



# *National Agromet Advisory Service Bulletin*

*Friday 28<sup>th</sup> August 2020*

*(For the period 28<sup>th</sup> August to 01<sup>st</sup> September 2020)*



*Issued by*

*India Meteorological Department*

**Weblink For**

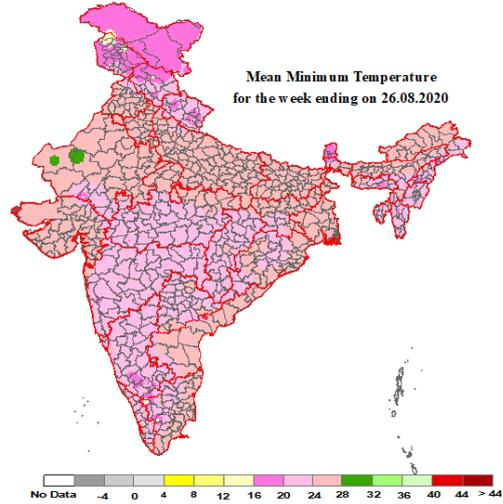
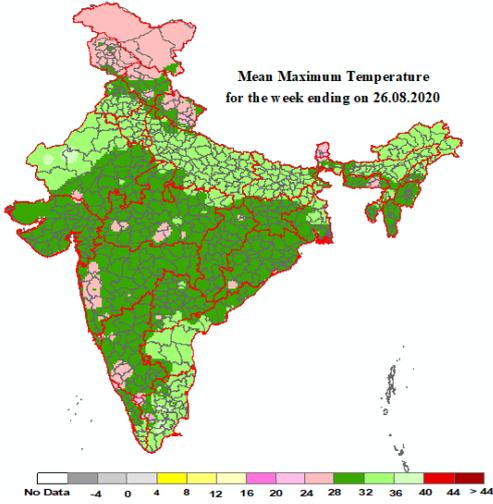
**District AAS Bulletin:** <http://www.imdagrimet.gov.in/node/3545>

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

## spatial distribution of weather parameters for the week 20.08.2020 to 26.08.2020

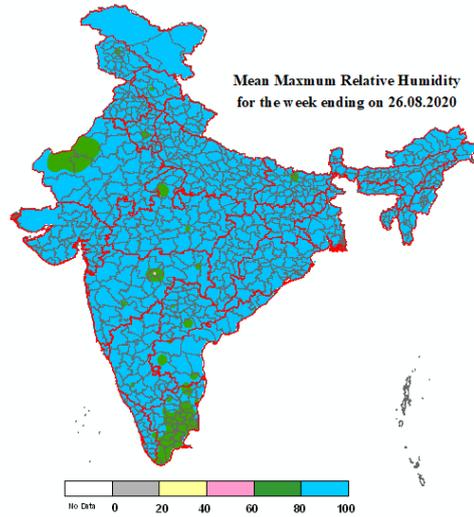
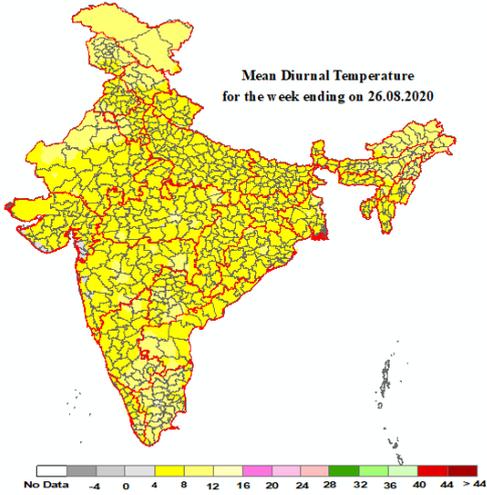
**Mean Maximum Temperature (°C) for the week 20.08.2020 to 26.08.2020**

**Mean Minimum Temperature (°C) for the week 20.08.2020 to 26.08.2020**



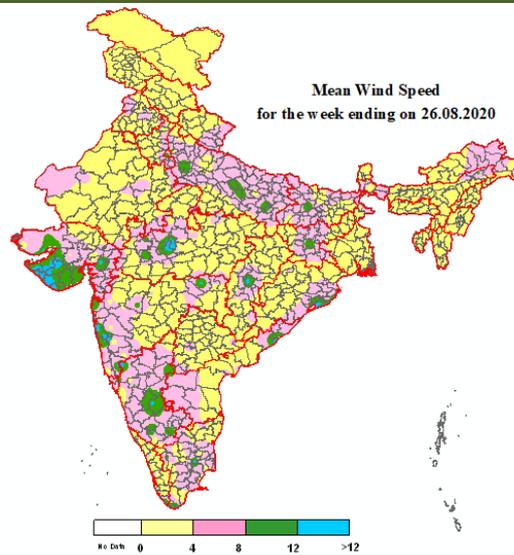
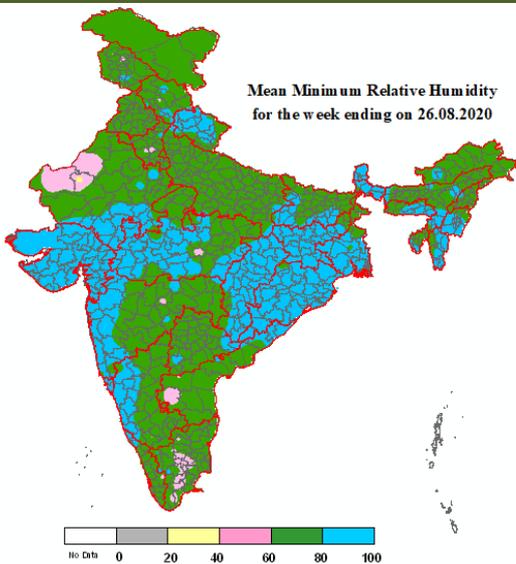
**Mean Diurnal Temperature Variation (°C) for the week 20.08.2020 to 26.08.2020**

**Mean Maximum Relative Humidity (%) for the week 20.08.2020 to 26.08.2020**

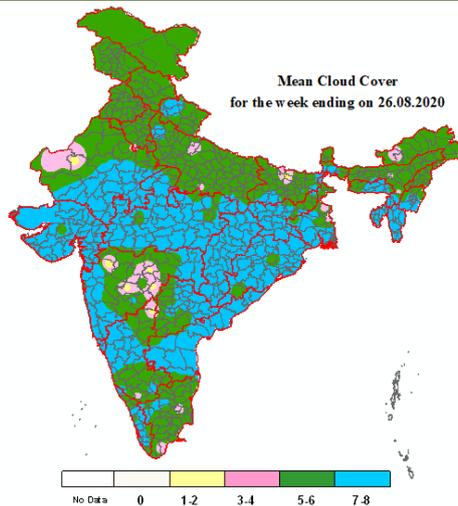


**Mean Minimum Relative Humidity (%) for the week 20.08.2020 to 26.08.2020**

**Mean Wind Speed (km/hr) for the week 20.08.2020 to 26.08.2020**

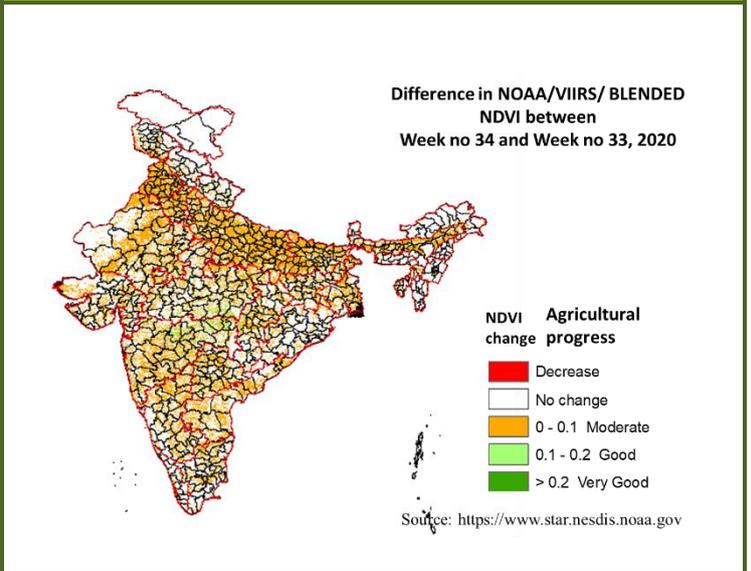
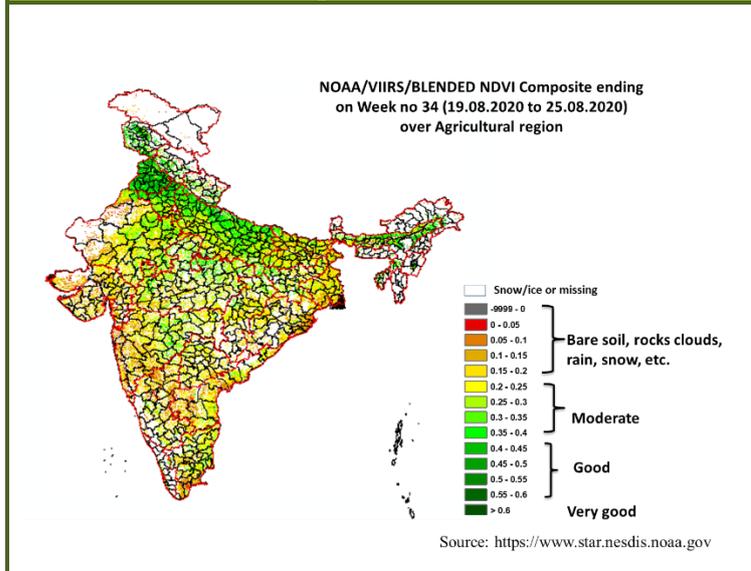


