



National Agromet Advisory Service Bulletin

Thursday 24th August 2017

(For the period 24th to 29th August 2017)



Issued by

India Meteorological Department

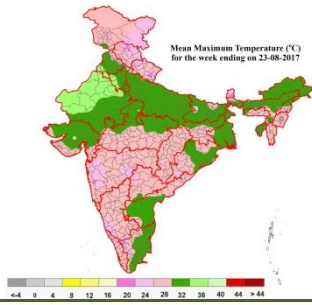
Weblink For

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

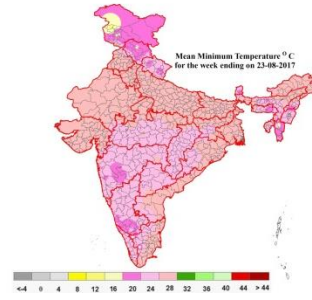
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending 23.08.2017

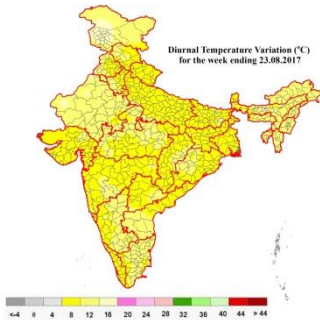
Mean Maximum Temperature (°C) for the week ending 23.08.2017



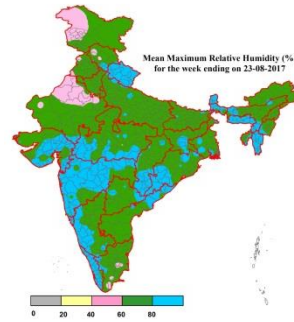
Mean Minimum Temperature (°C) for the week ending 23.08.2017



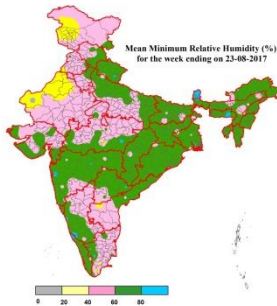
Diurnal Temperature Variation (°C) for the week ending 23.08.2017



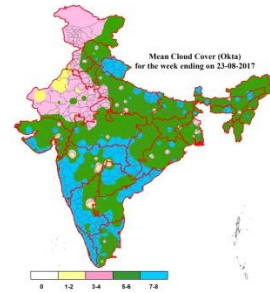
Mean Maximum Relative Humidity (%) for the week ending 23.08.2017



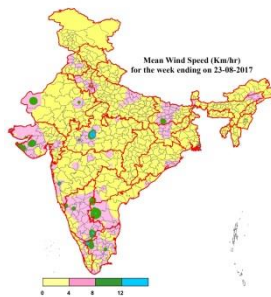
Mean Minimum Relative Humidity (%) for the week ending 23.08.2017



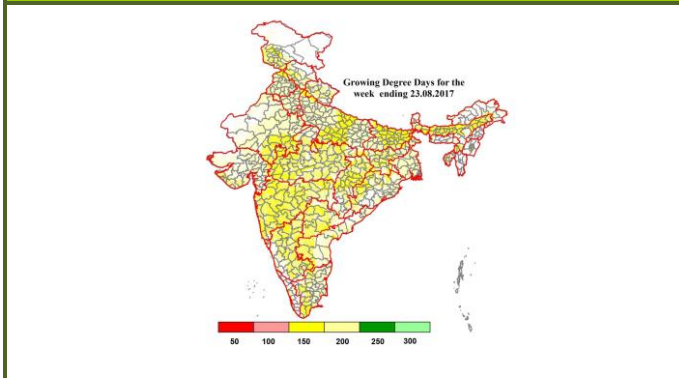
Mean Cloud Cover (okta) for the week ending 23.08.2017



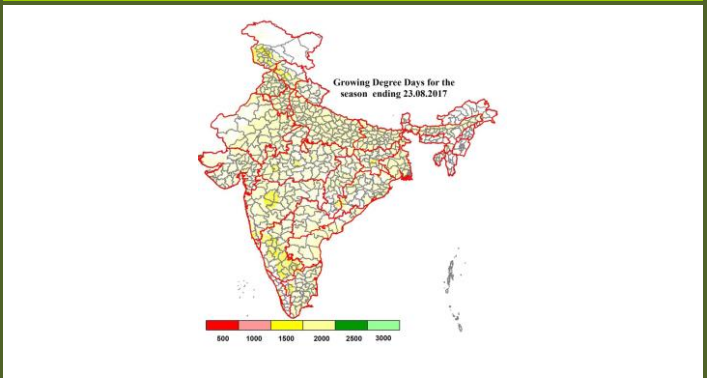
Mean Wind Speed (km/hr) for the week ending 23.08.2017



