



National Agromet Advisory Service Bulletin

Friday 9th August 2019
(For the period 9th to 13th August 2019)



Issued by
India Meteorological Department

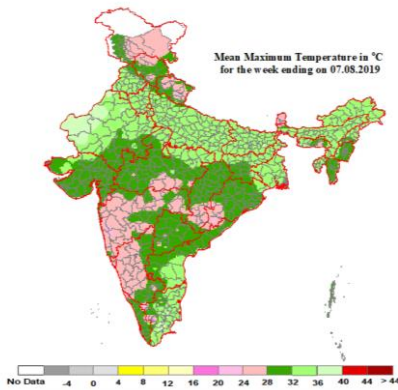
Weblink For

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

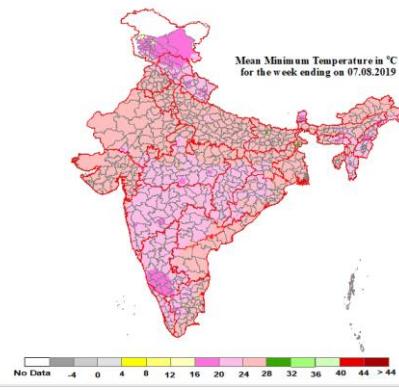
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 07.08.2019

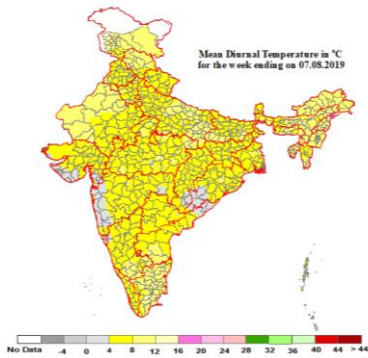
Mean Maximum Temperature (°C) for the week ending on 07.08.2019



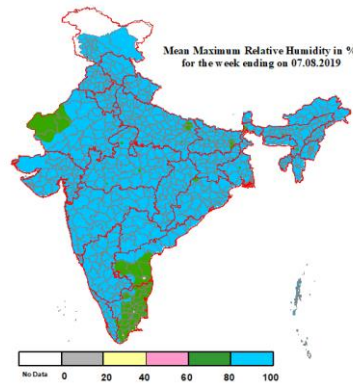
Mean Minimum Temperature (°C) for the week ending on 07.08.2019



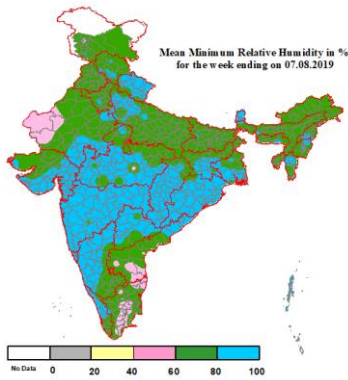
Mean Diurnal Temperature Variation (°C) for the week ending on 07.08.2019



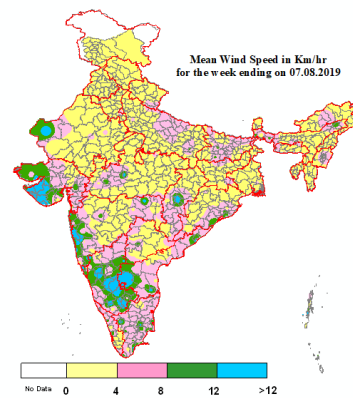
Mean Maximum Relative Humidity (%) for the week ending on 07.08.2019



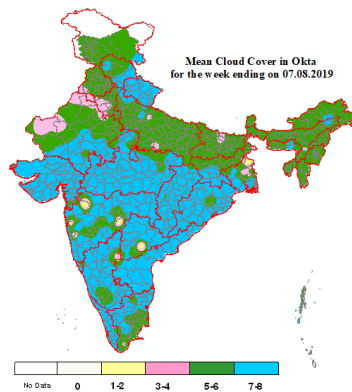
Mean Minimum Relative Humidity (%) for the week ending on 07.08.2019



Mean Wind Speed (km/hr) for the week ending on 07.08.2019

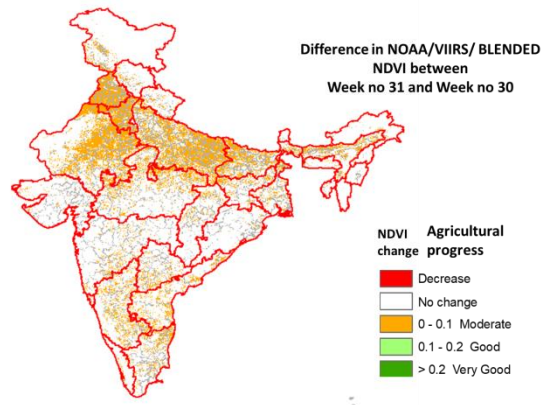
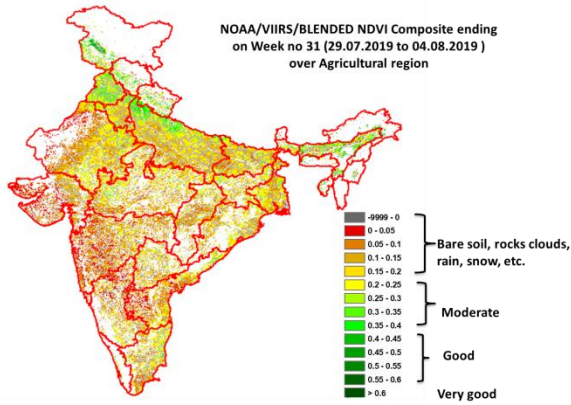


Mean Cloud Cover (okta) for the week ending on 07.08.2019



NOAA/VIIRS/BLENDED NDVI composite for the week number 31 (29.07.2019 to 04.08.2019) over Agricultural regions of India