**Mean Cloud Cover (okta) for the week 20.08.2020 to 26.08.2020**



**NOAA/VIIRS/BLENDED NDVI composite for the week number 34 (19.08.2020 to 25.08.2020) over Agricultural regions of India**

**Difference in NOAA/VIIRS/BLENDED NDVI between week number 34 and week number 33, 2020**

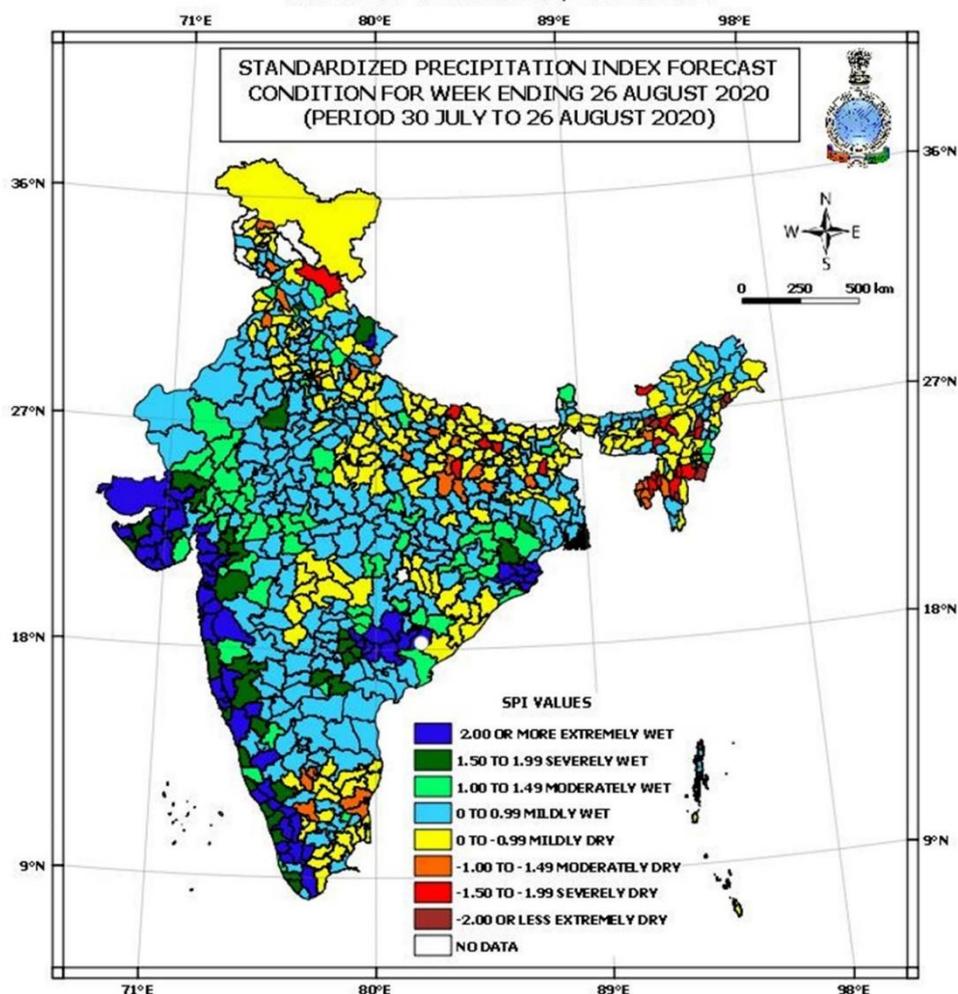


Agricultural vigour was good at many places of Jammu & Kashmir (UTs), Punjab; at a few pockets of Himachal Pradesh, Uttarakhand, Uttar Pradesh & North Eastern states and at isolated pockets of northern part of Haryana, Sikkim, Sub Himalayan West Bengal, East Madhya Pradesh, East Rajasthan, Marathwada and Kerala.

Good difference in agricultural vigour was observed over isolated pockets of few places of Marathwada, Vidarbha, Madhya Pradesh, Kerala, Andhra Pradesh, Chhattisgarh and at isolated pockets of Karnataka, Tamilnadu, Telangana, Madhya Maharashtra, Konkan, Gujarat, East Rajasthan, Jharkhand, Bihar, East Uttar Pradesh, Uttarakhand, Himachal Pradesh and Jammu & Kashmir (UTs).

**Standardised Precipitation Index  
for the period 30<sup>th</sup> July to 26<sup>th</sup> August 2020**

**MINISTRY OF EARTH SCIENCES  
INDIA METEOROLOGICAL DEPARTMENT  
HYDROMET SECTION, CRS PUNE**



- Extremely/Severely wet conditions exist in Banaskantha, Broach, Valsad, Mehsana, Surat, Anand, Narmada, Navsari, Patan, Tapi, Chhota Udepur, Amreli, Jamnagar, Junagarh, Kutch, Rajkot, Surendranagar, Porbandar, Botad, Devbhumi Dwarka, Gir Somnath, Morbi districts of Gujarat; Bilaspur district of Himachal Pradesh; Uttara Kannada, Udupi, Belgam, Dharwad, Haveri, Chikmagalur, Kodagu, Mysore districts of Karnataka; Cannur, Ernakulam, Kottayam, Kozhikode, Malappuram, Palakkad, Kollam, Thrissur, Trivandrum, Idukki, Kasargod, Wynad districts of Kerala; Mumbai City, Raigad, Ratnagiri, Thane, Sindhudurg, Mumbai Suburban, Palghar, Kolhapur, Nashik, Pune, Sangli, Nandurbar districts of Maharashtra; Bhadrak, Cuttack, Dhenkanal, Jagatsinghpur, Jajpur, Kendrapara, Keonjhar, Malkangiri districts of Orissa; Jaipur district of Rajasthan; Coimbatore, Nilgiri, Theni, Tirunelveli districts of Tamilnadu; Dadara & Ngr Hav, Daman, Diu districts of Union Territory; East Singhbhum, Ramgarh districts of Jharkhand; Chamoli, Bageshwar districts of Uttarakhand; Bijapur, Sukma districts of Chhatisgarh; North Goa, South Goa districts of Goa; South Delhi district of Delhi; Karimnagar, Mahabubnagar, Warangal, B.Kothagudem, Jangaon, J. Bhupalpally, Mahabubabad, Nagarkurnool, Rajanna Sircilla, Siddipet, Warangal\_Urban, Y.Bhuvanagiri, Mulugu districts of Telangana.
- Extremely/Severely dry conditions exist in Tawang, Tirap districts of Arunachal Pradesh; Darrang, Nagaon, Morigaon districts of Assam; Bhabua, Saran, Vaishali districts of Bihar; Lahaul & Spiti districts of Himachal Pradesh; Chandel, Churachandpur districts of Manipur; Jaintia Hills district of Meghalaya;

Aizwal, Serchhip districts of Mizoram; Kohima, Dimapur, Wokha districts of Nagaland; North Tripura, Dhalai districts of Tripura; Maharajganj district of Uttar Pradesh; Godda district of Jharkhand.

- Moderately wet to moderately dry conditions were experienced in remaining districts of the country.

## Weather Forecast for next 5 days valid upto 0830 hours of 02<sup>nd</sup> September, 2020

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- No significant change in temperatures very likely over most parts of the country during next 3-4 days.

### 5 Day Rainfall Forecast (MID-DAY) 28-August-2020

| Met-Sub-Division                | 28-Aug Today | 29Aug Sat | 30Aug Sun | 31Aug Mon | 01Sep Tue |
|---------------------------------|--------------|-----------|-----------|-----------|-----------|
| 1. Andaman & Nicobar Islands    | SCT          | SCT       | FWS       | FWS       | SCT       |
| 2. Arunachal Pradesh            | FWS          | FWS       | SCT       | SCT       | FWS       |
| 3. Assam & Meghalaya            | FWS          | FWS       | FWS       | FWS       | FWS       |
| 4. N. M. M. & T.                | SCT          | SCT       | FWS       | FWS       | FWS       |
| 5. S.H. West Bengal & Sikkim    | FWS          | FWS       | WS        | WS        | FWS       |
| 6. Gangetic West Bengal         | FWS          | SCT       | SCT       | FWS       | FWS       |
| 7. Odisha                       | SCT          | SCT       | ISOL      | SCT       | FWS       |
| 8. Jharkhand                    | FWS          | FWS       | SCT       | SCT       | FWS       |
| 9. Bihar                        | SCT          | ISOL      | ISOL      | SCT       | FWS       |
| 10. East Uttar Pradesh          | SCT          | SCT       | SCT       | FWS       | FWS       |
| 11. West Uttar Pradesh          | FWS          | FWS       | SCT       | SCT       | WS        |
| 12. Uttarakhand                 | FWS          | FWS       | SCT       | WS        | WS        |
| 13. Haryana, Chd & Delhi        | FWS          | SCT       | SCT       | FWS       | FWS       |
| 14. Punjab                      | FWS          | SCT       | SCT       | SCT       | FWS       |
| 15. Himachal Pradesh            | FWS          | SCT       | SCT       | SCT       | FWS       |
| 16. J & K and Ladakh            | SCT          | ISOL      | ISOL      | ISOL      | SCT       |
| 17. West Rajsthan               | SCT          | FWS       | FWS       | FWS       | SCT       |
| 18. East Rajsthan               | FWS          | WS        | WS        | FWS       | FWS       |
| 19. West Madhya Pradesh         | WS           | WS        | FWS       | SCT       | FWS       |
| 20. East Madhya Pradesh         | WS           | WS        | SCT       | SCT       | FWS       |
| 21. Gujarat Region              | WS           | WS        | WS        | FWS       | SCT       |
| 22. Saurashtra & Kutch          | WS           | WS        | WS        | SCT       | ISOL      |
| 23. Konkan & Goa                | WS           | WS        | WS        | WS        | FWS       |
| 24. Madhya Maharashtra          | FWS          | FWS       | SCT       | SCT       | SCT       |
| 25. Marathwada                  | FWS          | FWS       | SCT       | ISOL      | ISOL      |
| 26. Vidharbha                   | WS           | WS        | SCT       | SCT       | SCT       |
| 27. Chhattisgarh                | WS           | FWS       | SCT       | SCT       | FWS       |
| 28. Coastal A. P. & Yanam       | ISOL         | ISOL      | ISOL      | ISOL      | FWS       |
| 29. Telangana                   | FWS          | SCT       | ISOL      | ISOL      | SCT       |
| 30. Rayalaseema                 | ISOL         | ISOL      | ISOL      | ISOL      | ISOL      |
| 31. T.N., Puducherry & Karaikal | ISOL         | ISOL      | SCT       | SCT       | FWS       |
| 32. Coastal Karnataka           | SCT          | SCT       | SCT       | FWS       | FWS       |
| 33. North Interior Karnataka    | ISOL         | ISOL      | ISOL      | ISOL      | ISOL      |
| 34. South Interior Karnataka    | ISOL         | SCT       | WS        | FWS       | FWS       |
| 35. Kerala & Mahe               | ISOL         | ISOL      | SCT       | FWS       | WS        |
| 36. Lakshadweep                 | DRY          | SCT       | SCT       | FWS       | FWS       |

