



# *National Agromet Advisory Service Bulletin*

*Friday 16<sup>th</sup> August 2019*  
*(For the period 16<sup>th</sup> to 20<sup>th</sup> August 2019)*



*Issued by*  
*India Meteorological Department*

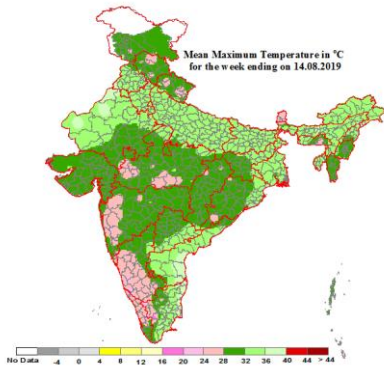
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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

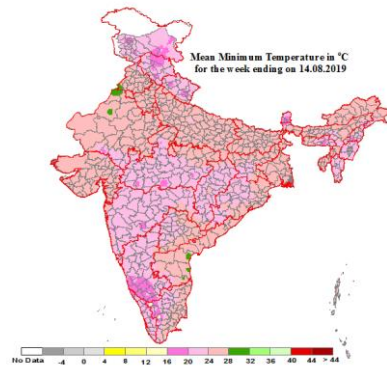
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

**Spatial distribution of weather parameters for the week ending on 14.08.2019**

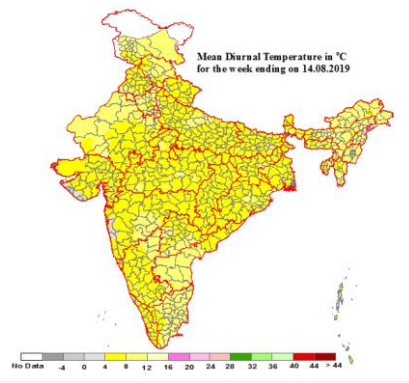
**Mean Maximum Temperature (°C) for the week ending on 14.08.2019**



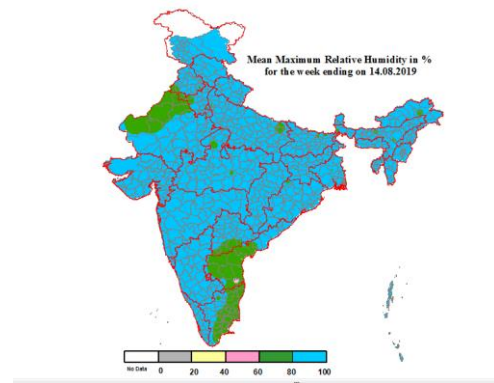
**Mean Minimum Temperature (°C) for the week ending on 14.08.2019**



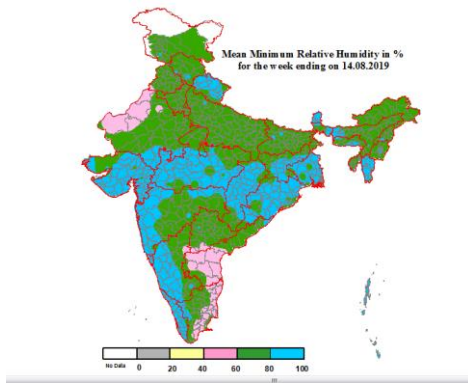
**Mean Diurnal Temperature Variation (°C) for the week ending on 14.08.2019**



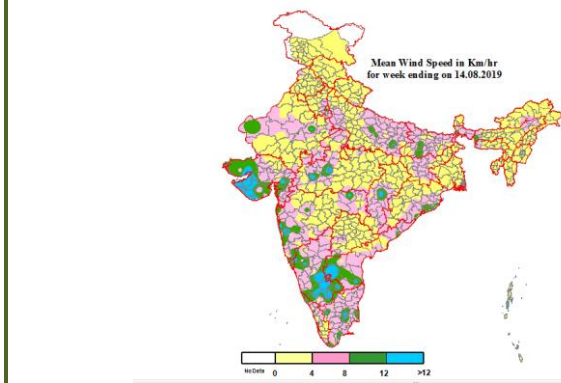
**Mean Maximum Relative Humidity (%) for the week ending on 14.08.2019**



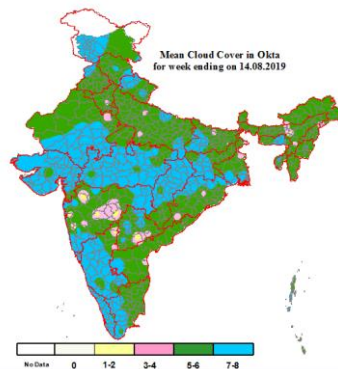
**Mean Minimum Relative Humidity (%) for the week ending on 14.08.2019**



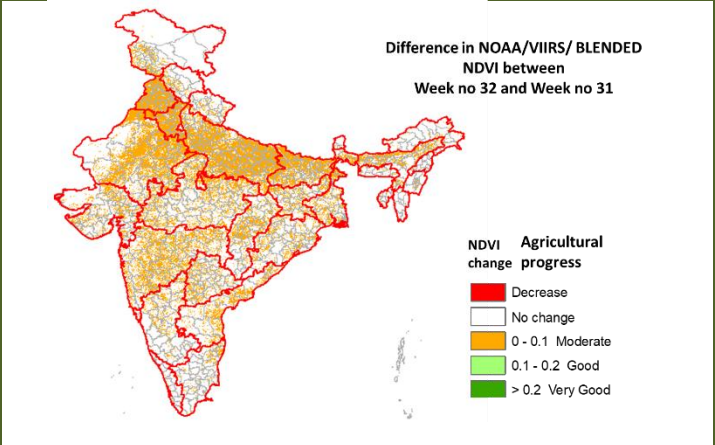
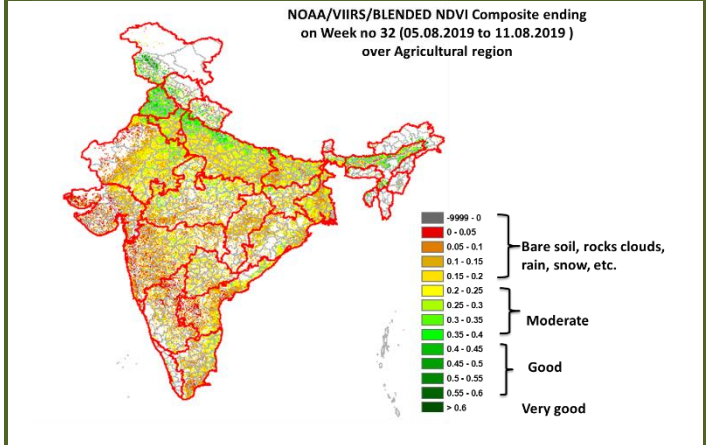
**Mean Wind Speed (km/hr) for the week ending on 14.08.2019**



