



National Agromet Advisory Service Bulletin

Friday 20th March 2020
(For the period 20th to 24th March 2020)



Issued by
India Meteorological Department

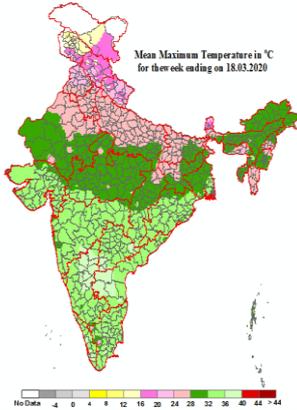
Weblink For

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

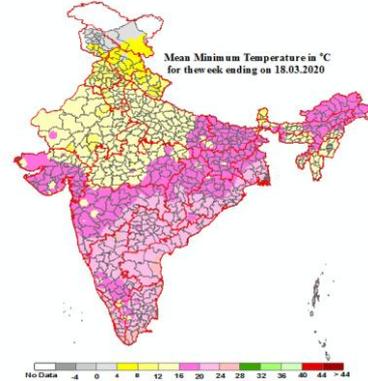
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 18.03.2020

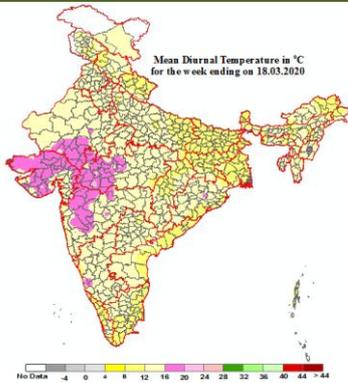
Mean Maximum Temperature (°C) for the week ending on 18.03.2020



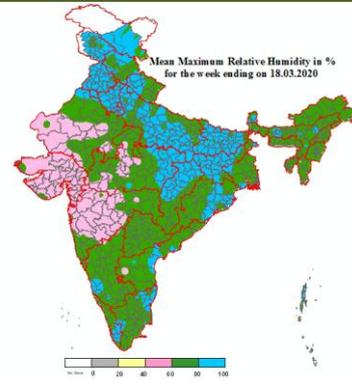
Mean Minimum Temperature (°C) for the week ending on 18.03.2020



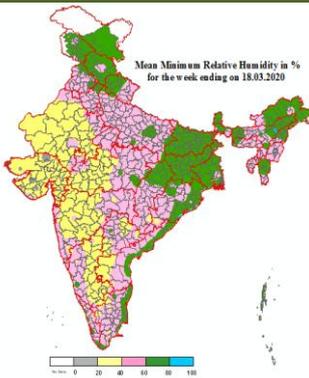
Mean Diurnal Temperature Variation (°C) for the week ending on 18.03.2020



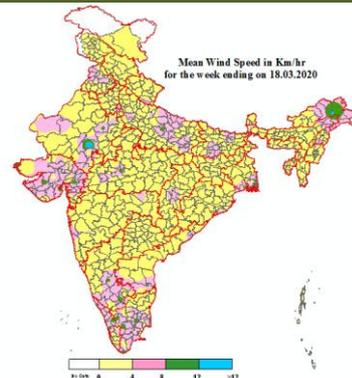
Mean Maximum Relative Humidity (%) for the week ending on 18.03.2020



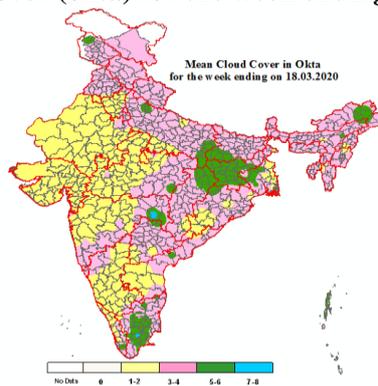
Mean Minimum Relative Humidity (%) for the week ending on 18.03.2020



Mean Wind Speed (km/hr) for the week ending on 18.03.2020

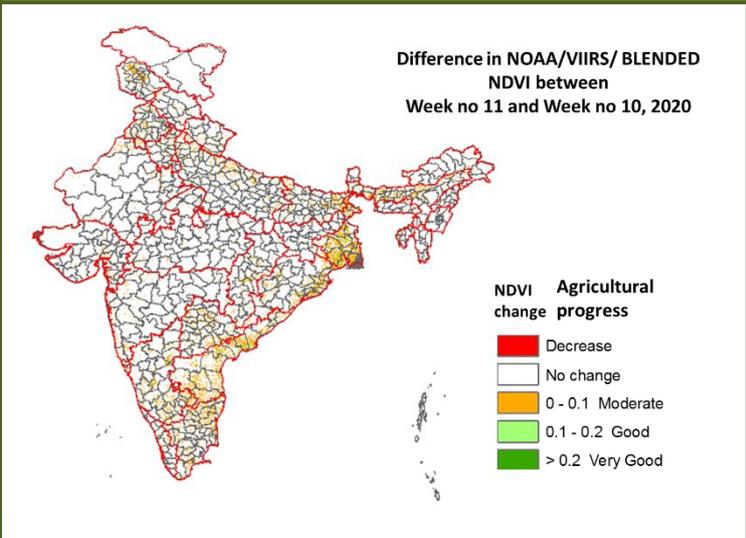
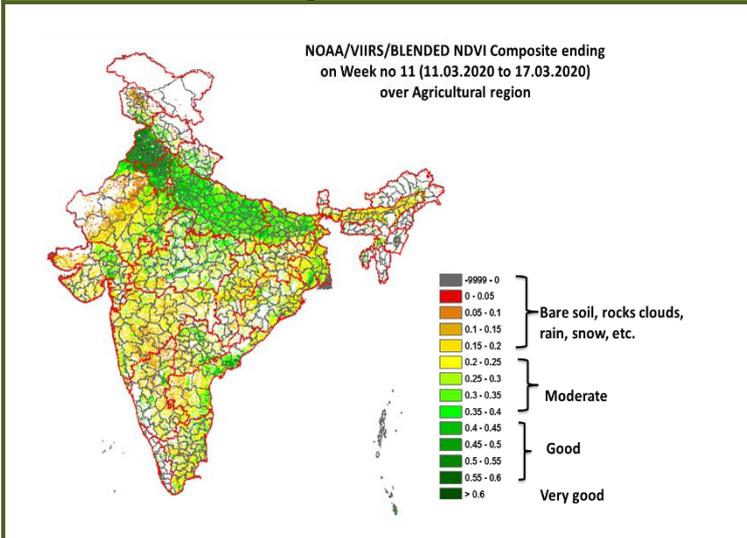


Mean Cloud Cover (okta) for the week ending on 18.03.2020



NOAA/VIIRS/BLENDED NDVI composite for the week number 11 (11.03.2020 to 17.03.2020) over Agricultural regions of India