#### % 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 five days:

**28 August (Day 1):** ♦ **Heavy to very heavy rainfall** at a few places with extremely heavy falls at isolated places very likely over East Madhya Pradesh; **Heavy to very heavy rainfall** with extremely heavy falls at isolated places over West Madhya Pradesh and Vidarbha; **Heavy to very heavy rainfall** at isolated places over Chhattisgarh, Gujarat Region and Konkan & Goa and **heavy rainfall** at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Rajasthan, Arunachal Pradesh, Assam & Meghalaya, Saurashtra & Kutch, Madhya Maharashtra and Telangana.

♦ **Moderate to severe thunderstorm accompanied with lightning** at isolated places very likely over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad (UTs), Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Rajasthan, Madhya Pradesh, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Telangana and Tamilnadu, Puducherry & Karaikal.

♦ **Strong Wind** (speed reaching 45-55 kmph) very likely over Southwest Arabian Sea. Fishermen are advised not to venture into these areas.

**29 August (Day 2):** ♦ **Heavy to very heavy rainfall** at isolated places very likely over East Rajasthan, West Madhya Pradesh, Gujarat State and Konkan & Goa and **heavy rainfall** at isolated places over Uttarakhand, West Uttar Pradesh, West Rajasthan, East Madhya Pradesh, Vidarbha, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya and ghat areas of Madhya Maharashtra.

♦ **Thunderstorm accompanied with lightning** very likely at isolated places over Rajasthan, West Madhya Pradesh, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Telangana and Tamilnadu, Puducherry & Karaikal.

♦ **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest Arabian Sea. **Squally weather** with wind (speed reaching 40-50 kmph) over Gujarat coast. Fishermen are advised not to venture into these areas.

**30 August (Day 3):** ♦ **Heavy to very heavy rainfall** at isolated places very likely over West Rajasthan and **heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat State, Konkan & Goa and Tamilnadu, Puducherry & Karaikal.

♦ **Thunderstorm accompanied with lightning** very likely at isolated places over Rajasthan, Jharkhand, Assam & Meghalaya and Tamilnadu, Puducherry & Karaikal.

♦ **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest Arabian Sea. Fishermen are advised not to venture into these areas.

**31 August (Day 4):** ♦ **Heavy to very heavy rainfall** at isolated places likely over Tamilnadu, Puducherry & Karaikal and **heavy rainfall** at isolated places over Uttarakhand, Haryana, Chandigarh & Delhi, East Uttar Pradesh, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, South Interior Karnataka and Kerala & Mahe.

♦ **Thunderstorm accompanied with lightning** likely at isolated places over East Uttar Pradesh, Rajasthan, Jharkhand, South Interior Karnataka, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.

♦ **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest Arabian Sea. Fishermen are advised not to venture into these areas.

**01 September (Day 5):** ♦ **Heavy rainfall** at isolated places likely over Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Rajasthan, Uttar Pradesh, West Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, South Interior Karnataka, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Thunderstorm accompanied with lightning** likely at isolated places over Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, South Interior Karnataka, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest Arabian Sea. Fishermen are advised not to

venture into these areas

### **Weather Outlook for subsequent 2 days from 02<sup>nd</sup> to 08<sup>th</sup> September, 2020**

Scattered to fairly widespread rainfall over Northeast, East & south Peninsular India; Fairly widespread to widespread rainfall over plains of Northwest India and adjoining Central India. Isolated to scattered rainfall over West India, north Peninsular India and Jammu, Kashmir, Ladakh, Gilgit, Baltistan, Muzaffarabad (UTs).

#### **Advisories for Flood Conditions**

- Floods are reported in some areas of Sonitpur and Jorhat districts in **Assam**, in Jashpur, Balrampur, Bijapur, Sukma & Narayanpur districts in **Chhattisgarh**, in Patan, Mahesana, Gandhinagar, Ahmedabad districts in **Gujarat**, Barwani, Jhabua, Ujjain, Neemuch, Ashoknagar, Satna, Bhopal, Sehore, Raisen, Rajgarh, Vidisha, Harda, Betul, Narsingpur and Mandla districts in **Madhya Pradesh**, Bhagalpur, Khagaria, Siwan, Patna, Darbhanga and Gopalganj districts in **Bihar**, Birbhumi, Howrah, Purba, Badhaman, South 24 Parganas, North 24 Parganas in **West Bengal**, Mayurbhanj and Malkangiri districts in **Odisha** during last week, drain out excess water from the fields of soybean, groundnut, pulses, maize and vegetables. Maintain optimum water level in rice fields. In Gujarat, drain out excess water from groundnut, green gram, maize, pearl millet, clusterbean, cowpea, sesame crop fields Patan, Mahesana, Gandhinagar, Ahmedabad districts. In Mayurbhanj and Malkangiri districts of Odisha, make proper arrangement for drain out excess water from the crop fields. In up and medium land, where there is no scope for revival of rice crop, go for sowing of pre-rabi crops like black gram, green gram, horse gram, sesame etc after cessation of heavy rainfall. If mortality in rice crop is more than 50%, go for re-transplanting with the available aged seedlings with closer spacing @ 4-5 seedlings per hill; in case of non-availability of seedlings, broadcasting of pre-germinated paddy with short and medium durations are recommended after cessation of heavy rainfall.

## Salient advisories

- **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest Arabian Sea, **Squally weather** with wind (speed reaching 40-50 kmph) over Gujarat coast on 29<sup>th</sup>, **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest Arabian Sea from 30<sup>th</sup> August to 1<sup>st</sup> September, Fishermen are advised not to venture into these areas.
- **Thunderstorm accompanied with lightning** very likely at isolated places over Rajasthan, West Madhya Pradesh, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Telangana and Tamilnadu, Puducherry & Karaikal on 29<sup>th</sup> August, **Thunderstorm accompanied with lightning** very likely at isolated places over Rajasthan, Jharkhand, Assam & Meghalaya and Tamilnadu, Puducherry & Karaikal on 30<sup>th</sup> August, **Thunderstorm accompanied with lightning** likely at isolated places over East Uttar Pradesh, Rajasthan, Jharkhand, South Interior Karnataka, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal on 31<sup>st</sup> August, **Thunderstorm accompanied with lightning** likely at isolated places over Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, South Interior Karnataka, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe on 1<sup>st</sup> September, 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over Assam & Meghalaya, West Bengal & Sikkim, Uttarakhand, East Rajasthan, West Madhya Pradesh, Konkan & Goa during the period, over Chhattisgarh on 28<sup>th</sup>, 29<sup>th</sup> August & 1<sup>st</sup> Sept., over Gujarat from 28<sup>th</sup> to 30<sup>th</sup> August, over Haryana, Chandigarh & Delhi on 31<sup>st</sup> August & 1<sup>st</sup> sept, over west Rajasthan from 29<sup>th</sup> to 31<sup>st</sup>, over Jharkhand, Madhya Maharashtra, Marathwada and Vidarbha on 28<sup>th</sup> & 29<sup>th</sup> August, over Coastal and South Interior Karnataka Karnataka and Kerala on 31<sup>st</sup> August & 1<sup>st</sup> sept., over Nagaland, Manipur, Mizoram & Tripura from 30<sup>th</sup> Aug. to 1<sup>st</sup> Sept. along with **Heavy to very heavy rainfall** at isolated places very likely over East Rajasthan, West Madhya Pradesh, Gujarat State and Konkan & Goa and **heavy rainfall** at isolated places over Uttarakhand, West Uttar Pradesh, West Rajasthan, East Madhya Pradesh, Vidarbha, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya and ghat areas of Madhya Maharashtra on 29<sup>th</sup> August, **Heavy to very heavy rainfall** at isolated places very likely over West Rajasthan and **heavy rainfall** at isolated places over Sub- Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat State, Konkan & Goa and Tamilnadu, Puducherry & Karaikal on 30<sup>th</sup> August, **Heavy to very heavy rainfall** at isolated places likely over Tamilnadu, Puducherry & Karaikal and **heavy rainfall** at isolated places over Uttarakhand, Haryana, Chandigarh & Delhi, East Uttar Pradesh, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, South Interior Karnataka and Kerala & Mahe on 31<sup>st</sup> August, **Heavy rainfall** at isolated places likely over Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Rajasthan, Uttar Pradesh, West Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, South Interior Karnataka, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe on 1<sup>st</sup> September, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

## *Detailed Agromet Advisories*

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

**Realised Rainfall:** Significant rainfall occurred in all the districts of Andhra Pradesh except Prakasam, Anantpur & Kurnool districts of Andhra Pradesh and Yanam; in all the districts of Telangana; in Kannur, Ernakulam, Kasargode, Kozhikode districts of Kerala ; Mahe districts; in Dharmapuri, Dindigul, Karur, Madhurai, Namakkal, Nilgiris, Perambalur, Salem, Trichy, Vellore, Virudhnagar districts of Tamilnadu; in all districts of Coastal Karnataka, in Belagavi, Bidar, Kalaburagi and Raichur districts of North Interior Karnataka, in Chikkamagaluru, Kodagu and Shivamogga districts of South Interior Karnataka.