**Mean Cloud Cover (okta) for the week ending on 14.08.2019**



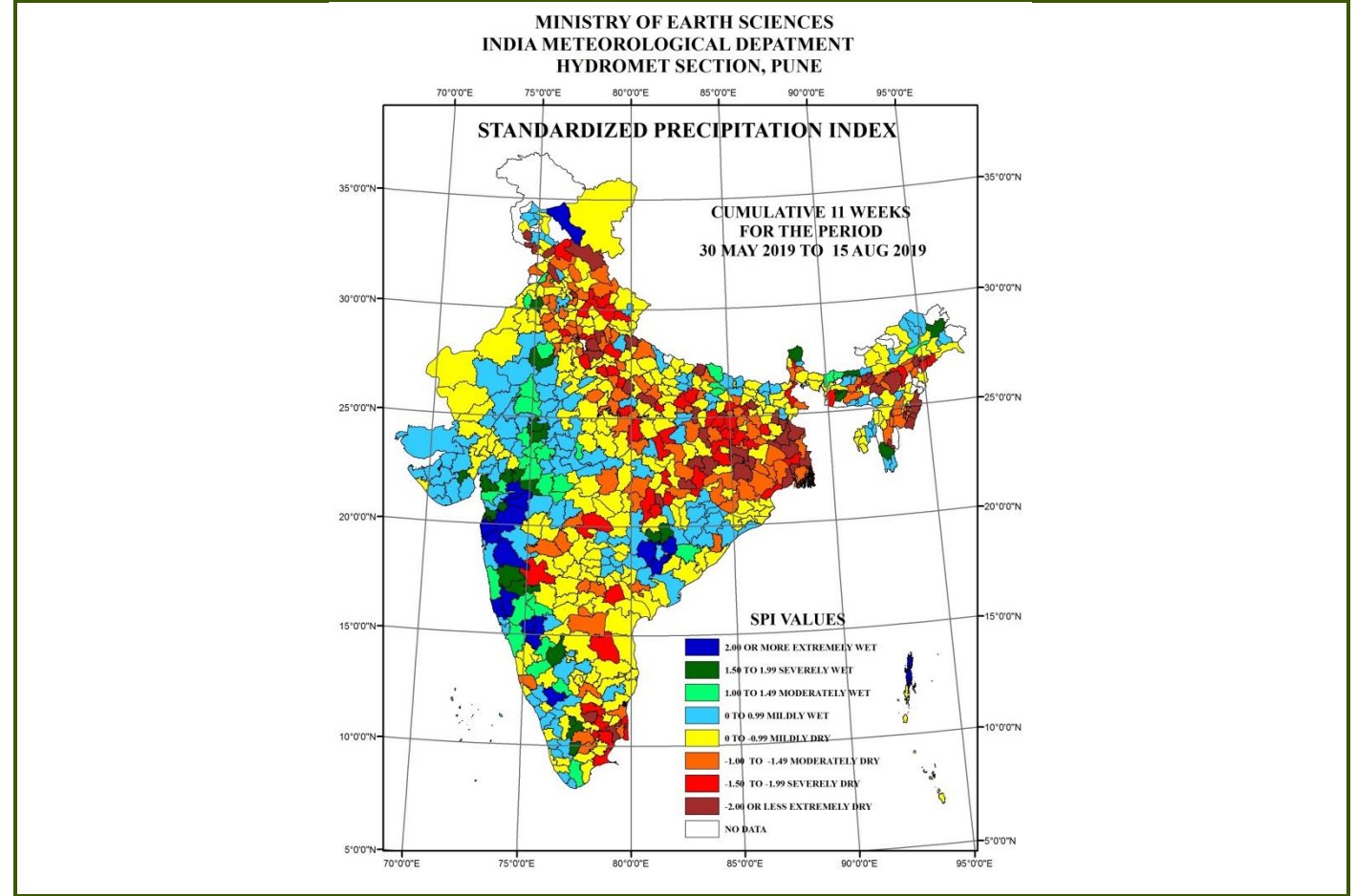
<b>NOAA/VIIRS/BLENDED NDVI composite for the week number 32 (05.08.2019 to 11.08.2019) over Agricultural regions of India</b>	<b>Difference in NOAA/VIIRS/BLENDED NDVI between week number 32 and week number 31</b>
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Agriculture vigour was good at many places over Jammu & Kashmir; few places over Punjab, Uttar Pradesh & North eastern States, and in isolated places of Himachal Pradesh, Northeastern Uttarakhand & Haryana. NDVI could not be captured over rest of the country due to persistent cloud cover.

Good Agricultural vigour has been observed over few places of Jammu & Kashmir and at isolated places over Punjab, Uttarakhand, Haryana, Himachal Pradesh, East Rajasthan, Madhya Pradesh, Uttar Pradesh, Jharkhand, North Eastern states, West Bengal, West Vidarbha Marathwada and Telangana.

### Standardised Precipitation Index Cumulative 11 weeks for the period 30<sup>th</sup> May to 15<sup>th</sup> August 2019



- Extremely/Severely wet conditions exist in Lower Dibang Valley district of Arunachal Pradesh; Baksa district of Assam; Broach, Valsad, Dangs, Chhota depur, Botad districts of Gujarat; Kargil district of Jammu; Dharwad, Gadag, Haveri, Chitradurga, Mysore districts of Karnataka; Barwani, Mandsaur, Neemuch, Alirajpur districts of West Madhya Pradesh; Raigad, Thane, Sindhudurg, Palghar, Dhule, Kolhapur, Nashik, Pune, Sangli, Satara, Nandurbar districts of Maharashtra; East Garo Hills district of Meghalaya; Lunglei districts of Mizoram; Bhatinda districts of Punjab; Sikar district of Rajasthan; Theni, Tirupur districts of Tamilnadu; Dadara & Nagar Haveli districts of Union Territory; North & Middle Andaman districts of Andaman & Nicobar Islands; North Sikkim districts of Sikkim; Bastar, Bijapur, Narayanpur, Sukma, Kondagaon districts of Chhattisgarh.
- Moderately wet conditions exist in Kokrajhar, Dhemaji, Chirang districts of Assam; W Champaran, Gopalganj, Siwan districts of Bihar; Surat, Narmada districts of Gujarat; Uttara Kannada, Bagalkote, Belgaon, Chikmagalur, Davangere, Mandya districts of Karnataka; Bhopal, Dhar, Jhabua, Khandwa, Khargone, Ratlam, Ujjain, Burhanpur districts of West Madhya Pradesh; Ratnagiri, Mumbai Suburban districts of Maharashtra; Koraput districts of Orissa; Kapurthala, Muktsar districts of Punjab; Ajmer, Bhilwara, Jhunjhunu, Pratapgarh districts of Rajasthan; Tirunelveli districts of Tamilnadu.
- Moderately/ mildly dry conditions experienced in remaining districts in the country.