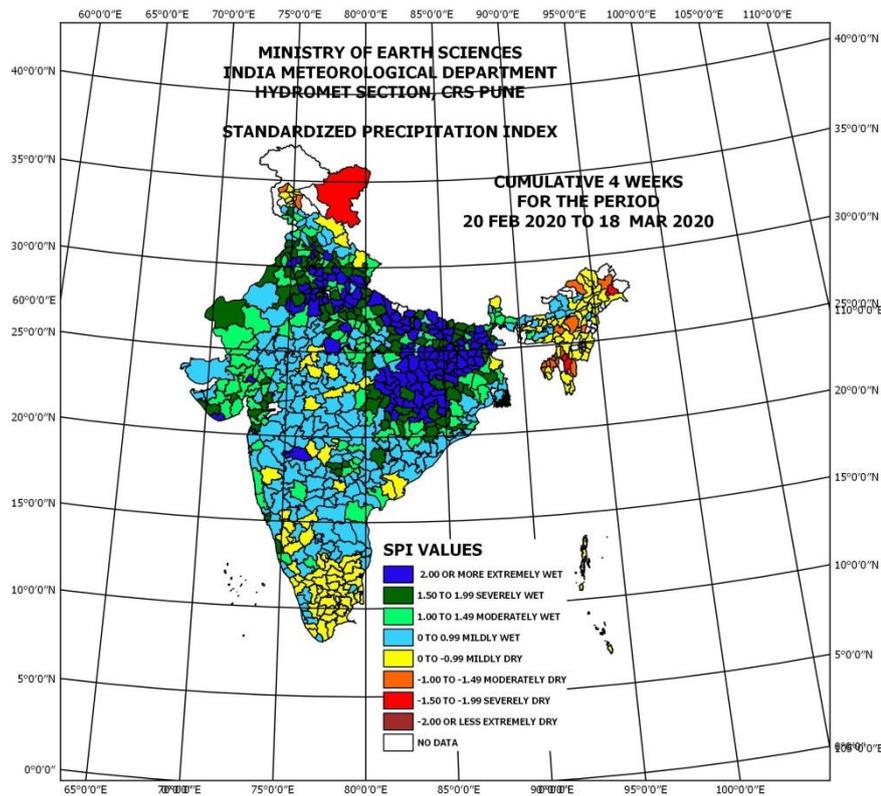
Difference in NOAA/VIIRS/BLENDED NDVI between week number 11, 2020 and week number 10, 2020



Agriculture vigour was good at most parts of Punjab; many parts of Haryana; few parts of Jammu division, West Uttar Pradesh & North Coastal Andhra Pradesh and at isolated places of Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Gangetic West Bengal, Odisha, Telangana, South Coastal Andhra Pradesh, North Interior Karnataka, Coastal Karnataka, Kerala & Tamilnadu.

Good difference in agricultural vigour has been observed at many places in Gangetic West Bengal; few places of Bihar, Sub Himalayan West Bengal, Central Chhattisgarh & North Coastal Andhra Pradesh and isolated places of Valley region of Jammu & Kashmir, Punjab, Haryana, Himachal Pradesh, Uttarakhand, Uttar Pradesh, North Eastern States, Sikkim, Odisha, South Coastal Andhra Pradesh, South Interior Karnataka, Tamilnadu, Kerala & Gujarat.

Standardised Precipitation Index Cumulative 4 weeks for the period 20th Feb to 18th March 2020



- Extremely/Severely wet conditions exist in Araria, Aurangabad, Banka, Begusarai, Bhabua, Bhagalpur, Bhojpur, East Champaran, West Champaran, Darbhanga, Gaya, Gopalganj, Jahanabad, Jamui, Katihar, Khagaria, Lakhisarai, Madhepura, Madhubani, Muzaffarpur, Nalanda, Nawada, Patna, Purnea, Rohtas, Samastipur, Saran, Sitamarhi, Sheikhpura, Sheohar, Siwan, Supaul, Vaishali, Arwal districts of Bihar; Valsad, Surat, Gandhinagar, Narmada, Chhota Udepur, Mahisagar, Junagarh, Porbandar, Botad, Gir Somnath districts of Gujarat; Gurgaon, Hisar, Karnal, Mahendragarh, Mewat, Rohtak, Bhiwani, Faridabad, Kurukshetra, Sirsa, Sonapat, Kaithal, Panipat, Rewari, Fatehabad, Jhajjar, Palwal districts of Haryana; Bilaspur, Hamirpur, Sirmaur, Solan, Una districts of Himachal Pradesh; Reasi district of Jammu; Udipi district of Karnataka; Bhind, Morena, Shivpuri, Balaghat, Dindori, Mandla, Panna, Shahdol, Umaria, Anuppur, Singrauli districts of West Madhya Pradesh; Beed district of Maharashtra; Angul, Bargarh, Boudhgarh, Cuttack, Deogarh, Jharsuguda, Kandhamal, Sambalpur, Sonepur, Sundargarh districts of Orissa; Bhatinda, Ferozepur, Kapurthala, Patiala, Moga, Ropar, Sangrur, Faridkot, Nawanshahar, Sas Nagar Mohali, Fatehgarh Sahib, Tarn Taran, Barnala districts of Punjab; Churu, Sri Ganganagar, Jaisalmer, Alwar, Bharatpur, Jhunjhunu, Sikar districts of Rajasthan; Diu district of Union Territory; Allahabad, Ambedkar Nagar, Azamgarh, Bahraich, Barabanki, Basti, Deoria, Faizabad, Farrukhabad, Ghazipur, Gonda, Gorakhpur, Kannauj, Kanpur City, Kheri, Lucknow, Maharajganj, Mirzapur, Pratapgarh, Sant Kabir Nagar, Siddharth Nagar, Sitapur, Sultanpur, Sonbhadra, Varanasi, Sahuji Maharaj Nagar, Sant Ravidas Nagar, Amethi, Aligarh, Baghpat, Bareilly, Bijnor, Badaun, Bulandshahar, Kanshiram Nagar, Etah, Firozabad, Mahamaya Nagar, Mainpuri, Mathura, Moradabad, Muzaffarnagar, Pilibhit, Shahjahanpur, Saharanpur, Sambhal, Shamli districts of Uttar Pradesh; Malda, North Dinajpur, Burdwan districts of West Bengal; Bokaro, Chatra, Deoghar, Dhanbad, Dumka, Garhwa, Giridih, Godda, Gumla, Hazaribag, Koderma, Lohardaga, Pakur, Palamu, Ranchi, Sahibganj, East Singhbhum, West Singhbhum, Jamtara, Simdega, Latehar, Seraikela-Khar, Ramgarh, Khunti districts of Jharkhand; Almora, Champawat, Dehradun, Hardwar, Nainital, Garhwal Pauri, Udham Singh Nagar, Bageshwar districts of Uttarakhand; Bilaspur, Durg, Janjgir, Jashpur, Korba, Koriya, Kowarda, Mahasamund, Raigarh, Raipur, Surguja, Bijapur, Balod, Baloda Bazaar, Balrampur, Bemetara, Gariabund, Mungeli, Surajpur districts of Chhatisgarh; South Goa district of Goa; New Delhi district of Delhi; Medak, Kamareddy, Rajanna Sircilla districts of Telangana.
- Moderately dry conditions exist in Lower Dib Valley, Upper Subansiri districts of Arunachal Pradesh; Karbi Anglong, Hailakandi districts of Assam; Anantnag, Kupwara districts of Jammu; Imphal West district of Manipur; Champhai, Serchhip districts of Mizoram; Kohima district of Nagaland; North Tripura, Dhalai, West Tripura districts of Tripura.
- Extremely/ Severely dry conditions exist in Lohit district of Arunachal Pradesh; Leh district of Ladakh; Aizwal, Kolasib districts of Mizoram.
- 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 25th March, 2020