- **Advisories: Thunderstorm accompanied with lightning** very likely at isolated places over Telangana and Tamilnadu, Puducherry & Karaikal on 29<sup>th</sup> August, over Tamilnadu, Puducherry & Karaikal on 30<sup>th</sup> August, over South Interior Karnataka, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal on 31<sup>st</sup> August & 1<sup>st</sup> September, 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. Keep harvested produce at safer places. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over Coastal and South Interior Karnataka Karnataka and Kerala on 31<sup>st</sup> August & 1<sup>st</sup> sept., along with **heavy rainfall** at isolated places over Tamilnadu, Puducherry & Karaikal on 30<sup>th</sup>, **Heavy to very heavy rainfall** at isolated places likely over Tamilnadu, Puducherry & Karaikal and **heavy rainfall** at isolated places over South Interior Karnataka and Kerala & Mahe on 31<sup>st</sup> August, 1<sup>st</sup> September, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

#### **Karnataka**

- In Coastal Kannada district, drain out excess water from maize, cotton, ginger, turmeric crop fields and papaya orchards. For management in cashew leaf beetle & weevil pest, spray Monocrotophos @ 1.5 ml /litre of water.
- In North Interior Karnataka, complete harvesting of matured green gram, black gram and sunflower under clear weather. Undertake weeding in rice, soybean and groundnut crops. In case of soil moisture stress during critical stages of the crop growth, provide protective irrigation to the crop. Continue transplanting of tomato seedlings with one row of the marigold after every 16 rows of tomato. Sowing of Bt cotton with non Bt cotton along the borders is advised. Present weather conditions are favorable for the incidence of onion purple leaf blotch and *Fusarium* basal rot in onion crop; to overcome, drain out the excess water from field; apply *Trichoderma* enriched FYM in furrows @ 1kg/100 kg FYM in clear weather. In Bagalkot district, drizzling rain and high humidity may cause infestation of Downey mildew in grapes; spray the crop with 1 % Bordeaux mixture.
- In South Interior Karnataka, for transplanting of rice, use 21 to 28 days old rice seedlings, if transplanting was postponed due to heavy rains. Continue transplanting of ginger rhizomes. Open drainage channels to facilitate rapid drainage of excess water in areas which received heavy rainfall. To trigger the root activity in coffee plantation, apply 1 bag Urea/acre at sufficient soil moisture level. For management of Koleroga

disease in coffee plantation, remove infected branches, leaves and fallen berries from the ground and dispose it off in order to prevent further spread of the disease. Spray Carbendazim @ 120 gm/200 litres of water along with wetting agent.

### **Kerala**

- In High Altitude Zone, farmers are advised to provide propping to standing banana crop and to take necessary phyto-sanitary measures to manage capsule rot (Azhukal disease) in cardamom and spray 1% Bordeaux mixture (500-1000 ml/plant). Keep vigilance against Red palm weevil, rhinoceros beetle in coconut and arecanut. Sigatoka leaf spot disease may become severe in banana due to increase in relative humidity, if found severe spray 1% Bordeaux mixture or Bavistin (1g/lit of water) after cutting the severely affected leaves and burn it.
- In Problem Areas Zone, drain out the excess water stagnated in the rice fields and maintain optimum water level. There is a chance for the attack of black bug. Yellowing and drying of the plants are the symptoms of the pest. Keep watch on the crop and consult the Agricultural officer/ R.R.S. Moncompu for recommendation. Bacterial leaf blight is noticed in rice field in many of the padasekharams in Kuttanadu due to flood occurrence. To prevent the spread of the disease from one field to another field, place bleaching powder at the entrance of irrigation channels @ 2 kg/acre as small packets. Spray supernatant solution of fresh cowdung (20/lit of water) and mix with 20 g of biocontrol agent – *Pseudomonas fluorescens* when the initial symptoms noticed.
- In Central Zone, proper drainage facilities should be ensured to protect the agricultural crops from pest & diseases. There is a chance of appearance of rice bug in paddy, spray 2 ml malathion per one litre of water. Pesticides application should be done either before 9 am or after 3 pm, the pesticide application will adversely affect the pollination. There is a chance of Anthracnose disease in cowpea, apply 1% Bordeaux mixture or spray copper oxychloride 3 gram per one litre of water.
- In Southern Zone, mites and thrips may lead to stunted growth of leaves in vegetables and chilli. This can be controlled by spraying verticillium 20 gram/ litre water or KVK Raksha (Neem based pesticide) @6 gram/litre water. During severe infections, spray Spiromesifen or Oberon@ 1 ml/ L water or wettable sulphur @ 2 gram/ L water to the crop.

### **Andhra Pradesh**

- In Srikakulam district due to prevailing dry spell direct seeded rice and maize are experiencing moisture stress spray with 13-0-45(multi-k)@10 gm/lit or 2% urea.
- In Ananthpur district provide irrigation at flowering, pegging and pod development stages in groundnut.
- In East Godavari district provide drainage channels in both nursery and main field for in rice. Immediately after draining spray Carbandizam @1 g/lit and for 1 cent of nursery apply 1/2 kg Urea & 1/4 kh MOP. If crop is at tillering stage, after draining the excess water apply 20 kg urea & 15 kg MOP per acre as a booster dose. If water cannot be drained, spray 2% Urea or Potassium Nitrate to enhance the growth of rice.
- In Guntur district, due to continuous rainfall occurring sowing of direct sowing paddy is not possible then broadcast the seed @ 10 kg per acre after through puddling.
- In Krishna district drain out excess water from the red gram if any, because excess moisture in the soil causes wilt. To control wilt, drench the plants with Copper oxy chloride@ 3 gm per liter of the water. After draining out the water from the field, spray 2 % potassium nitrate (KNO<sub>3</sub>) or urea solution @ 2 % under sunny weather conditions.
- In Prakasam district complete sowing of red gram if sowing is late increase the plant density.
- In Chittoor district areas where high rainfall was received, Groundnut is prone to the collar rot disease. To control spray Hexaconazole @400 ml/ 200L of water.

### **Telangana**

- Drain out excess water in maize, soyabean, cotton, turmeric and vegetables.
- In Nalgonda and Adilabad district drain out the excess water due to continuous rains in cotton and apply

Urea 25 kg and Potash 20 kg per acre as booster dose for growth and development. To control Root rot, apply Copper oxy Chloride @ 3 g. or Carbadazim @ 1 g mixed per liter of water around the base of the plant.

- Incidence of Fall army worm (*Spodoptera Frugiperda*) is noticed in Maize. To control use Poison baiting with Thiodicarb (mix 10kg rice bran + 2 kg jaggery + 2-3 liters of water; keep the mixture for 24 hours to ferment and add 100 g Thiodicarb just half an hour before the application in the field). The bait application should be done into the whorl of the plant or Spray Emamectin benzoate @ 0.4 g or Chlorantriliprole @ 0.4 ml per liter of water into the whorl of the plant. Top dressing of Urea @ 30 kg per acre and MOP @ 15 kg per acre may be taken up after cessation of rains.

#### **Tamil Nadu**

- In Cauvery Delta Zone, prevailing weather condition is conducive for Rice Tungro virus disease in rice which spread by green leaf hopper, maintain hygienic bunds and main field area. Also provide light traps to attract and control the leaf hopper vectors. Prevailing weather condition is conducive for leaf mite incidence in rice, spray Dicofol @ 500 ml/ acre or wettable sulphur @ 600 g/ acre.
- In Western Zone, prevailing weather is conducive for leaf blight in maize. Spray Mancozeb @ 2gm/lit or Kresoxim methyl @ 1ml/lit of water. In young maize plants, if Fall Army Worm is observed spray Emamectin benzoate @ 0.4g/lit of water. Weather is conducive for bacterial leaf spot disease in rice, spray Copper Hydroxide @ 3g/lit of water.
- In High Altitude Hilly Zone, due to prevailing humid weather condition, wilt disease may occur in vegetable crops. To control wilt disease drenching of *Pseudomonas fluorescens* @ 10 ml/litre of water may be done.
- In South Zone, prevailed weather condition induced Shoot and fruit borer incidence in brinjal, spray Azadirachtin 0.03 % WSP (300 ppm) 5.0 g/lit. (or) Emamectin benzoate 5 % SG @ 4 g/10 litre. Weather prevailed is conducive for leaf miner incidence in groundnut, spray Dimethiate 30 EC 660 ml/ha.

#### **Animal Husbandry:**

- In Karnataka, vaccinate (ET vaccine) the sheep and goat against Enterotoxemia. Diseases like HS and BQ are seen in cattle and buffaloes; vaccinate against these diseases.

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

**Realised Rainfall:** Rainfall occurred in East Siang, Kurung Kumey, Lohit and West Kameng districts of Arunachal Pradesh; all districts except Barpeta, Darrang, Kamrup(Rural), Kamrup(Metro), Morigaon, N.C.Hills and Nowgaon districts of Assam; all districts of Meghalaya; all districts except Chhimituipui, Lunglei and Serchhip districts of Mizoram; all districts except Chandel, and Senapati, districts of Manipur; all districts except Dimapur, Mon, Paren, Tuensang, and Wokha district of Nagaland and all districts except Dhalai district of Tripura.