**Growing Degree Days for the week ending
23.08.2017**

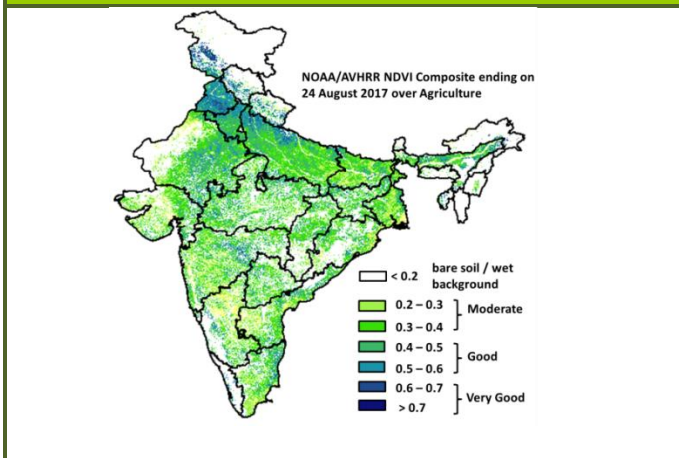


**Growing Degree Days for the season ending
23.08.2017**

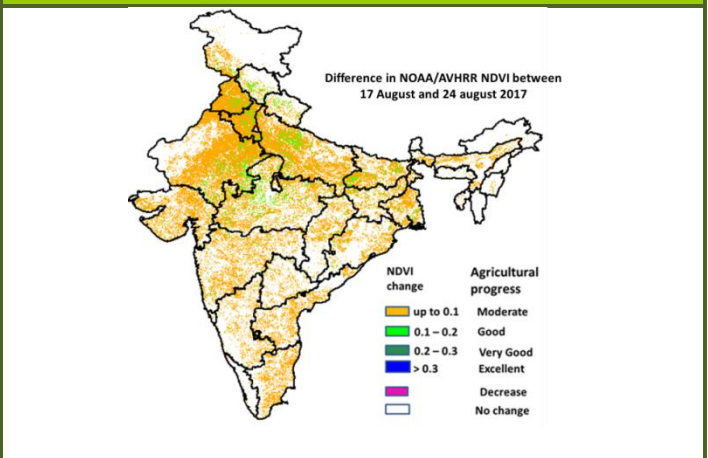


*Base temperature for *Kharif* Season is taken as 10⁰ C

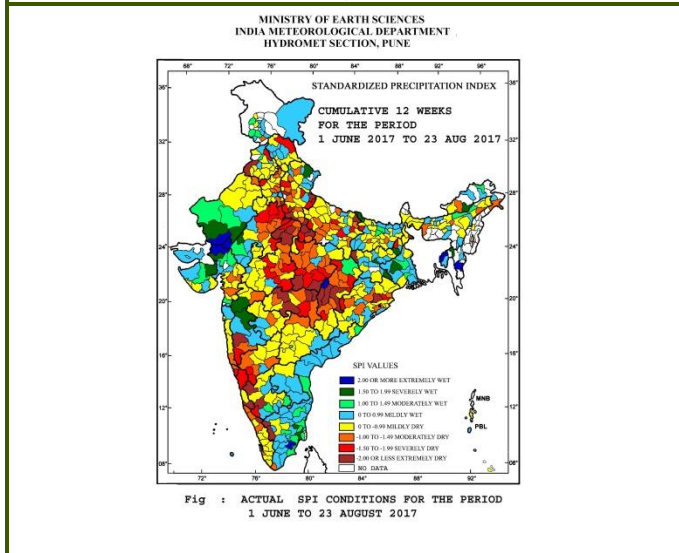
**NOAA/AVHRR NDVI composite ending on 24th
August 2017 over Agricultural regions of India**



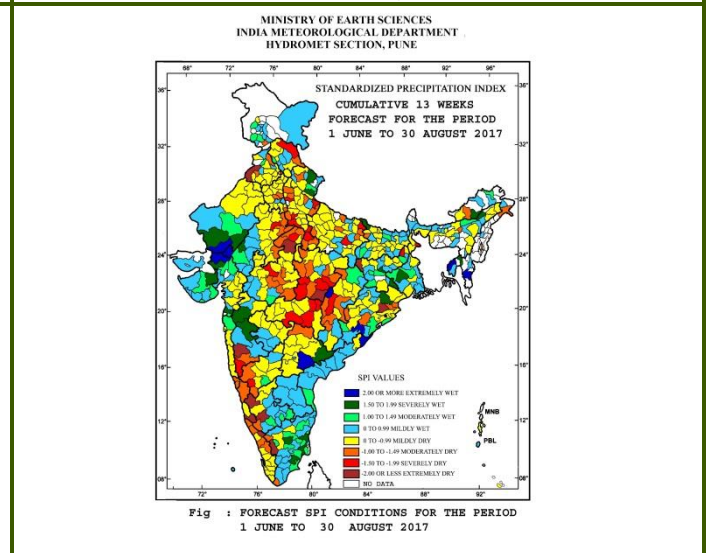
**Difference in NOAA/AVHRR NDVI between 17th
and 24th August 2017**



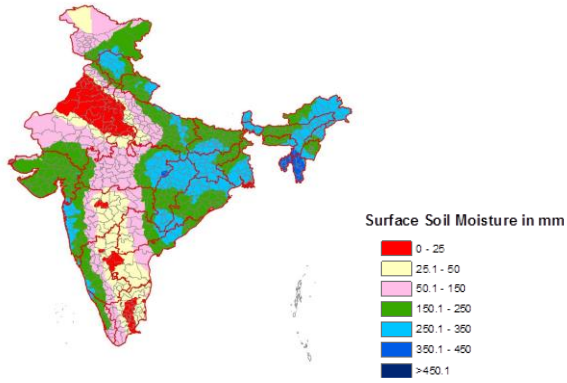
**Standardised Precipitation Index
Cumulative 11 weeks for the period 1st June 2017 to
23rd August 2017**



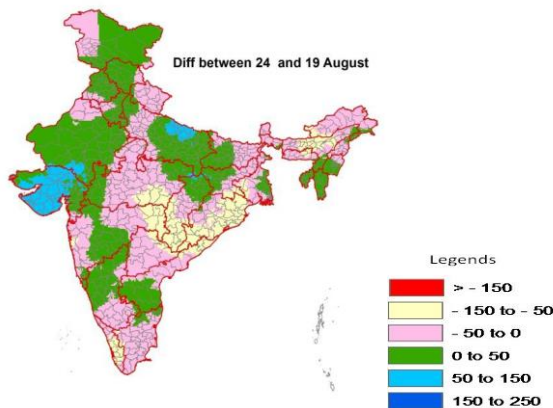
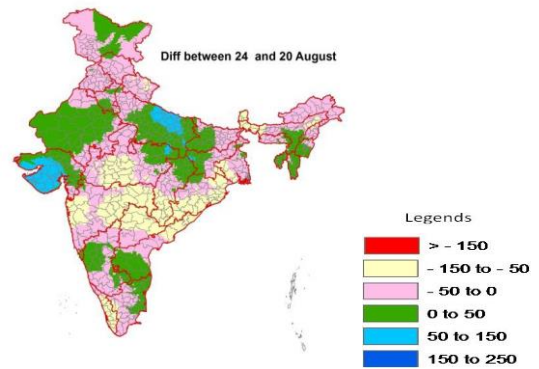
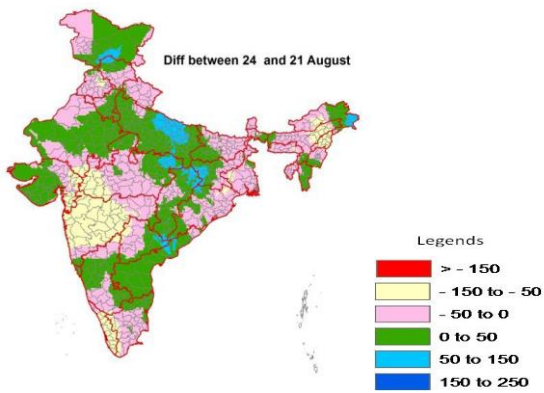
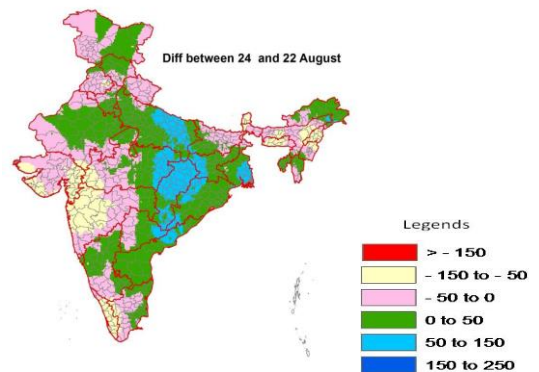
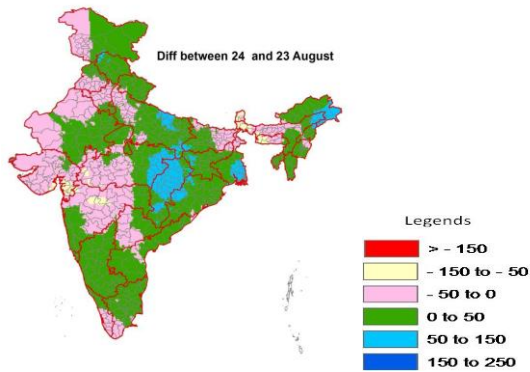
**Standardised Precipitation Index
Cumulative 12 weeks forecast for the period 1st June
2017 to 30th August 2017**