Difference in NOAA/VIIRS/BLENDED NDVI between week number 31 and week number 30

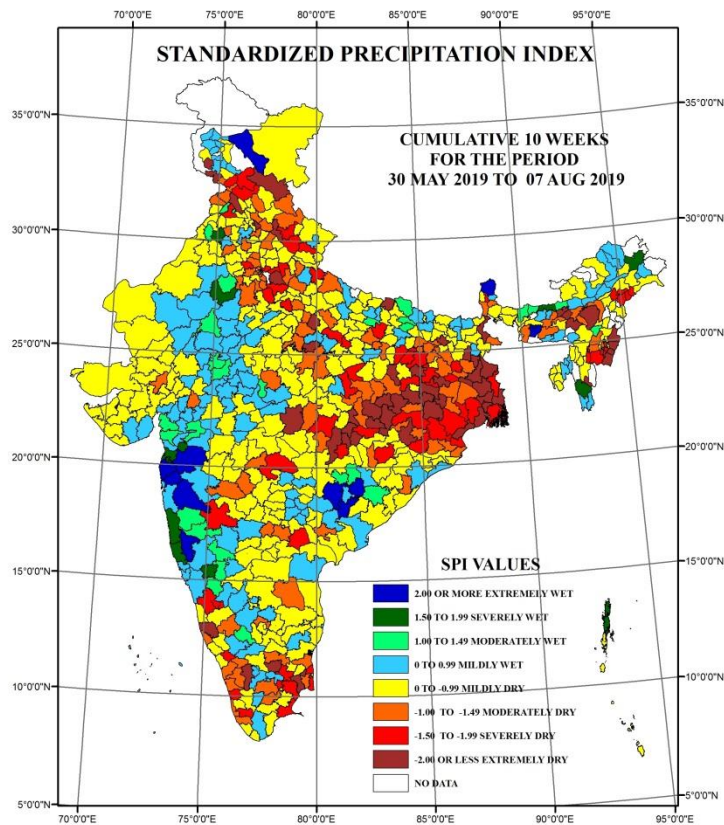


Agriculture vigour was good at few places over valley region of Jammu & Kashmir and in isolated places of Jammu Division, Himachal Pradesh, Northeastern States, Sub Himalayan West Bengal, Sikkim, Uttarakhand & West Uttar Pradesh. NDVI could not be captured over rest of the country due to persistent cloud cover.

Moderate agricultural progress was observed over most places in Punjab, Haryana and at many places over East Rajasthan, Uttar Pradesh, Bihar, North Eastern States. It was scattered to isolated over rest of the country.

**Standardised Precipitation Index
Cumulative 10 weeks for the period 30th May to 07th August 2019**

MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE



- Extremely/Severely wet conditions exist in Lower Dibang Valley district of Arunachal Pradesh; Baksa district of Assam; Valsad, Dangs districts of Gujarat; Kargil district of Jammu; Dharwad

district of Karnataka; Raigad, Ratnagiri, Thane, Sindhudurg, Mumbai Suburban, Palghar, Kolhapur, Nashik, Pune districts of Maharashtra; East Garo Hills district of Meghalaya; Lunglei district of Mizoram; Bhatinda district of Punjab; Sikar district of Rajasthan; Dadara & Nagar Haveli; North & Middle Andaman districts of Andaman & Nicobar Islands; North Sikkim district of Sikkim; Bastar, Bijapur, Sukma districts of Chhattisgarh.

- Moderately wet conditions exist in Kokrajhar, Udalguri, Chirang districts of Assam; W Champaran, Gopalganj, Siwan districts of Bihar; Broach, Surat districts of Gujarat; Bagalkote, Gadag, Haveri, Mandya districts of Karnataka; Bhopal, Mandsaur, Neemuch districts of West Madhya Pradesh; Sangli, Satara, Nandurbar districts of Maharashtra; Parem districts of Nagaland; Koraput districts of Orissa; Kapurthala, Muktsar districts of Punjab; Ajmer, Jhunjhunu districts of Rajasthan; Ambedkar Nagar district of Uttar Pradesh; Narayanpur, Kondagaon districts of Chhattisgarh.
- Extremely/Severely dry conditions exist in Tirap district of Arunachal Pradesh; Darrang, Sibsagar, Karbi Anglong, Morigaon districts of Assam; Aurangabad, Begusarai, Gaya, Rohtas, Arwal districts of Bihar; Rohtak, Panchkula districts of Haryana; Chamba, Kangra, Lahaul & Spiti districts of Himachal Pradesh; Jammu, Kathua districts of Jammu.
- Moderately/ mildly dry conditions experienced in remaining districts in the country.

Weather Forecast for next 5 days valid upto 0830 hours of 14th August 2019

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- ◆ No significant change in maximum temperatures likely over major parts of the country during next 48 hours.

5 Day Rainfall Forecast (MID-DAY) 09th August 2019

Met-Sub-Division	09-Aug Today	10Aug Sat	11Aug Sun	12Aug Mon	13Aug Tue
1. Andaman & Nicobar Islands	WS	WS	WS	FWS	FWS
2. Arunachal Pradesh	SCT	ISOL	SCT	FWS	FWS
3. Assam & Meghalaya	SCT	SCT	FWS	WS	FWS
4. N. M. M. & T.	SCT	SCT	FWS	WS	FWS
5. S.H. West Bengal & Sikkim	WS	WS	WS	WS	WS
6. Gangetic West Bengal	SCT	SCT	FWS	FWS	FWS
7. Odisha	SCT	SCT	FWS	FWS	FWS
8. Jharkhand	SCT	SCT	SCT	FWS	WS
9. Bihar	SCT	ISOL	SCT	FWS	FWS
10. East Uttar Pradesh	ISOL	ISOL	ISOL	FWS	FWS
11. West Uttar Pradesh	ISOL	ISOL	ISOL	FWS	FWS
12. Uttarakhand	WS	WS	WS	WS	WS
13. Haryana, Chd & Delhi	ISOL	ISOL	ISOL	SCT	SCT
14. Punjab	SCT	ISOL	SCT	SCT	FWS
15. Himachal Pradesh	WS	WS	FWS	FWS	WS
16. Jammu & Kashmir	FWS	FWS	SCT	SCT	FWS
17. West Rajsthan	SCT	SCT	ISOL	ISOL	ISOL
18. East Rajasthan	FWS	SCT	SCT	SCT	ISOL
19. West Madhya Pradesh	WS	FWS	SCT	SCT	SCT
20. East Madhya Pradesh	FWS	SCT	SCT	SCT	FWS
21. Gujarat Region	WS	WS	SCT	ISOL	SCT
22. Saurashtra & Kutch	WS	WS	FWS	ISOL	ISOL
23. Konkan & Goa	WS	WS	WS	WS	WS
24. Madhya Maharashtra	WS	WS	FWS	SCT	SCT
25. Marathawada	SCT	SCT	ISOL	ISOL	ISOL
26. Vidharbha	FWS	SCT	SCT	SCT	SCT
27. Chhattisgarh	FWS	SCT	SCT	SCT	FWS
28. Coastal A. P. & Yanam	SCT	ISOL	SCT	SCT	SCT
29. Telangana	SCT	SCT	SCT	SCT	SCT
30. Rayalaseema	ISOL	ISOL	ISOL	ISOL	ISOL
31. T.N.,Puducherry & Karaikal	SCT	SCT	ISOL	SCT	SCT
32. Coastal Karnataka	WS	WS	WS	WS	WS
33. North Interior Karnataka	FWS	FWS	SCT	SCT	SCT
34. South Interior Karnataka	WS	WS	FWS	FWS	FWS
35. Kerala & Mahe	WS	WS	WS	WS	WS
36. Lakshadweep	WS	WS	WS	WS	WS