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- ◆ No significant change in minimum and maximum temperatures over the country during next 2-3 days.

5 Day Rainfall Forecast (MID-DAY)

20th March 2020

| Met-Sub-Division | 20-Mar Today | 21Mar Sat | 22Mar Sun | 23Mar Mon | 24Mar Tue |
|--------------------------------|--------------|-----------|-----------|-----------|-----------|
| 1. Andaman & Nicobar Islands | DRY | DRY | DRY | DRY | DRY |
| 2. Arunachal Pradesh | FWS | FWS | SCT | ISOL | ISOL |
| 3. Assam & Meghalaya | SCT | FWS | SCT | ISOL | DRY |
| 4. N. M. M. & T. | ISOL | SCT | ISOL | ISOL | DRY |
| 5. S.H. West Bengal & Sikkim | ISOL | FWS | FWS | ISOL | ISOL |
| 6. Gangetic West Bengal | ISOL | SCT | FWS | ISOL | DRY |
| 7. Odisha | SCT | FWS | SCT | ISOL | ISOL |
| 8. Jharkhand | ISOL | SCT | SCT | DRY | ISOL |
| 9. Bihar | DRY | ISOL | ISOL | DRY | DRY |
| 10. East Uttar Pradesh | ISOL | ISOL | DRY | DRY | DRY |
| 11. West Uttar Pradesh | ISOL | ISOL | DRY | ISOL | ISOL |
| 12. Uttarakhand | ISOL | ISOL | ISOL | SCT | FWS |
| 13. Haryana, Chd & Delhi | ISOL | ISOL | DRY | ISOL | SCT |
| 14. Punjab | ISOL | ISOL | DRY | ISOL | SCT |
| 15. Himachal Pradesh | ISOL | SCT | ISOL | SCT | FWS |
| 16. J & K and Ladakh | ISOL | FWS | ISOL | FWS | WS |
| 17. West Rajsthan | ISOL | ISOL | ISOL | ISOL | ISOL |
| 18. East Rajasthan | ISOL | ISOL | ISOL | ISOL | ISOL |
| 19. West Madhya Pradesh | ISOL | DRY | DRY | DRY | ISOL |
| 20. East Madhya Pradesh | ISOL | ISOL | DRY | DRY | ISOL |
| 21. Gujarat Region | DRY | DRY | DRY | DRY | ISOL |
| 22. Saurashtra & Kutch | DRY | DRY | DRY | DRY | ISOL |
| 23. Konkan & Goa | DRY | DRY | DRY | DRY | DRY |
| 24. Madhya Maharashtra | DRY | DRY | DRY | DRY | ISOL |
| 25. Marathwada | DRY | DRY | DRY | DRY | ISOL |
| 26. Vidharbha | ISOL | ISOL | DRY | DRY | ISOL |
| 27. Chhattisgarh | SCT | SCT | ISOL | DRY | ISOL |
| 28. Coastal A. P. & Yanam | ISOL | ISOL | ISOL | ISOL | ISOL |
| 29. Telangana | ISOL | ISOL | ISOL | ISOL | ISOL |
| 30. Rayalaseema | ISOL | DRY | DRY | DRY | DRY |
| 31. T.N.,Puducherry & Karaikal | ISOL | ISOL | DRY | DRY | ISOL |
| 32. Coastal Karnataka | DRY | DRY | DRY | DRY | ISOL |
| 33. North Interior Karnataka | DRY | DRY | DRY | DRY | ISOL |
| 34. South Interior Karnataka | ISOL | DRY | DRY | DRY | ISOL |
| 35. Kerala & Mahe | ISOL | ISOL | ISOL | ISOL | ISOL |
| 36. Lakshadweep | DRY | DRY | DRY | DRY | SCT |

% 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

20 March (Day 1): ♦

Thunderstorm accompanied with lightning, hail & gusty wind (speed reaching 40-50 kmph) very likely at isolated places over Chhattisgarh; **with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over East Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Vidarbha and Arunachal Pradesh; **with lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over Odisha and Coastal Andhra Pradesh & Yanam and with **lightning** at isolated places over Punjab, Haryana, Chandigarh & Delhi, northeast Rajasthan, northwest Madhya Pradesh, Jharkhand, Gangetic West Bengal, Assam & Meghalaya, Kerala & Mahe and Telangana.

♦ **Squally weather** very likely to prevail over Westcentral Bay of Bengal. Fishermen are advised not to venture into this area.

21 March (Day 2): ♦

Thunderstorm accompanied with lightning, hail & squally wind (speed reaching 45-55 kmph) very likely at isolated places over Odisha; **with lightning, hail & gusty wind** (speed reaching 40-50 kmph) at isolated places over Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Arunachal Pradesh and Assam & Meghalaya; **with lightning & gusty wind** (speed reaching 40-50 kmph) at isolated places over Gangetic West Bengal; **with lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over East Madhya Pradesh, Chhattisgarh and Jharkhand and with **lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, north Rajasthan, Nagaland, Manipur, Mizoram & Tripura, Telangana and Kerala & Mahe.

22 March (Day 3):♦

Thunderstorm accompanied with lightning, hail & gusty wind (speed reaching 30-40 kmph) very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura and Assam & Meghalaya; **with lightning & gusty wind** (speed reaching 40-50 kmph) at isolated places over Gangetic West Bengal; **with lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over Coastal Andhra Pradesh & Yanam and with **lightning** at isolated places over Jharkhand, Odisha and Arunachal Pradesh.

23 March (Day 4): ♦

Thunderstorm accompanied with lightning, hail & gusty wind (speed reaching 30-40 kmph) likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan and Himachal Pradesh and with **lightning** at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and Coastal Andhra Pradesh & Yanam.

