna Godavari Zone, weather is congenial for powdery mildew, corenospora leaf spot, cercospora leaf spot and rust diseases in black gram; spray Hexaconazole @ 2 ml per litre of water at 30-35 days of the crop and Propiconazole @ 1 ml per liter of water 50-55 days crop stage.
- In Southern Zone, weather conditions are favourable for leaf folder in paddy; spray Monocrotophos @ 1.6 ml or Cartaphydrochloride @ 2 g per litre of water.

Telangana

- Prevailing weather conditions are congenial for incidence of hoppers, mealy bugs and scale insects in mango; spray Dimethoate @ 2 ml per litre of water.
- North Telangana Zone, prevailing weather conditions are favourable for spodoptera exigua in Bengal gram. To control, spray Thiodicarb @ 1g or Quinolphos @ 2ml or Acephate @ 1.5 g per litre of water.

Tamil Nadu

- **As Thunderstorm** accompanied with **lightning** very likely at isolated places over Tamilnadu, Puducherry & Karaikal on 23rd, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep cattle/goats indoor during thunderstorm.
- In Cauvery Delta Zone, continue harvesting of *Thaladi* paddy. Weather is congenial for infestation of the sucking pests including hoppers, thrips and white flies in the rice fallow black gram; spray Azadiractin at 0.03% or Triazophos at 2.5 ml/litre of water.
- In Western Zone, undertake sowing of summer irrigated sesame, planting of mid season sugarcane and transplanting of *Navarai* season rice.

- In High Altitude Hilly Zone, undertake sowing of potato using high yielding and disease resistant varieties. Carry out land preparation for sowing of crops like carrot, potato, peas, radish, beetroot and turnip during March – April.

Karnataka

- In North Interior Karnataka, continue harvesting of sorghum and chickpea crop. Undertake intercultural operations and provide protective irrigation during flowering stage in early sown groundnut. Apply irrigation in wheat crop. Incidence of leaf eating caterpillars is noticed in niger; spray Dimethoate @ 1.7ml in one litre of water.
- In South Interior Karnataka, continue transplanting of rice, brinjal, tomato and chilli seedlings and sowing of ragi. Undertake harvesting of Bengal gram crop. Spray Mancozeb @ of 2 g/liter or Copper Oxychloride @ 3g/liter of water against leaf spot in arecanut.
- In Coastal Karnataka, spray Quinolphos @ 2 ml or Indoxacarb @ 0.5ml per liter of water against leaf roller in rice.

Animal Husbandry:

- In Karnataka, vaccinate (ET vaccine) sheep and goats against Enterotoxemia.

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

Realised Rainfall: Rainfall occurs in Upper Siang district of Arunachal Pradesh and Dhemaji district of Assam. Weather remained mainly dry over rest of the region.

Advisories:

- As **Thunderstorm** accompanied with **lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over Assam & Meghalaya on 25th; with **lightning** at isolated places over Assam & Meghalaya on 24th and over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on 25th, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep cattle/goats indoor during thunderstorm.

Arunachal Pradesh

- In Arunachal Pradesh, continue harvesting of ginger and matured pods of pea. Undertake sowing of pea in higher altitudes and colder areas at the earliest.

Assam & Meghalaya

- As **rain/thundershowers** likely at many places over Assam & Meghalaya on 25th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- In Hill Zone of Assam, undertake transplanting *Boro* paddy seedlings. Increasing temperature may favour thrips in seedling stage of Boro rice; spray Chloropyriphos @ 2ml/litre of water if population of thrips is above ETL. Undertake land preparation and sowing of early *Ahu* rice (direct seeded).
- In Lower Brahmaputra Valley Zone, maintain standing water in the *Boro* rice field at 5±2 cm depth after 2-3 days of transplanting and continue gap filling within 7-10 days after sowing. Undertake sowing of *kharif* maize, summer green gram and black gram. There is a chance of attack of insect/pests like, whorl maggot, hispa, stem borer, etc. in transplanted Boro rice; apply Chloropyriphos 20 EC at the concentration of 0.02% solution or Carbofuran 3G @ 4kg/bigha. Spray 2 gm Bavistin /litre of water for control blast disease in wheat crop at CRI, vegetative, ear head and flowering stages.
- In Upper Brahmaputra Valley Zone, undertake harvesting of potato and rapeseed & mustard. Spray Chloropyriphos 20EC at 0.02% concentration or Quinalphos 25 EC at 0.025% concentration (i.e., 500-600

ml per 500-600 litre of water per hectare or 70-80 ml per 70-80 litre of water per bigha) against infestation of stem borers, hispa, hoppers etc. in the *Boro* rice. Continue land preparation for sowing of okra, summer green gram and black gram.