% Station Reporting Rainfall

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

Weather Warning during next 5 days

09 August (Day 1): Heavy to very heavy rainfall at a few places with **extremely heavy falls** very likely at isolated places over Gujarat State, Kerala and South Interior Karnataka; **Heavy to very heavy rainfall** with **extremely heavy falls** at isolated places over Tamilnadu,Puducherry & Karaikal, Coastal Karnataka, West Madhya Pradesh and East Rajasthan; **Heavy to very heavy rainfall** at isolated places over North Interior Karnataka, Konkan & Goa, Madhya Maharashtra and West Rajasthan and **Heavy rainfall** at isolated places over Lakshadweep, Vidarbha, Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab and Andaman & Nicobar Islands.

♦ **Strong winds**, speed reaching 40-50 kmph, are likely to prevail over southwest, central and northeast, Arabian Sea and along & off Kerala,Karnataka, Goa, Maharashtra, Gujarat coasts,

Lakshadweep area, Tamilnadu coasts, West Bengal-Odisha coasts and Andaman Sea. Fishermen are advised not to venture into these areas.

10 August (Day 2): ♦ Heavy to very heavy rainfall at a few places with **extremely heavy falls** very likely at isolated places over Saurashtra & Kutch; **Heavy to very heavy rainfall** likely at isolated places over Tamilnadu, Puducherry & Karaikal, Kerala, Coastal Karnataka, South Interior Karnataka, Konkan & Goa and Gujarat Region and **Heavy rainfall** at isolated places over Lakshadweep, North Interior Karnataka, Madhya Maharashtra, Himachal Pradesh, Uttarakhand, Rajasthan and Andaman & Nicobar Islands.

♦ **Strong winds**, speed reaching 40-50 kmph, are likely to prevail over southwest, central and northeast, Arabian Sea and along & off Kerala, Karnataka, Goa, Maharashtra, Gujarat coasts, Lakshadweep area, Tamilnadu coasts, West Bengal-Odisha coasts and Andaman Sea. Fishermen are advised not to venture into these areas.

11 August (Day 3): ♦ Heavy rainfall likely at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Gujarat State, Tamilnadu, Puducherry & Karaikal, Kerala, Lakshadweep, Coastal Karnataka, South Interior Karnataka, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura,

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

♦ **Strong winds**, speed reaching 40-50 kmph, are likely to prevail over southwest and westcentral Arabian Sea and along & off Kerala, Karnataka, Goa, Maharashtra, Gujarat coasts, Lakshadweep area and Andaman Sea. Fishermen are advised not to venture into these areas.

12 August (Day 4): ♦ Heavy to very heavy rainfall likely at isolated places over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and **Heavy rainfall** at isolated places over Punjab, Haryana, Chandigarh & Delhi, Tamilnadu, Puducherry & Karaikal, Kerala, Coastal Karnataka, Konkan & Goa, West Bengal & Sikkim, Odisha, Jharkhand and Bihar.

♦ **Strong winds**, speed reaching 40-50 kmph, are likely to prevail over southwest and westcentral Arabian Sea. Fishermen are advised not to venture into these areas.

13 August (Day 5): ♦ Heavy to very heavy rainfall likely at isolated places over Uttarakhand, Tamilnadu, Puducherry & Karaikal, Kerala and Sub-Himalayan West Bengal & Sikkim and Heavy rainfall at isolated places over Coastal & South Interior Karnataka, East Madhya Pradesh, Chhattisgarh, Jammu & Kashmir, Himachal Pradesh Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Odisha, Jharkhand, Bihar and Assam & Meghalaya.

♦ **Strong winds**, speed reaching 40-50 kmph, are likely to prevail over southwest and westcentral Arabian Sea. Fishermen are advised not to venture into these areas.

Weather Outlook for subsequent 2 days from 14th August to 16th August 2019

- ♦ Fairly widespread to widespread rainfall with isolated heavy falls likely over northern plains, East and Northeast India, western Himalayan region and along west coast.
- ♦ Scattered to fairly widespread rainfall likely over the rest of the country.

Salient advisories

- As rain/thundershowers likely at most places over **Coastal Karnataka** and **Kerala**, at most/many places over **South Interior Karnataka** during the period, over **North Interior Karnataka** on 9th & 10th August along with **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** very likely at isolated places over Kerala and South Interior Karnataka on 9th; **Heavy to very heavy rainfall** with **extremely heavy falls** at isolated places over Tamilnadu, Puducherry & Karaikal,

Coastal Karnataka on 9th; **Heavy to very heavy rainfall** at isolated places over Tamilnadu, Puducherry & Karaikal, Coastal Karnataka and South Interior Karnataka on 10th August, rain/thundershowers likely at most places over **Konkan & Goa** during the period and over **Gujarat** on 9th & 10th, at most/many places over **Madhya Maharashtra** from 9th to 11th August along with **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** very likely at isolated places over Gujarat State on 9th, **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** very likely at isolated places over Saurashtra & Kutch on 10th, **Heavy to very heavy rainfall** likely at isolated places over Gujarat Region on 10th and over Konkan & Goa on 9th & 10th, rain/thundershowers likely at most places over **Uttarakhand**, at most/many places over **Himachal Pradesh** during the period, over **Jammu & Kashmir** on 9th & 10th and over **Uttar Pradesh** on 12th & 13th August along with **heavy/Heavy to very heavy rainfall** likely at isolated places over Uttarakhand on 11th, 12th & 13th, over Himachal Pradesh and West Uttar Pradesh on 12th August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields like vegetables, pulses and maize. Provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to heavy rain.