Daily Soil Moisture (mm) for 24th August 2017



Difference of Soil Moisture (mm)



Weather Forecast for next 5 days valid upto 0830 hours of 29th August 2017

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No significant change in maximum temperatures very likely over the country during next 3-4 days.

5 Day Rainfall Forecast (Mid-day) 24th August 2017

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

% Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

- **24 August (Day 1):** Heavy rain at isolated places very likely over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, east Uttar Pradesh, East Rajasthan, south East Madhya Pradesh, Chhattisgarh, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Odisha, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka and Tamilnadu & Puducherry. Thunderstorm accompanied with lightning at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, Bihar, Gangetic West Bengal and Assam & Meghalaya.
- **25 August (Day 2):** Heavy rain at isolated places very likely over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Odisha, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka and Tamilnadu & Puducherry. Thunderstorm accompanied with lightning at isolated places very likely over Gangetic West Bengal.
- **26 August (Day 3):** Heavy to very heavy rain at isolated places very likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura; heavy at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, East Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Konkan & Goa, Telangana and Coastal Karnataka.

- **27 August (Day 4):** Heavy to very heavy rain at isolated places over Nagaland, Manipur, Mizoram & Tripura; Heavy rain at isolated places very likely over Uttarakhand, East Rajasthan, West Madhya Pradesh, Vidarbha, Gangetic West Bengal, Odisha, Assam & Meghalaya, Gujarat region, north Madhya Maharashtra, Konkan & Goa, Telangana and Coastal Karnataka.
- **28 August (Day 5):** Heavy to very heavy rain at isolated places over Gujarat region and north Konkan; Heavy rain at isolated places very likely over Uttarakhand, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Saurashtra & Kutch, north Madhya Maharashtra and Coastal Karnataka.

Weather Outlook for subsequent 2 days from 29th to 31st August 2017

- Rain at most places very likely along west coast and Gujarat.
- Rain at many places very likely over central and east India. Isolated to scattered rain likely over rest of the country.

Salient Advisories

- In the regions likely to receive rainfall at most/many places and heavy/ heavy to very heavy rainfall, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in standing crop fields.
- In North East and North West Alluvial Zone of **Bihar**, in flood affected areas, drain out excess water from standing crop fields. To protect from damping - off of vegetable seedlings in nursery bed, spray Copper oxychloride 50WP @ 3g/litre of water +Streptocycline @ 1g/10 litres of water after current spells of rain. In South Bihar Alluvial Zone, prevailing weather is congenial for attack of leaf folder/stem borer in rice. Farmers are advised to monitor their fields regularly, if observed, then broadcasting of Cartap 4% granules @ 10 kg/acre is recommended.
- In the Central Brahmaputra Valley Zone of **Assam**, in flood affected areas, undertake direct seeding with the photo insensitive short duration cultivars like Luit, Kapilee, Kolong and Dishang up to August. Carry out late and staggered planting up to mid of September with 60 to 80 days old seedlings of the paddy varieties like Prafulla (80 days) and Gitesh (60 days) after receding of flood. Carry out transplanting of old seedlings of other improved long duration variety like Monohar Sali up to August. Postpone sowing of sesame due to possibility of heavy rainfall. In already sown sesame crops, take measures to drain out excess water from the fields.
- In the Old Alluvial Zone of **West Bengal**, if the transplanted paddy seedlings are completely damaged in flood affected areas, farmers can go for cultivation of short duration paddy varieties like IET-4094, Lalat, IET-4786, GB-1 etc. using direct seedling technology after receding of water level. Drain out excess water from turmeric field to avoid rotting of rhizomes.
- In **Karnataka**, in Eastern Dry Zone, continue sowing of medium to short duration crops like ragi (Indaf-5, 9, HR-911, GPU-26, 28, 45 & 48, PR-202, ML-365), maize (Ganga, Deccan, Vijaya composite and Composite NAC), groundnut (JL-24, KCG-2, GBB-4), cowpea (KBC-1, TVX-944 and PKB-4 for vegetable purpose) utilizing the realized and expected rainfall. In North Dry Zone, sufficient rainfall to take up sowing of crops has been received and also rain is likely to occur. Undertake sowing of sunflower, desi cotton and fodder crops in medium black to deep black soils and sunflower, horse gram, Setaria (Navane) in shallow and red soils. Follow moisture conservation dry land techniques such as compartment bunding, ridges and furrow and scooping in fields spared for rabi sowing.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala, all districts of Coastal Karnataka, Bidar and Koppal districts of North Interior Karnataka, all districts of South Interior Karnataka except Ballari, Chamarajanagar, Chikaballapura, Chitradurga, Davangere, Mysuru and Tumakuru, in Ariyalur, Chennai, Cuddalore, Dharmapuri, Kancheepuram, Nagapattinam, Nammakal, Nilgiris, Puducherry, Pudukkotai, Salem and Thiruvallur districts of Tamil Nadu, all districts of Coastal Andhra Pradesh except Prakasam, in Chittoor and Cuddapah districts of Rayalaseema and in all districts of Telangana except Hyderabad, Mahbubnagar, Nalgonda and Rangareddy during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rainfall is very likely at most/many places over Karnataka, Coastal Andhra Pradesh during next 5 days, over Telangana from 25th to 28th, over at many places over Tamil Nadu and Rayalaseema on 24th, over Kerala on 26th, 27th and 28th, along with heavy to very rain at isolated places over Telangana and Coastal Karnataka on 26th and 27th, heavy rain at isolated places over Andhra Pradesh, South Interior Karnataka, Rayalaseema, Tamil Nadu & Puducherry on 24th and 25th, over Coastal Karnataka on 28th, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops
 - **Kerala:**
 - In the Southern Zone, undertake harvesting of Nendran bananas and continue tapping of rubber. In the Problem Area Zone, give propping to banana crop, since moderate wind is expected.
 - In the Central Zone, due to prevailing weather, there is chance for attack of thrips and mites in vegetables. To control, apply Spiromecifen @ 8 ml/10 litres of water after current spells of rain.
 - In the Problem Area Zone, give alternate sprays of Propiconazol @ 1 ml/litre of water to control sigatoka disease in bananas and apply Indifil 45 @ 4gm/litre of water to tapping rubber panels once in a week to prevent fungal diseases.
 - In the Northern Zone, apply Kerosene emulsion @ 15 ml kerosene mixed with 1 L soap solution) to control blue beetle incidence in paddy.
 - **Karnataka:**
 - In the Southern Dry Zone, as rainfall is expected during next 5 days, to conserve ground water, go for recharging of bore wells, construction of farm ponds and construction of check dams at sloppy area and take up other water conservation measures.
 - In Coastal Zone of Karnataka and Hill Zone, maintain optimum water level in transplanted rice. Hand weeding in rice is recommended.
 - In Southern Transition Zone, maintain optimum water level in transplanted rice. Provide proper drainage to remove excess water from the ginger and turmeric field.
 - In Central Dry Zone, complete sowing of short duration finger millet (varieties Indaf-5, Indaf-9, and GPU-28, MR-01, MR-06 & ML-365).
 - In Eastern Dry Zone, continue sowing of medium to short duration crops like ragi (Indaf-5, 9, HR-911, GPU-26, 28, 45 & 48, PR-202, ML-365), maize (Ganga, Deccan, Vijaya composite and Composite NAC), groundnut (JL-24, KCG-2, GBB-4), cowpea (KBC-1, TVX-944 and PKB-4 for vegetable purpose) in August under sufficient moisture condition. Arrange for proper drainage to remove the excess rainwater from already sown crops.
 - In North Dry Zone, sufficient rainfall to take up sowing of crops has been received and also rain is likely to occur. Undertake sowing of sunflower, desi cotton and fodder crops in medium black to deep black soils and sunflower, horse gram, Setaria (Navane) in shallow and red soils. Follow moisture conservation dry land techniques such as compartment bunding, ridges furrow and scooping in fields spared for rabi sowing.
 - In North Transition Zone, undertake weed control in groundnut, maize, soybean and sugarcane.
 - In Central Dry Zone, wherever incidence of sucking pests in already sown cotton crop is noticed, spray Imidacloprid @ 0.5 ml/litre of water after current spells of rain.
 - In North East Transition Zone incidence of sucking pests is noticed in vegetable ecosystem; for effective management, spray Thiamethoxam @ 0.5 g /litre of water in clear weather.
 - In Southern Transition Zone, as a precautionary measure, spray Carbendizim + Mancozeb (SAAF) @ 2.0 g / litre of water followed by (15 days after) Chlorothalnil @ 2.0 g/ litre of water to avoid sigatoka /leaf spot disease in banana after current spells of rain.
 - To manage bacterial blight disease in pomegranate in Central Dry Zone, spray the crop with Streptomycin Sulphate 0.5 g + Copper-oxy-Chloride @ 2 g dissolved in one liter water; then take up spraying of micro nutrients viz., Zinc Sulphate @ 1 g + Magnesium Sulphate 1 g. + Borax 1 g. + Calcium 1 g. dissolved in one liter of water after current spells of rain.
 - **Andhra Pradesh:**
 - In the North Coastal Zone, drain out excess water from groundnut, maize and mesta crop fields.
 - In the Scarce Rainfall Zone of Rayalaseema, complete sowing of jowar, foxtail millet, green gram, red gram, castor.