- In Barak Valley Zone, at tillering stage of *Boro* rice crop, there is a chance of stem borer infestation. To control the pest, spray Chlorpyrifos 50 EC @ 1.5 ml per litre of water. Before spraying the insecticide, drain out the irrigated water from the plots.
- In Central Brahmaputra Valley Zone, maintain 5±2 cm of standing water in the field. Continue sowing of summer green gram and black gram. Undertake harvesting of rapeseed/mustard and land preparation for sowing of Capsularis jute. The present weather condition is congenial for incidence of aphida in wheat at ear head stage; apply Dimethoate 30EC or Chloropyrifos 20EC @ 1ml per litre of water during afternoon hours to control aphids.
- In North Bank Plain Zone, continue land preparation and sowing of the seeds of direct seeded *Ahu* rice varieties and sowing of green gram and black gram.
- In Meghalaya, continue nursery sowing of brinjal, tomato, capsicum and harvesting of cole crop, ginger and turmeric. In mustard and turmeric, spray Azadirachtin 0.03 EC @ 5ml/litre against cabbage butterfly and aphids if infestation is above ETL.

Manipur, Mizoram, Tripura and Nagaland

- In Manipur, apply mulching in the standing crop field using straw/ dried leaves which is not infected by insect-pest to preserve soil moisture for the crop. In lentil crop, spray Bayleton @ 7g/ 10 litres of water or spray Neem Seed Kernel Extract at 5% concentration for powdery mildew and Nimbicidin (0.3%) to control rust disease and spray Imidachloprid 17.8 SL @ 7-10ml/15 litre of water against aphid.
- In Mizoram, continue harvesting of turmeric, pea and soybean. Carry out intercultural operations near the base of the potato plants; apply irrigation at 2-3 days interval; use straw mulch for better soil moisture conservation. To manage leaf blight disease in maize, spray aproach (Methoxy-acrylates) @ 2 g/litre of water.
- In Tripura, undertake land preparation for sowing of cowpea, green gram etc. Transplant young seedlings of summer vegetables in the main field. Maintain optimum moisture in the maize field through irrigation and apply mulching to hold moisture in the field. Spray Mancozeb 2ml per litre of water against stalk rot in maize field.
- In Nagaland, continue land preparation for sowing of *kharif* maize, okra and planting of ginger, potato.

Animal Husbandry

- In Assam, vaccinate poultry birds against Ranikhet disease and all pigs against swine fever at the age of 2-4 weeks during this period. In Barak Valley Zone of Assam, during this period, goat may be attacked by Blister disease; to protect from the disease, wash with Potassium permanganate (PP) and consult nearby Veterinary Dispensary for antibiotic cream and further treatment.

Fishery

- In Barak Valley Zone of Assam, apply CIFAX @ 1 litre per hectare for 1 meter water depth to prevent EUS disease. During winter season fishes are infested by various bacterial diseases; to control, apply Potash @ 4-5 mg per litre of water in the pond.

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

Realised Rainfall: Weather remained dry/mainly dry over the region.

Advisories:

- As **Thunderstorm** accompanied with **lightning** very likely at isolated places over Bihar, Jharkhand from 22nd to 24th; over Gangetic West Bengal on 23rd, over West Bengal & Sikkim and Odisha on 24th and 25th, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at many places over Jharkhand on 23rd and 24th; over Bihar from 23rd to 25th and over West Bengal & Sikkim and Odisha on 25th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Odisha

- Take up sowing of summer maize. rain-fed mustard sown during October is at maturity stage; carry out harvesting; dry the plants under sun for easy threshing and safe storage. Go for picking of matured pods of pulses like green gram and black gram. Flowering of summer groundnut has started; complete hoeing, weeding followed by earthing up without any delay; do not disturb the soil to avoid disturbances in pegging. Current moderate temperature favours thrips infestation in groundnut crop; spray 400 ml Dimethoate or 50 ml Imidachloprid in 200 litres of water per acre; to control tikka in groundnut, spray 2 g Carbendazim with Mancozeb 63% WP or 2 g Chorothalonil per litre water on clear day.

