



# *National Agromet Advisory Service Bulletin*

*Friday 14<sup>th</sup> June 2019*  
*(For the period 14<sup>th</sup> to 19<sup>th</sup> June 2019)*



*Issued by*  
*India Meteorological Department*

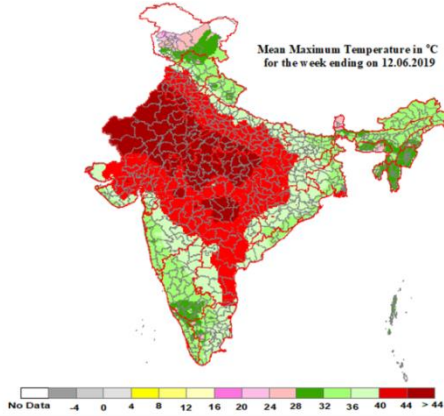
**Weblink For**

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

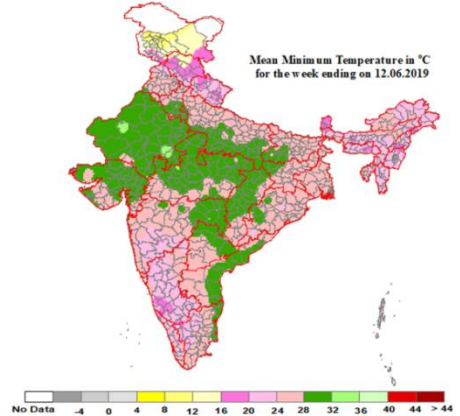
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

**Spatial distribution of weather parameters for the week ending on 12.06.2019**

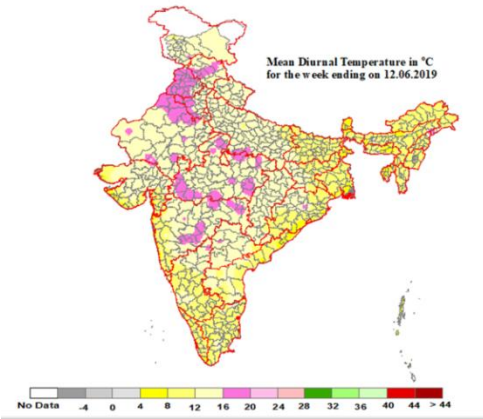
**Mean Maximum Temperature (°C) for the week ending on 12.06.2019**



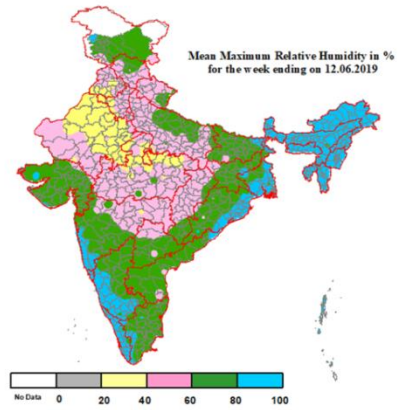
**Mean Minimum Temperature (°C) for the week ending on 12.06.2019**



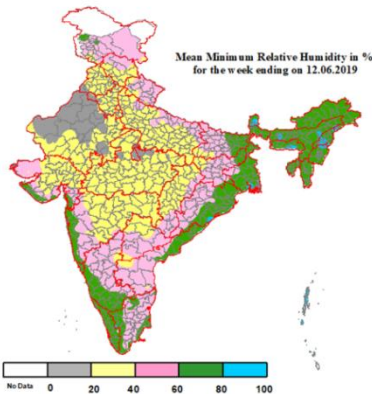
**Mean Diurnal Temperature Variation (°C) for the week ending on 12.06.2019**



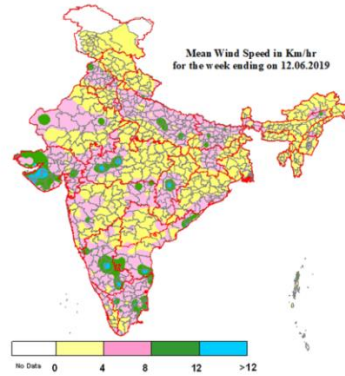
**Mean Maximum Relative Humidity (%) for the week ending on 12.06.2019**



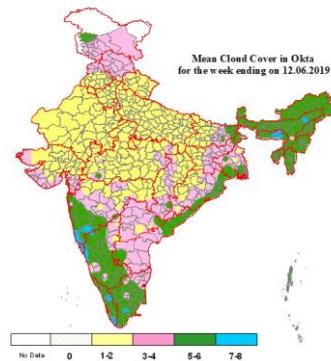
**Mean Minimum Relative Humidity (%) for the week ending on 12.06.2019**



**Mean Wind Speed (km/hr) for the week ending on 12.06.2019**

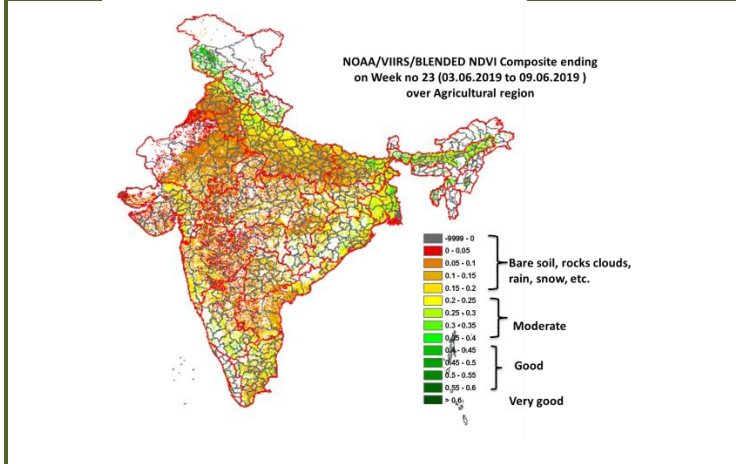


**Mean Cloud Cover (okta) for the week ending on 12.06.2019**



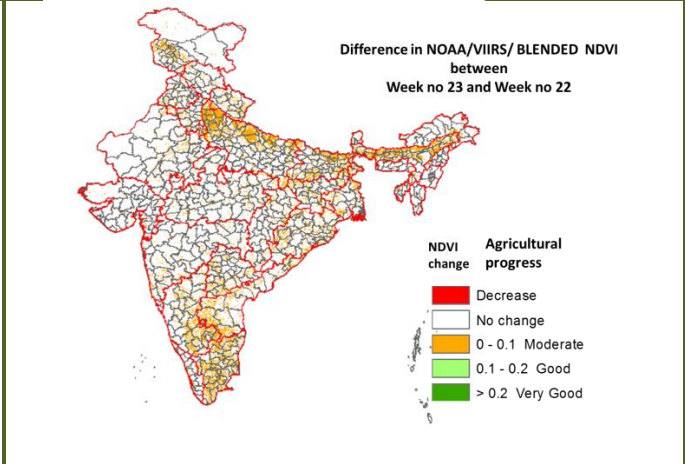


**NOAA/VIIRS/BLENDED NDVI composite for the week number 23 (03.06.2019 to 09.06.2019) over Agricultural regions of India**