- In Chittoor and Kadapa districts of the Southern Zone, continue sowing of contingent crops like red gram, castor, bajra, field bean, cowpea, korra and cluster bean.
- In the North Coastal Zone, there are chances for severe incidence of viral diseases in sugarcane (formative stage). To control, apply 50 kg urea + 20 kg potash per acre and spray Diamethoate @ 2.0 ml/litre of water after current spells of rain.
- In Chittoor district of the Southern Zone, in vegetable crops like tomato, bhendi and green pea, there is possibility of jassid incidence. To control, young stage larvae and eggs can be discarded by spraying 5% Neem decoction. If incidence is more, spray Thiodicarb @ 1g/litre of water after current spells of rain.
- **Telangana:**
 - In North Telangana Zone, continue planting of bananas utilizing the realized/expected rainfall.
 - In South Telangana Zone, undertake transplanting of long and short duration cultivars of rice. It is advised to see that maize crop is not subjected to moisture stress condition, since maize crop is more sensitive to moisture stress at tasseling to silking stage. Follow frequent inter cultivation to conserve soil moisture and control weeds.
 - In North Telangana Zone, spray Acephate @ 1.5 g/litre of water to control incidence of thrips observed in black gram and green gram after current spells of rain.
- **Tamil Nadu:**
 - In the Cauvery Delta Zone, continue nursery sowing of samba rice.
 - In the Western Zone, by utilizing prevailing rainfall, maize crop can be sown in both under irrigated as well as rainfed condition. Since wind speed above 18 km is expected, prop 5 months old banana and sugarcane against lodging.
 - In the South Zone, as high wind speed is expected in the coming days, give support for banana. Continue preparatory cultivation for dry lands by utilizing the recent rainfall as well as the expected rain in the coming days for raising crops as pre monsoon sowing during the ensuing north east monsoon season.
 - In the North Western Zone, undertake cultivation of sorghum, minor millets, green gram, red gram and black gram utilizing the realized rainfall.
 - In the High Altitude Hilly Zone, spray 1% Di Ammonium Phosphate (DAP) to leaves of pepper crop to prevent spike drop and for enhanced yield.
 - In the Western Zone, prevailing cloudy and humid weather condition is congenial for leaf spot disease in turmeric. To control, spray Mancozeb @ 2.5 g/ litre of water during non rainy days.
- **Animal Husbandry**
 - In the Problem Area Zone of Kerala, avoid moist conditions in cattle shed to prevent incidence of foot rot.
 - In the Cauvery Delta Zone of Tamil Nadu, crossbred cows may require additional electrolytes and vitamins supplements. Vaccinate sheep and goats with Enterotoxaemia and Blue tongue vaccine with the help of veterinarians.
 - In the Western Zone of Tamil Nadu, farmers are advised not to allow their animals to graze near pond or lake areas to avoid fluke infestation.
 - In the Southern Zone of Tamil Nadu, prevailing weather condition is congenial for incidence of black quarter disease in cow. Use Hyper immune serum (HIS) is to control explosive outbreaks. Penicillin along with HIS is used to treat the disease. Vaccinate the cow one month before rainy season.
 - In the South Zone, give Enterotoxaemia vaccine to sheep before the start of monsoon.
- **Agroforestry**
 - In Southern Dry Zone, agro forestry like Melia dubia (Hebbevu), Silver oak and Causurina on the bund is recommended for sustainable income under abnormal extreme rainfall events.
 - In North East Dry Zone, take up fresh plantation of fruit trees, teak, neem, tamarind, acacia or other trees on the bunds, uncultivated and marginal land, which is useful to prepare the agricultural implements.