### Weather Forecast for next 5 days valid upto 0830 hours of 21<sup>st</sup> August 2019

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

#### 5 Day Rainfall Forecast (MID-DAY)

**16<sup>th</sup> August 2019**

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

**16 August (Day 1):** ♦ **Heavy rainfall** at a few places with **very heavy** and **extremely heavy falls** very likely at isolated places over West Rajasthan; **Heavy to very heavy rainfall** with **extremely heavy falls** at isolated places over East Rajasthan; **Heavy to very heavy rainfall** at isolated places over Gujarat region, Sub-Himalayan West Bengal & Sikkim and Tamilnadu, Puducherry & Karaikal; **Heavy rainfall** at isolated places over Jammu & Kashmir, Uttarakhand, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Konkan & Goa, West Madhya Pradesh, Andaman & Nicobar Islands, Assam & Meghalaya, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe and Coastal & South Interior Karnataka.

♦ **Thunderstorm accompanied** with **lightning** very likely at isolated places over Gangetic West Bengal.

♦ **Strong winds**, speed reaching 45-55 kmph, are likely to prevail over westcentral & southwest Arabian Sea. **Squally weather** likely to prevail over south Tamil Nadu coast. Fishermen are

advised not to venture into these areas.

**17 August (Day 2):** ♦ **Heavy rainfall** at a few places with **very heavy falls** at isolated places very likely over Punjab and Himachal Pradesh; **Heavy to very heavy rainfall** at isolated places over Jammu & Kashmir, Uttarakhand, Haryana, Chandigarh & Delhi, Rajasthan, Coastal Andhra Pradesh & Yanam and **Heavy rainfall** at isolated places over West Uttar Pradesh, West Bengal & Sikkim, Konkan & Goa and Tamilnadu, Puducherry & Karaikal.

♦ **Thunderstorm accompanied with lightning** very likely at isolated places over Bihar, Jharkhand, Gangetic West Bengal and Odisha.

♦ **Strong winds**, speed reaching 45-55 kmph, are likely to prevail over westcentral & southwest Arabian Sea. **Squally weather** likely to prevail over south Tamil Nadu coast. Fishermen are advised not to venture into these areas.

**18 August (Day 3):** ♦ **Heavy to very heavy rainfall** very likely at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Punjab and **Heavy rainfall** at isolated places over West Uttar Pradesh, Konkan & Goa, Bihar, Jharkhand, West Bengal & Sikkim, Arunachal Pradesh and Assam & Meghalaya.

♦ **Thunderstorm accompanied with lightning** very likely at isolated places over Bihar, Gangetic West Bengal, Jharkhand and Odisha.

♦ **Strong winds**, speed reaching 45-55 kmph, are likely to prevail over westcentral & southwest Arabian Sea. Fishermen are advised not to venture into these areas.

**19 August (Day 4):** ♦ **Heavy rainfall** likely at isolated places over Arunachal Pradesh and Assam & Meghalaya.

♦ **Thunderstorm accompanied with lightning** likely at isolated places over Jharkhand.

♦ **Strong winds**, speed reaching 45-55 kmph, are likely to prevail over westcentral & southwest Arabian Sea. Fishermen are advised not to venture into these areas.

**20 August (Day 5):** ♦ **Heavy rainfall** likely at isolated places over East Madhya Pradesh and Chhattisgarh.

♦ **Strong winds**, speed reaching 45-55 kmph, are likely to prevail over westcentral & southwest Arabian Sea. Fishermen are advised not to venture into these areas.

#### **Weather Outlook for subsequent 2 days from 21<sup>st</sup> August to 23<sup>rd</sup> August 2019**

♦ Fairly widespread to widespread rainfall with isolated heavy falls likely over East and Northeast India and northern parts of Central India.

♦ Scattered to fairly widespread rainfall likely over the rest of the country except over northwest India where isolated rainfall is likely.

#### **Salient advisories**

- As rain/thundershowers likely at most/many places over **Uttarakhand** and **West Uttar Pradesh** during the period, over **Himachal Pradesh** and **Haryana** from 16<sup>th</sup> to 19<sup>th</sup>, over **Jammu & Kashmir** and **Punjab** from 16<sup>th</sup> to 18<sup>th</sup>, over **East Uttar Pradesh** from 17<sup>th</sup> to 20<sup>th</sup> and over **East Rajasthan** from 16<sup>th</sup> to 18<sup>th</sup> along with **Heavy rainfall** at a few places with **very heavy falls** at isolated places very likely over Punjab and Himachal Pradesh on 17<sup>th</sup>; **Heavy to very heavy rainfall** at isolated places over Jammu & Kashmir, Uttarakhand, Haryana, Chandigarh & Delhi on 17<sup>th</sup> & 18<sup>th</sup>, over Rajasthan on 16<sup>th</sup> & 17<sup>th</sup> August, rain/thundershowers likely at most places over **Coastal Karnataka** during the period, at most/many places over **Kerala** on 16<sup>th</sup>, 17<sup>th</sup> & 20<sup>th</sup>, over **Tamilnadu, Puducherry & Karaikal** on 16<sup>th</sup>, over **Coastal Andhra Pradesh** on 17<sup>th</sup> to 19<sup>th</sup> and over **Telangana** 18<sup>th</sup>

to 20<sup>th</sup> August along with **Heavy /Heavy to very heavy rainfall** at isolated places over Tamilnadu, Puducherry & Karaikal on 16<sup>th</sup> & 17<sup>th</sup> August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields like vegetables, pulses and maize. Provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to heavy rain.