#### **Advisories:**

- **Thunderstorm accompanied with lightning** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 29<sup>th</sup> August, over Assam & Meghalaya on 30<sup>th</sup> August, 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. Keep harvested produce at safer places. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over Assam & Meghalaya during the period, over Nagaland, Manipur, Mizoram & Tripura from 30<sup>th</sup> Aug. to 1<sup>st</sup> Sept. along with **heavy rainfall** at isolated

places over Arunachal Pradesh on 29<sup>th</sup> August, over Assam & Meghalaya on 29<sup>th</sup> to 31<sup>st</sup> August, **heavy rainfall** at isolated places over Nagaland, Manipur, Mizoram & Tripura on 30<sup>th</sup> August, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

#### **Arunachal Pradesh**

- In Arunachal Pradesh, spray Rodamil M2-72 @ 2.5g/litre of water against Rhizome rot disease in ginger at 15 days interval (2 times). Current weather is favorable for Die-back and fruit rot infestation in chilli. Spray Benomyl 50% WP @ 80 g in 240 l of water/acre or Captan 75% WP @ 800 g in 400 l of water/acre or Copper Oxy Chloride 50% WP @ 1000 g in 300-400 l of water/acre in chilli at flowering / fruiting stage. Continue nursery raising for cole crops. Spray aromatic (like lemongrass) soup solution to expel the rice bug during the flowering stage of the rice crop.

#### **Assam & Meghalaya**

- In Hill Zone of Assam, continue sowing of sesame and nursery sowing of cauliflower after current spells of heavy rain. Spray Fipronil 5 SC @ 50 ml per bigha of land or Thiamethoxam 25 WG @ 13 gm per bigha of land against stem borer and case worm attack in Sali rice at the time of tillering stage during the rain free weather.
- In Lower Brahmaputra Valley Zone, spray Fipronil 5 SC @ 50 ml per bigha of land or Thiamethoxam 25 WG @ 13 gm per bigha of land against stem borer and case worm attack in Sali rice at the time of tillering stage during the rain free weather. Continue sowing of black gram/ green gram and nursery sowing of early cauliflower.
- In Upper Brahmaputra Valley Zone, farmers who have not yet started cultivation of *Sali* rice, can go for directly sowing of the sprouted seeds of very short duration or extra-early (less than 100 days) photo-insensitive varieties like Luit, Kopilee and Dishang in the main field. Continue sowing of green gram and early cauliflower. Spray Chlorpyrifos 20 EC or Quinalphos 25 EC @ 1 ml/litre of water against army worm in Sali rice during tillering stage during evening hours under fair weather condition.
- In Barak Valley Zone, to control rice pests, erect 50 'T'-perches per ha 2 ft (60 cm) above rice crop canopy as roosting site for insectivorous birds, which are to be removed before flowering in order to prevent activity of birds. To control papaya mealy bug in papaya carry out dusting of Chlorpyrifos 1.5% dust or Malathion 5% dust around the healthy plants to check the movement of crawlers or spot. Spray Neem oil (1 to 2%), NSKE (5%), Profenophos 50 EC (2 ml/litre), Chlorpyrifos 20 EC (2 ml/litre), Dimethoate 30 EC (2ml/litre), Thiomethoxam 25WG (0.6 g/litre) and Imidacloprid 17.8 SL (0.6 g/litre); destruction of ant colonies with drenching of Chlorpyrifos 20 EC @ 2 ml/litre. Spray Malathion 50 EC @ 1.0-1.5litre or Fenitrothion @ 1.0-1.L and mixed in 500-700 litre of water/ha against Pod borer, Apion borer, Aphids, Jassids, Flea beetle and Leaf roller in pigeon pea during flowering stage.
- In Central Brahmaputra Valley Zone, Continue harvesting of Capsularis and Olitorius jute. Continue sowing of *kharif* pulses (green gram & black gram). In early sown Sali rice at tillering stage, there is chance of attack of stem borer infestation. Spray Chloropyrifos (20%) @ 2ml/litre to control the attack.
- In North Bank Plain Zone, continue sowing of black gram/ green gram and cole crops. Continue harvesting of jute. Spray Chloropyrifos 20EC or Quinalphos 25EC @ 2.0-2.5 ml per litre of water against rice hispa along with other insects like leaf folder, case worm etc. in *Sali* rice field at tillering stage. Spray Malathion 50 EC@ 1ml per litre against attack of fruit fly, red pumpkin beetle and Epilechna beetle in summer gourds to control these insects when the weather is sunny.
- In Meghalaya, complete transplanting of *Sali* rice. Ensure proper drainage system in the ginger/turmeric and vegetable crop field. Continue sowing of cole crops, cow pea and French bean on clear weather.

#### **Manipur, Mizoram, Tripura and Nagaland**

- In Manipur, spray Dithane M-45 @ 2ml/ litre water to control Tikka disease in groundnut. Spray Hexaconazole 5% EC @2ml/ litre of water against rust in soybean. In rice, during panicle initiation stage, spray Hexaconazole @2ml/litre water against sheath blight or sheath rot, spray Copper Hydroxide 53.8%DF@3g/litre water against Bacterial Leaf Blight and to avoid any sucking insect, spray Imidachlopid @ 8ml/ 15 litre of water after rains. Monitor water level in the *Kharif* rice field at tillering to panicle initiation stage. Spray Redomil MZ 72 WP @ 2g/litre water alternately with Carbendazim @ 2g/lit water at 14 days interval against Soft rot in ginger and Rhizome rot in turmeric. Continue nursery raising of cole crops (cauliflower/ cabbage/ broccoli).
- In Mizoram, due to high humidity (90-95%) and moderate rainfall, possibility of rust disease on soybean is higher. So farmers are advised to spray Hexaconazole 5% @ 2.0 ml/litre of water to control the disease. Spray Chlorantraniliprole @ 0.3 ml/litre of water or Fipronil 5% SC @ 2.0 ml/ litre of water against rice leaf folder/rice stem borer infestation in normal rice at vegetative stage. Apply Cypermethrin 2.0 ml/litre of water against gundhi bug infestation in Jhum rice during tillering to panicle emergence stage during sunny days.
- In Tripura, undertake land preparation for sowing of black & green gram, sesamum. Undertake harvesting of Aus rice if 80 to 90 percent crop in the field is matured. Prevailing humid weather is conducive for the attack of Leaf Folder in *Aman* rice during active tillering stage . The attack may be managed manually by flooding the field followed by dragging a rope across the field and draining out the water. The attack may also be managed by application of Cypermethrin+ Chloropyrophos 1ml per litre of water.
- In Nagaland continue harvesting of Naga King chilli, tomato, cow pea and maize. Continue sowing of green gram. There is chance of attack of brown spot, caseworm, leaf folder, rice hispa disease in TRC/WRC rice at tillering stage. Spray 1g of Ediphenphos in one litre of water against brown spot infestation if infestation is high and spray Chloropyriphos 20 EC or Quinalphos 25EC @ 2.0-2.5 ml per litre of water against caseworm, leaf folder, rice hispa disease. In vegetables (brinjal, cabbage, tomato etc), for monitoring of borer insect, farmers are advised to use pheromone trap @ 3-4/acre. Spray of Neem Seed Kernel Extract @ 5% for management of early stage of hairy caterpillar and tobacco caterpillar during vegetative stage. Spray neem oil 0.5% to control shoot borer in ginger.

#### **Animal Husbandry**

- In Northeastern states, carry out immunizations against BQ, HS, Foot and mouth disease as well as anthrax diseases in livestock like cows, buffaloes, goats and pigs. Also carry out vaccination (RDF1) against Ranikhet disease in one week old chicks and against Gamboro disease in two weeks old chicks. During the monsoon season, animals should not be fed with water submerged rotten grasses.

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

**Realised Rainfall:** Significant rainfall occurred in North & Middle Andaman districts of Andaman & Nicobar Islands, in all districts of Bihar except Bhabua, Bhojpur, Gopalganj, Khagadia, Kishanganj, Muzaffarpur, Saran, Sheikhpura, Siwan, Vaishali and West Champaran; in all district of Jharkhand; in all districts of Odisha; in all districts of Sub-Himalayan West Bengal & Sikkim except South Dinajpur and in all districts of Gangetic West Bengal. Weather remained dry/mostly dry over the rest of the region.

#### **Advisories:**

- **Thunderstorm accompanied with lightning** very likely at isolated places over Jharkhand on 29<sup>th</sup> Aug. to 1<sup>st</sup> September, over Bihar and Gangetic West Bengal on 1<sup>st</sup> September, 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. Keep harvested produce at safer places. Farmers are advised to avoid

standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.

- As **rain/thundershowers** likely at **most/many places** over West Bengal & Sikkim during the period, over Jharkhand on 28<sup>th</sup> & 29<sup>th</sup> August along with **heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim on 29<sup>th</sup>, 30<sup>th</sup>, 31<sup>st</sup> August, **Heavy rainfall** at isolated places likely over Bihar, Jharkhand, Gangetic West Bengal, Odisha on 1<sup>st</sup> September, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

### **Odisha**

- In North Central Plateau Zone & North Eastern Coastal Plain Zone, drain out excess water from the field; wash out mud from the paddy and non-paddy leaves by spraying water just after receding of flood water; if damage is more than 50%, re-transplant rice seedlings of medium duration variety. Due to rain and high humid condition during last week, wilting is likely to appear in young vegetable plants; drain out water from the field; spray Streptocycline@20g with Carboxin+Thiram @400g or Metalaxyl 8%+Mancozeb 64% WP @400g per acre in 200 litres of water.
- In South Eastern Ghat Zone, flood like situation occurred in some parts of Malkangiri district and it might have caused damage to crops; make proper arrangement for drain out excess water from the crop field; in up and medium land, where there is no scope for revival of rice, go for pre-rabi crops like black gram, green gram, horse gram, sesame etc after cessation of heavy rainfall. If mortality in rice crop is more than 50%, go far re-transplanting with the available aged seedlings with closer spacing @ 4-5 seedlings per hill; in case of non-availability of seedlings, broadcasting of pre-germinated paddy with short and medium durations are recommended after cessation of heavy rainfall.
- In Western Undulating Zone, the transplanted paddy is at two to six-week stage in main field; postpone fertilizer application and spraying pesticides if rain persists. The direct seeded rice is at eight to nine-week stage; BLB disease may infest the crop in this weather condition; to control, spray Streptocyclin 20g/acre @ 0.1g/litre of water with Copper oxychloride 500g/acre @2.5g/litre of water. Drain out water from cotton, maize, arhar, green gram, groundnut and sugarcane crop fields.