- In Madhya Maharashtra, in flood affected districts, drain out excess water from already sown crop fields. Maintain 5 cm water level in the rice fields.
- In **Assam**, in flood affected areas of North Bank Plain Zone, if there is total damage of rice seedlings or crops in the main field, farmers are advised to sow wet seeding of sprouted seeds (@75-80 kg/ha) of short to medium duration varieties. Undertake direct seeding with the photo insensitive short duration variety. In partially affected fields, drain out excess water and apply 1/3rd N₂ + 50% K₂O as top dressing during the tillering stage after current spells of rain.
- Utilizing the relied and expected rainfall, undertake sowing/transplanting of following *Khariif* crops:
 - In South Interior Karnataka, undertake transplanting of ragi and rice seedlings in Southern Transition Zone.
 - Complete transplanting of rice in Madhya Pradesh and Chhattisgarh.
 - In Nagaland and Manipur, continue transplanting of rice.
 - In East Uttar Pradesh, complete transplanting of rice and sowing of groundnut, arhar, sunflower, lobia, jowar, bajra and maize. In Western Plain Zone of Uttar Pradesh, continue sowing of sorghum, pearl millet, groundnut, pigeon pea, black gram, green gram and groundnut.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in the all the districts of the region except Anantpur, Chittoor and Cuddepah in Rayalaseema, and Nellore in Coastal Andhra Pradesh, in all the districts of Kerala and in Coimbatore, Nilgiris districts in Tamilnadu, in all districts of Coastal Karnataka, in all districts of North Interior Karnataka except Koppal, Raichur, Vijayapura, Yadgir districts, rainfall occurred in Chikkamagaluru, Chitradurga, Davangere, Hassan, Kodagu, Mysuru and Shivamogga districts of South Interior Karnataka during the week.

Advisories:

- As rain/thundershowers likely at most places over **Coastal Karnataka** and **Kerala**, at most/many places over South Interior Karnataka during the period, over North Interior Karnataka on 9th & 10th August along with **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** very likely at isolated places over Kerala and South Interior Karnataka on 9th; **Heavy to very heavy rainfall** with **extremely heavy falls** at isolated places over Tamilnadu, Puducherry & Karaikal, Coastal Karnataka on 9th; **Heavy to very heavy rainfall** at isolated places over Tamilnadu, Puducherry & Karaikal, Coastal Karnataka and South Interior Karnataka on 10th August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields like vegetables, pulses and maize. Provide mechanical support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to heavy rain.

Kerala:

- In Kerala, drain out excess water from rice fields and maintain 5-7cm water level. Also drain out excess water from banana, ginger and vegetable fields.
- In Problem Area Zone, in pepper gardens, the vines may be drenched over a radius 45-50 cm with Copper Oxchloride 2g / litre@ 5-10 litres/ vine. A foliar spray with 1 per cent Bordeaux mixture is also to be given after current spells of rain.
- In High Altitude Zone, to control soft rot, drench the soil with 1% Bordeaux mixture/0.3% Mancozeb
- In Central Zone, to control green leaf hopper attack in Bhindi. Spray 2 g Thiamethoxam per 10 litre of water after current spells of rain.
- In Northern Zone, weather is congenial for bacterial leaf blight in paddy, spray Streptocyclin 30g/200 L of water for 1acre. after current spells of rain

Andhra Pradesh:

- In North Coastal Andhra Pradesh, by utilizing the realized rainfall incorporate green manure crops preceding to rice and go for puddling of main fields for transplanting. Drain out excess water from the Black gram, Green gram sugarcane, maize, groundnut and sesame. In sugarcane, there is a chance of crop lodging due to rainfall which has attained 4 feet, undertake tying and wrapping of the crop.
- In Scarce rainfall Zone of Rayalaseema, farmers of Atmakur, Midthur, Bandi Atmakur, Nandi Kotkur, Pagidyala, Chippagiri, Pamulapadu, Jupadu Bungalow and Velgode mandals of Kurnool district can take up sowings of contingency crops like redgram, castor, bajra and foxtail millet after receipt of sufficient rainfall.
- In Krishna Godavari Zone of Andhra Pradesh, spray Bispyribac sodium 200 ml/ha as post emergence herbicide at 15-20 days after sowing to control both monocot and dicot weeds in rice.
- In Southern Zone of Andhra Pradesh, farmers who has not taken up groundnut sowing are advised to sow alternate crops like bajra, redgram, castor, cowpea, field bean, fodder jowar, horse gram after receiving the rains.

Telangana:

- In Southern Telangana zone, undertake sowing of Cowpea, Sesamum, Castor crop and Sunflower at closer spacing utilizing the realized rainfall.
- In Northern Telangana, drain out excess water from standing crops. The prevailing weather conditions are favorable for blast in paddy. To control apply Tricyclozole @ 0.6 g or isoprothiolane @ 1.5 ml liter of water on a non rainy day. Sow the Redgram crop as intercrop in cotton and maize.

Tamil Nadu:

- In Western Zone, undertake sowing of irrigated maize and gourds like snake gourd, bitter gourd and other cucurbits. Prevailing weather condition is conducive for the Cercospora leaf spot in groundnut. Monitor the disease initiation and if already crop is infected, spray Mangozeb @ 2.5 g per litre of water.
- In North Western Zone, apply coconut micronutrient mixture along with farm yard manure in order to control the button shedding in coconut as well as to improve the yield.
- In Cauvery Delta Zone, weather is congenial for stem borer incidence in kuruvai paddy, spray Profenophos at 400 ml/acre (or) apply Cartarp hydrochloride 4 G @ 6 kg/ac for effective control of stem borer.

Karnataka:

- In Coastal Karnataka, drain out excess water from crop fields /black pepper gardens. Undertake planting of areca nut seedlings after current spells of heavy rain.
- In North Interior Karnataka, complete sowing of onion crop. Undertake sowing of sunflower, cowpea crop.
- In South Interior Karnataka, provide proper drainage to remove excess of water from crop fields. Undertake transplanting of ragi and rice seedlings. Carry out intercultural operation in maize, red gram crops after current spells of rain.
- In South Interior Karnataka, ginger crop is severely affected by Rhizome rot disease; to manage this disease, spray Copper Oxchloride @ 3 gm/liter of water after current spells of rain. Since cloudy weather expected, flower may drop in cotton; spray Planofix @1.0 ml in 4.5 liters of water.
- In North Interior Karnataka, incidence of leaf eating caterpillar has been noticed in soybean; spray the crop with Biopesticide such as Nomoriya riley @2gm or Triazophos @ 2ml or Lambda Cyahalothrin @0.5ml dissolved in one litre of water after current spells of rain.

Animal Husbandry

- In Karnataka, injection 0.5ml of lasota is recommended for poultry birds for control of ranikhet disease.
- In Tamilnadu, due to cloudiness, the temperature will be around 34.0°C, hence feed intake will be higher in poultry. To control feed intake and to satisfy the energy requirement of birds, addition of vegetable oil to the feed @ 5 – 8 kgs / ton is recommended. Addition of shell grit to the feeder to the birds aged above 60 weeks is recommended to reduce the egg breakage problem in commercial layers.