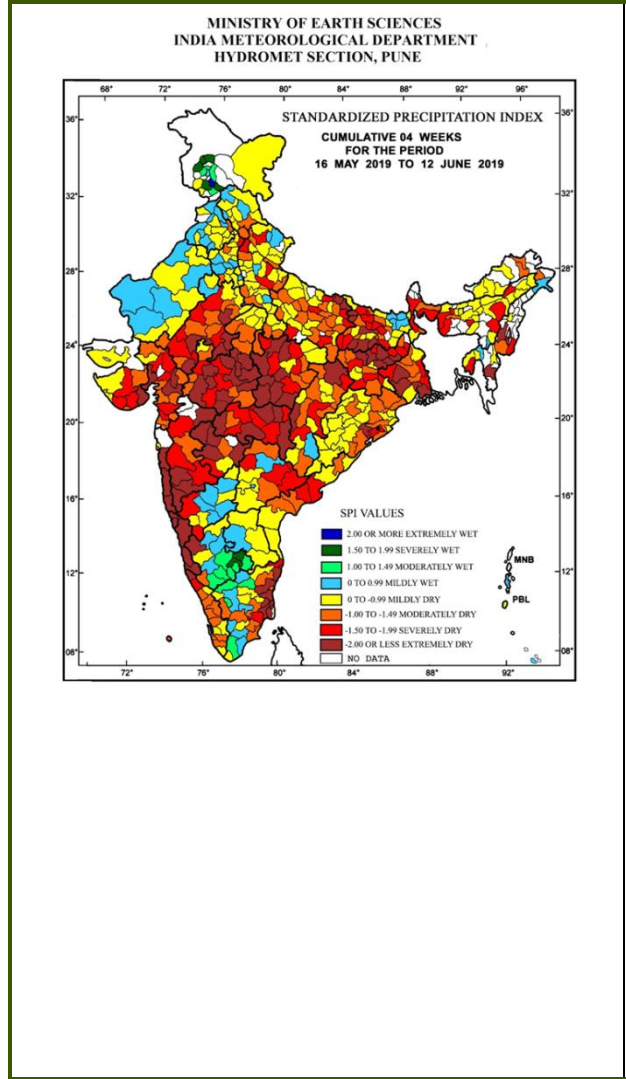
Agriculture vigour is good at a few places over valley region of Jammu & Kashmir and at isolated places over North Eastern States, Himachal Pradesh, Uttarakhand and West Bengal.

**Difference in NOAA/VIIRS/BLENDED NDVI between week number 23 and week number 22**



Moderate difference in agricultural vigour was noticed at many places over Jammu & Kashmir, Uttar Pradesh, Bihar, Odisha, Gangetic West Bengal, North Eastern States, Southern Andhra Pradesh, South Interior Karnataka and Tamilnadu.

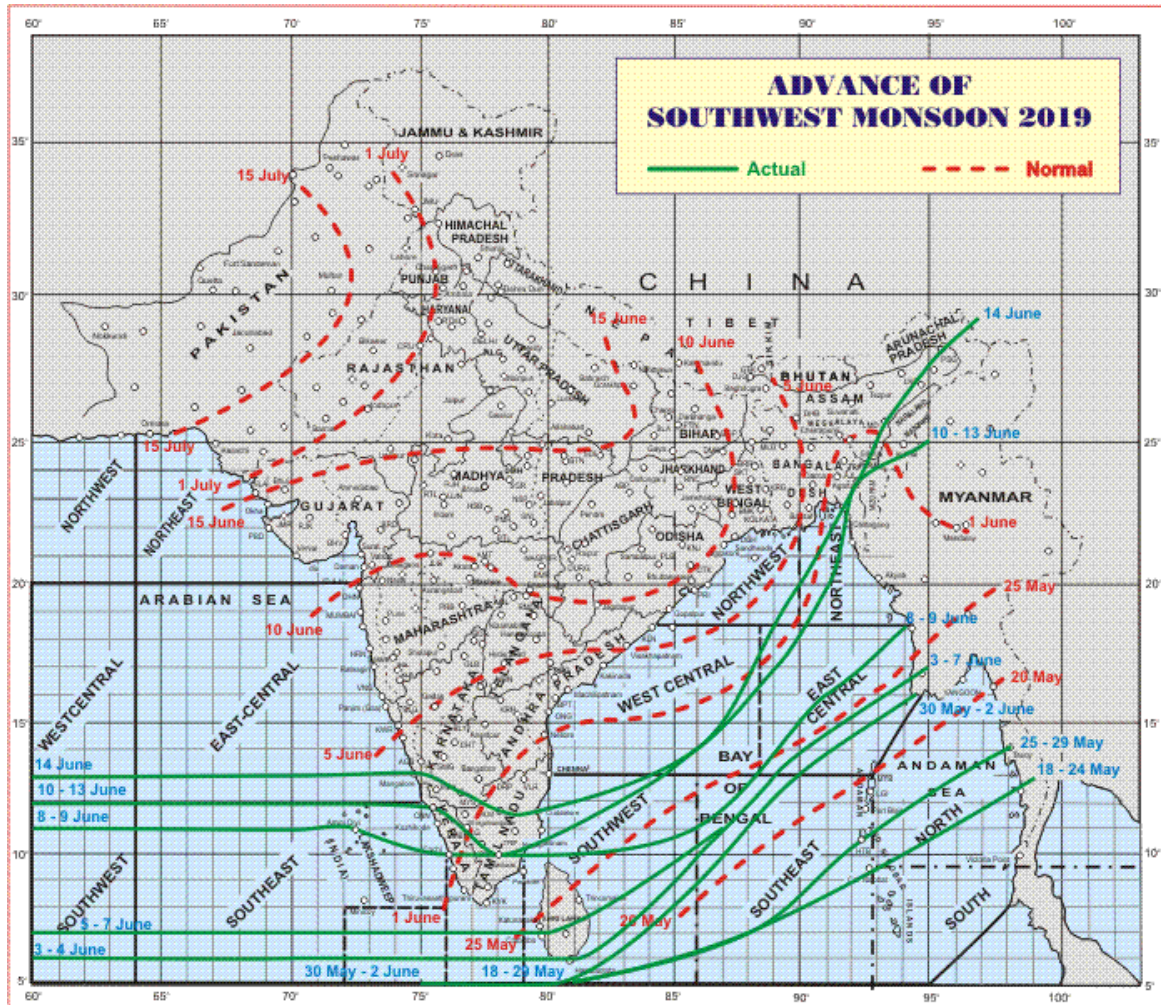
**Standardised Precipitation Index Cumulative 4 weeks for the period 16<sup>th</sup> May to 12<sup>th</sup> June 2019**