### **Bihar**

- In North East Alluvial Zone, monitor rice crop regularly for leaf folder or stem borer at vegetative stage; install pest specific pheromone traps @ 3- 4/acre in the paddy fields for monitoring of stem borer. To control the collar rot disease in tomato, avoid water stagnation by ensuring good drainage; drench with either Trichoderma @10g or Carbendazim @ 1g/litre of water.
- In South Bihar Alluvial Zone, carry out transplanting of brinjal, tomato, chilli, cauliflower and cabbage seedlings; apply 10-15 tons of cow dung and also apply 60 kg Nitrogen, 50 kg Phosphorus and 40 kg Potassium per hectare before final preparation of field. To control cut worm attack in maize field, apply insecticides Chlorpyrifos @ 2ml per litre of water or Furadon 4-5 granules in per whorl of the maize plant. If leaf folder or stem borer is observed in paddy, broadcast Cartap 4% granules @ 25 kg/ha in clear sky for effective control.

### **Jharkhand**

- In South Eastern Plateau Zone, in fallow sloped land, undertake sowing of pigeon pea, kulthi, lobia, safflower and rice bean in the month of September. Drain out excess water from pigeon pea, ginger, turmeric and yam fields. Start preparation of land for the cultivation of short duration early potato. Carry out transplanting of tomato, chilli and brinjal seedlings.
- In Central & North Eastern Plateau Zone, undertake sowing of improved varieties of kulthi and planting of sweet potato. Undertake sowing of tomato, cabbage and cauliflower after seed treatment with Carbendazim@2g or Trichoderma @5g per kg of seeds.

### **West Bengal**

#### **Sub-Himalayan West Bengal:**

- In Hill Zone, monitor water level in the rice field; construct proper drainage system to avoid flooding in crop field. Provide adequate drainage facilities in turmeric and ginger fields.

- In Old Alluvial Zone, maintain water level in the field upto 3-4 cm; drain out excess water from the field; place 4 pheromone traps/acre in the field for monitoring of stem borer; whenever the number of male moths/traps reaches 4-5, apply Rynaxypyr 0.4g @ 4 kg/acre mixing with 4 kg of dry sand or Chlorantraniliprole 18.5% SC 60 ml/acre mixed with 200 litres of water for yellow stem borer. Apply Propiconazole (Tilt/Compas) @ 1 ml/litre of water to control sheath blight disease. Take plant protection measures during clear weather.

#### **Gangetic West Bengal:**

- In Red & Laterite Soil Zone, regularly monitor infestation of stem borer and leaf folder in timely sown paddy crop; place 2-3 Pheromone traps/ bigha for monitoring infestation of stem borer; if severe infestation is observed, apply Cartap hydrochloride 4G @3.5kg/bigha or Chlorantraniliprole 0.4 GR @ 1.3 kg/bigha at 15-20 DAT after decreasing the ongoing rainfall activity. There may be a chance of blast disease at this stage of rice after transplanting; keep vigilance at regular interval; apply Propiconazole or Hexaconazole @ 0.6-1 gm/litre of water if eye-shaped brownish tint appears on the leaves. Take plant protection measures during clear weather.
- In New Alluvial Zone, make proper arrangements for drainage in all vegetables, pulse, maize and nurseries of the crops; do not apply irrigation to the crops. In present weather condition, monitor rice crop for brown plant hopper; if insect population is above ETL, spray of Imidacloprid 17.8 % SC@ 1.0 ml / 3 lit of water or Acephate 75 SP 625gm /ha or Carbofuran 3G 17.5 kg/ha; drain out water for 3-4 days before use of pesticide and direct the spray towards the base of the plants; split application of N may reduce the hopper attack; neem oil 3% 15litre/ha or neem seed kernel extract 5% 25 kg/ha may also be applied to control it. Take plant protection measures during clear weather.
- In the Coastal saline Zone, if wet seeded Aman paddy field is fully submerged, wait for drain out and if necessary, re-transplanting should be done; where field was not submerged but with water logging condition, no fertilizer application or spraying for stem borer should be done within 3-4 days; immediately drain out the excess water by opening the bund.

#### **Andaman & Nicobar Islands**

- Close the bunds in paddy field and store the rain water as light rainfall is expected. Do hand weeding, apply vermicompost @ 5 tones/ha and earthing up for vegetable crops. Sowing of leafy vegetables (Amaranthus and poi) can be done on raised beds of 30 cm height and 45-100cm width. Undertake line sowing of vegetable seeds in raised bed with proper drainage facility.

#### **Animal Husbandry**

- Don't give green fodder from water stagnated area to the cattle; do not give pond water to the animals; to protect the animals from external parasites, give Butox as prescribed by veterinary doctor. Smoke of neem leaves in animal-shed is advisable for the control of mosquito and house fly.

#### **Fishery**

- In Odisha, drain out excess surface water from the pond. Protect ponds with net so that fishes do not come out of the pond.

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

**Realised Rainfall:** Significant rainfall occurred in all districts of Gujarat and in all districts of Maharashtra except Ahmednagar, Sangli, Solapur, Beed, Yeotmal, Washim.

#### **Advisories:**

- As **rain/thundershowers** likely at **most/many places** over Konkan & Goa during the period, over Gujarat from 28<sup>th</sup> to 30<sup>th</sup> August, over Madhya Maharashtra, Marathwada and Vidarbha on 28<sup>th</sup> & 29<sup>th</sup> August along with **Heavy to very heavy rainfall** at isolated places very likely over Gujarat State and Konkan & Goa and **heavy rainfall** at isolated places over Vidarbha and ghat areas of Madhya Maharashtra on 29<sup>th</sup> August, **heavy rainfall** at isolated places over Gujarat State, Konkan & Goa on 30<sup>th</sup>

August, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

### **Maharashtra**

- **In Konkan**, Maintain 10 cm of water level in rice fields. To control downy mildew in cucurbits, spray Dithane M-45 or Dithane Z-78 each @ 2.5 g/litres of water during clear weather. Due to cloudy and humid climate there is possibility of incidence of leaf eating caterpillar in newly planted mango orchards, spray Neem oil @ 2.5 ml per liter of water during clear weather in Palghar district.
- **In Madhya Maharashtra**, maintain 5 to 10 cm water level in rice fields. Undertake harvesting and threshing of black gram and green gram during clear weather. Keep the harvested produce in safer place. Drain out water from sugarcane fields, apply 25% N, P and K fertilizers and 8 kg Zinc sulphate for better growth of crop during clear weather. Frequent rains and high humid condition is favourable for occurrence of tikka in groundnut, to control spray Mancozeb @ 25 g + Bavistin @ 25 g in 10 liters of water during clear weather. To control fall army worm in maize, spray Chlorantriliprole 18.5 SC @ 4 ml per 10 litres of water during clear weather. To control white fly in sugarcane, spray Dimethoate 30% @ 26 ml in 10 liters of water during clear weather.
- **In Marathwada**, continue harvesting of matured green gram. Keep the harvested produce in safer place. Due to cloudy weather condition, rainfall and humidity if infestation of sucking pest (white fly, sugarcane pyrilla) is observed in sugarcane, spray Chlorpyrifos 20 % @ 30 ml per 10 liter of water during clear weather. To control Rhizome fly in turmeric, spray Quinalphos 25 % @ 20 ml or Diamethoate 30 % @ 10 ml per 10 liters of water along with sticker during clear weather.
- **In Vidarbha**, continue picking of matured green gram during clear weather. Keep the harvested produce in safer place. Maintain 5 cm water level in rice fields. To control wilt in pigeon pea, undertake drenching with copper oxychloride @ 25 g / 10 litres of water during clear weather in Buldana district. To control incidence of bacterial leaf blight in rice, spray Copper Hydroxide 53.8% DF @ 30 g in per 10 liter of water during clear weather.

### **Gujarat**

- In Middle Gujarat, water logging condition was observed as a result of long wet spell. Due to such conditions wilt as well as yellowing of lower leaves was observed in cotton crop where drainage of excess water was not possible. Yellowing of leaves was observed in pigeon pea crop also. Crop lodging was observed in maize crop due to high wind speed in some blocks of Chhotaudepur district. Drain out excess rain water from the field wherever possible. Carry out weeding and intercultural operations at vapsa condition. Take precaution measures for control of pest and disease in crops. Apply supplemental dose of Nitrogen to control crop damage due to water logging after intercultural operations at suitable vapsa condition. Where crops are completely damaged due to heavy rain and water logging conditions, farmers are advised to select contingency crops like castor, pigeon pea or fodder crops (sorghum, bajra) for resowing as per favourable conditions.
- In South Gujarat, remove excess water and maintain 5-7 cm water level in rice fields. Avoid water logging condition in the sweet corn, bajra, okra, brinjal and other standing crops & mango orchards. If the number of plants in the unit area is affected due to heavy rainfall in the cotton crop, then the number of plants can be reduced. Castor or pigeon pea can be planted as a relay crop. If crops like pearl millets, maize and pulses are destroyed by excessive rains, cultivate cluster bean, green gram, black gram, pigeon pea, castor, pearl millet and flax for seeds production and fodder crops like sorghum, cowpea. Give support to newly planted mango grafts. Short term vegetable crops like cluster bean, cowpea, okra, spinach, fenugreek, coriander, etc. can be cultivated.