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

Realised Rainfall : Rainfall occurred in all districts of Arunachal Pradesh except Changlang, East Kameng East siang, Kurung Kumey, Upper Siang, West Siang and Upper Subansari; in all districts except Barpeta, Bongaigaon, Darrang, Goalpara, Karbi Anglong, Golghat, Sonitpur districts of Assam; all districts of Meghalaya except East Garo Hills and Ri-Bhoi; all districts of Mizoram except Lunglei, Mamit, Serchhip; all districts of Manipur except Bishnupur, Chandel, Churachandpur, Tamenglong, Thoubal; in all districts of Nagaland except Longleng, Mon districts and in Dhalai and North Tripura districts of Tripura.

Advisories:**Arunachal Pradesh:**

- In Arunachal Pradesh, if there is total damage of seedlings or crops in the main field of rice due to heavy rainfall during past weeks, farmers are advised sowing of medium to short duration varieties of seeds in nursery bed. Provide proper drainage in maize crop fields to avoid water stagnation.

Assam & Meghalaya:

- In Upper Brahmaputra Valley Zone of Assam, in flood affected areas, undertake nursery raising of the photo insensitive short duration (90-100 days) varieties in the areas where the rice crop is totally damaged due to flood for transplanting. Due to congenial weather, there is chance of attack of stem borers, hoppers etc. in the sali rice seedlings in the nurseries. Under fair weather condition, it is advised to spray Chlorpyrifos 20 EC or Quinalphos 25 EC (66-80 ml per 66-80 litre of water per bigha) against the pests. Continue sowing of sesame seeds in the flood-free upland areas after current spells of rain.
- In Lower Brahmaputra Valley Zone, complete transplanting of rice seedlings. Complete sowing of sesame upto mid of August. Undertake land preparation for sowing of finger millet.
- In North Bank Plain Zone of Assam, undertake land preparation / sowing of kharif Sesame

and Pulses (green gram and black gram.

- In Hill Zone of Assam, early and timely sown capsularis jute may be harvested during this week and kept in the field in standing position for 3-4 days before retting for proper defoliation. Avoid water logged condition in the olitorious jute field. Continue land preparation and sowing of kharif sesame.
- In Central Brahmaputra Valley, complete transplanting of Sali paddy seedlings of medium and long duration varieties (120-150) days. Continue sowing of kharif sesame. Undertake land preparation for sowing of kharif pulses (green gram & black gram).
- In North Bank Plain Zone of Assam, in flood affected areas, if there is the total damage of seedlings or crops in the main field, farmers are advised to sow wet seeding of sprouted seeds (@75-80 kg/ha) of short to medium duration varieties. Undertake direct seeding with the photo insensitive short duration variety. In partially affected fields, drain out the excess water and apply 1/3rd N2 + 50% K2O as top dressing during the tillering stage after current spells of rain.
- In Meghalaya, continue transplanting of low land Sali rice. After transplanting maintain a thin layer of 2-3 cm stagnating water in the field. Maintain proper drainage in the field of ginger, turmeric and maize fields.

Manipur, Mizoram, Tripura and Nagaland:

- In Nagaland, continue sowing of black gram, groundnut, rice bean and millet.
- In Nagaland, spray neem oil @5 ml/litre of water along with suitable agent like nirma powder 1g l-1 or NSKE 5% against Hairy caterpillar in groundnut at vegetative stage after current spells of rain
- In Manipur, continue transplanting of kharif rice. Maintain a thin film of water up to 7 days after transplanting and then increase water to 5-7 cm. Continue sowing of black gram, groundnut, black gram, rice bean and millet. Spray Carbendazim @ 0.5g / lit of water to control tikka disease in groundnut after current spells of rain.
- In Mizoram, to manage Northern leaf blight disease in maize at cob formation stage, spray Approach (Methoxy-acrylates) @ 2 g/litre of water after current spells of rain. Continue transplanting of rice. Drain out excess water in maize, green gram, ginger/turmeric and jhum rice field after current spells of rain
- In Tripura, continue transplanting of Aman rice. If rice nursery is not raised, undertake either direct sowing or opt for short duration variety.

➤ Animal Husbandry:

- In flood affected areas of Upper Brahmaputra valley zone of Assam, vaccinate domestic livestock like cattle, goat and pigs against BQ, HS, Foot and mouth disease as well as anthrax disease. During the monsoon season animals should not be fed with water submerged rotten grasses.
- In Lower Brahmaputra Valley Zone of Assam, keep the animal in raised platform during the flood situation. Maintain a proper distance from the free flowing flooding streams and rivers. Provide seasonal vaccination against viral and bacterial diseases like FMD, BQ, HS etc. supply adequate amount of clean and pure drinking water.
- In Tripura, monsoon weather could lead to gastrointestinal parasites infection in pig. It is advised to maintain good sanitary conditions of pig sheds.

Fishery:

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

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

Realised Rainfall: Rainfall occurred in North & Middle Andaman and South Andaman districts of Andaman & Nicobar Islands; in Araria, Aurangabad, Bhabua, Buxar, Darbhanga, Gaya, Gopalganj, Jehanabad, Kishanganj, Nawada, Purnea, Rohtas, Saharsa, Samastipur, Sheikpura, Vaishali and West Champaran districts of Bihar; in all districts of Jharkhand except Deogarh, Godda, Pakur, Sahebganj and West Singhbhum; in all districts of Odisha except Bargarh, Deogarh, Jharsuguda and Sundergarh; in all districts of Gangetic West Bengal except East Midnapore, Howrah, Murshidabad and South 24 Paraganas

and in all districts of Sub-Himalayan West Bengal and Sikkim except South Dinajpur and South Sikkim. Weather remained dry over rest of the region.

Advisories:

Odisha:

- Impound water in the fields Direct seeded rice to carry out khelua operation at four to five week stage of the crop. Repair the bunds to check water loss from fields. Prepare the land for transplanting three to four week paddy seedlings in main field. Take up cultivation of ragi and ginger. Make adequate drainage channels to avoid water stagnation in the cotton, arhar, groundnut, maize and vegetable fields.
- Spray Profenophos @ 400 ml per acre crop area @ 2 ml/litre of water to control early shoot borer in sugarcane crop. In early transplanted paddy crop, there is chance for leaf folder infestation due to the prevalence of cloudy weather. Spray Chlorantraniliprole 18.5% SC @ 3 ml/10 litre of water or Fipronil 5% SC @ 2 ml/litre of water. Undertake plant protection measures after current spells of rain.