♦ **Squally weather** likely to prevail over North Bay of Bengal. Fishermen are advised not to venture into this area.

24 March (Day 5):♦

Thunderstorm accompanied with lightning, hail & gusty wind (speed reaching 30-40 kmph) likely at isolated places over Himachal Pradesh; **with lightning & squally wind** (speed reaching 30-40 kmph) very likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, East Madhya Pradesh, Vidarbha and Chhattisgarh and with **lightning** at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, Kerala & Mahe and Coastal Andhra Pradesh & Yanam.

◆ **Heavy rainfall/snowfall** likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan.

Weather Outlook for subsequent 2 days from 25th to 27th March, 2020

- ◆ Under the influence of an active Western Disturbance, scattered to fairly widespread rainfall/snowfall likely over Western Himalayan region and isolated to scattered rainfall over plains of northwest India.
- ◆ Scattered to fairly widespread rain/thundershowers with isolated to scattered hailstorm likely over parts of Interior Maharashtra and isolated to scattered rainfall over Gujarat, south peninsular India and northeast India.
- ◆ Weather is likely to be dry over rest of the country.

Salient advisories

➤ **Advisory for Desert Locust:**

- In Arid Western Plain Zone of Rajasthan, where there is attack of desert locust in Bikaner and Jaisalmer districts, apply Chloropyrifos (50%) @ 1 ml/litre or (20%) @ 2.5 ml/litre of water in standing crops.
- **As Thunderstorm accompanied with lightning, hail and squally wind** (speed reaching 45-55 kmph) very likely at isolated places over Chhattisgarh on 20th and over Odisha on 21st; **lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over East Madhya Pradesh and Vidarbha on 20th, over Sub-Himalayan West Bengal & Sikkim and Arunachal Pradesh on 20th & 21st, over Coastal Andhra Pradesh & Yanam and Assam & Meghalaya on 21st, over Gangetic West Bengal on 22nd and 23rd, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan on 23rd and over Himachal Pradesh on 23rd & 24th; **with lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over Odisha on 20th, over Coastal Andhra Pradesh & Yanam on 20th & 22nd, over East Madhya Pradesh, Chhattisgarh and Jharkhand on 21st and (speed reaching 40-50 kmph) over Gangetic West Bengal on 21st and 22nd; **lightning** at isolated places over northeast Rajasthan, northwest Madhya Pradesh and Assam & Meghalaya on 20th, over Telangana on 20th & 21st, over Punjab and Haryana Chandigarh & Delhi on 20th, 21st, 23rd and 24th, over Kerala & Mahe on 20th, 21st and 24th, over Jharkhand on 20th and 22nd, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Himachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on 21st, over north Rajasthan on 21st and 23rd, over Uttarakhand on 21st, 23rd & 24th, over West Uttar Pradesh on 21st & 24th, over Odisha and Arunachal Pradesh on 22nd and over Coastal Andhra Pradesh & Yanam on 23rd & 24th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- **As rain/thundershowers** likely at most places over Jammu & Kashmir on 24th; at many places over Arunachal Pradesh on 20th and 21st, over Odisha and Assam & Meghalaya on 21st, over Sub-Himalayan West Bengal & Sikkim on 21st and 22nd, over Jammu Kashmir & Ladakh on 21st & 23rd, over Gangetic West Bengal on 22nd and over Himachal Pradesh and Uttarakhand on 24th along with **Heavy rainfall/snowfall** likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan on 24th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- Undertake the following operations:
 - cutting/planting of pepper in nurseries to initiate rooting and planting of tapioca during this month in Problem Area Zone of Kerala
 - land preparation for sowing of ginger and turmeric in South Interior Karnataka.
 - sowing of Capsularis jute and summer vegetables like lady's finger, bottle guard, pumpkin, ridge guard, cucumber, etc.; land preparation for planting of ginger and turmeric in CentralBrahmaputra Valley Zone of Assam.
 - sowing of baby corn and sowing of summer *moong* bean and okra in Jharkhand.
 - land preparation followed by sowing of green gram, groundnut, sesame, cowpea and pearl millet In North Gujarat.
 - field preparation and sowing of okra, barwati, beans, french beans, etc. in Keymore Plateau Zone of Madhya

Pradesh.

- transplanting of tomato, brinjal and chilli in Sub-Tropical Zone of Jammu & Kashmir.
- sowing of summer *moong* and transplanting of chilli in Western Plain of Punjab.
- sowing of green gram, maize, french bean, amaranthus, vegetable lobia, bottle gourd, cucumber, ridge gourd, sponge gourd, pumpkin and summer radish in East Uttar Pradesh.
- field preparation for sowing of potato and continue transplanting of tomato in Hill Zone of Uttarakhand.
- sowing of cluster bean, cowpea and green gram in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in Kottayam and Pathanamthitta districts in Kerala. Weather remained dry/mainly dry over rest of the region.

- **Advisories: As Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Coastal Andhra Pradesh & Yanam **with lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over Coastal Andhra Pradesh & Yanam on 20th & 22nd, **lightning** at isolated places over northeast over Telangana on 20th & 21st, over Kerala & Mahe on 20th, 21st and 24th and over Coastal Andhra Pradesh & Yanam on 23rd & 24th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Kerala

- In Problem Area Zone, continue planting of tapioca during this month. Undertake cutting/planting of pepper in nurseries to initiate rooting.
- In Central Zone, there is a chance of white fly attack in chilli; apply 2% neem oil and garlic emulsion or spray 20g *Lecanicillium lecanii* per one litre of water at ten days intervals.
- In Southern Zone, go for sowing of cowpea in rice fallow.

Andhra Pradesh

- In Scarce Rainfall Zone, present weather conditions are favourable for BPH, stem borer and leaf folder in paddy. For control of BPH, spray Buprofigin @ 1.5 ml (or) Ithofenprox @ 2 ml per litre of water; for stem borer and leaf folder, spray Cartaphydrochloride @ 2 g (or) Chloripyriphos @ 2.5 ml per litre of water.
- In North Coastal Zone, weather is congenial for incidence of sucking pests (aphids, jassids, thrips, etc.) in groundnut, sesame and vegetables. Spray Monocrotophos @ 1.6 ml or Dimethoate @ 2 ml per litre of water
- In Krishna Godavari Zone, as day temperatures are increasing, protect the rice crop from moisture stress by maintaining 5cm water from PI to grain hardening stage. Water should be drained prior to top dressing of nitrogen fertilizers and re-flood the field after 48 hours.
- In Southern Zone, undertake harvesting of *rabi* groundnut when 70-80% of leaves, stems turn yellow 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

- In Southern Telangana Zone, prevailing high relative humidity conditions are congenial for spread of blast disease in rice. To control, spray Tricyclazole @ 0.6 g or Isoprothiolane @ 1.5 ml or Kasugamycin @ 2.5 ml per litre of water twice in 10-15 days interval.
- In North Telangana Zone, the prevailing weather conditions are favourable for *spodoptera exigua* in Bengal gram. To control, spray Thiodicarb @ 1g or Quinolphos @ 2ml or Acephate @ 1.5g per litre of water.