- **Thunderstorm accompanied with lightning** very likely at isolated places over Bihar, Jharkhand, Gangetic West Bengal and Odisha on 17<sup>th</sup> & 18<sup>th</sup> August, provide mechanical support to banana and propping up in sugarcane/staking of vegetables to prevent the crops from lodging due to strong winds.
- In **Kerala**, drain out excess water from rice fields and maintain 5-7cm water level. Also drain out excess water from banana, coconut, ginger and vegetable fields.
- Utilizing the reliased and expected rainfall, undertake sowing/transplanting of following *Kharif* crops:
  - In South Interior Karnataka, continue sowing of Foxtail millet, black gram, sunflower, soybean and cowpea. Continue transplanting of ragi and rice seedlings in Southern Transition Zone.
  - In Southern Telangana zone, undertake sowing of Cowpea, Castor, Sesamum and Sunflower.
  - In Cauvery Delta Zone of Tamil Nadu, undertake nursery raising of long duration varieties of *Samba* rice.
  - In upland areas of Odisha, undertake sowing of Ragi, Maize, Arhar, Green gram, Black gram, Cowpea, Sesame, Groundnut, etc.
  - In Central Bramhaputra Valley Zone of Assam, prevailing weather is conducive for infestation of Rice Hispa at tillering stage of rice. Spray Chloropyriphos 20EC or Monocrotophos 40EC @ 1.5ml per litre of water to control rice hispa after current spells of rain.

## *Detailed Agromet Advisories*

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

**Realised Rainfall:** Significant rainfall occurred in the districts of East Godavari, Sirkakulam, Visakhapatnam and Vizianagram districts of Andhra Pradesh, Adilabad, B. Kothagudem, J. Bhupalpally, Jagtial, Jangaon, Kamareddy, Karimnagar, Khammam, Kumaram Bheem, Mahabubabad, Mancherial, Medak, Nirmal, Nizamabad, Peddapalle, Ranjanna Sircilla, Siddipet, Warangal\_Rural, and Warangal\_Urban of Telangana, in all the districts of Kerala, Coimbatore, Kanyakumari, Nilgiris, Theni, Thirunelveli, Tirupur districts of Tamilnadu, in all districts of Coastal Karnataka, in Belagavi, Dharwad, Gadag, Haveri districts of North Interior Karnataka, in all districts of South Interior Karnataka except Ballari, Chikaballapur, Kolar, Ramanagara and Tumakuru districts during the week.

#### **Advisories:**

- As rain/thundershowers likely at most places over **Coastal Karnataka** during the period, at most/many places over **Kerala** on 16<sup>th</sup>, 17<sup>th</sup> & 20<sup>th</sup>, over Tamilnadu, Puducherry & Karaikal on 16<sup>th</sup>, over Coastal Andhra Pradesh on 17<sup>th</sup> to 19<sup>th</sup> and over Telangana 18<sup>th</sup> to 20<sup>th</sup> August along with Heavy /Heavy to very heavy rainfall at isolated places over Tamilnadu, Puducherry & Karaikal on 16<sup>th</sup> & 17<sup>th</sup> August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide mechanical support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to heavy rain. Provide adequate drainage in standing crop fields in Tamilnadu,

**Kerala:**

- In Kerala, drain out excess water from rice fields and maintain 5-7cm water level. Also drain out excess water from banana, ginger and vegetable fields.
- In Southern Zone, weather is congenial for sigatoka in banana, spray 1% Bordeaux mixture or Mancozeb 3 gram/ litre of water along with stickers 4-5 times at 2-3 weeks interval.
- In Problem Area Zone, take all possible measures to avoid water logging in coconut gardens.
- In Central Zone, weather is congenial for leaf folder and stem borer attack in virippu paddy. As a prophylactic measure, apply 2CC Trichogramma chilonis card per acre to control leaf folder and 2CC Trichogramma Japonicum card per acre to control stem borer in paddy. Cut the cards in to small pieces and fix in different parts of the field in plastic cups. If the attack is severe, spray Chlorantraniliprole @ 3ml per 10 litre of water after current spells of rain.
- In Northern Zone, weather is congenial for Shoot and fruit borer in okra, for control, spray neem oil emulsion @ 5 % after current spells of rain and repeat at intervals of 15 to 20 days.

**Andhra Pradesh:**

- In North Coastal Andhra Pradesh, water stagnation in sugarcane field may lead to wilt disease. To control mix 20 kg of Trichoderma asperellum culture with 1 tonne FYM and apply in field.
- In Scarce rainfall Zone of Rayalaseema, undertake sowing of contingency crops like bajra, foxtail millet and cowpea after receipt of sufficient rainfall.
- In Krishna Godavari Zone of Andhra Pradesh, maintain optimum water level in the rice fields and drain out the excess water stagnation in the field so as to encourage the healthy growth and more number of tillers
- In Southern Zone of Andhra Pradesh, the present weather conditions are favourable for leaf hoppers in Kharif Groundnut. To control spray imidachloprid @ 0.3 ml./L of water after current spells of rain.

**Telangana:**

- In Southern Telangana zone, undertake sowing of Cowpea, Castor ,Sesamum and Sunflower.
- In Northern Telangana, drain out excess of water from the standing crop fields. Undertake sowing of sesame & cowpea. Excess soil moisture congenial for the incidence of parawilt in cotton .To prevent the spread of the disease soil drench with Copper- oxy-chloride @ 3gr per litre of water. The prevailing weather conditions are favourable for blast in paddy. To control apply of Tricyclozole @ 0.6 g or isoprothiolane @ 1.5 ml/ liter of water. Undertake plant protection methods after current spells of rain.

**Tamil Nadu:**

- In Coastal Zone, nursery raising of long duration varieties of rice like CR 1009, ADT 50 and KKLR 1 may be adopted for ensuing Samba season.
- In Western Zone, weather is favorable for the tikka leaf spot incidence in groundnut, for control, apply Carbendazim 500 g or Mancozeb 1000 g per ha after current spells of rain.
- In North Western Zone, give foliar spraying with groundnut rich @ 2 kg / acre in 200 liters of water along with sticking agent twice @ flowering and peg formation stage in order to control the nutrient deficiency in plants as well as to improve the yield of Groundnut under kharif season.
- In Cauvery Delta Zone, weather is congenial for stem borer incidence in kuruvai paddy, spray Profenophos at 400 ml/acre (or) apply Cartarp hydrochloride 4 G @ 6 kg/ac for effective control of stem borer after current spells of rain.

**Karnataka:**

- In Coastal Karnataka, drain out excess water from crop fields. Continue planting of areca nut seedlings.
- In North Interior Karnataka, complete sowing of onion crop. Continue sowing of sunflower, cowpea crop.
- In South Interior Karnataka, remove excess of water from standing crop fields. Continue sowing of Foxtail millet, black gram, sunflower, soybean and cowpea. Continue transplanting of ragi and rice seedlings.
- In North Interior Karnataka, incidence of leaf eating caterpillar has been noticed in soybean; spray the crop with Biopesticide such as Nomoriya riley @2gm or Triazophos @ 2ml or Lambda Cyahalothrin @0.5ml dissolved in one litre of water after current spells of rain.