Bihar

- Take up land preparation for sowing of summer vegetables such as okra, pumpkin, cucumber, sponge Gourd, ridge gourd and bitter guard; apply 15-20 tonnes of FYM during land preparation; apply Chlorpyrifos 20EC @ 2 litres/acre during land ploughing to protect vegetable crops from cutworm attack. Irrigate wheat, maize and mustard crops to maintain soil moisture. At the time of 50 % flowering in pigeon pea, spray Cartap Hydrochloride @ 1.5ml/litre of water to control pod borer. Apply Nitrobenzene @ 1.5 ml/litre of water to lentil crop at flowering stage to protect falling of flowers.

Jharkhand

- Undertake sowing of summer *moong* bean and *urd* bean. Undertake sowing of creeper vegetables of cucurbitaceous family (bottle gourd, khira, kakri, sponge gourd, ridge gourd, bitter gourd, sweet gourd and kheksa, etc) as well as okra, brinjal, shimla mirch of improved varieties; transplant ready seedlings after treating them in the solution of Cantaf/Sitara/Samadhan @2 ml per litre of water. Continue sowing of summer maize. Continue transplanting of 21-25 days old summer paddy seedlings. Harvest mature potato tubers. If dead tillers are observed in wheat crop, spray Imidachloprid @ 2 ml per litre of water or Acetamiprid @ 0.5 g per 8 litres of water on clear day.

West Bengal

- In Sub-Himalayan West Bengal, carry out land preparation for maize crop. Continue preparing main field and transplanting 25-30 days old Boro rice seedlings. Provide irrigation to mustard and potato crops. Carry out harvesting of matured pods of green pea. Carefully observe lentil field; if yellowing is seen, spray Carbendazim 50% w.p. @ 2g/litre of water on clear day.
- In Gangetic West Bengal, undertake sowing of okra. For wheat crop at flowering stage, keep the field weed free; give irrigation to the crop and avoid unnecessary chemical applications at this stage; at dough (final) stage, give light irrigation. For blast attack in paddy crop, apply Bavistin@1g/litre of water; for brown spot attack, spray Ediphenphos 50EC@1ml/litre of water during afternoon hours or at morning hours from 10:00 a.m. to 11:00 a.m on clear day. For aphid attack in mustard, use light trap during night time; in case of heavy attack, spray Metasystox@1.5ml/litre of water on clear day.

Andaman & Nicobar Islands

- Do hand weeding in pulses and provide light irrigation. Remove weeds from the field of cucurbits, apply 5 kg compost and spray 1% panchkavya to improve yield. Do mulching around the areca nut tree for moisture conservation and take dehusk nuts to the nearby market to sell. Make copra using solar or biomass fired dryer, as the weather is dry and conducive.

Animal Husbandry

- Provide sufficient clean drinking water to animals. Keep the animal shed clean and dry. Contact departmental personnel for vaccination.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Weather remained dry/mainly dry over the region.

Advisories:

Maharashtra

- In Konkan, undertake intercultural operation like weeding and apply first dose of Nitrogen @ 40 kg per ha (Urea @ 87 kg) to rice (30 days after transplanting). To control fruit dropping and for improvement in production and quality of mango (pea and marble size), spray 1% Potassium nitrate. Apply irrigation to orchards like arecanut, coconut and cashewnut.
- In Madhya Maharashtra, farmers are advised to continue harvesting of matured gram. Apply irrigation to vegetables and orchards. To control leaf miner in water melon/ musk melon, spray Profenophos @ 20 ml per 10 litre of water. To control sucking pest in onion, spray Carbosulphan 10 ml per 10 litres water using knapsack spray pump. To control early blight in tomato, spray Mancozeb @ 25 g in 10 liters of water. To control mealy bug in grape, spray Verticillium lecanii @ 50 g + milk @ 50 ml per 10 litres of water.
- In Marathawada, farmers are advised to continue harvesting of matured gram and safflower. To control white fly in sugarcane, spray Chlorpyrifos 20 % @ 30 ml or Fipronil 5 % @ 30 ml per 10 liters of water.
- In Vidharbha, farmers are advised to continue harvesting of matured gram and safflower. To control pod borer in gram, spray Quinalphos 25% EC @ 20 ml in 10 liters of water. To control aphids in wheat, spray Metarhizium anisopliae @ 40 g per 10 litres of water.