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

- **Realised Rainfall:** Rainfall occurred in Lohit, Lower Dibang Valley, Papumpara, Tawang, Tirap, Upper Subansiri and West Siang districts of Arunachal Pradesh, Baksa, Barpeta, Bongaigaon, Cachar, Chirang, Dhemaji, Dibrugarh, Hailakandi, Kamrup Rural, Karbi Anglong, Karimganj, Lakhimpur, Morigaon, N.C.Hills, Nagaon, Sibsagar, Sonitpur, Tinsukia and Udalguri districts of Assam; East Garo Hills, East Khasi Hills, Ri-Bhoi and West Garo Hills districts of Meghalaya, Aizwal, Lunglei and Serchip districts of Mizoram, Imphal West and Senapati districts of Manipur, Dimapur district of Nagaland and Dhalai, North Tripura, South Tripura and West Tripura districts of Tripura during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rainfall is very likely at most/many places over Assam & Meghalaya, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura during the period, along with heavy to very at isolated places over Assam & Meghalaya on 26th and over Nagaland, Manipur, Mizoram & Tripura on 26th and 27th, heavy rain at isolated places over Assam & Meghalaya on 24th, 25th, 27th and 28th, over Nagaland, Manipur, Mizoram & Tripura on 24th, 25th and 28th, and over Arunachal Pradesh 24th and 25th Augst, avoid intercultural operation and application of plant

protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops and vegetables to avoid water stagnation.

▪ **Assam & Meghalaya, Arunachal Pradesh:**

- In the Central Brahmaputra Valley Zone, undertake direct seeding with the photo insensitive short duration cultivars like Luit, Kapilee, Kolong and Dishang up to August. Carry out late and staggered planting up to mid of September with 60 to 80 days old seedlings of the paddy varieties like Prafulla (80 days) and Gitesh (60 days) after receding of flood. Carry out transplanting of old seedlings of other improved long duration variety like Monohar Sali up to August. Postpone sowing of sesame seeds due to possibility of heavy rainfall. In already sown sesame crops, take measures to drain out excess water from the fields.
- In Hill Zone of Assam, keeping in view of rain for next five days, avoid sowing of sesame and nursery sowing of vegetables. Drain out excess water and provide adequate drainage in arhar crop. Avoid irrigation, application of fertilizer and spraying of pesticides.
- In the Central Brahmaputra Valley Zone, undertake land preparation for black gram and green gram and carry out sowing after 15th September. Undertake land preparation for early Cole crops and raddish. Undertake sowing of sesame after current spells of heavy rain. In already sown sesame crops, take measures to drain out excess water from the fields. Present weather is congenial for buildup of rice Hispa population. Inspect the crop regularly and if one adult insect or one damaged leaf per hill is observed, undertake spraying of Chloropyriphos 20 EC or Monocrotophos 40EC @ 1.5 ml per liter of water. Undertake plant protection measures after current spells of rain.
- In Barak Valley Zone of Assam, apply top dressing of 5 kg Urea at the time of tillering stage of Sali rice, i.e., 20 -30 days after transplanting of seedlings. For leaf miner attack in the Sali rice field, apply Chlorpyriphos @ 2ml per liter of water. For controlling mosaic and leaf curl disease in papaya plant, either rouge out the affected plants or spray with Rogar @ 0.1% after current spells of rain.
- In Meghalaya, maintain water level of 2-5 cm in paddy field from transplanting to maturity. The level should not exceed 5 cm particularly during tillering stage. Undertake sowing of French beans, rajmash and cowpea during August – September at 30cm row to row 15cm plant to plant. Carry out timely harvesting of cucurbits and brinjal.
- In Arunachal Pradesh, give support to banana bunches to protect them from falling due to heavy rain. Remove the male flower in banana bunches to attain better finger/fruit size. Spray Triazophos 40EC @ 4ml/lit water against leaf folder in rice crop after current spells of rain.
- In Hill Zone of Assam, current weather is favourable for fruit borer in bhindi crop. Set up pheromone trap @ 3-4 / acre for monitoring fruit borer.

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

- In Manipur, undertake land preparation for planting potato for early crop and also for production of seed after the rains in foothills and upland areas. Undertake sowing/planting of onions. Provide proper drainage in maize, soybean, groundnut, black gram, rice bean and turmeric fields. In kharif rice, spray Streptocycline @ 2g/15 litres of water (at least three pumps per sangam) for bacterial leaf blight, Imidachlorpid @ 8ml/ 15 litres of water for sucking insects and Coragen @3ml/15 lit of water or Lambdacythothrin @ 15ml/ 15 litre of water for Case worm, borer, leaf folder & thrips, after rains. For control of red hairy caterpillars in soybean, groundnut, black gram and rice bean crops, dust 5% Malathion @ 20 kg/ ha or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water) after current spells of rain.
- In Mizoram, spray Monocrotophos @ 1.5 ml/lit of water or Imidachlorpid 1.5 ml/litre of water for effective control of thrips and leaf mites in kharif rice and Tubeconazole @ 1 ml/10 lt of water for control of blast in kharif and Jhum rice. Apply insecticide like imidacloprid 0.5 ml or phosolone 1.5 ml or acephate 1.0 g or dimethoate 2 ml/lit of water for leafroller in Okra. Apply insecticide like Imidacloprid 0.5 ml or Phosolone 1.5 ml or Acephate 1.0 g or Dimethoate 2 ml/lit of water for shoot borer infestation in ginger and turmeric crops after current spells of rain.
- In Nagaland, first weeding in TRC/WRC rice should be done within 2–3 weeks after establishment and the second in another 2–3 weeks. Carry out timely weeding and earthing up operation in brinjal, naga king chilli, groundnut, ginger and turmeric crops.
- In Tripura, undertake timely harvesting of Aus rice crop and keep it under shade to protect from rain. Aman rice transplanted at first fortnight of July is now at tillering stage. Carry out weeding in the field. Give one spray of Zinc Sulphate and apply urea @ 10kg per kani for better tiller. Birds may pose problem in Jhum rice field at grain filling stage. It may be managed through mechanical ways. Due to cloudy and humid weather, there may be attack of Leaf Blight in Maize field. To manage, spray Zineb @ 3gm per liter of water at 20 days interval the attack. In case attack of stem borer in maize, spray Novacron @ 2ml per liter of water after current spells of rain.