- Extremely/severely wet conditions experienced in Baramulla, Doda, Reasi, Kupwara, Ramban, Bandipore districts of Jammu; Bangalore Rural, Chickballapur districts of Karnataka.
- Extremely/Severely dry conditions experienced in East Godavari, West Godavari, Khammam, Nizamabad, Warangal districts of Andhra Pradesh, Darrang, Lakhimpur, N. C. Hills, Dhubri, Karbi Anglong, Bongaigaon districts of Assam, Aurangabad, Begusarai, Bhabua, East Champaran, Gaya districts of Bihar.
- Moderately dry conditions experienced at a few districts of Madhya Pradesh, Odisha, Uttar Pradesh, Guntur, Krishna, Vizianagaram, Adilabad, Nalgonda districts of Andhra Pradesh, East Siang, Lohit, Upper Siang districts of Arunachal Pradesh, Goalpara, Karimganj districts of Assam, Buxar, Darbhanga, Jahanabad, Khagaria, Lakhisarai, Saran, Sitamarhi, Sheikhpura districts of Bihar, Banaskantha, Broach, Valsad, Dangs, Surat, Anand, Dahod, Narmada, Surendranagar districts of Gujarat, Mahendragarh, Kaithal districts of Haryana, Shimla, Sirmour districts of Himachal Pradesh, Kodagu districts of Karnataka, Mumbai City, Ahmednagar, Parbhani, Akola districts of Maharashtra, Churachandpur districts of Manipur, SAS Nagar, Mohali districts of Punjab, Bhilwara, Bundi, Dungarpur, Sirohi, Tonk, Dausa, Karauli districts of Rajasthan, Coimbatore, Dindigul, Ramanathapuram, Sivaganga, Trichy, Tiruvannamalai

districts of Tamilnadu, Dadara & Nagar Haveli, Diu, Puducherry districts of Union Territory, Jalpaiguri, South Dinajpur, Birbhum, Burdwan, Hooghly districts of West Bengal, Garhwa, Godda, Palamu, Ranchi, West Singhbhum districts of Jharkhand, Dehradun, Udham Singh Nagar districts of Uttarakhand, Bilaspur, Dantewada, Durg, Koriya, Mahasamund, Raigarh districts of Chhattisgarh, Central Delhi, West Delhi and Lakshadweep.

## Advance of SouthWest Monsoon 2019



- ♦ Southwest Monsoon has further advanced into some parts of central Arabian sea, remaining parts of Kerala, some parts of Karnataka, Tamilnadu, most parts of southwest Bay of Bengal, some more parts of central & North Bay of Bengal and parts of northeast India.
- ♦ Northern Limit of Monsoon (NLM) now passes through Lat. 13°N/Long. 60°E, Lat. 13°N/Long. 70°E, Mangalore, Mysore, Salem, Cuddalore, Lat. 14°N/Long. 86°E, Lat. 20°N/Long. 90°E, Agartala, Lumding, Passighat and Lat. 29°N/Long. 97°E.
- ♦ Conditions are becoming favourable for further advance of Southwest Monsoon into some more parts of central Arabian Sea, Karnataka, remaining parts of Tamilnadu, some more parts of central Bay, north & south Bay and some more parts of northeast India and some parts of north Bengal and Sikkim in 2-3 days.

## Significant weather features

- ◆ The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as VAA'YU) over northeast and adjoining eastcentral Arabian Sea moved west-northwestwards with a speed of about 06 kmph in last six hours and lay centred at 0530 hours IST of today, the 14th June, 2019 near Lat. 21.0°N and Long. 68.5°E over northeast & adjoining eastcentral Arabian Sea, about 130 km southwest of Porbandar (Gujarat), 185 km west of Veraval (Gujarat) and 250 km west of Diu. This system is moving west-northwestwards skirting the Saurashtra coast affecting Porbandar & Devbhoomi Dwarka with wind speed 60-70 kmph gusting to 80 kmph and Gir Somnath and Junagarh with wind speed 40-50 kmph gusting to 60 kmph. It is very likely to continue to affect these districts during next 12 hours and wind speed over these districts is very likely to decrease gradually thereafter.

### **Weather Warning:**

- ◆ **14<sup>th</sup> June: Gale winds speed** of the order of 120-130 kmph gusting to 145 kmph very likely over north Arabian Sea. Gale wind speed of the order of 60-70 kmph gusting to 80 kmph very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea. Strong wind speed of the order of 45-55 kmph is very likely over northwest Bay of Bengal. The **Sea condition** is Phenomenal over north Arabian sea and over northern parts of east central Arabian sea during next 12 hours. The sea condition is rough to high over rest part of eastcentral part of Arabian sea. **Fishermen are advised** not to venture into north Arabian Sea, along & off Gujarat coast and along & off Maharashtra coast. Total Suspension of Fishing Operations.
- ◆ **15<sup>th</sup> June: Gale winds speed** of the order of 100-110 kmph gusting to 125 kmph very likely over north Arabian Sea, along & off Gujarat coast. Squally wind speed of the 50-60 kmph gusting to 70 kmph very likely over to Gujarat coast. Strong wind speed of the order of 45-55 kmph is very likely over westcentral Bay of Bengal. The **Sea condition** is Phenomenal over north Arabian sea. The sea condition is rough to very rough over rest part of eastcentral parts of Arabian sea. **Fishermen are advised** not to venture into north Arabian Sea and along & off Maharashtra coast. Total Suspension of Fishing Operations.
- ◆ **16<sup>th</sup> June: Gale winds speed** of the order of 80-90 kmph gusting to 100 kmph very likely over north Arabian Sea, along & off Gujarat coast. Squally wind speed of the 45-55 kmph gusting to 65 kmph very likely over to Gujarat coast. Strong wind speed of the order of 45-55 kmph is very likely over central Bay of Bengal, 35- 45 kmph over southwest Bay of Bengal. The **Sea condition** is Phenomenal over north Arabian sea. **Fishermen are advised** not to venture into north Arabian Sea and along & off Maharashtra coast. Total Suspension of Fishing Operations.
- ◆ **17<sup>th</sup> June:** Strong wind speed of the order of 35-45 kmph is likely over west central and south Bay of Bengal, 35-45 kmph over southwest Bay of Bengal. The **Sea condition** is Phenomenal over north Arabian sea. **Fishermen are advised** not to venture into north Arabian Sea and along & off Maharashtra coast. Total Suspension of Fishing Operations.



## Weather Forecast for next 5 days valid upto 0830 hours of 19<sup>th</sup> June 2019

Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.

- ◆ Maximum temperatures are likely to remain above normal by 2-3°C over some parts of east India during next 2-3 days. No significant change in maximum temperatures likely over rest of the country during next 2 days and they are likely to fall gradually by 2-3°C thereafter.

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

14-June-2019

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

**14 Jun (Day 1):** ◆ **Thunderstorm accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Madhya Pradesh, Chhattisgarh, Bihar. Coastal Andhra Pradesh, Jharkhand, West Bengal & Sikkim, Odisha and Tamilnadu, Puducherry & Karaikal; **with dust storm & gusty winds (30-40 Kmph)** at isolated places over Rajasthan.

- ◆ **Heavy rainfall** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamilnadu & Puducherry, Konkan & Goa, Saurashtra & Kutch ,Coastal & South Interior Karnataka, Kerala and Andaman & Nicobar Islands.
- ◆ **Heat wave** in isolated pockets over West Madhya Pradesh, Vidarbha, Gangetic West Bengal, Coastal Andhra Pradesh, Jharkhand and Telangana.