Tamil Nadu

- In Cauvery Delta Zone, in rice fallow black gram, spray DAP (2%) + KCl (1%) solution in morning or evening at flower initiation and next at 15 days interval. Alternatively, 'pulse wonder' at 5.0 kg/ha can be sprayed during flower initiation.
 - In Western Zone, attack of rhinoceros beetle is being observed in coconut; remove the tree top debris and keep naphthalene balls @ 3 to 4 numbers per tree along with sand. Looking at the increase in maximum and minimum temperatures, coconut may be irrigated with 100 liters of water per day per tree through drip irrigation system.
 - In High Altitude Hilly Zone, garlic is at harvesting stage, carry out harvesting and keep the harvested garlic bulbs in field itself for 3 days; this will increase the bulb weight.
- In South Zone, prevailing weather condition is conducive for incidence of citrus canker disease, spray Copper oxychloride (COC) @ 0.3% followed by 4 sprayings with Streptocyclin 100 ppm + COC @ 0.3 % at monthly intervals after pruning.

Karnataka

- In North Interior Karnataka, complete harvesting of wheat, safflower, sorghum, Bengal gram, red gram, niger and pigeon pea crops. For effective control of hoppers in mango, spray Thiamethaxom @ 0.5 gm in one litre of water.
- In South Interior Karnataka, provide irrigation to mango orchard, as the fruits are in marble stage. Carry out land preparation for sowing of ginger and turmeric.
- In Coastal Karnataka, to control leaf hopper in mango sprays Imidachloprid @ 0.5ml /litre of water before flowering and after fruit setting.

Animal Husbandry:

- In Karaikal and Pondicherry, the poultry may be vaccinated to prevent Ranikhet disease.

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

Realised Rainfall: Significant rainfall occurred in Upper Siang district of Arunachal Pradesh. Weather was mainly dry in rest of the region.

- **Advisories: As Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Arunachal Pradesh on 20th & 21st and Assam & Meghalaya on 21st; **lightning** at isolated places over Assam & Meghalaya on 20th, over Nagaland, Manipur, Mizoram & Tripura on 21st and Arunachal Pradesh on 22nd, provide mechanical support to banana, young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at many places over Arunachal Pradesh on 20th and 21st, over Assam & Meghalaya on 21st, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Arunachal Pradesh

- In Arunachal Pradesh, undertake harvesting of green pods of field pea at 4-5 days interval. Provide proper drainage in the field. Undertake sowing of maize. After harvesting the oranges, carry out pruning of dead and diseased branches. Provide proper drainage in potato field.

Assam & Meghalaya

- In Hill Zone of Assam, undertake sowing of green gram and black gram. Current weather condition is favourable for attack of stem borer in boro rice; if eggs of the pests are noticed, apply 'Darsban' or Monocrotophos @ 2 tea spoon per 5 litres of water in the field.
- In Upper Brahmaputra Valley Zone, continue nursery sowing of *Ahu* rice. Undertake land preparation for banana cultivation. Maintain 5±2 cm depth of standing water in the Boro rice fields; insert around 7-8 numbers of bamboo 'T' perches per bigha of land in rice field; it will act as a resting place for predatory birds that will devour insect larvae and egg masses.
- In Lower Brahmaputra Valley Zone, undertake sowing of summer vegetables. As the moisture status in wheat field is sufficient, postpone irrigation.

- In Central Brahmaputra Valley Zone, continue harvesting of rapeseed/ mustard and potato. Continue harvesting of wheat crop. Undertake sowing of Capsularis jute and summer vegetables like lady's finger, bottle guard, pumpkin, ridge guard, cucumber, etc. Undertake land preparation for planting of ginger and turmeric.
- In North Bank Plain Zone, undertake main field preparation for sowing of direct seeded *Ahu* rice and nursery bed preparation for transplanted early *Ahu* rice. Farmers of flood affected low lying areas are advised to collect suitable varieties of *Bao* rice as March-April is the ideal time for sowing. Undertake land preparation/ sowing of Capsularis jute. Undertake planting of ginger and turmeric.
- In Meghalaya, continue harvesting of matured pea pods as well as rapeseed/mustard in the morning. Undertake transplanting of 1 month old seedlings of brinjal, chilli, tomato and capsicum; irrigate immediately after transplanting. Undertake sowing of pumpkin and bottle gourd.

Manipur, Mizoram, Tripura and Nagaland

- In Manipur, maintain water level up to 5cm in transplanted rice. Carry out earthing up operation in tomato followed by irrigation.
- In Mizoram, undertake harvesting of potato, tomato and matured maize cobs. Undertake harvesting of matured. Continue harvesting of mustard
- In Tripura, there is a possibility of incidence of aphids on ladies finger crop which develops into the growth of black fungus on leaves and inflorescence. If the incidence is noticed, collect and destroy all infected shoots and leaves, spray Dimethoate 30%EC@10 ml per 10 litres of water. Also, use yellow sticky cards in the field to attract sucking pest. Stock rot may occur in rabi maize; to manage the attack, spray Mancozeb @ 2ml per litre of water.
- In Nagaland, plan for maximizing plant diversity by inter cropping of maize with suitable pulse crops like pigeon pea/black gram /green gram/soybean; plant Napier grass in the border rows to act as Fall Army Worm (FAW) trap crop. Undertake land preparation for planting of ginger.

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

Realised Rainfall: Significant rainfall occurred in Arwal, Aurangabad, Banka, Begusarai, Bhabua, Bhagalpur, Gaya, Jahanabad, Jamui, Katihar, Khagadia, Lakhisarai, Monghyr, Nalanda, Nawada, Rohtas and Sheikpura districts of Bihar; in all districts of Jharkhand except Sahibganj; in Jharsuguda and Sundargarh districts of Odisha and in Malda district of Sub-Himalayan West Bengal & Sikkim. Weather remained dry/mainly dry over the rest of the region.