- In Saurashtra and Kutch, drain out excess rain water from low-lying areas immediately for prevention of wilting in all crops. Under present weather condition (continuous rainfall and wet), over saturation condition of soil persists; apply Urea, Ammonium Sulphate and murate of Potash fertilizers each @ 30 kg/ha in cotton, chilli and other fruiting vegetable crops immediately to revive growth and to prevent wilting. Also spray Mencozeb fungicide @ 27 gm/10 litres of water for prevention Alternaria and other fungal diseases in cotton and vegetable crops, under clear weather. Under present weather condition, yellow mosaic virus infestation is observed in black gram; for control, remove the infected plants and spray Triazophos 40 % EC @ 10 ml/10 litres of water.
- In North Gujarat, drain out access rainwater from groundnut, green gram, maize, pearl millet, clusterbean, cowpea, sesame crop fields. Due to forecast of rainfall, avoid application of fertilizers/irrigation in the standing crops. Continue the new planting of saplings in orchards. Water logging condition causes iron deficiency in groundnut, and leaves turns pale yellow; to overcome, spray Ferrous Sulphate @ 100 g and Citric acid @ 10 g/10 litres of water under clear weather condition.

### **Animal Husbandry**

- In Gujarat, for the control of tick and other parasites, spray Deltamethrin or Aemita @ 2 ml in 1 liter of water. Keep animal indoor during rainy period. Keep fodder at safe place to avoid spoilage due to rainfall. Provide stored fodder with mineral mixture.

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

**Realised Rainfall:** Rainfall occurred in all districts of Chhattisgarh and in Madhya Pradesh except in Rewa, Datia and Morena districts during the week.

### **Advisories:**

- **Thunderstorm accompanied with lightning** very likely at isolated places over West Madhya Pradesh on 29<sup>th</sup> August, 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. Keep harvested produce at safer places. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over West Madhya Pradesh during the period, over Chhattisgarh on 28<sup>th</sup>, 29<sup>th</sup> August & 1<sup>st</sup> Sept., along with **Heavy to very heavy rainfall** at isolated places very likely over West Madhya Pradesh and **heavy rainfall** at isolated places over East Madhya Pradesh on 29<sup>th</sup> August, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

### **Madhya Pradesh**

- In Malwa Plateau Zone, drain out excess water from soybean fields and maintain adequate drainage. Undertake transplanting of onion. In the situation of continuous drizzling, in some area, it has been observed that the defoliating insects have started feeding on soybean pod which may results in probable situation of non-podding. Therefore, farmers are advised to control the defoliating insects using contact insecticides like Indoxacarb 333 ml/ha or Lambda cyhalothrin 4.9 CS 300 ml/ha. To make insecticide spray effective and reach the larvae, it is most important to use at least 500 liter water with knapsack sprayer or 120 liter water per hectare with power sprayer. In case of infestation by White fly is observed in addition to defoliators, it is advised to spray Bitacyfluthrin + Imidachloprid 350 ml/ha or Thiomethoxam + Lambda cyhalothrin 125 ml/ha.
- In Nimar Valley Zone, for management of Girdle beetle in soybean, spray the crop with Thicloprid 21.7 SC @ 650 ml/ha, profenophos 50 EC @ 1.25 lit/ha. or Trizophos 40 EC @ 800 ml/ha. after current spells of

rain. Undertake transplanting of onion.

- In Jhabua Hills Zone, to control of fall army worm in maize, spray Emamectin benzoate @ 10ml/pump. Prepare drainage channels in proper distance for drainage of excess rain water in soybean and maize crop fields.
- In Kymore and Satpura Hill Zone, drain out excess water from maize, soybean and turmeric fields. There is possibility of semi-granular disease in tomato, brinjal and chilli, sprinkle two spells of any fungal drug @ 1 to 1.5 gm per liter of water at 10-15 days intervals

### **Chhattisgarh**

- In Chhattisgarh Plain Zone, if the maize crop has reached 30-35 days age, undertake intercultural operations. Drain out excess water from pigeon pea and other pulses crops and maintain proper drainage. For protection of oilseed and pulses crops from white fly, Metasystox should be sprayed @ 3 ml per litre of water or Nuvan can be sprayed @ 1 ml per litre of water.
- In Northern Hill Zone, in the transplanted rice fields, maintain water level up to 3-5 cm. Farmers are advised Weeding/ Intercultural operation in maize before broadcasting of urea. Apply 10 - 15 grains of Furadon (insecticides) in each leaf sheath if the crops are attacked by stem borer.
- In Bastar Plateau Zone, prepare vegetable nursery on a 15cm high raised bed; sow the seeds after seed treatment against rotting diseases; provide thin net around the nursery as a protection against vector diseases. Continue sowing of minor millet (Kodo) and finger millet.

### **Animal Husbandry**

- In Madhya Pradesh, vaccinate cattle to prevent from Haemorrhagic Septicaemia and Black Quarter diseases. Keep goat in dry and shaded place, provide green fodder and provide clean and fresh water three times in a day. Vaccinate the goat to control PPR disease.

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

**Realised Rainfall :** Significant rainfall occurred in all districts of Rajasthan except Dholpur in East Rajasthan, Bikaner, Jaisalmer Sriganganagar districts in West Rajasthan; in all districts except Almora and Champawat districts of Uttarakhand; Anantnag, Doda, Ganderbal, Jammu, Kathua, Kulgam, Poonch, Rajouri, Ramban, Reasi, Samba, Srinagar and Udhampur districts of Jammu and Kashmir (UTs); all districts except Kinnaur, and Lahaul & Spiti, districts of Himachal Pradesh; in all districts of Punjab except Barnala, Ludhiana, Mansa, Moga, Nawanshahr, Sangrur; in all districts of Haryana except Bhiwani, Fatehabad, Jhajjar, Jind, Rohtak, Sonapat; in all districts of Delhi except Central Delhi and North West Delhi; in Allahabad, Balrampur, Basti, Deoria, Faizabad, Gazipur, Gorakhpur, Jaunpur, Kanpur City, Mirzapur, Pratapgarh, Sant Kabir Nagar, Sant Ravidasnagar and Sultanpur districts of East Uttar Pradesh and Aligarh, Bijnor, Etawah, Gautam Budh Nagar, Ghaziabad, Hamirpur, Hapur, Jhansi, Jotiba Phule Nagar, Kanshiramnagar, Lalitpur, Meerut, Moradabad, Muzaffarnagar, Saharanpur, Sambhal and Shamli districts of West Uttar Pradesh.

- **Advisories: Thunderstorm accompanied with lightning** very likely at isolated places over Rajasthan from 29<sup>th</sup> August to 1<sup>st</sup> September, over East Uttar Pradesh on 31<sup>st</sup> August, over Uttar Pradesh on 1<sup>st</sup> September, provide mechanical support to young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.

- As **rain/thundershowers** likely at **most/many places** over Uttarakhand, East Rajasthan during the period, over Himachal Pradesh on 1<sup>st</sup>, over Haryana, Chandigarh & Delhi on 28<sup>th</sup>, 31<sup>st</sup> & 1<sup>st</sup> Sept., over west Rajasthan from 29<sup>th</sup> to 31<sup>st</sup> along with **Heavy to very heavy rainfall** at isolated places very likely over East Rajasthan and **heavy rainfall** at isolated places over Uttarakhand, West Uttar Pradesh, West Rajasthan, on 29<sup>th</sup>, **Heavy to very heavy rainfall** at isolated places very likely over West Rajasthan on 30<sup>th</sup> August, **heavy rainfall** at isolated places over Uttarakhand, Haryana, Chandigarh & Delhi, East Uttar Pradesh, Rajasthan, on 31<sup>st</sup> August, **Heavy rainfall** at isolated places likely over Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Rajasthan, Uttar Pradesh on 1<sup>st</sup> September, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

#### **UTs of Jammu & Kashmir and Ladakh**

- In Cold Arid Zone, spray Mancozeb 75WP @ 0.3% or Hexaconazole 5EC @ 0.05% for blight and leaf spot of tomato, chilli, brinjal and capsicum. Spray with Metalaxyl 8% + Mancozeb 64% @ 0.25% or Mancozeb 75WP @ 0.3% against fruit rot in of tomato, chilli, brinjal and capsicum. For wilt and root rot drench the soil with Carbendazim 50WP @ 0.1% or Carbendazim 12% + Mancozeb 63% 75WP @0.5%. For angular leaf spot in cucurbits, spray the crop with Streptocycline @ 0.02%. For downy mildew diseases spray the crop with Metalaxyl 8% + Mancozeb 64% @ 0.25%. Avoid water stagnation. Rogue out wilted or rotted plants from fields.
- In Intermediate Zone, in case rice crop is affected by Hispa, spray Chlorpyrifos 20EC @ 2 ml/litre of water or Triazophos 40EC @ 2.5 ml/litre of water or Chlorpyrifos + Cypermethrin @ 2 ml/litre of water per hectare. Collect and destroy the affected leaves. Apply Carbofuron 3G @ 20 kg/ha (apply 3- 4 granules/leaf whorls to control the blister beetle in maize during tasseling/silking stage. Farmers are advised to provide adequate drainage facilities to avoid water logging in pulse crop fields.
- In Valley Temperate Zone, undertake harvesting of matured cobs of maize. Continue sowing of carrot, radish and turnip and transplanting of seedlings of cole crops. Maintain water level of 5 ±2cm in rice fields. Spray Tricyclozole in the field of rice @ 6g/ 10litre as per the package against blast infestation.