**15 Jun (Day 2):** ◆ **Thunderstorm accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Madhya Pradesh, Chhattisgarh, Coastal Andhra Pradesh, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Jammu & Kashmir, Odisha and Tamilnadu, Puducherry & Karaikal; **with dust storm & gusty winds (30-40 Kmph)** at isolated places over Punjab, Haryana, Chandigarh & Delhi and Rajasthan.

- ◆ **Heavy rainfall** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Arunachal Pradesh, Tamilnadu & Puducherry, Konkan & Goa, Coastal & South Interior Karnataka, Kerala and Sub-Himalayan West Bengal & Sikkim.
- ◆ **Heat wave** in isolated pockets over West Madhya Pradesh, Vidarbha, Gangetic West Bengal, Coastal Andhra Pradesh, Jharkhand and Telangana.

**16 Jun (Day 3):** ◆ **Thunderstorm accompanied with lightning, hail and gusty winds (40-50 Kmph)** at isolated places very likely over Himachal Pradesh and Uttarakhand; **with gusty winds (30-40 Kmph)** at isolated places over Jammu & Kashmir, Madhya Pradesh, Chhattisgarh, Vidarbha, Telangana, Rayalaseema, Coastal Andhra Pradesh, Jharkhand and Odisha; **with dust storm & gusty winds (30-40 Kmph)** at isolated places over Uttar Pradesh, Punjab, Haryana, Chandigarh & Delhi and Rajasthan.

- ◆ **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim. **Heavy rainfall** at isolated places over Assam & Meghalaya, Arunachal Pradesh, Konkan & Goa and Coastal Karnataka.

- ◆ **Heat wave conditions** in isolated pockets very likely over Telangana.

**17Jun (Day 4):** ◆ **Thunderstorm accompanied with lightning, hail and gusty winds (40-50 Kmph)** at isolated places very likely over Himachal Pradesh and Uttarakhand; **with gusty winds (30-40 Kmph)** at isolated places over Jammu & Kashmir, East Madhya Pradesh, Bihar, Gangetic West Bengal, Chhattisgarh, Vidarbha, Rayalaseema, Coastal Andhra Pradesh, Jharkhand and Odisha; **with dust storm & gusty winds (40-50 Kmph)** at isolated places over Rajasthan; **with dust storm & gusty winds (30-40 Kmph)** at isolated places over Uttar Pradesh, Punjab and Haryana, Chandigarh & Delhi.

- ◆ **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim. **Heavy rainfall** at isolated places over Assam & Meghalaya, Arunachal Pradesh, Konkan & Goa, Andaman & Nicobar Islands and Coastal Andhra Pradesh.

**18 Jun (Day 5):**◆ **Thunderstorm accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Himachal Pradesh, Uttarakhand, Jammu & Kashmir, Bihar, Gangetic West Bengal, Chhattisgarh, Vidarbha, Coastal Andhra Pradesh, Jharkhand and Odisha; **with dust storm & gusty winds (40-50 Kmph)** at isolated places over Rajasthan; **with dust storm & gusty winds (30-40 Kmph)** at isolated places over Uttar Pradesh, Punjab and Haryana, Chandigarh & Delhi.

- ◆ **Heavy rainfall** at isolated places over Kerala, Konkan & Goa, Madhya Maharashtra, South Interior Karnataka, Andaman & Nicobar Islands and Coastal Andhra Pradesh.
- ◆ Strong wind speed of the order of 35-45 kmph is likely over west central and south Bay of Bengal, 35-45 kmph over southwest Bay of Bengal.

#### **Weather Outlook for subsequent 2 days from 19<sup>th</sup> to 21<sup>th</sup> June 2019**

- ◆ Widespread rainfall likely with isolated heavy falls likely over West Coast, East, Central and Northeast India, Andaman & Nicobar Islands and isolated to scattered rainfall likely over Northwest Indian Region.

### Salient advisories

- As thunderstorm **accompanied with lightning, hail and gusty winds (40-50 Kmph)** at isolated places very likely over Himachal Pradesh and Uttarakhand on 16<sup>th</sup> & 17<sup>th</sup>; **Thunderstorm accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Jammu & Kashmir; **with dust storm & gusty winds (30-40 Kmph)** at isolated places over Punjab, Haryana, Chandigarh & Delhi and Rajasthan on 15<sup>th</sup> to 18<sup>th</sup> over Uttar Pradesh from 16<sup>th</sup> to 18<sup>th</sup> June, it is advised to use hail net for orchard crops to protect from mechanical damage in Himachal Pradesh and Uttarakhand. Provide mechanical support to young fruit plants, staking of vegetables to prevent the crops from lodging due to strong winds.
- Thunderstorm **accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Coastal Andhra Pradesh from 14<sup>th</sup> to 18<sup>th</sup> , over Tamilnadu, Puducherry & Karaikal on 14<sup>th</sup>&15<sup>th</sup> June, **Thunderstorm accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Bihar on 14<sup>th</sup>, 15<sup>th</sup>,17<sup>th</sup> & 18<sup>th</sup>, over Jharkhand, West Bengal & Sikkim, Odisha during the period, provide mechanical support to young fruit plants banana and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane. Avoid application of plant protection measures and fertilizers to the standing crops during strong / squally / gusty winds.
- **Heat wave conditions very likely** in isolated pockets over Coastal Andhra Pradesh, Gangetic West Bengal and Jharkhand on 14<sup>th</sup> & 15<sup>th</sup> June and over Telangana from 14<sup>th</sup> to 16<sup>th</sup> June, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to high temperature; undertake mulching with straw to conserve soil moisture. Provide shade for young fruit plants for protection from scorching sun.
- As **rain/thundershowers** likely at most places over Jammu & Kashmir and Himachal Pradesh from 16<sup>th</sup> to 18<sup>th</sup> and at many places over Uttarakhand on 17<sup>th</sup> & 18<sup>th</sup>, at most/many places over Kerala, at most places over Coastal Karnataka during the period along with heavy rainfall at isolated places 14<sup>th</sup> to 16<sup>th</sup> June, rain/thundershowers likely at most/many places over **Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** during the period along with **heavy rainfall** at isolated places likely over Assam & Meghalaya, Arunachal Pradesh, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Kerala, Assam & Meghalaya.
- Utilizing the realised and expected rainfall, continue land preparation and transplanting of *Virippu* rice in Kerala. In Coastal Karnataka, continue sowing of drill sown rice crop and undertake nursery preparation for rice. In South Interior Karnataka, continue land preparation for sowing of kharif crops like pulses (cowpea, green gram, black gram, horse gram, field bean etc), rice, ragi, sunflower and maize and undertake sowing wherever sufficient soil moisture is available in the fields. In Assam,



continue nursery bed preparation / sowing of *Sali* rice.