- **Advisories: As Thunderstorm accompanied with lightning, hail and squally wind** (speed reaching 45-55 kmph) very likely at isolated places over Odisha on 21st; **lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Sub-Himalayan West Bengal & Sikkim on 20th & 21st, over Gangetic West Bengal on 22nd and 23rd; **with lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over Odisha on 20th, over Jharkhand on 21st and (speed reaching 40-50 kmph) over Gangetic West Bengal on 21st and 22nd; **lightning** at isolated places over Jharkhand on 20th and 22nd and over Odisha on 22nd, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at many places over Odisha on 21st, over Sub-Himalayan West Bengal & Sikkim on 21st and 22nd and over Gangetic West Bengal on 22nd, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Odisha

- Complete sowing of vegetables cowpea, cluster bean, pumpkin, cucumber, watermelon, etc., rabi pulses, oilseed crops and sesame. Rabi sunflower is at maturity stage; harvest the heads with sickle when the calyx of the flowers turns yellow; dry them in sun. In case of brown spot incidence in the rice field, apply Mancozeb 500 g/acre or Propconazole @ 200 ml/acre using 200 litres of spray solution along with additional potassium @ 6 kg/acre (MOP @ 10 kg/acre).

Bihar

- Carry out harvesting of matured lentil crop when pods turn yellowish in colour; sundry and store in safe place. Continue land preparation and sowing of *moong* and *urd*. Complete sowing of summer vegetables such as okra, pumpkin, cucumber, sponge gourd, ridge gourd and bitter gourd. To protect mango from fruit flies, spray Malathion (2 EC) @ 2 litres / 1000 litres of water per ha.

Jharkhand

- Continue sowing of summer *moong* bean and okra. Undertake sowing of baby corn; soak seeds overnight for better germination; treat seeds with Carbendazim @ 2 g/kg of seeds and dry it in shade before sowing. Provide support of bamboo or other such material to cucurbitaceous vegetables that have achieved vigorous growth; this would prevent leaves and fruits from contact with soil.
- To control pumpkin beetle in cucurbitaceous vegetables, spray neem based insecticide (Neemerin/Neemetin/Neemesidin/Achook) @ 5 ml per liter of water during clear weather (at fruiting stage) and spray the insecticide Chlorpyrifos @ 2 ml. per liter of water at vegetative stage.

West Bengal

- In Sub-Himalayan West Bengal, complete sowing of maize crop. Irrigate cardamom and mustard as per the requirement. Continue harvesting of matured pods of garden pea. Carry out weeding in *Boro* rice field; keep 2-3 cm level of water in the field. Prepare land for ginger and turmeric cultivation. Spray Hexaconazole/Carbendazim 50 WP @ 1g/litre of water in case of minute brown color spots in *Boro* paddy.
- In Gangetic West Bengal, spray nutrient solution Groundnut rich @ 38g/litre of water on groundnut crop at 35-40 DAS during clear weather conditions for improving pod filling. Harvest the fully matured potato tubers at clear weather condition; store them in a cool and dry place for 10-12 days for curing; the soil should not be too wet at the time of harvesting. Keep irrigation channels clear in brinjal and tomato fields. Carry out weeding and puddling by hand in *Boro* rice field. For stem borer attack in *Boro* rice where 20 DAT already over, apply Profenophos @ 1.5ml/litre of water. Apply Streptocyclene @ 3g/10 litres of water for fruit borer in tomato.

Andaman & Nicobar Islands

- Provide light irrigation in green gram and black gram during evening hours as the weather is dry with low humidity. Spray neem seed kernel extract @ 5 % to control white fly for the management of yellow vein mosaic disease in bhendi and repeat after 15 to 20 days interval. Observe for slug caterpillar in coconut as the weather is conducive for such pest.

Animal Husbandry

- Provide mineral mixture to @ 50-60 g to adults and @ 30-40 g to young dairy animals. Provide cool drinking water with electrolyte to poultry birds to reduce mortality due to rising temperature.

Fishery

- In West Bengal, undertake pond preparation through cultivation of Dhaincha @ 1-1.5 kg/bigha for 30-45 days for seasonal and new pond.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

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

- **Advisories: As Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Vidarbha on 20th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Maharashtra

- In Konkan, maintain 10 cm water level in rice fields. Continue harvesting of matured cowpea, horsegram and *wal*. Harvest the matured pods during morning hours and dry them in sun.
- To decrease mango fruit drop, cover the fruits with paper bags and to minimize evapotranspiration, apply mulch in mango orchards. To control thrips in cashewnut, spray Monocrotophos 36% SL @ 15 ml or Lambda cyhalothrin 5% EC @ 6 ml per 10 liter of water.
- In Madhya Maharashtra, continue harvesting of matured gram and wheat in Pune, Solapur, Jalgaon, Kolhapur,

Sangli, Satara, Ahmednagar, Dhule, Nandurbar districts. Undertake intercultural operation like weeding in groundnut. Apply irrigation to vegetables and orchards. Undertake gap filling in suru sugarcane. To control leaf miner in watermelon and muskmelon, spray profenophos @ 20 ml per 10 litre of water. To control fruit borer in okra, spray 4% Neem extract. To control thrips in tomato, spray Imidacloprid @ 0.5 ml or Fipronil @ 1.5 ml in 1 liter of water.

- In Marathawada, continue harvesting of gram, wheat and turmeric, dry the crops and store in safer place. To control white fly in sugarcane, spray Chlorpyrifos 20 % @ 20 ml per 10 liters of water.
- In Vidarbha, continue harvesting of matured gram, wheat, turmeric and oranges as early as possible. Keep the harvested produce in safer place. Apply irrigation to sesame, green gram, onion, orchards and vegetables. Undertake earthing up in groundnut. Also apply irrigation to the crop. To control stem borer in rice, spray Acephate 75% WP @ 20 g or Quinalphos @ 32 ml in 10 liters of water.

Gujarat:

- In Middle Gujarat, continue harvesting and threshing of wheat crop. Carry out land preparation for sowing of summer pearl millet and cowpea. Undertake sowing of summer green gram.
- In North Gujarat, continue land preparation for green gram, groundnut, sesame, cowpea and pearl millet and undertake sowing of these crops. Undertake sowing of okra, cluster bean and cowpea for summer season vegetables. Carry out transplanting of brinjal seedlings during evening hours.
- In Saurashtra, do not irrigate summer sesame before the crop reaches 5 to 6 leaves stage after germination. For profuse flowering in groundnut crop, do not irrigate until crop starts wilting. Continue planting summer green gram/black gram and vegetables like lady finger, ridge gourd, bottle gourd, sponge gourd, bitter gourd, cluster bean and water melon. Continue transplanting of brinjal.
- In Kutch, continue sowing of summer groundnut, sesame, green gram and pearl millet. Carry out harvesting of castor spikes, mustard and cumin.
- In South Gujarat, irrigate vegetable crops at an interval of 3-4 days. For increased flowering in mango crop, apply foliar spray of 0.5 % urea solution. Spray 0.5% Zinc Sulphate or 0.2% Ferrous Sulphate in banana crop for better yield and quality.