Bihar:

- Complete the transplanting of paddy and undertake weed management in the transplanted rice field on priority basis. Take up nursery sowing/transplanting of cauliflower. Take up planting of pointed gourd and nursery sowing of papaya in raised seedbed. Complete the sowing of pigeon pea. Carry out transplanting of 45-50 days old onion seedlings in raised seedbed. Take up nursery sowing of chilli in raised seedbed and carry out transplanting if the seedlings are ready. Plant new saplings of fruit plants such as mango, litchi, jackfruit, guava, custard apple, lemon, etc.

Jharkhand:

- Continue transplanting paddy seedlings in low land as sufficient water is available for puddling. In medium land, where sufficient water is not available for puddling, farmers may continue transplanting through SRI method with 10-15 days old seedlings. In fallow upland at present, take up sowing of Arhar, Niger or different vegetables on ridge. Take up sowing of improved varieties of urd and horse gram. Cultivate improved varieties of sweet potato, tomato, cabbage and cauliflower.
- Spray neem based insecticide @ 5 ml per litre of water in maize crop and Monocrotophos @ 2.5 ml per litre of water or Chlorantranilierole/Spinasad @ 0.3 ml per litre of water in rice crop for management of fawl army worm. Undertake plant protection measures after current spells of rain.

West Bengal:

- In Sub-Himalayan West Bengal, go for transplanting aromatic rice as weather conditions are suitable for good quality yield. Keep the large cardamom field weed free. Carry out careful roguing and destruction of infected plants. Maintain clean drainage channels in Khasi mandarin and large cardamom fields. Continue sowing of early cauliflower. Keep okra and ginger fields weed-free and provide adequate drainage.
- In Gangetic West Bengal, continue transplanting Aman paddy in low and medium land areas. Check the bunds around the field. Keep some seedlings in seed bed for emergency purpose. Keep the drainage channels clean in the betel vine gardens.

Andaman & Nicobar Islands:

- In Andaman & Nicobar Islands, keep open the bunds in paddy field to remove excess rain water. Harvest the matured vegetables to avoid losses due to rain. Provide support to the fruit bearing banana and papaya trees as moderate wind is expected.

Animal Husbandry:

- In Bihar, clean the mouth, hooves and udders of FMD affected animals with 1% solution of Potassium per manganate. Vaccinate animals against Haemorrhagic Septicaemia and Anthrax Black Quarter.
- In Jharkhand, provide proper medication to cattle against diarrhoea, liver fluke and Babesiosis diseases in consultation with the local veterinarian. Bathe the cattle with Butox or Cypermethrine @ 2ml/ litre of water to prevent Ecto parasite.
- In West Bengal, clean the cattle shed regularly using calcium carbonate during rainy season.
- In Andaman & Nicobar Islands, ensure proper control of ecto parasites and flies in cow and buffaloes. Provide proper shelter to pigs and goats as heavy rainfall is expected.

Fishery:

- In Odisha, apply Urea @ 10kg/bigha-m and SSP @ 15kg/bigha-m in fish pond if required.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Rainfall occurred in all districts of Gujarat State except Devbhoomi Dwarka, Kutch, Morbi, Porbandar districts of Saurashtra & Kutch. Rainfall occurred in all districts of Konkan & Goa, Vidarbha, Madhya Maharashtra except Solapur district and in all districts of Marathwada except in Beed and Jalna districts.

Advisories:

- As rain/thundershowers likely at most places over Konkan & Goa during the period and over Gujarat on 9th & 10th, at most/many places over Madhya Maharashtra from 9th to 11th August along with **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** very likely at isolated places over Gujarat State on 9th, **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** very likely at isolated places over Saurashtra & Kutch on 10th, **Heavy to very heavy rainfall** likely at isolated places over Gujarat Region on 10th and over Konkan & Goa on 9th & 10th August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields Konkan & Goa and Gujarat.

Maharashtra:

- In Konkan region, drain out excess water from the fields of groundnut wherever necessary. Maintain 5 cm water level in rice fields. To control weeds in rice, spray herbicide Gramoxzone @ 3 ml per litres of water after current spell of rain.
- In Madhya Maharashtra, in flood affected districts, drain out excess water from already sown crop fields. Maintain 5 cm water level in the rice fields. Undertake weeding operation in pigeon pea on a non rainy day. To control sucking pest in green gram and black gram, spray Quinalphos 25 EC @ 20 ml per 10 liters of water after current spells of rain. If reddening of cotton leaves is observed, spray magnesium sulphate @ 45 g per 15 liters of water after current spell of rain. Farmers from the villages in Atpadi, Jat, Kavte mahankal and Tasgaon tahsils (Sangli district) and Man, Khatav, Koregaon, Khandala Bavada and Phaltan tahsils (Satara district) and farmers from the areas which are not affected by flood are advised to undertake weeding in standing crops like maize, groundnut and soybean after current spell of rain. Also undertake planting of adsali sugarcane (varieties Co.86032 (Nira) and Co.M.0265(Phule 265)) upto 15th August. To control semi looper on soybean, spray Profenofos 50 EC @ 25 ml per 10 liters of water after current spell of rain. In cotton, due to present cloudy and humid condition there are chances of sap sucking pests, to control spray Diamethoate 30% EC @ 10 ml per 10 liters of water after current spell of rain.
- In Marathwada, undertake weeding in pearl millet and vegetable fields on non rainy days. To control aphids in cotton, spray Flonicamid 50 WG @ 60 g per acre or Verticillium Lecanii @ 1 kg per acre during clear weather condition.
- In Vidharbha, drain out excess water from waterlogged areas of standing crops, orchards and vegetable fields. Carry out weeding operation in early sown cotton, sorghum, green gram, black gram, maize and soybean after current spell of rain. To control early stage/initial incidence of leaf eating caterpillar in soybean, spray Azadiractin 300 ppm @ 50 ml per 10 litres of water after current spell of rains. To manage the initial incidence of pink boll worm in earlier sown cotton at flowering stage, undertake spray of 5% NSKE or Azadiractin 1500 ppm @ 25 ml per 10 litres of water on a non rainy day. Maintain optimum 2- 3cm water level in the transplanted rice field. Carry out intercultural operations for weed management in pigeon pea, cotton and soybean on non rainy days. To control stem borer in turmeric crop remove the infected leaves and spray Neem oil @ 20 ml per 10 liters of water on non rainy day.

Gujarat

- In Middle Gujarat, remove excess rainwater from nursery of vegetable and tobacco crops. Continue transplanting of rice crop. Undertake sowing of intercrops like green gram, black gram etc. in cotton field after current spells of heavy rain.
- In Saurashtra & Kutch, arrange for proper drainage in cotton, groundnut, vegetables, pulses and maize fields. Continue transplanting of brinjal, chilli and early cauliflower after current spells of heavy rain.
- In North Gujarat, carry out sowing of castor after current spells of heavy rain.
- In South Gujarat, complete planting of banana (Basrai variety and transplanting of rice seedlings. Arrange for drainage in sugarcane fields.