**Animal Husbandry**

- In Karnataka, vaccinate (ET vaccine) sheep and goats against Enterotoximia.
- In Tamilnadu, prevailing weather condition is favourable for Enterotoxaemia in goats, vaccinate the



young Goat/growing kids at 6 month old.

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

**Realised Rainfall :** Rainfall occurred in all districts of Arunachal Pradesh except Anjaw, Dibang Valley, East Kameng, East Siang, Papumpare, Tirap, Upper Siang, Upper Subansiri and West Siang; in all districts except Cachar, Darnag, Dibrugarh, Jorhat, Kamrup (Rural and Metro), Lakhimpur, Morigaon, N. C. Hills, Sibsagar, Tinsukhia, Udalgiri districts of Assam; all districts of Meghalaya except West Garo Hills and Ri-Bhoi; all districts of Mizoram; all Bishnupur, Churachandpur districts of Manipur; in all districts of Nagaland except Longleng, Mon, Phek and Wokha districts and in all the districts of Tripura.

### **Advisories:**

#### **Arunachal Pradesh:**

- In Arunachal Pradesh, maintain optimum water level in rice fields. Maintain periphery of Jhum rice field weed free and clean to prevent disease and pest harbouring in weeds.

#### **Assam & Meghalaya:**

- In Upper Brahmaputra Valley Zone of Assam, complete sowing of sesame at the earliest. Undertake land preparation for sowing of green gram.
- In Lower Brahmaputra Valley Zone, in case of any kind of damage to hills due to flood/stress or any other reason in transplanted rice, fill those gaps by splitting healthy hills of same age. Maintain a depth of 5-6 cm water level in the paddy field. Complete sowing of sesame at the earliest. Continue land preparation for sowing of finger millet.
- In Hill Zone of Assam, continue the sowing of Arahara. Undertake intercropping in arhar with green gram/blackgram/ sesamum.
- In Barak Valley Zone of Assam, high temperature and relative humidity are conducive for leaf curl disease in chilli and brinjal. For effective control of the disease, apply Rogar or Dimethoate @ 1.5 ml per litre of water.
- In Central Brahmaputra Valley, complete transplanting of Sali paddy seedlings of medium and long duration varieties (120-150) days and sowing of kharif sesame at the earliest. Continue land preparation and sowing of kharif pulses (green gram & black gram). Prevailing weather is very conducive for heavy infestation of Rice Hispa of rice at tillering stage. Spray Chloropyriphos 20EC or Monocrotophos 40EC @ 1.5ml per litre of water to control rice hispa along with other insects like leaf folder, case worm etc.
- In North Bank Plain Zone of Assam, farmers of flood affected areas are advised for sowing of short duration cultivars like Luit, Kapilee, Kolong and Dishang in the nursery bed within the 3rd week of August. 20-25 days seedling of these cultivars can be transplanted in the main field with a spacing of 15x15 cm up to mid of September. Continue sowing of kharif Sesame and pulses (green gram and black gram). There is chance of attack of leaf folder /rice hispa in seedling and tillering stage of early transplanted rice. If there is one damage leaf per hill due to attack of leaf folder or appearance of one adult hispa per hill is observed, the farmers are advised to spray Chloropyriphos 20EC or Monocrotophos 40EC @ 1.5ml per litre of water after current spells of rain.
- In Meghalaya, continue transplanting of low land Sali rice. After transplanting maintain a thin layer of 2-3 cm stagnating water in the field. Maintain proper drainage in the field of ginger, turmeric and maize fields. Undertake nursery raising for cole crops (cabbage, cauliflower, broccoli).

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

- In Nagaland, remove the affected clumps and drench the soil with Bordeaux mixture 1% at 15 days interval against Rhizome rot disease in ginger.
- In Manipur, complete transplanting of kharif rice. Continue sowing of black gram, groundnut, black gram, rice bean and millet. Spray Carbendazim @ 0.5g / lit of water to control tikka disease in groundnut after current spells of rain.
- In Mizoram, continue transplanting of rice. Undertake harvesting of matured cobs of maize and pods of green gram.
- In Tripura, undertake harvesting of Aus rice after current spells of rain.

### **Animal Husbandry:**

- In Upper Brahmaputra valley zone of Assam, during the monsoon season, to prevent the livestock from worm infestations, it is advised to give Piperzine or Mebendazole at recommended dose after proper consultation with veterinary doctor.
- In Tripura, monsoon weather could lead to gastrointestinal parasites infection in pig. It is advised to maintain good sanitary conditions of pig sheds.

#### **Fishery:**

- In Barak Valley Zone of Assam, after draining out of flood water, apply lime @ 30 kg per bigha of pond, 15 days to 20 days after lime application apply 250-300 kg FYM per bigha of pond and if possible provide net around the pond to protect from fishes flowing out with flash flood.
- In Arunachal Pradesh, provide additional feed for the fishes in the pond. There is possibility of muddy water influx from the surrounding areas into the fishery resulting reduction of dissolved oxygen contents. Stirring the water with a bamboo pole will help in increasing the gaseous exchange and protect the fishes from suffocation.

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

Realised Rainfall: Rainfall occurred in all districts of Andaman & Nicobar Islands; in Araria, Aurangabad, Banka, Begusarai, Bhabua, Bhagalpur, Bhojpur, Darbhanga, Gaya, Gopalganj, Jahanabad, Jamui, Katihar, Kishanganj, Lakhisarai, Madhepura, Madhubani, Monghyr, Nalanda, Nawada, Purnea, Saharsa and Samastipur districts of Bihar; in all districts of Jharkhand except Godda; in all districts of Odisha; in all districts of Gangetic West Bengal and in all districts of Sub-Himalayan West Bengal and Sikkim except Malda.

#### **Advisories:**

- **Thunderstorm accompanied with lightning** very likely at isolated places over Bihar, Jharkhand, Gangetic West Bengal and Odisha on 17<sup>th</sup> & 18<sup>th</sup> August, provide mechanical support to banana and propping up in sugarcane/staking of vegetables to prevent the crops from lodging due to strong winds.

#### **Odisha:**

- Undertake transplanting of three to four week paddy seedlings in the main field. Complete the transplanting as early as possible. Go for sowing of green gram and black gram as well as planting of brinjal and banana. Drain out excess water from maize field. In upland areas, where rice cultivation is not possible now, go for non-paddy crops like Ragi, Maize, Arhar, Green gram, Black gram, Cowpea, Sesame, Groundnut, etc.
- In North Eastern Coastal Plain zone of Odisha, wrapping and propping should be done in sugarcane 4-5 months old in medium and late duration varieties.
- In East and South Eastern Coastal Plain Zone of Odisha, complete sowing of greengram and blackgram in fallow uplands.
- To minimize infestation of top shoot borer in sugarcane crop, spray Lambda Cyhalothrin @2ml/ litre of water. In early transplanted paddy crop, there is a chance for leaf folder infestation due to the prevalence of cloudy weather. Spray Chlorantraniliprole 18.5% SC @ 3 ml/10 litre of water or Fipronil 5% SC @ 2 ml/litre of water. Undertake plant protection measures after current spells of rain.