Animal Husbandry:

- In Gujarat, properly clean udder of milch animals with Zinc Oxide or boric powder.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Significant rainfall occurred in Anuppur, Balaghat, Dindori, Shadol and Singrouli districts of Madhya Pradesh and in Bikrampur, Bemetara, Bilaspur, Durg, Janjgir, Jashpurnagar, Kabirdham, Korba, Koriya, Mungeli, Raigarh, Raipur, Surajpur and Surguja districts of Chhattisgarh. Weather remained dry/mainly dry over the rest of the region.

- **Advisories:** As **Thunderstorm accompanied with lightning, hail and squally wind** (speed reaching 45-55 kmph) very likely at isolated places over Chhattisgarh on 20th; **lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over East Madhya Pradesh on 20th; **with lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over East Madhya Pradesh and Chhattisgarh on 21st; **lightning** at isolated places over northwest Madhya Pradesh, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Madhya Pradesh

- In Malwa Plateau Zone, carry out intercultural operations in vegetable crops to remove weeds. Carry out earthing-up in potato field if crop has attained a height of 15-22 cm; the practice may be repeated after 15 days. Apply manure and fertilizer in mango and other orchards; apply irrigation in all orchards. Monitor for aphids in mustard crop; in early stage, cut and destroy the infested part of the plant.
- In the Keymore Plateau Zone, irrigate wheat crop at critical stages like flowering and grain development as per requirement. Prepare field and sow okra, barwati, beans, french beans, etc. after seed treatment with fungicide Bavistin or SAAF at the rate of 2 g per kg seeds.

- In Vindhya Plateau Zone, prepare field for the sowing of *mung*, *urd* and cucurbitaceous vegetables. Continue transplanting of brinjal. Carry out harvesting of matured wheat crop and other standing *rabi* crops.
- In Jhabua Hills Zone, undertake sowing of summer green gram after seed treatment with Thiram @ 2.0 gm + Carbendazim @ 1 gm/kg seed followed by treatment with Rhizobium and PSB culture @ 5-5 gm /kg. Harvest mature crop of *rabi* gram and store in a safe place after sundrying and threshing. Harvest matured chick pea and wheat crops. Dig mature tubers of ginger and turmeric.
- In Nimar Valley Zone, carry out transplanting of young seedlings of tomato, chilli in flat beds and of cucurbits crops in Hill channel method during this week. Undertake sowing of green gram and black gram after seed treatment with crop specific Rhizobium culture as well as phosphorus solubilising bacteria (PSB).
- In the Bundelkhand Zone, harvest of timely sown mature lentil, pea, mustard and linseed crops during fair weather. Monitor chilly, tomato and brinjal for leaf curl disease. Monitor mango orchard for the attack of sucking pest; if observed, spray Dichlorvas 76% @ 2ml/ litre of water during clear sky condition.

Chhattisgarh

- In Northern Hill Zone, do not irrigate crop considering the forecasted rainfall; make arrangements to drain out water from the field; rough out wheat plants to maintain healthy and pure seed production. Continue planting of sugarcane after treating sugarcane sets with fungicide like Agallol. Carry out intercultural operations and urea application in summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. For control of fruit flies in mango, hang pots filled with solution of Malathion insecticide mixed with jaggery at different places in the orchard.
- In Bastar Plateau Zone, provide support to vines. Apply fertilizer to gourd crops. In case of infestation of sucking insects in *moong* and other crops, spray Imidachloprid @ 0.3 ml per litre of water in the afternoon hours.

Animal Husbandry

- Vaccinate cattle against FMD and goat against PPR diseases.

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

Realised Rainfall : Significant rainfall occurred in all districts of Himachal Pradesh; in all districts of Jammu & Kashmir except Bandipore, Kargil, and Kupwara; in Leh district of Ladakh and in all districts of Uttarakhand except Udham Singh Nagar; in Chandigarh, Fatehgarh Saheb, Ferozpur, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Nawashahar, Patiala, Ropar, Mohali and TarnTaran districts of Punjab; in Ambala, Katihal, Karnal, Kurukshetra, Panchkula, Sonapat and Yamunanagar districts of Haryana and in New Delhi, North Delhi and North East Delhi districts; in Allahabad, Azamgarh, Bahraich, Balrampur, Barabanki, Basti, Chitrakoot, Gonda, Mirzapur, Sant Ravidas Nagar, Shravasti, Sitapur, Sonbhadra, Sultanpur and Varanasi districts of east UP and Bareilly, Bijnor, Moradabad, Muzaffarnagar, Saharanpur, Shahjahanpur and Shamli districts of west UP.

- **Advisories: As Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan on 23rd and over Himachal Pradesh on 23rd & 24th; **lightning** at isolated places over northeast Rajasthan on 20th, over Punjab and Haryana Chandigarh & Delhi on 20th, 21st, 23rd and 24th, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan and Himachal Pradesh on 21st, over north Rajasthan on 21st and 23rd, over Uttarakhand on 21st, 23rd & 24th and over West Uttar Pradesh on 21st & 24th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at most places over Jammu & Kashmir on 24th; at many places over Jammu Kashmir & Ladakh on 21st & 23rd, over Himachal Pradesh and Uttarakhand on 24th along with **Heavy rainfall/snowfall** likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan on 24th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Jammu & Kashmir

- In Valley Temperate Zone, carry out weeding followed by hoeing operation in wheat, oats, lentil, pea and chickpea. Drain out excess water from saffron fields. Continue sowing of solanaceous crop seeds under protected conditions.

- In Sub-Tropical Zone, undertake transplanting of tomato, brinjal and chilli. Monitor the wheat crop for yellow rust infestation; if observed, apply Propiconazole (Tilt) @ 25ml in 25 litres of water/kanal. Spray Imidacloprid @ 0.5ml/litre of water to control aphids in mustard. For control of collar rot and root rot in gram, rogue out the severely infected plants and drench affected areas with Thiram @ 0.2% or Carbendazim @ 0.1%.
- In Cold Arid Zone, undertake nursery sowing of vegetables like tomato, brinjal, chilli and capsicum. Undertake sowing of onion. Carry out pruning of fruit plants.
- In Intermediate Zone, when diameter of onion bulb has attained size of 5 to 8 cm, stop irrigation to avoid rotting of bulb. Undertake transplanting of summer vegetables like tomato, brinjal, chilli and capsicum. Weather is congenial for the infestation of yellow rust in wheat crop. If observed, apply Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/ litre of water) during clear weather conditions only. Monitor the *rabi* pulses for wilt and blight incidence. If symptoms observed, drench the affected spots with Carbendazim @ 1 gm / litre of water during clear weather conditions.