• **Animal Husbandry**

- In Northeastern states, immunizations against FMD, HS and BQ in cattle & buffaloes and swine fever in pigs may be carried out during monsoon season. Vaccination (RDF1) against Ranikhet disease in one week old chicks and against Gamboro disease in two weeks old chicks may be carried out.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa, all districts of Madhya Maharashtra except

Nandurbar and Sangli, all districts of Marathwada, all districts of Vidarbha, during the week and weather remained mainly dry over rest of the region.

- **Advisories:**

- As rainfall is very likely at most places over Konkan & Goa during the period and at many places over Madhya Maharashtra from 25th to 28th, over Marathwada on 26th and 27th and over Vidarbha from 25th to 28th August, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops and vegetables to avoid water stagnation in Konkan as heavy/very rain is expected from 26th to 28th August.

- **Maharashtra:**

- In Sub Monate Zone, for control of hoppers in the lower region (stem portion) of rice, spray Cypermethrin @ 4 ml / 10 litres of water. In cloudy weather, for control of fruit and shoot borer in brinjal spray Flubendimide 40 EC @ 3 ml/10 litres of water or Cypermethrin 25 EC or Chloropyrifos 20 EC @ 20 ml/10 litres water after current spells of rain. Destroy the affected fruits and shoots by burying them in soil.

- In Western Ghat Zone, maintain water level upto 5-10 cm in rice field and undertake weeding in rice field. Apply top dressing with 25 kg/ha in finger millet. If symptoms of leaf scaled disease observed in rice, spray Propiconazole @ 10 ml in 10 litre of water + 10 ml sticker. To control BLB & leaf blast disease on rice, spray Dithane M-45 @ 2.5 g per liter + Carbendazim @ 1 g per liter of water with sticker. To control the rust & tikka leaf spot diseases in groundnut crop, spray Mancozeb @ 25 g + Carbendazim @ 10 g per 10 litre of water after current spells of rain.

- In Marathwada, to control attack of semilooper, tobacco eating caterpillar and American bollworm in soyabean, make use of five pheromonetraps per hectore. To control attack of tobacco eating caterpillar, spray Profenofos 50 % EC @ 20 ml or Lambda-cyhalothrin 4.9 % CS @ 6 ml or Indoxacarb 15.8 EC @ 6.66 ml or Chlorantraniliprole 18.5 SC @ 3 ml per 10 liter of water. To control attack of Earhead midge fly in Sorghum, spray Dimethoate 30 % EC @ 33 ml per 10 liter of water after current spells of rain. Undertake plantation of Yashwant, Jaywant and Dasrath fodder crops.

- In East Vidarbaha, maintain optimum water level in the rice field. If the incidence of rice leaf folder is observed in the rice crop, spray Monocrotophos 36 EC @ 14 ml or Malathion 50 EC @ 30 ml per 10 litres of water on the whole crop. If attack of leaf eating caterpillar observed in pigeon pea, spray Quinalphos 25 EC @ 16 ml per 10 litres of water after current spells of rain..

- **Gujarat:**

- As rainfall is likely to occur at many/most places on 27th and 28th with Heavy to very heavy rain at isolated places over Gujarat region on 28th, heavy rainfall at isolated places in Gujarat Region on 27th, and over Saurashtra and Kutch on 28th, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops.

- In Bhal and Coastal Zone, complete sowing of castor and fodder sorghum (S-1049, GFS-4 and GFS-5 varieties).

- In North Gujarat Zone, complete resowing of short duration crops like green gram, cluster bean as contingent crop planning where there was crop failure. Complete sowing of fodder sorghum, castor.

- In South Gujarat Heavy Rainfall Zone, maintain optimum water level in transplanted rice. Continue resowing of early maturing varieties of pulse crops where there was crop failure due to heavy rain.

- In North West Zone of Gujarat, carry out intercultural operation in cotton, vegetable and pearl millet crops.

- In South Saurashtra Zone, for the control of pink bollworm in cotton, spray Deltamethrin @ 10 ml or Trizophos / 10 litres of water after current spells of rain.

- If infestation of heliothis is observed in pulses in Bhal and Coastal Zone, spray Quinalphos 25 EC @ 20 ml in 10 litres of water or Renaxypyr @ 3 ml in 10 litres of water after current spells of rain. In South Gujarat Zone, use 3 to 5 pheromone traps for monitoring of pink boll worm in cotton.

- For prevention of leaf spot disease in groundnut in Middel Gujarat Zone, spray Hexaconazole @ 10 ml or Tebuconazole @ 7 ml /10 litres of water after current spells of rain.

- Heavy infestation of semilooper observed in castor in North Saurashtra Zone; spray Chlorpyro phos @ 30 ml in 10 liters of water for control. Under present weather condition, infestation of thrips and aphids is observed in cotton; spray Imidacloprid 17.8 % @ 5 ml or Thiomethoxam @ 3 g or Dimethoate @ 10 ml in 10 litres of water in clear weather. For monitoring of pink bollworm infestation in cotton crop use 6-8 pheromone traps/ha.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands, all districts of Gangetic West Bengal except East Midnapore and Murshidabad, all districts of Sub-Himalayan West Bengal & Sikkim except Cooch Behar, Malda, North Dinajpur and South Dinajpur, in Aurangabad, Banka, Bhagalpur, Gaya, Gopalganj, Jahanabad, Kishanganj, Nalanda and West Champaran districts of Bihar, all districts of Jharkhand except Chatra, Deogarh, Garwah, Giridih, Godda, Hazaribag, Jamtara, Koderma, Lohardaga, Paukur and Sahibganj, all districts of Odisha except Boudhgarh during the week and weather remained mainly dry over rest of the region.

- **Advisories:**

- As rain/thundershowers very likely at most/many places in Odisha, Jharkhand, West Bengal & Sikkim and Andaman & Nicobar islands during next 5 days and over Bihar on 24th, 27th & 28th August along with heavy rain isolated places over Odisha during the period, over Jharkhand on 24th & 25th and over Gangetic West Bengal & Sikkim on 26th & 27th August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in maize, pulses and vegetable fields to avoid water stagnation in the crop fields.

- **Odisha:**

- In West Central Table Land Zone, maintain 3 to 5 cm water level in transplanted rice. Complete beushanning in direct seeded rice.
- In North Central Plateau Zone, continue transplanting of rice with 21 day old seedlings and undertake sowing of green gram, black gram and niger in uplands. Grow high yielding varieties such as black gram: Sarala, Ujala, PU-30, T-9, Prasad and Green gram varieties like Tarm-1, Dhauli, Jyoti, PDM-54, PDM-11, Samrat, PM-1, PM-2 @ 6-8kg/acre and before sowing seeds are to be treated with 2 g Bavistin/kg seeds. Drain out excess water from maize fields.
- In South Eastern Ghat Zone, continue direct sowing ragi (Suitable varieties are Divyasinha, Neelachal, Bhairavi, Shuvra, and Chilika) and continue transplanting of rice.
- In West Central Table Land Zone, current weather is favourable for Leaf blight infestation in groundnut. Spray Mancozeb @ 3 g in 1 litre water after current spells of rain.