#### **Bihar:**

- In the transplanted rice field, farmers are advised to carry out weed management. Carry out weeding and intercultural operations in vegetable crops. Continue transplanting of 45-50 days old onion seedlings in raised seedbed and planting new saplings of fruit plants such as mango, litchi, jackfruit, guava, custard apple, lemon, etc.
- Drain out excess water or make trench around the kharif maize fields. Spray Profenofos/Chlorpyrifos @2ml/litre of water in maize crop for management of stem borer. Undertake plant protection measures after current spells of rain.

#### **Jharkhand:**

- Complete the transplanting of paddy. Farmers having irrigation facility may go for cultivation of short duration variety of maize. In fallow upland, undertake cultivation of medium duration Pigeon pea and pulses like Horse gram, Moong, Urd, Oilseeds like Niger and Safflower.
- To control stem borer in paddy, spray Monocrotophos 36 E.C. @ 1-2 ml per litre of water and mix

Tipol in the solution or prepare the solution in soap water. Undertake plant protection measures after current spells of rain.

#### **West Bengal:**

- In Sub-Himalayan West Bengal, go for transplanting aromatic rice as weather conditions are suitable for good quality yield. Keep okra and ginger fields weed-free and provide adequate drainage. In Darjeeling and Kalimpong districts, transplant 28-30 days old rice seedlings in the main field and keep 4-5 cm water level.
- Spray Neem oil 10,000 ppm @ 3ml + sticker 0.5ml per litre of water in the rice field as a preventive measure at early vegetative stage. Undertake plant protection measures after current spells of rain.
- In Gangetic West Bengal, complete the transplanting of Aman paddy in medium land areas. Carry out hand weeding in the main rice fields at regular interval. Check the bunds around the field. Keep the drainage channels clean and arrange proper aeration in the betel vine gardens. Provide drainage and carry out weeding in tomato, chilli and brinjal fields.
- For management of rice Hispa, delay the first top dressing, do manual collection and kill beetles, cut the shoot tips and spray Quinalphos @ 0.5 ml per litre of water. Undertake plant protection measures after current spells of rain.

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

- In Andaman & Nicobar Islands, do hand weeding in rice main field at 30 days after transplanting and maintain thin film of water. Make nursery for brinjal and use seed rate @ 400 g/ha. Collect fallen coconut from the field and make pits at distance of 7.5 m for planting. Remove excess water from vegetable field, as rainfall is expected during the period.

#### **Animal Husbandry:**

- In Bihar, keep animal yard or farm clean and dry to avoid mastitis disease in dairy cattle and diarrhoea like situation.
- In Odisha, vaccinate calves above 3 months and sheep and goat above two months against Foot and Mouth disease.
- In West Bengal, give the animals 30-50 grams of mineral mixture along with their feed on a daily basis. This increases milk productivity and enhances immunity.
- In Andaman & Nicobar Islands, use banana stem and leaves as animal feed. Feed milking cow @ 15 to 20 kg per day.

#### **Fishery:**

- In West Bengal, apply lime @ 20 kg per bigha of pond water. Remove weeds from the pond immediately. Make boundary with a net surrounding the pond.  
In Andaman & Nicobar Islands, do breeding of IMC carp fishes and store spawn in well managed nursery pond.

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

**Realised Rainfall: Realised Rainfall:** Rainfall occurred in all districts of Gujarat State during the period, all districts of Konkan & Goa except Mumbai, Madhya Maharashtra except Solapur Nanded, Parbhani districts of Marathwada, all the districts of Vidarbha.

#### **Advisories:**

##### **Maharashtra:**

- In Konkan region, maintain 5 cm water level in rice fields. To control leaf folder in rice, spray 25 % Quinalphos @ 18 ml or 40% Triazophos @ 13 ml or 5% Lambda cyhalothrin @ 5 ml per 10 liter of water and to control blast disease in rice, spray Tricyclazole 75%WP @ 10 g per 10 liter of water after current spells of rain.
- In Madhya Maharashtra, maintain 5 cm water level in rice fields. Undertake intercultural operation like hoeing and weeding in cotton on a non-rainy day. To control white grub in sugarcane, spray granular Forate 10% @ 25 kg and Carbofuron 3% @ 15 Kg per ha on a non-rainy day. To control spodoptera litura in groundnut, spray SLNPV @ 1 ml + Beauveria bassiana @ 5 ml in 10 litres of water on a non-rainy day. If reddening of cotton leaves is observed, spray magnesium sulphate @ 45 g per 15 liters of water on a non-rainy day. To control rust in soybean, spray Propiconazole 25% EC or Hexaconazole 5% EC @ 1ml per liter of water on a non-rainy day. Undertake intercultural operations like weeding and hoeing in orchards, vegetable fields and hoeing in standing crops like green gram, soybean and cotton on a non rainy day.

- In Marathwada, undertake weeding in orchards like mango, custard apple and vegetable fields on a non rainy day. To control aphids in cotton, spray Flonicamid 50 WG @ 60 g per acre or Verticillium Lecanii @ 1 kg per acre.
- In Vidharbha, undertake weeding in early sown cotton, sorghum, green gram, black gram, maize and soybean on a non rainy day. Maintain 2- 3cm water level in rice fields. Apply top dressing of nitrogen fertilizer if not applied to cotton crop- @ 40 kg N/ha for irrigated Bt cotton, 35 kg N/ha for irrigated hybrid cotton, 30 kg N/ha for deshi hybrid cotton, 20 kg N/ha for deshi improved variety on a non rainy day. For control of girdle beetle above ETL level (10% infested plants) in soybean, spray Triazophos 40 % @ 12.5 ml or Chlorantraniliprole 18.5% SC @ 3 ml per 10 liters of water on a non rainy day.

### **Gujarat**

- In Saurashtra & Kutch, drain out excess water from cotton, groundnut, vegetables, pulses and maize fields. Complete transplanting of brinjal, chilli and early cauliflower. In view of moist weather, apply supplementary dose of Nitrogen through Ammonium Sulphate (30 kg/ha) and also apply Murate of Potash (30 kg/ha) to cotton crop.
- In South Gujarat, maintain water level of 2-3 cm in rice field. Undertake nursery preparation for chilli and brinjal seedlings.
- In Middle Gujarat, remove excess rainwater from nursery of vegetable and tobacco crops. Complete transplanting of rice and vegetable crops. Continue sowing of intercrops like green gram, black gram etc. in cotton field. Carry out hand weeding in green gram and groundnut crops on non rainy day.
- In North Gujarat, carry out sowing of castor.
- In South Gujarat, for effective control of semi-looper in castor spray neem oil 2% or 3% solution made from neem seed on non rainy day.