Himachal Pradesh

- In Mild Hills Sub Humid Zone, spray Bordeaux mixture (2 kg white wash + 2 kg Copper Carbonate in 200 litres of water) on pear trees immediately after pruning to prevent from fungal infection at the cut ends.
- In Sub Montane and Low Hills Sub Tropical Zone, continue sowing of green gram and black gram. Undertake sowing of okra, French bean, cluster bean and summer raddish. Carry out mulching in ginger and turmeric crops. Carry out weeding in potato. To control downy mildew in garlic, spray Diathane M 45 2.5 g or Bavistine 1 g per litre. Infection of blight may occur in potato and tomato; if symptoms appear, spray Carbandizam @ 1.0 g / litre of water or Dithane-M-45 @ 2.0 g / litre of water. To control attack of thrips in onion crop, spray Carbaryl @ 2 g per litre of water with sticky material (Tipol 1.0 g /litre).
- In High Hill Temperate Dry Zone, apply dung, phosphorus and potash fertilizers after the snow has melted.
- In Mid Hills Sub Humid Zone, complete sowing of bitter gourd, cucumber, pumpkin and other gourd crops. Undertake nursery sowing of tomato, capsicum and red chilli. Apply second dose of Calcium Ammonium Nitrate (CAN) @ (12 kg/bigha) in Spinach crop. In pea crops, apply second dose of Calcium Ammonium Nitrate (CAN) fertilizer @4 kg/bigha after the snow melts.

Punjab, Haryana, Delhi

- In Western Zone of Punjab, monitor the crop fields for infestation of disease/insect-pest and take appropriate measures. Weather is favourable for incidence of army worm in wheat crop; spray 400 ml of Ekalux 25 EC using 80-100 litres of water. Monitor wheat crop for appearance of yellow rust; if noticed, spray Caviet @ 200g or Opera or Tilt or Shine @ 200 ml in 200 litres of water per acre on a clear day. Monitor mustard crop as prevailing weather is favourable for spread and development of white rust; spray Ridomil Gold @ 250g in 100 litres of water per acre on a clear day.
- In Western Plain of Punjab, undertake sowing of summer *moong* and transplanting of chilli.
- In Undulating Plain Zone of Punjab, remove excess water from the fields. Continue sowing/transplanting of summer vegetables like okra, brinjal, cucurbits when weather become clear. Regularly monitor the wheat crop for yellow rust to detect the initial foci of infection; carry out spot application surrounding the infected area with 0.1% Caviet / Opera / Tilt / Shine / Bhumper / Markzole / Stilt / Compass.
- In Central Plain Zone of Punjab, weather is favourable for planting of all evergreen fruit plants. Regularly monitor wheat crop for yellow rust to detect the initial foci of infection; carry out spot application surrounding the infected area with 0.1% Caviet/Opera/Tilt /Shine /Bhumper/Markzole/Stilt/Compass.
- In 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 on a clear day.
- In Western Zone of Haryana, considering the possibility of variable weather and rainfall, undertake harvesting of matured mustard crop and keep at safe place. Keep weather in mind while application of irrigation, fertilizer doses and chemical spray in wheat, barley and chickpea crops.
- In Eastern Zone of Haryana, carry out proper management in all standing crops. Undertake sowing of green gram. Undertake harvesting of the matured mustard and sugarcane. Install pheromone trap @ 2-3 traps per acre in tomato field for monitoring the fruit borer. If pest population is high, spraying of Bt. 1.0 gram/litre of water is advised. After 15 days if pest population is more than ETL, farmers are advised to spray Spinosad 48 EC @ 1 ml. /4 litres of water. In present weather condition, monitor constantly timely sown seed onion crop against attack of thrips. Due to high humidity, there are chances of appearance of yellow rust disease in wheat; regularly monitor the crop; if

symptom observed spray 200 ml Propiconazole 25% EC in 200 litre water per acre.

- In Delhi, harvest matured mustard at the earliest. Do not irrigate and spray standing crops and vegetables. Present temperature is suitable for incidence of powdery mildew disease in cucurbitaceous crops and late pea. If symptoms are found, spray Carbendazim @ 1.0 gram per litre of water. In present weather condition, monitor timely sown seed onion crop against attack of thrips.

Uttar Pradesh:

- **In East Uttar Pradesh**, continue harvesting mature mustard crop and dry it during clear sky. Harvest matured Bengal gram and chick pea crops and keep in safe place. Continue digging of mature potato crop. Carry out plucking of fruit in ladyfinger at the interval of 3 days. To control loose smut disease in wheat crop (in which all the ears take the form of black powder and do not form grains), destroy ear-heads by burning them or burying them in a pit. Start sowing of green gram, maize, french bean, amaranthus, vegetable lobia, bottle gourd, cucumber, ridge gourd, sponge gourd, pumpkin and summer radish; ensure proper moisture before sowing for optimum germination. Install bird perches in tomato, pea, brinjal, gram crops to control fruit borer insects. Spray phosphamidon (250ml) / hectare on sunflower crop to protect from leafhopper damage.
- **In West Uttar Pradesh**, apply light irrigation in wheat crop. Continue sowing of French beans, cluster beans, maize and black gram. Continue harvesting of mustard crop in clear weather when 70% of siliqua turn golden yellow in colour. Continue digging of mature potato crop. Ensure prevention of rats in wheat crop; for prevention of rat, use one part of zinc phosphate, 48 parts granule or barium carbonate 100 grams, wheat flour 860 grams, sugar 15 grams and 25 grams mustard oil and this process should be done collectively 2-3 times in clear sky. There is a possibility of outbreaks of pod borer insects in the bengal gram, chick pea and field pea crop; for prevention, spray Quinalphos 25 EC@ 2 liters per hectare in 500 to 600 liters of water.

Uttarakhand

- In Bhabar and Tarai Zone, undertake sowing of green gram. Undertake transplanting of tomato. Continue harvesting of mustard crop. Undertake plucking of pea pods. Maintain proper drainage in potato field.
- In Sub Humid Sub Tropic Zone, drain out excess water from wheat field. Undertake planting of sugarcane. Carry out threshing in mustard crop. Dig out the potato crop under optimum moisture condition of field and dry the potato in shade before storage.
- In Hill Zone, undertake field preparation for sowing of potato. Continue transplanting of tomato. Prevailing weather condition is congenial for yellow rust disease over wheat; if seen on leaves, spray Propiconazole @ 1ml/litre of water on a non rainy day. If powdery mildew appears, spray Dinocap or Propiconazole @ 1ml/litre of water.

Rajasthan

- In Sub Humid Southern Plain and Aravali Hill Zone, start sowing cluster bean, cowpea and green gram.
- In Arid Western Plain Zone, isabgol, mustard, cumin and barley crops are at physiological maturity stage; carry out harvesting.
- In Flood Prone Eastern Plain Zone, weather is congenial for powdery mildew disease in mango that causes flower and fruit drop; to manage, spray Karathane @ 1ml/litre water.
- In Irrigated North Western Plain Zone, weather is congenial for yellow rust in wheat, spray Propiconazole (25 EC) @ 1 ml/litre of water; repeat the spray after 15 days if required.

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