- In view of the **heat wave conditions** in isolated pockets over Vidarbha, Telangana and West Madhya Pradesh during next two days, it is advised to take necessary measures and protect livestock from heat stroke. Keep cattle in sheds and avoid grazing during noon hours. Provide cool drinking water mixed with minerals to livestock at frequent intervals to avoid dehydration. In poultry sheds water tank and lines may be covered with gunny bags to provide cool water. Foggers and sprinklers may be used to reduce temperature

## *Detailed Agromet Advisories*

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

**Realised Rainfall:** Rainfall occurred in all districts of Kerala and Kanyakumari, Nilgiris and Tirunelveli districts of Tamilnadu; Mahabubnagar, Nagarkurnool, Wanaparthy districts of Telangana; in all districts of Coastal Karnataka, Bagalkote district of North Interior Karnataka, in Bangalore Urban, Chikaballapur, Chikkamagaluru, Hassan, Kodagu, Kolar, Mysuru, Ramanagara districts of South Interior Karnataka. Weather remained mainly dry over rest of the region during the week.

**Advisories:**

- As rain/thundershowers likely at most/many places over Kerala, at most places over Coastal Karnataka during the period along with heavy rainfall at isolated places 14<sup>th</sup> to 16<sup>th</sup> June, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields.
- Thunderstorm **accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Coastal Andhra Pradesh from 14<sup>th</sup> to 18<sup>th</sup>, over Tamilnadu, Puducherry & Karaikal on 14<sup>th</sup> & 15<sup>th</sup> June, provide mechanical support to young fruit plants banana and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane. Avoid application of plant protection measures and fertilizers to the standing crops during strong / squally / gusty winds.
- **Heat wave conditions very likely** in isolated pockets over Coastal Andhra Pradesh on 14<sup>th</sup> & 15<sup>th</sup> and over Telangana from 14<sup>th</sup> to 16<sup>th</sup> June, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to high temperature; undertake mulching with straw to conserve soil moisture. Provide shade for young fruit plants for protection from scorching sun.

**Kerala:**

- Undertake land preparation and transplanting of *Virippu* rice and continue sowing of direct sown paddy crop. Undertake planting of new seedlings of coconut and banana.
- In Northern Zone, undertake for planting of coconut seedlings.

**Andhra Pradesh:**

- In North Coastal Andhra Pradesh, undertake land preparation for planting of rainfed sugarcane and procure paddy seed and green manure seed.
- In Scarce rainfall Zone of Rayalaseema, procure the seed and fertilizers and keep the inputs ready to take up sowing only after receiving sufficient rainfall after onset of monsoon. Undertake sowing only after receiving 50mm rainfall for red soils and 75 mm rainfall for black soils. Also prepare the land for sowing of kharif crops.
- In Krishna Godavari Zone of Andhra Pradesh, undertake pre-kharif pulses and complete the sowing of green manure crops.
- In Southern Zone of Andhra Pradesh, present weather conditions are congenial for leaf folder and stem borer attack in paddy which is at nursery to tillering stage, spray cartaphydrochloride @ 2 g/L of water. Protect the groundnut crop from wilting by giving frequent irrigation.

**Telangana:**

- In Southern Telangana, undertake land preparation for timely sowing of rainfed crops. Undertake sowing of rainfed crops like Soybean, Jowar, Maize, Redgram, Greengram, Cotton etc., only after receiving cumulative rainfall of 50-60 mm in light soils and 60-75 mm in heavy soils or the soil should be wet up to top 15-20 cm after onset of South-West monsoon rains.
- In Northern Telangana, provide light irrigation in vegetables. Soil should be wet up to top 15-20 cm. after onset rains, undertake sowing of rainfed crops like maize, soybean, redgram, greengram and cotton etc. Procure and keep ready the seed, fertilizer and for timely sowing rainfed crops.

- In Southern Telangana, the prevailing dry weather conditions are congenial for incidence of sucking pests in vegetables. To control, spray Fipronil @ 2ml or Thiomethoxim @ 0.3g per litre of water. Prevailing weather conditions are congenial for the incidence of Shoot & Fruit Borer in Brinjal. To control, spray Flubendiamide @ 0.4 g or Chlorantriliprole @ 0.2ml per liter of water two times at weekly interval. Prevailing weather conditions are congenial for the incidence of Thrips in Tomato. Monitor the pest, if noticed control it by spraying Dimethoate @ 2 ml per liter of water.

#### **Tamil Nadu:**

- In Cauvery Delta Zone, continue nursery sowing of kuruvai season rice.
- In North Western Zone, undertake land preparation for sowing of groundnut. Farmers are advised to seed treatment of groundnut seeds with pseudomonas bio control agent (10 g / 1 kg of seeds) before sowing to control root rot disease during early vegetative phase of groundnut crop.
- In Southern Zone, for control of Gray mould disease in tomato, spray Tebuconazole + Captan @ 100 ml + sticky agent @ 10ml with 10 litres of water. Also white fly on cotton, spray neem seed kernel extract 50 kg & neem oil at 5 ml/l of water (or) Acetamiprid<sub>SEP</sub> 20% SP 100 g/ha.

#### **Karnataka:**

- In Coastal Karnataka, continue sowing of drill sown rice crop. Undertake nursery preparation for rice crop. Continue planting of arecanut. Continue harvesting of mango and vegetables fruits and keep in safer places. Staking in banana in recommended.
- In South Interior Karnataka, continue land preparation for kharif sowing of pulses (cowpea, green gram, black gram, horse gram, field bean etc), rice, ragi, sunflower, maize, minor millets, sugarcane and vegetable crops and undertake sowing wherever sufficient soil moisture is available in the field. Under mono cropping the long duration crops red gram, castor, maize and under double cropping the short duration crops sesame, groundnut, cowpea and black gram are suggested. Complete harvesting of rice crop.
- In North Interior Karnataka, continue land preparation for sowing of *kharif* crops and undertake fresh planting of fruit trees. Continue sowing of green gram, soybean, groundnut and maize with irrigation facility. After receiving sufficient rainfall, undertake sowing of sunflower, Bt. cotton, green gram, red gram, bajra, maize, sesamum, Navane and groundnut (bunch type) on preference. Intercropping of bajra+ groundnut (bunch) in 2:4 row proportion; bajra + red gram in 2:1 row proportion; groundnut (bunch) + red gram in 3:1 or 4:2 row proportion, red gram + sesamum in 1:2 or 2:4 row proportion is suggested.

#### **Animal Husbandry**

- In Karnataka, keep cattle in safer places. Vaccinate the animals.

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

**Realised Rainfall:** Rainfall occurred in Anjaw, Changlang, Dibang Valley, East Kameng, East Siang, Kurung Kumey, Lohit, Lower Dibang Valley, Papumpare, Tirap, Upper Siang, Upper Subansari, West Kameng and West Siang districts of Arunachal Pradesh; Bongaigaon, Cachar, Chirang, Dhemaji, Dibrugarh, Hailakandi, Jorhat, Kamrup(Metro), Karimganj, Kokrajhar, Lakhimpur, Nalbari, Sonitpur, Sibsagar, Tinsukia and Udalgiri districts of Assam; all districts of Meghalaya; Aizwal, Champhai, Chhimituipui, Kolasib, Lawngtlai, Saiha and Serchhip districts of Mizoram; Bishnupur, Chandel, Churachandpur, Imphal West, Senapati, Tamenglong and Thoubal districts of Manipur; Dimapur, Kephire, Mokokchung, Mon and Tuensang districts of Nagaland and North Tripura district of Tripura.