- In Saurashtra & Kutch, due to continuous rainfall infestation of yellow mosaic virus observed in pulse crops; for control, remove the infected plants and spray Triazophos 40 % EC @ 10 ml/10 litres of water after current spells of rain.

Animal Husbandry

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

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in all districts of Madhya Pradesh and in all districts of Chhattisgarh except in Durg, Janjgir, Raigarh and Raipur districts.

Advisories:

Madhya Pradesh

- In Kymore Plateau & Satpura hills, complete transplanting of rice in main field and dip the roots of paddy seedling in the azotobacter culture before transplanting the seedlings. Drain out excess water from standing crops.
- In Jabhua Hill Zone, provide drainage channels in proper distance for drainage of excess rain water in tomato, chilli, brinjal, kharif onion and early cauliflower crop and give recommended dose of fertilizers.
- In Nimar Valley Zone, if soybean is found infested with Anthracnose, Aerial Blight and Charcoal rot, spray the crop with Tebuconazole @ 625 ml/ha or Tebuconazole + Sulphur 1 kg/ha or Hexaconazole @ 500 ml/ha with the use of 500 litres of water.
- In Satpura Plateau Zone, Bud necrosis disease is observed in groundnut, for control, apply Monocrotophos @ 1.6 ml/liter of water and for stem rot of groundnut spray of Saaf @ 3gram/ liter of water should be done.
- In Central Narmada Valley Zone, complete transplanting of rice and undertake weed management in soybean crops.
- In Malwa Plateau Zone, undertake intercultural operations in Kharif crops. Farmers are advised to install Light Trap / Insects specific Pheromone Trap in order to assess the likely infestation of insects and for integrated pest management. For management of defoliators and white fly spray pre-mixed insecticides like Betacyfluthrin + Imidacloprid @ 350 ml/ha or Thimethoxam + Lambda cyhalothrin @ 125 ml/ha. This will also help in control of stem fly.

Chhattisgarh:

- In Northern Hill Zone, complete transplanting of paddy seedlings. In upland areas, undertake sowing of urad, sesamum, moong etc., intercropping of maize with Urd is advised. Farmers are advised to sow brinjal, early tomato, chilli and onion in the nursery in the upland areas. Undertake intercultural operations in different kharif crops like Rice, Maize, Ragi, Arhar, Groundnut, Soyabean, Urd, Mung etc. After weeding, broadcast urea as per their requirement.
- In Chhattisgarh Plain Zone, complete transplanting of rice with 4-5 seedlings per hill and apply 10% higher nitrogen. If leaf eating caterpillar is observed in soybean crop, apply Trizofas @ 2 ml or Flubendiamide @ 0.5 ml/ 200 liter water in one acre.
- In Bastar Plateau zone, maintain 5cm water level in rice fields. In the rice crop, continuous monitoring of harmful insects should be done. For this light trap should be used. Light trap should be placed at some distance from the crop and bulb should be lighted from evening 06:30 pm to 10:30 pm. Collected insects should be destroyed in the morning hours.

Animal Husbandry:

- In Madhya Pradesh, cattle sheds should be kept dry as far as possible. During monsoon season normally low light duration due to cloudy weather condition hence farmers are advised increase light duration in poultry farms.
- In Chhattisgarh, cattle shed should be kept dry as far as possible to prevent from foot rot disease. Hygiene should be maintained around cattle shed. Bushes, parthenium weeds should be uprooted and pits etc. should be filled so that mosquitoes control is there.

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

Realised Rainfall: Rain occurred in most of the districts except Kinnaur, Kullu and Lahaul & Spiti districts of Himachal Pradesh; in Doda, Poonch, Reasi and Samba districts of Jammu & Kashmir; in all the districts of Uttarakhand; in all the districts of East Rajasthan; in all the districts of West Rajasthan except Barmer, Hanumangarh, Jaisalmer, Jodhpur, Sriganganagar of West Rajasthan; in Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Nawashahar, Patiala, Ropar, SASnagar (Mohali) districts of Punjab; in Gurgaon, Karnal, Palwal, Panchkula, Panipat, Yamunanagar districts of Haryana, East Delhi, North East Delhi, North Delhi, South West Delhi; in Allahabad, Ambedkarnagar, Amethi, Bahraich, Banda, Fatehpur, Gazipur, Hardoi, Kannauj, Pratapgarh, Shrawasti, Sitapur, Sonbhadra, Sultanpur and Varanasi districts of East Uttar Pradesh; in Agra, Aligarh, Auraiya, Badaun, Bareilly, Bijnor, Bulandshahar, Etah, Firozabad, Gautam Budh Nagar, Ghaziabad, Hamirpur, Hapur, Jalaun, Jhansi, Lalitpur, Mahamayanagar, Mahoba, Meerut, Moradabad, Muzaffarnagar, Pilibhit, Rampur and Shamli districts of West Uttar Pradesh.

Advisories:

- As rain/thundershowers likely at most places over Uttarakhand, at most/many places over Himachal Pradesh during the period, rain/thundershowers likely at many places over Jammu & Kashmir on 9th & 10th and over Uttar Pradesh on 12th & 13th August along with **heavy/Heavy to very heavy rainfall** likely at isolated places over Uttarakhand on 11th, 12th & 13th, over Himachal Pradesh and West Uttar Pradesh on 12th August, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields Uttarakhand and Himachal Pradesh.

Jammu & Kashmir:

- In Sub Tropical Zone, carry out thinning operations in kharif pulses. Strengthen and raise the height of field bunds to retain rain water in rice field. Carry out earthing up operation in maize field. Carry out weeding operation in turmeric and okra fields.
- In Valley Temperate Zone, carry out weeding operations in pulses and vegetables. Undertake sowing of carrot.
- In Cold Arid Zone, carry out hoeing and weeding operations in cruciferous crops and onion in the open field conditions. Apply Neem oil @ 4ml/litre to control aphids on vegetables.
- In Intermediate Zone, carry out weeding operation at regular intervals in maize crop. Provide proper drainage facility in maize and kharif pulses. To avoid wilting in chillies, tomato and brinjal, avoid water logging conditions in the field. For control of red pumpkin beetle in cucurbits, apply imidachloprid 1 ml/3 litres of water or Dichlorvos 30 EC @ 2 ml/ litre of water on a non rainy day.