Gujarat:

- In Middle Gujarat, carry out picking of matured fruits of tomato and fruit crops. Spray Quinalphos 25 EC @ 20 ml in 10 litres of water at evening hours for control of shoot and fruit borer in brinjal.
- In Saurashtra & Kutch, undertake sowing of summer groundnut when temperature rises to 22-25°C, sesame when minimum and maximum temperature rises up to 19 °C and 30°C and vegetable crops. Under present weather condition, heavy attack of thrips and aphids has been reported in cumin; spray Acetamiprid @ 5 gm or Imidacloprid 17.8 % @ 5 ml/10 liters of water.
- In North Gujarat, carry out sowing of okra, cluster bean and cowpea and transplanting of brinjal seedlings. Continue picking of matured fruits of tomato. Undertake earthing up operations in papaya and apply irrigation as per requirement.
- In South Gujarat, apply irrigation to vegetables crops at an interval of 3 to 4 days as there is increase in temperature. Undertake planting of sugarcane crop and carry out weeding in pulses. Continue nursery sowing of rice and chili in South Gujarat Heavy Rainfall Zone. For higher flowering in mango crop, foliar spray of 0.5 % urea solution is advised.

Animal Husbandry:

- In Gujarat, keep animals indoor during night time for protecting against cold.

Realised Rainfall: Weather remained dry/mainly dry over the region.

Advisories:

- As **Thunderstorm** accompanied with **lightning** very likely at isolated places over East Madhya Pradesh on 23rd and over Chhattisgarh on 24th and 25th, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep cattle/goats indoor during thunderstorm.

Madhya Pradesh

- In Malwa Plateau Zone, monitor gram crop for pod borer; install pheromone traps @ 3-4 traps per acre if flowering has reached 10-15%; install. "T" shaped bird perches in and around crop field for controlling insect population. Monitor early stage mustard crop for aphids; cut and destroy the infested part of the plant.
- In Vindhya Plateau Zone, apply irrigation to wheat crop at flowering and milking stages. Carry out gap filling in new orchards. Undertake transplanting of brinjal. Carry out earthing up in potato for better tuberation. Monitor chick pea crop for incidence of pod borer; if larvae exceed two larvae per meter row length, apply Profenophos 50 EC @ 2 litres per hectare using 500 litres of water.
- In Jhabua Hills Zone, apply fifth irrigation at milking stage (80-85 DAS) and sixth irrigation at dough stage (95-100 DAS) to wheat crop. Prepare nursery for summer vegetables. Irrigate winter vegetable crops. Dig the mature crop of ginger and turmeric.
- In the Nimar Valley Zone, monitor wheat crop for rust disease; spray Dithane M-45 @ 2.5 g per litre of water if symptoms appear.
- In Central Narmada Valley Zone, give light irrigation to wheat crop at 20 days intervals and avoid waterlogged condition. Gram crop is pod development stage and prone to pod borer attack; spray Indoxacarb 14.5 % SC @ 12-15 ml/pump in the initial stage of infestation; to control caterpillars in early stage, use 'T' shaped bird percher @ 20-25 and pheromone traps @ 8 traps per acre; if attack is more (2-3 caterpillar in one meter row), spray Triazophos @ 800 ml/ha.

Chhattisgarh

- In Chhattisgarh Plain Zone, timely sown wheat crop is at heading stage which is sensitive of moisture stress; irrigate the crop and apply Nitrogen after irrigation. Complete sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. Timely sown early duration mustard crop is approaching maturity stage; harvest the crop when siliqua turns bright yellow in colour; dry the harvested crop in the sun for 2-3 days before threshing.
- In Northern Hill Zone, postpone irrigation to wheat and vegetable crops as rainfall is forecasted. Early to medium duration variety potato crop is at maturity stage; remove the upper leaves/parts (Dehaulming) of the crop 7- 10 days prior to digging. Continue planting sugarcane sets after treatment with a fungicide. Mango crop is at flowering/fruit setting stage; monitor crop for powdery mildew; if symptoms appear, spray Carbendizim (Bavistin) @1.5g or Sulphex @3.0g per litre of water.
- In Bastar Plateau Zone, undertake sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra, etc. as temperature is suitable for germination. Pulses and oil seed crops are at branching and flowering stages; apply irrigation to maintain soil moisture. Use pheromone and light traps around summer paddy field to control stem borer.