#### **Advisories:**

- As rain/thundershowers likely at most/many places over **Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** during the period along with **heavy rainfall** at isolated places likely over Assam & Meghalaya, **Arunachal Pradesh**, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields.

#### **Arunachal Pradesh:**

- Continue transplanting of kharif rice.
- To control infestation of leaf blast & leaf spot in jhum rice, spray Carbendazim @2g/litre water on clear days.

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

- In Assam, continue nursery bed preparation / sowing of Sali rice.
- In Hill Zone of Assam, continue land preparation and sowing of pigeon pea and cotton.
- In Central Brahmaputra Valley of Assam, undertake land preparation and sowing of groundnut.
- In Upper Brahmaputra Valley of Assam, undertake planting of black pepper and transplanting of papaya.
- In Meghalaya, continue planting of ginger and turmeric and continue sowing of cucurbits.
- When weather is clear, in transplanted tomato, spray with Bio- formulation like Trichoderma spp. and Pseudomonas spp. @ 2.5g/litre at 30 days intervals to prevent late blight along with Neem oil based formulations of Azadirachtin (as per label) to control leaf miner disease attack.

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

- In Nagaland, continue field preparation for TRC/WRC paddy and transplanting for chilli.
- In Manipur, continue nursery raising and transplanting of kharif rice. Continue land preparation for transplanting of rice seedlings and preparation of nursery for early cauliflower in the upland area.
- In Manipur, for stem borer in maize, apply few granules of Carbofuran 3G in whorl of plant against stem borer after current spells of rain.
- In Mizoram, continue sowing of maize, green gram, black gram and planting of ginger and turmeric.
- In Tripura, continue transplanting of Aus rice and maintain 2-3 cm of water in the field. Complete the sowing of maize in upland and medium upland. Continue sowing of groundnut. Maintain good drainage to avoid stagnant water in the field of cowpea at pod formation stage.

**Animal Husbandry:**

- In Nagaland and Manipur, pig should be vaccinated against all infectious diseases before the monsoon starts.
- In Lower Bramhaputra Valley of Assam, during monsoon season the calves are infected more by the worms. To reduce the problem, it is advised to give Piperzine or Mebendazole at recommended dose in consultation with veterinary doctor.
- In Upper Bramhaputra Valley of Assam, high rainfall coupled with high temperature and humidity is congenial for the occurrence of Foot & Mouth disease in livestock. Farmers are advised to immediately vaccinate their farm animals against the disease after consultation with a local veterinarian

**Fishery:**

- In Mizoram, as heavy rainfall is forecasted during next 2-3 days, repair damaged dykes of fisheries ponds and take care so that fishes does not escape.
- In Meghalaya, maintain proper drainage system and fix the net in the drainage pipe in the fish pond. Maintain of proper dyke.
- In Barak Valley Zone of Assam, due to prevailing rainfall the ponds are getting filled up with the rain water so, in this situation there may be chances of bacterial disease in fishes. To control the diseases apply lime @ 6 kg per bigha of pond.

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

**Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands; in Araria, Madhepura, Purnea, Supaul and West Champaran districts of Bihar; in South 24 Paraganas district of Gangetic West Bengal and in Cooch Behar, Darjeeling, East Sikkim, Jalpaiguri, North Sikkim and South Sikkim districts of Sub-Himalayan West Bengal and Sikkim. Weather remained mainly dry over rest of the region.

**Advisories:**

- **Thunderstorm accompanied with lighting and gusty winds (30-40 Kmph)** at isolated places very likely over Bihar on 14<sup>th</sup>, 15<sup>th</sup>, 17<sup>th</sup> & 18<sup>th</sup>, over Jharkhand, West Bengal & Sikkim, Odisha during the period, provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane in Odisha. Avoid application of plant protection measures and fertilizers to the standing crops during strong / squally / gusty winds.
- **Heat wave conditions very likely** in isolated pockets over Gangetic West Bengal and Jharkhand on 14<sup>th</sup> & 15<sup>th</sup> June, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to high temperature; undertake mulching with straw to conserve soil moisture. Provide shade for young fruit plants for protection from scorching sun.

**Odisha:**

- Complete the sowing of direct seeded paddy in low land and medium low land. Go for early sowing of kharif vegetables like okra and cucurbits. Take up sowing of arhar and maize. Complete the planting of turmeric & ginger.
- In case of attack of fruit borer in tomato, apply 80 ml Spinosad 14.5SC in 200 litres of water/acre.

**Bihar:**

- Continue land preparation for long duration rice, kharif maize and kharif onion crops. Continue harvesting of early sown green gram and black gram during clear weather. Continue sowing of turmeric. Intercultural operation and monitoring of pests is advised in vegetables such as lady's finger, pumpkin, cucumber, sponge gourd, bottle gourd, etc. Complete the sowing of elephant foot yam.
- Spray Dimethoate 30 EC @ 2 ml+10 gram sugar /litre of water for infestation of fruit fly in cucurbit crops.

**Jharkhand:**

- Start land preparation for timely sowing of direct seeded upland rice. Complete the sowing of upland rice by 30th June. Prepare field for early vegetables like long gourd, round gourd, bitter guard, sponge gourd, ridge gourd, cucumber and cowpea.
- To control fruit & shoot borer in okra, spray neem extract insecticide @ 1.5 to 2 ml / litre of water.

**West Bengal:**



- In Sub-Himalayan West Bengal, take up planting of ginger after seed treatment with Carbendazim + Mancozeb @ 2g/litre of water for 30 minutes.
  - In Gangetic West Bengal, complete the final land preparations in upland areas and go for sowing of the paddy crop as early as possible. Make proper bunds to hold water in the field. Prepare the field for paddy nursery raising in the low land areas. Start sowing of *Olitorius* jute. Collect and destroy the borer affected fruits of bhindi, chilli and brinjal crops and spray Neem oil @ 5ml/litre of water at clear weather conditions.
- Andaman & Nicobar Islands:**
- In Andaman & Nicobar Islands, prepare field for raising rice nursery. Drain excess water from the vegetable field and immediately harvest the matured fruits as moderate to heavy rainfall is expected during next five days. Make channel in coconut garden to avoid overland flow of rain water.
- Animal Husbandry:**
- In Bihar, vaccinate cattle against Anthrax, BQ and HS diseases.
  - In Odisha, do not allow cattle to graze during the hotter parts of the day. Provide cool drinking water.
  - In West Bengal, carry out vaccination and de-worming of cattle before the monsoon season.
  - In Andaman & Nicobar Islands, provide micronutrients, like Chromium @ 1 ppm and Zinc @ 80 ppm in the diets of the domestic animals and birds to improve immunity. Do de-worming of all the pigs and provide shelter for piglets.
- Fishery:**
- In Odisha, harvest all the cultured fish from the pond and drain out water from it for complete drying. In perennial ponds, where water draining is impossible, apply Mahua Oil Cake 1tonne/acre to kill all the predatory and weed fishes. Strengthen the embankments of the ponds.
  - In West Bengal, prepare pond for carp cultivation. Apply mahua cake for destruction of harmful insects and fish and let the pond remain in such way for 21 days.
  - In the Andaman & Nicobar Islands, start the breeding for fish (IMC) during rainy days and breed 1:2 (female : male) ratio of body weight and inject ovaprim @ 0.5 ml/kg for female and 0.2-0.3 ml/kg for male during evening hours.