### **Animal Husbandry:**

- In Gujarat, take care of cattle and stored dry fodder during heavy rainfall period.

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

**Realised Rainfall:** Rainfall occurred in all districts of Chhattisgarh, East Madhya Pradesh and in all districts of West Madhya Pradesh except in Datia and Gwalior districts.

### **Advisories:**

#### **Madhya Pradesh**

- In Kymore Plateau & Satpura hills, complete transplanting of rice in main field and dip the roots of paddy seedling in the azotobacter culture before transplanting the seedlings.
- In Jabhua Hill Zone, provide drainage channels in proper distance for drainage of excess rain water in tomato, chilli, brinjal, kharif onion and early cauliflower crop and give recommended dose of fertilizers.
- In Satpura Plateau Zone, if leaf eating caterpillar is observed in soybean crop, apply Trizofas @ 2 ml/ acre or Flubendiamide @ 0.5 ml/acre +200 liter water. Bud necrosis disease is observed in groundnut, for control, apply Monocrotophos @ 1.6 ml/liter of water and for stem rot of groundnut spray of Saaf @ 3gram/ liter of water on non rainy day.
- In Central Narmada Valley Zone, complete transplanting of rice and undertake weed management in soybean crops.
- In Malwa Plateau Zone, continue intercultural operations in soybean, maize and cotton crops. Farmers are advised to install Light Trap / Insects specific Pheromone Trap in soybean crop in order to assess the likely infestation of insects and for integrated pest management. For management of defoliators and white fly in soybean, spray pre-mixed insecticides like Betacyfluthrin + Imidacloprid @ 350 ml/ha or Thimethoxam + Lambda cyhelothrin @ 125 ml/ha on non rainy day.

#### **Chhattisgarh:**

- In Northern Hill Zone, in upland areas, undertake sowing of urad, sesamum, moong etc., inter cropping of maize with Urd is advised. Farmers are advised to sow brinjal, early tomato, chilli and onion in the nursery in the upland areas. Undertake intercultural operations in different kharif crops like Rice, Maize, Ragi, Arhar, Groundnut, Soyabean, Urd, Mung etc on non rainy day. . After weeding, broadcast urea as per their requirement.
- In Chhattisgarh Plain Zone, if leaf eating caterpillar is observed in soybean crop, apply Trizofas @ 2 ml or Flubendiamide @ 0.5 ml/ liter water on non rainy day.

- .In Bastar Plateau zone, maintain 5cm water level in rice fields. In the rice crop, continuous monitoring of harmful insects should be done. For this light trap should be used. Light trap should be placed at some distance from the crop and bulb should be lighted from evening 06:30 pm to 10:30 pm. Collected insects should be destroyed in the morning hours.

#### **Animal Husbandry:**

- In Madhya Pradesh, cattle sheds should be kept dry and farmers are advised to provide dry feed along with green feed in (50:50) ratio and 20-30 g mineral mixture and salt for the dairy animal's every day. . Vaccinate the chicks at 7 days (F1) and at 6 weeks with R2B. Vaccinate the poultry birds to prevent Ranikhet disease. (first F-1 in age of 7 days & second R2B in age of 8 weeks )
- In Chhattisgarh, cattle shed should be kept dry as far as possible to prevent from foot rot disease. Hygiene should be maintained around cattle shed. Bushes, parthenium weeds should be uprooted and pits etc. should be filled so that mosquitoes control is there.

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

**Realised Rainfall:** Rainfall occurred in most of the districts except Kinnaur and Lahaul & Spiti districts of Himachal Pradesh; in Kathua, Reasi, Samba, Srinagar and Udhampur districts of Jammu & Kashmir and in most of the districts of Uttarakhand during the week, Allahabad, Bahraich, Chitrakoot, Faizabad, Mirzapur, Sultanpur districts of East Uttar Pradesh and Agra, Auraiya, Bijnor, Etah, Firozabad, Hamirpur, Jalaun, Kanshiramnagar, Lalitpur, Mahoba, Muzaffarnagar districts of West Uttar Pradesh, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Nawashahar, Ropar districts of Punjab, Ambala, Faridabad, Mewat and Yamunanagar districts of Haryana; in Pali district of West Rajasthan, in all the districts of East Rajasthan except in Sikar.

#### **Advisories:**

- As rain/thundershowers likely at most/many places over Uttarakhand and West Uttar Pradesh during the period, over Himachal Pradesh and Haryana from 16<sup>th</sup> to 19<sup>th</sup>, over Jammu & Kashmir and Punjab from 16<sup>th</sup> to 18<sup>th</sup>, over East Uttar Pradesh from 17<sup>th</sup> to 20<sup>th</sup> and over East Rajasthan from 16<sup>th</sup> to 18<sup>th</sup> along with **Heavy rainfall** at a few places with **very heavy falls** at isolated places very likely over Punjab and Himachal Pradesh on 17<sup>th</sup>; **Heavy to very heavy rainfall** at isolated places over Jammu & Kashmir, Uttarakhand, Haryana, Chandigarh & Delhi on 17<sup>th</sup> & 18<sup>th</sup>, over Rajasthan on 16<sup>th</sup> & 17<sup>th</sup> August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields.

#### **Jammu & Kashmir:**

- In Sub Tropical Zone, carry out weeding, hoeing and earthing up operations in maize field and thinning, hoeing and weeding operations in kharif pulses after current spells of rain. Install pheromone trap @ 20/acre for trapping brinjal shoot and fruit borer.
- In Intermediate Zone, install pheromone traps @ 5 – 7/ha for early detection of stem borer in rice field. On observation of the same, install pheromone traps @ 12 – 15/ha. For chemical control, apply Carbofuron 3G @ 20 kg/ha in standing water and do not drain or irrigate the field for 72 hours after application. Carry out weeding operation at regular intervals in maize, to keep the crop free of weeds at least up to 40 days after sowing to avoid yield loss.