Animal Husbandry

- Vaccinate cattle for control of FMD, BQ and HS; vaccinate goat against PPR. To control ecto-parasite

use Butox and also de-worm cattle. Milk the milch animals fully to avoid mastitis disease.

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

Realised Rainfall : Significant rainfall occurred in Kupwara district of Jammu & Kashmir, dry weather prevailed over the rest of the region.

Advisories:

- **As Thundersquall (speed reaching 50-60 kmph)** accompanied with **lightning & hail** very likely at isolated places over Uttarakhand; **Thunderstorm** accompanied with **hail, lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over West Uttar Pradesh; with **hail, lightning & gusty wind (speed reaching 30-40 kmph)** at isolated places over East Uttar Pradesh and Haryana, Chandigarh & Delhi on 21st, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hail net for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- **As Thunderstorm** accompanied with **lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over East Uttar Pradesh on 23rd and 24th with **lightning** at isolated places over over Uttarakhand on 23rd and 24th, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep cattle/goats indoor during thunderstorm.

Jammu & Kashmir

- In Cold Arid Zone, plough the field to retain more moisture during the winter months. It will also help in uprooting of the weeds and decomposition of crop residues. Carry out intercultural operations like weeding and hoeing in poly-houses. Cover the trenches and low tunnels with polythene and blankets during the night to avoid loss due to sudden dip in temperature below -15^oC. Apply second dose of nitrogenous fertilizer in cabbage, cauliflower and broccoli in green houses.
- In Sub-Tropical Zone, the weather condition is favourable for yellow rust in wheat; if noticed, apply Propaconazole (Tilt) @ 25ml in 25 litres of water/kanal during clear weather. The weather condition is favourable for outbreak of aphids in late sown mustard crop; if the count is above threshold level, spray the crop with imidacloprid @ 0.3 ml / litre of water or (Dimethoate) Rogar 30 EC @ 1ml/litre of water during clear weather.
- In Intermediate Zone, provide staking to the pea vines and apply irrigation at first flower formation and pod formation stage depending upon the soil moisture condition. 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 @2.5g/litre of water alternately as curative measure.

Himachal Pradesh

- In Mild Hills Sub Humid Zone, cover the small pomegranate plants with grass to avoid cold paralysis. Destroy infected plant parts. To protect the plants from direct sun shine which may cause canker disease, white wash the stem up to first branch and also on branches of sunny side, with the solution of 15 kg white wash + 5 kg copper sulphate +2 litres of linseed oil in 50 litres of water.
- In High Hill Temperate Dry Zone, avoid pruning of apple trees when snow is fallen until the weather is warm. Cover the small plants with grass to avoid cold paralysis.
- In Sub Montane and Sub Tropical Low Hills Zone, carry out thinning and weeding operation in mustard crop. To control pod borer in the gram crop, install pheromone traps @ 3-4 traps per acre after flowering has reached 10-15%. Also install "T" shaped bird perches in and around crop field to control insect

population.

- In Mid Hills Sub-Humid Zone, apply irrigation to pea crop in flowering to pod formation stage. Carry out weeding in coriander and fenugreek. Prepare the fields for summer vegetables like tomato, capsicum, okra, gourd etc. in lower hills areas.

Punjab, Haryana, Delhi

- In Punjab, in view of mainly dry weather, irrigate the standing crops as and take special care of vegetables and newly planted orchard plants due to continuous rising of temperature.
- In Western Plain Zone of Punjab, regularly monitor wheat crop for yellow rust; on detection of the initial foci of infection, do only spot application surrounding the infected area with 0.1% Caviet/Opera/Tilt /Shine /Bhumper/Markzole/Stilt/Compass.
- In Undulating Zone of Punjab, regularly monitor the potato crop; if symptoms of late blight are observed, spray Indofil M-45/Mass M45/Markzeb/Kavach @ 500-750g using 250-350 liters of water per acre at 7 days interval.
- In Western Plain Zone and Central Plain Zone of Punjab, prevailing weather is favourable for spread and development of white rust in rapeseed and oil seeds; spray Ridomil Gold @ 250g in 100 litres of water per acre. If needed, repeat the spray after 20 days interval.
- In Western Zone of Haryana, due to possibility of variable weather conditions, withhold application of irrigation and fertilizer in mustard, wheat and barley crops. Keep watch on late blight disease in potato.
- In Eastern Zone of Haryana, in view of dry weather, irrigate crops and spray if necessary. There are chances of aphids in mustard crop, spray 250 to 400 ml of Methyl Demeton (Matassistanx) 25 EC or Dimethoate (Rogor) 30 E.C per acre mixed with 250 - 400 liters of water. Monitor timely sown onion crop against attack of thrips and infection of purple blotch. Spray Confidor @ 0.5 ml per 3 litres of water with sticky material (Tipol 1.0 gram /litre) for thrips and spray Dithane-M-45 @ 3 grams per litre of water with sticky material (Tipol 1.0 gram /litre) for purple blotch disease.
- In Delhi, undertake transplanting of chilli, tomato and brinjal. Considering the increase in temperature, apply light irrigation in standing crops and vegetables as per requirement and also monitor vegetable and mustard crops against attack of aphids. Monitor timely sown onion crop against attack of thrips and infection of purple blotch; spray Confidor @ 0.5 ml per 3 litre of water with sticky material (Tipol 1.0 gram /litre for thrips and Dithane-M -45 @ 3 grams per litre of water with sticky material (Tipol 1.0 g/litre) for purple blotch disease.