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

**Realised Rainfall:** Rainfall occurred in Mumbai Suburban, Sindhudurg districts of Maharashtra; North and South Goa districts of Goa. Weather remained dry over the region during the week.

**Advisories:**

- **Heat wave conditions very likely** in isolated pockets over Vidarbha on 14<sup>th</sup> & 15<sup>th</sup> June, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to high temperature; undertake mulching with straw to conserve soil moisture. Provide shade for young fruit plants for protection from scorching sun.
- In view of the Gale wind speed of the order of 60-70 kmph gusting to 80 kmph very likely over Gujarat coast during next 12 hours, provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds in coastal districts.
- As rain/thundershowers likely at most places over **Konkan & Goa** during the period along with **heavy rainfall** at isolated places and rain/thundershowers likely at many places over Saurashtra & Kutch on 14<sup>th</sup>, 17<sup>th</sup> & 18<sup>th</sup> June, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Konkan & Goa.

**Maharashtra:**

- In Konkan region, complete nursery sowing of rice and nagli. Undertake land preparation for sowing of groundnut after current spell of heavy rain. Undertake sowing of okra. To control hoppers, leaf eating caterpillars, shoot borer and midge fly in new flush of mango spray Dimethoate 25 EC @ 12 ml or Monocrotophos 36 WSC @ 11 ml per 10 litres of water after current spell of rain. Apply Urea @ 1 kg and single super phosphate @ 3 kg of with sufficient quantity of FYM per 1 Are (R) area of nursery after current spell of rain.
- In Madhya Maharashtra, continue ploughing in harvested crop fields. Undertake land preparation for *kharif* groundnut. Continue nursery bed preparation for *kharif* rice and nagli. Continue land preparation for groundnut, soybean maize, green gram and jowar. To control white grub in sugarcane, apply 25% Chlorpyrifos with 10 liters of water in the ridges on a non rainy day.
- In Maratwada, undertake land preparation for sowing of *kharif* crops like cotton, pigeon pea, black gram and groundnut. Apply irrigation to orchards and vegetable crops and undertake intercultural operation like weeding in sugarcane fields.
- In Vidarbha, as heat wave conditions are likely to prevail during next 2 days, apply mulching in orchards. Undertake nursery bed preparation for rice and land preparation for pigeon pea.

**Gujarat:**

- In South Gujarat, undertake land preparation for sowing of pigeon pea, green gram and black gram crops. Continue nursery sowing of rice crop. Continue planting of bell pepper, Elephant Foot Yam and Greater Yam. Maintain 2-3 cm water level in rice field.
- In Middle Gujarat, undertake sowing of Bt. cotton. Continue land preparation for pearl millet, groundnut and nursery sowing of rice. Staking may be provided to banana to counteract the effect of wind speed.
- In Saurashtra & Kutch, continue sowing of groundnut crop. Undertake sowing of irrigated hybrid cotton and B.T. cotton crop in Kutch. Continue land preparation for sowing of groundnut, sesame, pulses and pearl millet crops. Complete harvesting of groundnut, pearl millet, green gram crops. Keep harvested produce at safer places.
- In North Gujarat, complete harvesting of groundnut, pearl millet and green gram crops. Continue land preparation for sowing of irrigated hybrid cotton and B.T. cotton crop.
- **Animal Husbandry**
- In Gujarat, keep animals under shade during noon hours and provide clean drinking water.

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

**Realised Rainfall:** Rainfall occurred in Kondagaon district of Chhattisgarh. Weather remained mainly dry/dry over the rest of region during the week.

**Advisories:**

- **Thunderstorm accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Madhya Pradesh 14<sup>th</sup> to 16<sup>th</sup> and over Chhattisgarh during the period, support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds.
- **Heat wave conditions very likely** in isolated pockets over West Madhya Pradesh on 14<sup>th</sup> & 15<sup>th</sup> June, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to high temperature; undertake mulching with straw to conserve soil moisture. Provide shade for young fruit plants for protection from scorching sun.

**Madhya Pradesh**

- In Central Narmada Valley Zone, undertake nursery sowing of rice early and medium duration varieties of rice (Early varieties- Sahbhagi, Danteshwari, JR 201, BVD109, Medium duration varieties: Pusa 1460, WGL-32100, Pusa Sugandha 3, Pusa Sugandha 4, MTU-1010, IR 64, IR 36, JR 353, JR 201, JR 81, JRB 1, Improved Chinnor, Improved Jira Shankar). Keep inputs ready for sowing of soybean and maize. Select disease and pest resistant variety of Soybean for sowing like Ahilya-2(NRC-12), JS 95-60, JS 75-46, JS 97-52, JS 20-29, RVS 2001-4, JS 20-34, JS 20-69, JS 20-94, JS 20-98, NRC-86. Farmers are advised to start digging of pit of appropriate size and distance for new orchard establishment. To control fruit drop in mango, spray planofix 5 ml per pump.
- In Malwa Plateau Zone, field preparation should be done for sowing of pigeon pea and cotton. Farmers are advised to procure good quality seeds from certified source. Prepare the fields and undertake planting of ginger and turmeric.
- In Kymore Plateau and Satpura Hill Zone, undertake field preparation for sowing of vegetables.
- In Satpura Plateau Zone, due to the prevailing high maximum temperature and hot and dry winds banana and papaya fruits are damaged because of sun scorching. Hence, farmers are advised to cover the fruits by using leaves or Jute bags to protect the fruits from sun scorching. It is also advised to provide wind breaks in west/north-west direction. Optimum moisture level should be maintained in cucurbitaceous crops by light and frequent irrigation as dry conditions may lead to drop in yield of the crop.

**Chhattisgarh:**

- In North Hill Zone, prepare nursery for sowing of long duration rice varieties and undertake land preparation for sowing of vegetables. Farmers who are growing fruit crops are suggested for digging of pit for the planting of fruit crops i.e. Papaya, Guava, Mango, Litchi, and Pomegranate etc.
- In Chhattisgarh Plain Zone, deep ploughing of the field should be done and covered with polythene. This will prevent crops from soil borne diseases, weeds and insect eggs will be destroyed in the soil. Farmers are advised to keep seeds of kharif crops ready for sowing. Before nursery sowing or direct seeding of rice crop, rice seeds should be treated with 17 % salt solution. Farmers having the assured irrigation facilities are advised to irrigate the fields for preparing the raised land for rice nursery. Ploughing the field at this time will help the farmers not only in controlling weeds and pests but also facilitate sowing of rice nursery by the second week of June. For sowing of soybean, maize, groundnut crops, fields should be well prepared so that perennial grass are destroyed.

**Animal Husbandry**

- In Madhya Pradesh, before the onset of monsoon, dairy farmers are advised to arrange the vaccines to protect the animals from FMD and jahari fever disease.
- In Chhattisgarh, vaccinate animals against Haemorrhagic Septicaemia (H.S.), Block quarter (B.Q.), etc. To avoid

dehydration, feed solution of 4-5 teaspoon sugar and one fourth amount of salt every half an hour to dairy animals.