#### **Himachal Pradesh**

- In Sub Montane and Low Hills Sub Tropical Zone, carry out weeding in pulses. Continue sowing of raddish, carrot, broccoli and lettuce. If upper leaves of the paddy seedlings become yellow and lower leaves remain green, it indicates the iron deficiency. To overcome this problem, spray Ferrous Sulphate @ 0.5 % with 0.25% lime solution. Ensure proper drainage in vegetable crops.
- In High Hill Temperate Dry Zone, spray Ridomil MZ-72 W.P. (25%) twice at 15 days of interval and then spray Dithane M-45 (0.25%) after 7 days of interval as required against late blight in potato. Spray malathion 0.05% 2ml/ litre of solution in the fields against aphid in cauliflower/ cabbage. Spray Myclobutanil(80gms/200lts) or Mancozeb (600gms/200lts) for scab in apple.
- In Mid Hills Sub Humid Zone, undertake sowing of French beans, radish, turnip and carrot. To control the fruit rot in tomato, remove the yellow leaves 15-20 cm from the ground and spray Mancozeb 250 g / 100 litres of water at an interval of 8-10 days. Add sticker to the mixture and spray on a clear day.

#### **Punjab, Haryana, Delhi**

- In Western Zone of Punjab, undertake planting of evergreen fruit plants like citrus, mango, guava, litchi, loquat, sapota etc. Due to prevailing humid weather conditions, farmers are advised to regularly monitor rice crop for fungal diseases. Regularly monitor cotton crop for infestation of whitefly; if population reaches 6 whiteflies per leaf in the upper canopy, spray with 80g Ulala 50 WG (flonicamid) or 200g Polo in 125-150 litres of water/acre on clear days. Attack of jassid on bhindi can be reduced by spraying 40ml Confidor 17.8 SL (Imidacloprid) or 40g Actara 25 WG (Thiamethoxan).
- In Western Plain Zone of Punjab, drain out excess rain water from the orchard. Irrigation and application of

fertilizer and pesticides should be withheld in rice. Under coming weather conditions there are chances of fruit rot attack in chilli, give 3-4 sprays of folicur @ 250 ml or Indofil M-45 or Blitox 50 WP @ 750 g/acre at 10 days interval.

- In Undulating Plain Zone of Punjab, plan fertilizer application in rice after the current spells of rainfall. Remove excess rain water from field of sugarcane, maize, black gram to avoid any adverse effect. Use PAU fruit fly trap @16 trap per acre for chemical free and effective control of fruit flies. Remove excess rainwater from orchard and nursery area of guava and mango.
- In Central Plain Zone of Punjab, continue sowing of okra and cucurbits such as cucumber, bottle gourd, sponge gourd, pumpkin etc. Monitor the cotton crop regularly for whitefly attack. To prevent the incidence of mealy bug on cotton crop, remove all the weeds growing around the crop fields and regularly monitor the crop. Avoid rain water stagnation in the main maize crop as this crop is highly sensitive to standing water and promotes bacterial stalk rot. Save the rice crop from sheath blight by keeping the bunds of the field clean; if the symptoms are observed, spray Galelio way@400ml or Nativo @80 g or Amitsar Top/Tilt/Folicur/Pikapika@200ml in 200 litres of water per acre.
- In Western Zone of Haryana, due to favourable weather condition, prevailing high humidity and optimum temperature prevailing, monitor the infestation of leaf folder-Larva in rice crop. If observed than spray 400 ml Quinalphas (ekalux) 20 AF or 200 ml Monocrotophas 36 SL mixed with 200 liter water per acre in the crop, if sky remains clear. Drain out the excess rain water in cotton crop. Due to variable weather conditions, high humidity and favourable temperature for the chances or infestation of white fly. Keep vigil on leafhopper, thrips white fly infestation. If infestation of white fly above to the economical threshold level (ETL) than 400 ml dimethoate (rogor) 30 E.C. or 500 ml oxydemeton-methyl 25 E.C. (metasystox) spray of 1 liter Nimbecidine mixed with 250 liter water per acre, when sky remain clear. For control of leafhopper infestation the spray 40 ml imidacloprid (Confidor) 200SL mixed with 120-150 liter water per acre, during clear weather condition.
- In Eastern Zone of Haryana, withhold intercultural/hoeing operation and spraying in the cotton crops. Rainy season onion should be transplant in the prepared fields. Proper drainage management to be done if there is standing water after rain. Monitor the cotton crop for white fly attack carefully. Keeping in view of present weather, farmers are advised to monitor crop regularly for leaf folder or stem borer as paddy crop is in vegetative stage. Install pest specific pheromone traps @ 3-4/acre in the paddy fields for monitoring of stem borer. In present weather condition, monitor constantly brown plant hopper (BPH) in paddy field. Monitor borer, diamond back moth (DBM) insect in cauliflower, cabbage, use pheromone trap @ 3-4/acre. Undertake sowing of carrot on raised bed.
- In Delhi, in view of the realized rainfall, do proper arrangement for drainage in all vegetables, pulse, maize and nurseries of the crops and avoid spraying in the crops. Undertake transplanting of brinjal, tomato, chilli and early cauliflower on ridge whose seedlings are ready, sowing of sweet corn (Madhuri, win orange) and baby corn (HM-4). Maintain proper drainage in the fields. Undertake sowing of guar (Pusa Navbahar, Durga Bahar), radish (Pusa Chetki), cluster bean (Pusa Komal), Beans (Pusa Sem 2, Pusa Sem 3), spinach (Pusa Bharti), amaranths (Pusa lal Chaulai, Pusa Kiran) and ladyfinger (Pusa A-4) on ridges. Undertake transplanting of rainy season onion in the prepared fields and maintain proper drainage in the fields. Monitor crop regularly for leaf folder or stem borer as rice is in vegetative stage. Install pest specific pheromone traps @ 3-4/acre in the paddy fields for monitoring of stem borer. Undertake weeding and hoeing in the standing crops and vegetables to protect them from weeds and proper drainage in all pulses, vegetables and other crops.

#### **Uttar Pradesh:**

- **In East Uttar Pradesh**, in the paddy field, if plants started turning yellow i.e. top leaves turned yellow and bottom leaves remained green, farmers are advised to spray zinc sulphate solution (6.0 kg zinc sulphate dissolved in 300 litres of water / ha.) or zinc sulphate @25kg per hectare. Undertake weeding and thinning and split application nitrogen in standing crop's field. Apply 40 kg nitrogen (87 Kg urea) at

top dressing after sowing of 25-30 day of sunflower. Farmers are advised to give top dressing of urea in their spring sugarcane as per proper moisture is available in soil if not done yet & tying them to avoid lodging for fast growing sugarcane. Undertake intercultural operations and ensure no water lodging in Brinjal, Chillies, Okra etc. In present weather condition, constant monitoring for brown plant hopper (BPH) in paddy field is advised. Monitor the insect-pest and diseases and its symptom appear and goes to ETL then apply recommended control measures.

- **In West Uttar Pradesh**, if Khaira disease is visible in paddy, spray 20-25 kg Zinc sulphate and 2.5 kg lime in 800 liters of water for its control. In the paddy crop, apply the second top dressing of urea at the rate of 60 to 65 kg per hectare after 55-60 days after transplanting. Undertake weeding in pigeon pea, green gram and black gram crops, okra and propping in sugarcane. For the prevention of stem borer in paddy, Trichoderma should be applied at an interval of 8 to 10 days. Farmers are advised to control of pests like hairy caterpillar, green mahoo and beetles through neem-based azedirectin pesticide @ 5-7 ml. per liter of water sprayed in the fields of Urd, Moong and Arhar crops. As per weather forecast, farmers are advised to control the bacterial disease / leaf spot diseases in vegetables and citrus fruits by spray of copper oxychloride 2.5 g with streptomycin 200 ml per liter of water. In sesame crop, do the second weeding 30-30 days after sowing in case of no rain. Undertake transplanting of saplings like brinjal, chilli, tomato and early cauliflower.

#### **Uttarakhand**

- In Sub Humid Sub Tropic Zone, maintain proper arrangements of drainage to remove excess amount of water from maize, sugarcane and vegetables crop etc. Farmers are advised to avoid irrigation, application of fertilizer and spraying of pesticides/insecticides as there is possibility of heavy rainfall during the foresaid period.
- In Bhabar and Tarai Zone, continue land preparation for sowing of rapeseed. Undertake sowing/transplanting/ of cabbage, broccoli, and turnip. Maintain sufficient moisture in the paddy field during emergence/ formation of ear head stage.
- In Hill Zone, maintain proper arrangement for water drainage in ginger, soybean crop field. Postpone any spray of chemicals. Continue sowing/ transplanting of vegetable pea, radish, carrot and cauliflower after current spell of rain

#### **Rajasthan**

- In Irrigated North Western Plain Zone, undertake transplanting of brinjal, tomato, chilli and early cauliflower on ridge whose seedlings are ready. Maintain proper drainage facilities in the fields. In present weather condition, monitor constantly for brown plant hopper (BPH) in paddy field, spray of Buprothiazine 25 SC 1.5 ml. per liter of water.
- In Sub Humid Southern Plain and Aravali Hill Zone, avoid top dress of urea in maize. To control fall army worm in maize, spray Emamectin Benzoate 5 SG @ 0.4 g/l water after current spells of rain.
- In Flood Prone Eastern Plain Zone, to control white grub in bajra crop, spray Chloropyrifos @ 4 litre /500-600 liter water per hectare.
- In Semi Arid Eastern Plain Zone, in standing kharif protect the crops from the attack of white grub, use Imidachlorpid 17.8 SL @ 300 ml per hectare mixed with 80-100 kg soil on a clear day and apply irrigation when there is no rainfall.
- In Arid Western Plain Zone, make arrangements for drainage and postpone irrigation and any kind of spray in groundnut, fruit plant and vegetable crops. Prevailing and forecasted weather conditions may increase the chances of attack of semi looper in early sown castor and there are chances of incidence of lemon butter fly in citrus orchard, spray application of indoxacarb 14.5 SC @ 1 ml per 2 litres of water. Prevailing and forecasted weather conditions may increase the chances of red hairy caterpillar infestation in green gram, apply quinalphos 1.5% or malathion 5% dust @ 25 kg per hectare. Prevailing and forecasted weather conditions may increase the chances of white fly infestation in green gram, spray with the application of dimethoate 30 EC @ 1 litre/hectare.

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