Uttar Pradesh

In East Uttar Pradesh,

- Continue sowing of maize, bottle gourd and pumpkin. Continue planting of spring season sugarcane crop; irrigate the field two weeks prior to sowing. Irrigate wheat, Bengal gram, chick pea and onion crops as per requirement. Continue harvesting mature potato tubers; send them to market for selling or store properly. Harvest matured crop of mustard.

In West Uttar Pradesh,

- Continue sowing of maize, black gram and okra. Transplant onion seedlings and irrigate crop immediately after. Irrigate wheat crop at tillering stage (40–45 days after sowing) and give third irrigation at the time of lump formation (60–65 days after sowing). Carry out digging of mature potato on a clear day. Outbreak of aphid and painted class is likely in mustard crop, spray Chlorpyrifos 20% EC @ 1 litre / ha or Monocrotophos 36% S.L. @ of 500 ml / ha in 600 to 700 litres of water in clear sky conditions.

Uttarakhand

- As **rain/thundershowers** likely at many places over Uttarkhand on 21st, avoid irrigation, inter-cultural

operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

- In Bhabar and Tarai Zone, undertake harvesting of yellow mustard. Undertake sowing of fruit crops like apple, plum, pear, walnut etc. To control the yellow rust disease on the wheat crop, spray Propiconazole @ 1g/litre of water per hectare. To control the late blight disease in potato, spray mancozeb @ 3g/litre of water per hectare. If the upper part of leaves of onion is turning yellow, spray solution of Propiconazole or Tebuconazole @ 1 ml/litre of water.
- In Sub Humid Sub Tropic Zone, in view of forecast of thundersquall and hail, avoid irrigation to wheat and mustard. Also avoid spraying of fertilizers and pesticides / insecticides. Postpone planting of spring sugarcane.
- In Hill Zone, carry out weeding and hoeing operation in vegetable pea. Continue transplanting of cauliflower seedlings. Continue field preparation for cultivation of rainfed potatoes in high altitude areas.

Rajasthan

- In Arid Western Plain Zone, weather is congenial for attack of termites in standing crops, apply Chloropyriphos @ 4 litre or Imidacloprid @ 300 ml per ha with irrigation.
- In Semi-Arid Eastern Plain Zone, garlic & onion crop is likely to be affected by thrips; it sucks the sap of leaves and causes white blotching on leaves. To control, spray Methyl demeton 25 EC or Melathion 50 EC @ 1.0 ml per litre of water.
- In Sub Humid Southern Plain and Aravali Hill Zone, undertake harvesting of mustard. Weather is favourable for incidence of powdery mildew in fenugreek; spray Dinocap 1ml/litre of water; to control aphids in fenugreek, spray Dimetheate 30 E.C. or Malathim 50 E.C. @ 1ml/litre of water; if required, repeat the spray after 10-15 days.
- In Flood Prone Eastern Plain Zone, regularly monitor the mustard crop for aphids; destroy infested branches of plant; spray Dimethoate 30 EC @ 1litre/ ha dissolved in 800 litre water when atleast 10% plants are infested with 25-26 aphid per plant. Alternaria blight (black spot) disease may attack in mustard crop in some pockets; destroy the infested plants and spray Iprodione or Mencozeb @ 2 kg/800 litre solution.

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