#### **Himachal Pradesh:**

- In High Hill Temperate Dry Zone, carry out weeding operation in potato field. For the prevention of blight disease in potato, spray Ridomil 2.5 g or Blitox (copper oxy chloride) at 3 g per litre of water. Carry out weeding operation in peas. Spray Bavistin 0.25% after flowering stage in peas to control white rot disease. Undertake plant protection methods after current spells of rain.
- In Sub Montane and Low Hills Sub Tropical Zone, spray Carbendazim @ 2 gram per litre of water to protect rice from blast and brown spot. Carry out weeding operation in pulses. Spray Imidacloprid 17.8 % SC @ 1.0 ml / 3 lit of water to protect vegetable crops from white flies and other sucking pests. Continue picking of tea leaves at 8-10 days interval to maintain the quality and productivity.

- In Mid Hills Sub Humid Zone, to control fruit rotting in tomato, remove the yellow leaves from 15 to 20 cm near the ground and bury them in soil and spray Mancozeb 250gm or Redomil 250 gm @ 100 litres of water at an interval of 8-10 days. To control fruit rotting and leaf blight diseases in Capsicum and chilli, spray bodo mixture at an interval of 7-10 days. Undertake plant protection methods after current spells of rain.

### **Punjab, Haryana and New Delhi**

- In Punjab, continue transplanting of vegetables (tomato, chilli, brinjal, cauliflower) and sowing of maize. Complete the transplanting of basmati rice and sowing of mash and moong. Remove excess rain water to avoid any damage in maize and pulses field. Farmers are advised to remove foot rot infected plants from rice field and avoid ponding of water to check further spreading of infection.
- In Undulating Plain Zone, use fruit fly trap to control fruit fly damage in guava orchards. Weather condition is favourable for planting of evergreen fruit plants like Mango, Litchi, Guava.
- In Haryana, continue transplanting of matured seedlings of tomato, cauliflower, cabbage in prepared field and complete the sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish. Complete transplanting of rice and continue land preparation for sowing for pulses i.e. green gram, lobia, moth.
- In Delhi, continue transplanting of early cauliflower, tomato, chilli and brinjal whose seedlings are ready. Undertake sowing of fodder sorghum, sweet corn and baby corn. Protect cucurbitaceous crops against fruit fly by use of bait trap (mixing jaggary 10 % with Malathion 10 % and putting at different corners of the field). Undertake hoeing & weeding in all crops and vegetables and monitor all crops regularly against white flies and sucking pests. Undertake plant protection methods after current spells of rain.
- In Haryana, due to congenial weather, there is chance of attack of cotton jassid in cotton vegetative/flower initiation stage, spray 80g Ulala to control the attack after current spells of rain.
- In Undulating Plain Zone of Punjab, borers in sugarcane can be managed by using Tricho-cards having 20,000 eggs of *Corcyra cephalonica* parasitized (seven days old) by *Trichogramma chilonis* and *Tricogramma japonicum* per acre at 10 days interval. Remove excess rain water to avoid any damage.
- In Western Zone of Punjab, in case of severe attack of thrips and jassid in cotton, spray the crop with 80 g Ulala 50 WG in 100 litres of water per acre. Parawilt in cotton plants can be checked by spraying cobalt chloride @ 10 mg/ litre of water on the affected plants at the initial stage of wilting. Apply 4 sprays of 2 % Potassium nitrate (13-0-45) solution at weekly intervals, starting at flower initiation stage. Undertake plant protection methods after current spells of rain.
- In Western Plain Zone of Punjab, heavy rainfall followed by bright sunny days can result in parawilt incidence in cotton, spray cobalt chloride (10 mg per litre of water) only on affected plants within 24 hours of appearance of symptoms. To control leaf spots or blight, spray the crop with Blitox 500 g + Agrimycin 20 g or Streptocycline 3 g/acre at an interval of 15 to 20 days after current spells of rain.

### **Uttar Pradesh**

- In East Uttar Pradesh, continue weeding and thinning in black gram, maize, pearl millet, pigeon pea, sorghum, jowar and great millet, bottle gourd etc.. Continue planting of new fruit orchards. Carry out broadcasting of Zinc Sulphate @ 25kg or spraying of Zinc Sulphate @ 5kg plus lime @ 2.5kg in 100 litres of water per hectare for control of khaira disease in paddy crop. Farmers are advised to carry out weeding in paddy fields. In case if weeding is over, then top dressing of Nitrogen fertilizer can be done under optimum moisture condition. There is a possibility of stem borer attack in Maize, hence farmers are advised for application in Carbofuran 3% granules @ 20 kg/ha after current spells of rain.
- In West Uttar Pradesh, undertake nursery sowing of medium duration capsicum, tomato, cabbage. Carry out transplanting of vegetables such as brinjal, chilli, cauliflower etc. Undertake sowing of okra, lobia gourd, toria, bitter gourd, cucumber etc. Undertake planting of mango, guava, berry, amla, lemon etc in fruit orchards.

### **Uttarakhand:**

- In Bhabar and Tarai Zone, undertake transplanting of radish, turnip. Undertake sowing of early variety of pea. Undertake transplanting of cole crops. Spray solution of Mancozeb @ 2.5 g/litre of water to control the late blight in tomato after current spells of rain.

- In Hill Zone, undertake transplanting of cabbage seedlings. Undertake harvesting of mature potato tubers. Undertake planting of lemon sapling, fodder plants and other fruit plants.
- In Sub-Humid Sub-Tropic Zone, tie 4-5 sugarcane plants above first knot to avoid the lodging due to high wind velocity. Drain out excess water from vegetables and fodder crop fields.

**Rajasthan:**

- In Transitional Plain Zone and Inland Drainage Zone, undertake planting of fruit plants like ber, aonla, pomegranate.
- In Semi-Arid Eastern Plain Zone, weather is congenial for fruit borer attack in bitter gourd, tinda, cucumber, brinjal & tomato, pluck affected fruits and bury them deep in soil & spray Malathion 50 EC @ 1.0 ml per litre water on a non-rainy day. Harvest fruits 3 days after spray.
- In Arid Western Plain Zone, to control thrips in cotton, spray Acetamiprid or thiomethoxam 3 g/lit of water after current spells of rain.
- In Sub Humid Southern Plain and Aravali Hill Zone, weather is congenial for stem borer in soybean, spray Quinalphos 500-700 ml or Triazophos 40 E.C. in one liter water after current spells of rain.
- In Flood Prone Eastern Plain Zone, undertake planting of guava, pomegranate, aonla, ber, papaya, and lime.

**Animal Husbandry:**

- In Rajasthan, undertake vaccination in animals as per schedule and provide clean drinking water.
- In Uttar Pradesh, Hot and humid weather may cause ring worm in animals so keep the animals and sheds clean and dry. Due to rainy season, avoid dampness to avoid incidence of coccidiosis in poultry. Add coccidiostats in the poultry feed for prevention of this disease avoids the entry of rain inside.

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