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

**Realised Rainfall:** Rainfall occurred in many districts of Jammu & Kashmir; in Nainital, Pithoragarh and Rudrapur districts of Uttarakhand during the week. Weather remained mainly dry/dry over rest of the region.

### **Advisories:**

- Thunderstorm **accompanied with lightning, hail and gusty winds (40-50 Kmph)** at isolated places very likely over Himachal Pradesh and Uttarakhand on 16<sup>th</sup> & 17<sup>th</sup>; **Thunderstorm accompanied with lightning and gusty winds (30-40 Kmph)** at isolated places very likely over Jammu & Kashmir; **with dust storm & gusty winds (30-40 Kmph)** at isolated places over Punjab, Haryana, Chandigarh & Delhi and Rajasthan on 15<sup>th</sup> to 18<sup>th</sup> over Uttar Pradesh from 16<sup>th</sup> to 18<sup>th</sup> June, it is advised to use hail net for orchard crops to protect from mechanical damage in Himachal Pradesh and Uttarakhand. Provide mechanical support to young fruit plants, staking of vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.
- As rain/thundershowers likely at most places over Jammu & Kashmir and Himachal Pradesh from 16<sup>th</sup> to 18<sup>th</sup> and at many places over Uttarakhand on 17<sup>th</sup> & 18<sup>th</sup> June, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.

### **Jammu & Kashmir:**

- In Valley Temperate Zone, undertake transplanting of rice. Complete sowing of pulses.
- In Sub Tropical Zone, complete sowing of rice. Undertake land preparation for sowing of maize. To control tomato leaf curl, remove virus infected plants and spray imidacloprid @ 0.5ml/litre of water during clear weather to check secondary spread of disease.
- In Intermediate Zone, carry out weeding in rice nursery. Maintain optimum water level in the rice nursery. Provide mechanical support for better crop stand in young plants of tomato and cucurbits to avoid losses from gusty winds. Undertake sowing of maize.

### **Himachal Pradesh:**

- In Mid Hills Sub Humid Zone, spray Bactinash (70 gm) or Propineb (600 gm) or Mancozeb (600 gm) for the control of bacterial fruit spots on pomegranate. Spray Myclobutanil (80 gm) or Mancozeb (600gm) or Propineb (600 gm) or Dodine (150 gm) per 200 litres water for the control of scab in apple after current spells of rain.

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

- In Punjab, complete sowing of summer moong, summer mash, cowpea and cucurbits. Undertake transplanting of vegetables (tomato, chilli, brinjal, cauliflower). Complete sowing of cotton including Bt cotton or desi Cotton and planting of turmeric. Undertake field preparation for nursery sowing of rice. Irrigate the vegetable and fruit crops.
- In Haryana, continue sowing of cotton, 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. Undertake field preparation of nursery sowing of rice and land preparation for sowing for pulses i.e. green gram, lobia, moth and pigeonpea. Undertake intercultural/hoeing operation as per requirement of the cotton crop for removal of weed and conserved the soil moisture. Apply light irrigation in existing nursery of rice, planted vegetable crops and fruits at morning or evening hours.
- In Delhi, continue sowing of vegetables, green gram, pigeon pea and cotton. Maintain optimum moisture level in cucurbitaceous crops by light and frequent irrigation. Undertake preparation of nursery for early cauliflower, tomato, chilli, brinjal and land preparation of rice.
- In Western Plain Zone of Punjab, summer moong is severely attacked by the thrips, spray the crop at flower bud initiation stage with 600 ml triazophos 40 EC or 100 ml Rogor 30 EC in 80-100 litres of water per acre.

### **Uttar Pradesh:**

- In East Uttar Pradesh, prepare land for paddy nursery and procure disinfected and certified seeds of paddy. Apply irrigation to vegetable crops, radish, lady finger, watermelon, bitter gourd, moong, sugarcane, and bottle gourd. Undertake planting of banana. Apply cow-dung as fertilizer for guava, papaya, mango, amla and plum date trees.
- In West Uttar Pradesh, apply irrigation to maize, urad, moong, green fodder and green vegetables. Prepare land for paddy nursery. Undertake harvesting of tomato, chilli, lady finger, bitter gourd and



cucumber. Undertake harvesting of timely sown moong and urad; dry them in sunlight and, after drying, store in a dry place.

- For protection from stem borer insects in maize, spray Quinalphos 25 EC @ 2 litres/hectare or Dimethoate 30 EC @ 1litre mixing in 500-600 litre of water. For protection from pod borer insects in urad and moong, spray Quinalphos 25 EC @ 1.5 litres/hectare or Cypermethrin 10 EC @ 750ml/hectare mixing in 700-800 litre of water

#### **Uttarakhand:**

- In Hill Zone, undertake land preparation for sowing of finger millets, soybean and black gram. Continue transplanting of nursery rice. Carry out hoeing and weeding operations in red gram. Stop irrigation to onion and garlic crop few days before harvesting. Undertake harvesting of mature vegetables like tomato, brinjal, chilli and capsicum in valley. Undertake transplanting of vegetables in high altitude. Apply irrigation after planting. Use black polythene as a mulch to avoid weed emergence.
- In Sub-Humid Sub-Tropic Zone, maintain proper soil moisture in rice nursery. Apply irrigation to maize crop. Carry out intercultural operations in sugarcane crop and maintain proper soil moisture.
- In Bhabar and Tarai Zone, continue sowing of soybean. Continue field preparation for nursery sowing of rice. Continue transplanting of capsicum and brinjal in the polyhouse in mid and high hills and apply irrigation.

#### **Rajasthan:**

- In Irrigated North Western Plain Zone and South eastern Humid Plain Zone, continue nursery preparation of rice.
- In Sub Humid Southern Plain and Aravali Hill Zone, due to increase in temperature, apply irrigation at regular interval in summer vegetables and fruits crops. Also, due to increase in wind velocity stop all tillage operation for avoid the wind erosion.
- In Semi Arid Eastern Plain Zone, undertake field preparation for sowing of irrigated groundnut, planting of fruit trees. Also for blight disease in tomato, spray Mencozeb @ 2 gm or copper Oxychloride @ 3 gm per litre water.
- In Transitional Plain Zone of Inland Drainage, undertake nursery preparation for kharif onion Also due to increasing temperature and hot wind , irrigate fruit orchard and vegetable crops.
- In Arid Western Plain Zone, undertake field preparation for groundnut sowing.

#### **Apiculture:**

- In Himachal Pradesh, during this time, bees collect extra honey and store it. Give extra frames to the colony for more honey accumulation. Save the colony from insects. The colony may be divided to increase the numbers.
- In Jammu and Kashmir, protect colonies from high temperature by shifting to shady areas/ cooler places or cover with wet gunny bags. Bees need water to dilute honey and to cool the hives during hot weather conditions. Keep water trough filled with coarse gravel near the hive as it helps bees to spend more time in collecting nectar and less time for water collection.

#### **Animal Husbandary:**

- In Uttar Pradesh, feed mixture of 60% green fodder and 40% dry fodder to animals. Give them sufficient drinking water and minerals. Keep them in dry and clean shed. Vaccinate animals according to schedule.

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