- **Bihar:**

- In North East and North West Alluvial Zone of Bihar, in flood affected areas, drain out excess water from the standing crop fields. To protect from damping - off of vegetable seedlings in nursery bed, spray Copper oxychloride 50WP @ 3g/litre of water +Streptocycline @ 1g/10 litres of water after current spells of rain.
- In South Bihar Alluvial Zone, continue transplanting of brinjal, tomato, chilli, cauliflower and cabbage on raised beds. Prevailing weather is congenial for attack of leaf folder/stem borer in rice. Farmers are advised to monitor their fields regularly, if observed, then broadcasting of Cartap 4% granules @ 10 kg/acre is recommended. Also in maize fields, constant monitoring of stem borer should be done, if insect population is above ETL, spray Carbrayl @ 2 gm/ litre of water after current spells of rain.
- In North East Alluvial Zone of Bihar, to control brinjal fruit & shoot borer or tomato fruit borer, apply Indoxacarb 15.8 EC @ 1ml/litre of water after current spells of rain.

- **Jharkhand:**

- In South Eastern Plateau Zone, continue sowing of medium duration (150-180 days) Pigeon pea (UPAS 120), Horse gram (VLG 19 and Birsakulthi 1) and Niger (Birsaniger 1, 2 and 3 as well as Puha1) and in Central and Western Plateau Zone, continue sowing of urad and arhar after current spells of heavy rain.
- In Western Plateau Zone, in fallow uplands, continue sowing of kulthi and arhar (with short duration variety like UPAS-120) after current spells of heavy rain. Select improved varieties of kulthi like V.L.G.-19 or Birsa kulthi-1. Before sowing, seeds must be treated with Rhizobium culture.
- In Western Plateau Zone, present weather is favourable for the attack of blast disease in rice, when symptoms appear, immediately spray the fungicide Beam @ 3 gram per 5 liter of water. The spraying of Beam also protects the crop against other fungal disease. Mix Sandovit or Tipol @ 5 ml. in 10 liter of the solution of insecticide/fungicide. Undertake plant protection methods after current spells of rain.

- **West Bengal:**

- In Laterite and Red Soil Zone, give proper bunding to hold the water the direct-seeded paddy fields.
- In the Hill Zone of West Bengal, provide proper drainage to ginger, turmeric and Mandarin orange. Keep the large cardamom field weed free and remove diseased plants from the field. Carry out hand weeding according to the weed infestation and maintain 2-3 cm of water in the rice field. Drainage system should be maintained properly to remove excess water from rice field. Remove the infected fruits and spray Ridomil-MZ @ 2g /lit of water at clear weather condition for Downy mildew and Mosaic Virus in Bitter gourd/Pointed gourd.
- In the Old Alluvial Zone, if the transplanted paddy seedlings are completely damaged in flood affected areas, farmers can go for cultivation of short duration paddy varieties like IET-4094, Lalat, IET-4786, GB-1 etc. using direct seedling technology after receding of water level. Drain out excess water from Turmeric field to avoid rotting of rhizomes.
- In Terai Zone, in case of damage of paddy field, select upland area for seed bed preparation of short duration varieties (115 days) such as MTU-1010, IITT-4786, Gotra Bidhan-1.3/ IR-36, Rajendra etc.. Continue harvesting of mature legume vegetables. Drain out excess water from the brinjal, chilli, legume vegetables, ginger and turmeric fields.
- In the New Alluvial Zone, undertake first weeding in paddy at 3 weeks after transplanting and second weeding at 6 weeks after transplanting. Apply 4.5 kg Urea / bigha as 1st top dressing after 1st weeding and same amount after second weeding. Drain out stagnant water from the field before applying Urea. Carry out proper retting of jute after harvesting. Do not use mud or banana stem for retting purpose.

- In Coastal Saline Zone, complete transplanting of Aman rice in main field with old seedlings and give first top dressing just after 10 days. Apply first top dressing of 12kg urea per bigha in flood-free Aman rice field, maintain proper water level and check the field during morning for any disease or pest attack. Where field is completely destroyed cultivate early spinach, radish, amaranthus, sweet gourd, pumkin etc. Provide drainage in betel vine plantation. Sow seeds of Vadu Kalai @ 4-5kg/bigha after seed treatment with thirum@3g/kg of seed.
- In the Laterite and Red Soil Zone, give foliar spray with Neem oil at 30ml/lit of water if appearance of sheath blight is noted. Give 3-4 sprays with Mancozeb 75 WP @ 2g/lit of water at an interval of 10-12 days for brown spots under clear weather condition. If the stem borer damage (Dead heart) is exceeding more than 5% in transplanted paddy field, spray Chlorpyrifos 20% EC @2ml/lit at clear weather condition.
- In the Old Alluvial Zone, for sheath blight disease in standing paddy crop, spray Propiconazole @ 0.75 ml/liter of water.
- **Andaman and Nicobar Islands:**
- In North, Middle and South Andaman, close the bunds in paddy fields and store the rain water. Continue planting of banana.
- **Animal Husbandry**
- In North Central Plateau Zone of Odisha, due to prevailing high humid and cloudy condition, animals should be provided with dry and clean shelter. Provide clean and hygienic drinking water. Calves above three months and sheep and goat above two months should be vaccinated against Foot and Mouth disease. Deworming in animals should be done
- In Bihar, do not allow animals to graze around waterlogged/swampy/wet land and deworm and vaccinate animals against infectious disease like, Anthrax and Galaghotu. Keep animal shelter floors dry. In Poultry, more chance of occurrence of fungal diseases in poultry birds because of high humidity, hence, lime should be mixed thoroughly in poultry litter.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rainfall occurred in Anupur, Balaghat, Katni, Narsinghpur, Shahdol and Umaria districts of East Madhya Pradesh, all districts of West Madhya Pradesh except Ashoknagar, Bhind, Datia, Guna, Gwalior, Mandsaur, Morena, Neemuch, Raisen, Rajgarh, Shajapur, Sheopur and Shivpuri, all districts of Chhattisgarh except Janjgir, Korba, Koriya and Raigarh during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rainfall likely at most/many places over Madhya Pradesh and Chhattisgarh during next 5 days along with heavy rain at isolated places over South East Madhya Pradesh on 24th over Madhya Pradesh on 25th and 26th, over West Madhya Pradesh on 27th and over Chhattisgarh from 24th to 26th August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - **Madhya Pradesh:**
 - In Malwa Plateau Zone, continue transplanting of onion, brinjal, tomato, chilli, cauliflower and cabbage on raised bed. Continue nursery preparation of cauliflower for mid season (Oct-Nov.).
 - In Jhabua Hill Zone, apply 1/3 dose of recommended nitrogenous fertilizer (urea) in cereal crops in 45-50 days old crops as top dressing after current spells of rain.
 - In Bundelkhand Zone, undertake transplanting of brinjal, tomato, chilli, cauliflower and cabbage on raised bed.
 - In Gird Zone, due to cloudy weather there are chances of attack of fruit borer in brinjal and okra, spray Dimethoate @ 750ml per hectare dissolved in 500-600 litres of water. In Central Narmada Valley Zone, due to cloudy weather, infestation of white fly may be seen in soybean crop, apply Thiomethoxam 25 WG @ 100 gram or Imidachlorprid 17.8 SL @ 200 ml per hectare. Undertake spraying of chemicals after current spells of rain.
 - **Chhattisgarh:**
 - In North Hill Zone, in fallow upland, continue sowing of crops like horsegram and niger. In low rainfall regions (deficit rainfall), farmers should prepare the fields and go for sowing of low water requirement *kharif* crops like Ramtil, urad, sesamum, maize, moong etc. after seed treatment.
 - In Bastar Plateau Zone, maintain 5-7 cm water in rice fields for better growth and to suppress weeds. Continue nursery preparation for papaya and custard apple.
 - In Chhattisgarh Plain Zone, in low rainfall regions (deficit rainfall), farmers should prepare the fields and go for sowing of post-kharif crops like niger and horsegram. Undertake nursery preparation for capsicum and transplanting of onion.
 - **Animal Husbandry**
 - In Madhya Pradesh, vaccinate the poultry birds to prevent Ranikhet disease.
 - In Chhattisgarh, cattle sheds should be well protected from flies and mosquitoes.