Himachal Pradesh:

- In Mild Hills Sub Humid Zone, spray Captan and Hexaconazole 400 g per 200 litres water for prevention of fruit rot in pomegranate. Spray Captan(600 gm) or Ziram Metiram55% (600ml) per 200 litres of water on apple trees for the control of scab/ fly speck/ bitter rot scab. Spray Malathion 200 ml or Oxy-demeton methyl 200 ml per 200 litres of water for the control of Aphid Sanjose scale on apple trees.
- In High Hill Temperate Dry Zone, carry out weeding operation in peas. Spray bavistin 0.25% after flowering stage in peas to control white rot disease. Spray fenazaquin(50ml/200lts) or propargite(200ml/200lts) to control mites on apple.
- In Mid Hills Sub Humid Zone, spray Fenzaqueen Mejjister 3.75 ml in 15 litres of water to protect tomato from mite disease. Spray hexaconazol/ carbendazim 100 gram in 200 litres water on strawberry to protect it from leaf spot.

Punjab, Haryana and New Delhi

- In Punjab, continue transplanting of vegetables (tomato, chilli, brinjal, cauliflower) and sowing of maize. Complete the transplanting of basmati rice and sowing of mash and moong. Remove excess rain water to avoid any damage in maize and pulses field. Farmers are advised to remove foot rot infected plants from rice field and avoid ponding of water to check further spreading of infection.
- In Undulating Plain Zone, do not irrigate orchards and nursery area. Use fruit fly trap to control fruit fly damage in guava. Weather condition is favourable for transplanting of evergreen fruit plants like Mango, Litchi, Guava.
- In Haryana, continue transplanting of matured seedlings of tomato, cauliflower, cabbage in prepared field and complete the sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish. Complete transplanting of rice and continue land preparation for sowing for pulses i.e. green gram, lobia,

moth.

- In Delhi, continue transplanting of early cauliflower, tomato, chilli and brinjal whose seedlings are ready. Undertake sowing of fodder sorghum, sweet corn and baby corn. Protect cucurbitaceous crops against fruit fly by use of bait trap (mixing jaggary 10 % with Malathion 10 % and putting at different corners of the field). Undertake hoeing & weeding in all crops and vegetables and monitor all crops regularly against white flies and sucking pests.
- In Haryana, due to congenial weather, there is chance of attack of cotton jassid in cotton vegetative/flower initiation stage, spray 80g Ulala to control the attack on a non rainy day.
- In Undulating Plain Zone of Punjab, due to sporadic rainfall in the region, sucking pest population may increase which can also transmit Mosaic disease in Mung and Mash. Spray recommended insecticides for control of sucking pest on a non rainy day.
- In Western Plain Zone of Punjab, weather is suitable for attack of stem borers in rice. If more than 5% dead hearts appears in the field, spray 20 ml Fame 480 SC or 170 g Mortar 75 SG or 350 ml of Marktriazol /sulfathion 40 EC or 560 ml Monocrotophos 36 SL or one litre of chlorpyrifos 20 EC in 100 litres of water per acre on a non rainy day. Further application may be repeated as and when damage reaches economic threshold level. These insecticides also control leaf folder.

Uttar Pradesh

- In East Uttar Pradesh, maintain optimum water level in the rice fields. Complete sowing of bajra, nursery raising of Capsicum, chilli, Cauliflower and cabbage. Undertake weeding in rice, black gram, maize, pearl millet, pigeon pea, sorghum, jowar and great millet. Continue planting of new fruit orchards. Carry out broadcasting of Zinc Sulphate @ 25kg or spraying of Zinc Sulphate @ 5kg plus lime @ 2.5kg in 100 litres of water per hectare for control of khaira disease in paddy crop.
- In West Uttar Pradesh, carry out broadcasting of Zinc Sulphate @ 25kg or spraying of Zinc Sulphate @ 5kg plus lime @ 2.5kg in 100 litres of water per hectare for control of khaira disease in paddy crop. In Western Plain zone, continue sowing of sorghum, pearl millet, groundnut, pigeon pea, black gram, green gram and groundnut. Make arrangements for drainage of excess water under heavy rainfall condition. Undertake weeding in standing crop's field like jowar. Transplanting of brinjal, tomato, chilli and early cauliflower on ridge is advised for those farmers whose seedlings are ready.

Uttarakhand:

- In Bhabar and Tarai Zone, to control the weeds in transplanted paddy, spray solution of Butachlor (50 EC) @ 3 litres/ 750 litres of water within 3 days of transplanting. If the leaves of french bean and lobia are drying, apply Carbendazim @ 1 g/litre of water at the root zone and to control the white rot diseases, Carbendazim @ 500g/ha should be sprayed. Undertake sowing of radish, spinach, rai and turnip in hills, in unirrigated condition. Undertake transplanting of cole crops. Spray solution of Mancozeb @ 2.5 g/litre of water to control the late blight in tomato after current spells of rain .
- In Sub-Humid Sub-Tropic Zone, drain out excess water from sugarcane, vegetables and fodder fields.
- In Hill Zone, undertake transplanting of cabbage seedlings. Undertake direct sowing of radish, coriander and mustard. Provide adequate drainage in vegetable fields. Undertake harvesting of mature potato tubers after current spells of rain.

Rajasthan:

- In Transitional Plain Zone of Inland Drainage Zone, continue sowing of guar, bajara, moong, til and groundnut.
- In Semi-Arid Eastern Plain Zone, weather is congenial for fruit borer attack in bitter melon, tinda, cucumber, brinjal & tomato, pluck affected fruits and bury them deep in soil & spray Malathion 50 EC @ 1.0 ml per litre water on a non-rainy day. Harvest fruits 3 days after spray.
- In Arid Western Plain Zone, continue sowing of bajara, guar, moong and moth.
- In Sub Humid Southern Plain and Aravali Hill Zone, weather is congenial for jassids and thrips, use of Chrysoperla parasites eggs at the rate of 50,000 per hectare beneath the leaf.

Animal Husbandry:

- In Rajasthan, animals may be attacked by external & internal parasites. To control internal parasites give Albendazol or Fenbendazol under the guidance of Veterinary Doctor. To subside attack of external parasites like ticks, flies, mosquitoes etc. spray Butox on animal surrounding & body.

Floriculture :

- In Mid Hills Sub Humid Zone of Himachal Pradesh, harvest gladiolus spikes at colour bud stage leaving atleast two-three pairs of leaves on the main plant. Plant chrysanthemum rooted cuttings in the fields.

- In Valley Temperate Zone of Jammu & Kashmir, undertake harvesting of Gladiolus, Lilium and Alstroemeria cut flowers. Keep flower beds moist by watering regularly as and when needed. Carry out weeding and hoeing operations in flower beds.

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