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

- **Realised Rainfall:** Rainfall occurred in Kathua, Reasi, districts of Jammu & Kashmir, in all districts of Himachal

Pradesh except Kinnaur, Lahaul & Spiti, Chamba, in Bageshwar, Chamoli, Champawat, Dehradun, Hardwar, Nainital, Pithoragarh, Rudrapur, Uttarkashi districts of Uttarakhand, Gurdaspur, Jalandhar, Kapurthala, Ludhiana, Nawashahar, Ropar, Mohali districts of Punjab, Ambala, Chandigarh, Kurukshetra, Panchkula, Yamunanagar districts of Haryana; in Kushinagar, Mau, Sant Kabir Nagar, districts of East Uttar Pradesh; in Baghpat, Bulandshahar, Etah, Hamirpur, Kanshiramnagar, Moradabad, Pilbhit, Shahjahanpur districts of West Uttar Pradesh, Banswara, Dungarpur, Pratapgarh, Sirohi, Udaipur districts of East Rajasthan during the period and weather remained mainly dry/dry over rest of the region.

• **Advisories:**

➤ As rain is very likely at most places over Uttarakhand, at most/many places over Himachal Pradesh, East Uttar Pradesh and East Rajasthan during the period, at many places over Jammu and Kashmir on 24th & 25th, over West Uttar Pradesh from 25th to 27th, over Haryana, Chandigarh & Delhi from 25th to 27th and Punjab on 24th to 26th August along with heavy rain at isolated places, avoid irrigation, intercultural operation, application of fertilizers and plant protection methods in standing crops.

▪ **Jammu & Kashmir:**

➤ In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, undertake intercultural operations (thinning, weeding, hoeing) in Kharif pulses crops after current spells of rain. Provide drainage in turmeric and vegetable fields.

➤ In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, maintain 3-5 cm water level in paddy fields. Keep the paddy fields weed free.

➤ In Valley Temperate Zone of Jammu and Kashmir, in saffron ensure grading of corms and select healthy, disease free corms (above 8 gms) followed by corm treatment with combination of Carbendazim (50g in 50 litres) and Mancozeb (150g in 50 litres). Treated corms should be shade dried overnight. Before planting apply split dose of UREA @ 2.4, DAP @ 6.6, MOP @ 4.15 kgs/kanal and Well rotted FYM @ 5q/kanal and vermin compost @ 25kgs/kanal.

➤ In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, to control stem borer in paddy, apply Carbofuron 3G @ 20 kg/ha in standing water and do not drain or irrigate the field for 72 hrs after application and install pheromone traps (yellow stem borer luren) @ 20/hectare from 10 – 15 days of transplanting. Spray Tricyclazole @ 0.06% or 1 ml in 1.5 liters of water at clear weather conditions to control blast disease in paddy. Undertake plant protection after current spells of rain.

▪ **Punjab, Haryana and Delhi:**

➤ In Central Plain Zone of Punjab, undertake nursery sowing of mid season Cauliflower. In the prevailing weather, there is chance of attack of stem borer and leaf folder in rice, farmers are advised to apply PAU recommended insecticides i.e. Fame 480 SC @ 20 ml or Mortar 75 SG @ 170 g or Marktriazol/ Suthation 40 EC @ 350 ml or Coroban/Durmet/Force 20 EC @ 1000 ml in 100 litres of water per acre for control. Undertake plant protection methods on a non rainy day.

➤ In Western Plain Zone of Punjab, monitor cotton fields regularly for attack of whitefly. If the whitefly reaches 6 whiteflies per leaf in the upper canopy, spray the crop with Ulala 50 WG 80 g/acre or Lano 10 EC @ 500 ml/acre or 200 ml/acre Oberon in 125-150 litres of water/acre.

➤ In Eastern Zone of Haryana, undertake planting of fruit trees like mango, pears (gauva), jamun, orange, ber, phalsa etc.

▪ **Rajasthan:**

➤ In Jaisalmer and Bikaner districts of Arid Western Plain Zone, undertake nursery sowing of vegetables like cauliflower, cabbage, chili and brinjal vegetables.

➤ In Irrigated North Western Plain Zone, Hanumangarh and Sriganganagar, maintain 4-5 cm water level in standing rice crop.

➤ In Sub Humid Southern Plain and Aravali Hill Zone, prevailing weather condition is congenial for attack of white fly and sucking insects and pests in cotton crop, for control spray Methyl Dimeton 25 EC @ 1 litre of water per ha after current spells of rain.

➤ In Dungarpur, Banswara and Pratapgarh districts of Southern Humid Plain Zone, prevailing weather condition is congenial for attack of stem fly/semiloopers/girdle beetle in soybean crop, for control, spray Triazophos 40 EC or Profenofos 50 EC @ 1.25 litres per hectare or Indoxacarb @ 350 ml per ha or Emamectin benzoate 5 WSG @ 220 gm / ha after current spells of rain.

• **Poultry:**

➤ In Western Zone of Punjab, the poultry feed should contain 15-20% more protein, minerals and vitamins. To protect Coccidiosis in the chicken, avoid dampness in the deep litter house by stirring the litter 2-3 times in a week.

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