



National Agromet Advisory Service Bulletin

Friday 19th July 2019

(For the period 19th July to 23rd July 2019)



Issued by

India Meteorological Department

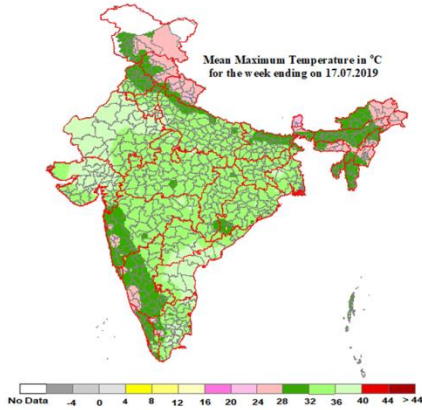
Weblink For

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

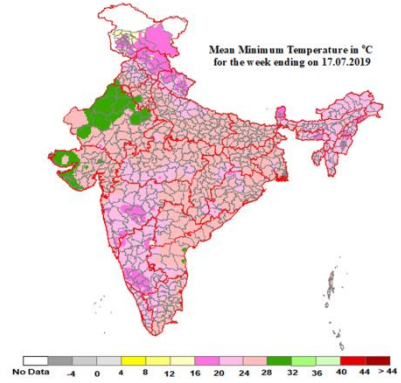
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 17.07.2019

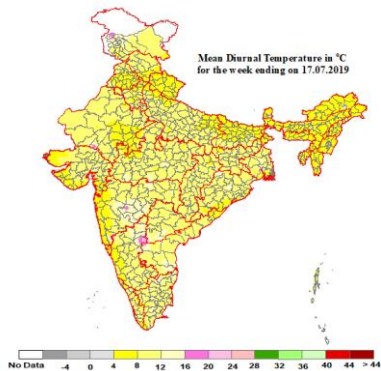
Mean Maximum Temperature (°C) for the week ending on 17.07.2019



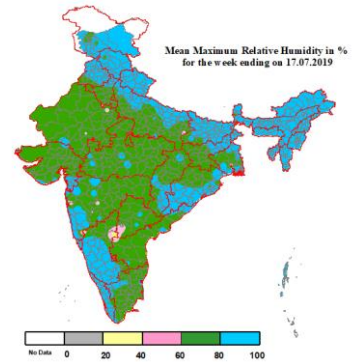
Mean Minimum Temperature (°C) for the week ending on 17.07.2019



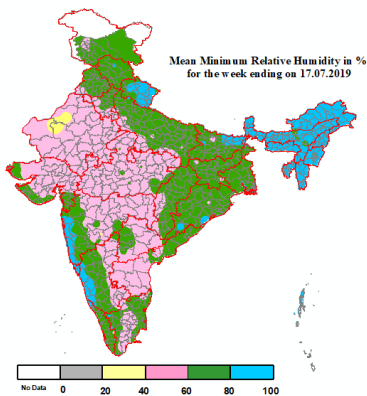
Mean Diurnal Temperature Variation (°C) for the week ending on 17.07.2019



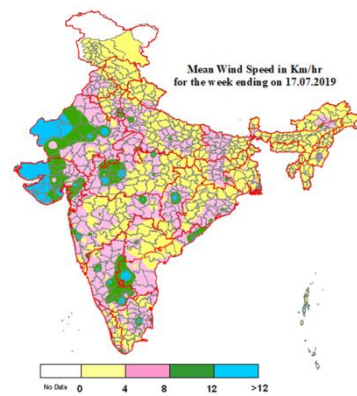
Mean Maximum Relative Humidity (%) for the week ending on 17.07.2019



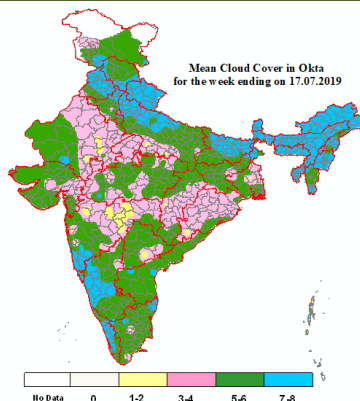
Mean Minimum Relative Humidity (%) for the week ending on 17.07.2019



Mean Wind Speed (km/hr) for the week ending on 17.07.2019

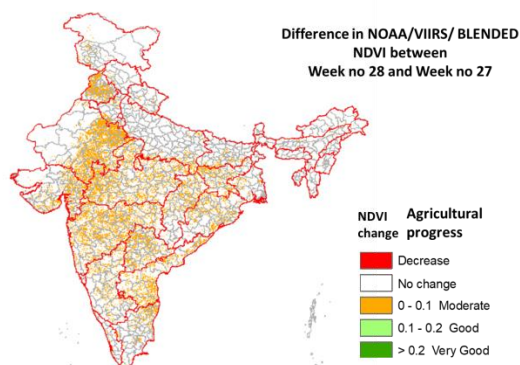
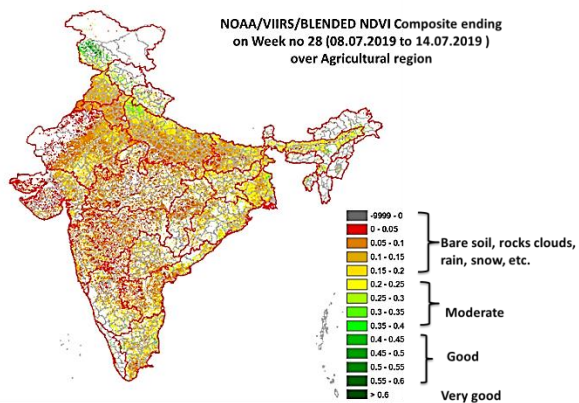


Mean Cloud Cover (okta) for the week ending on 17.07.2019



NOAA/VIIRS/BLENDED NDVI composite for the week number 28 (08.07.2019 to 14.07.2019) over Agricultural regions of India

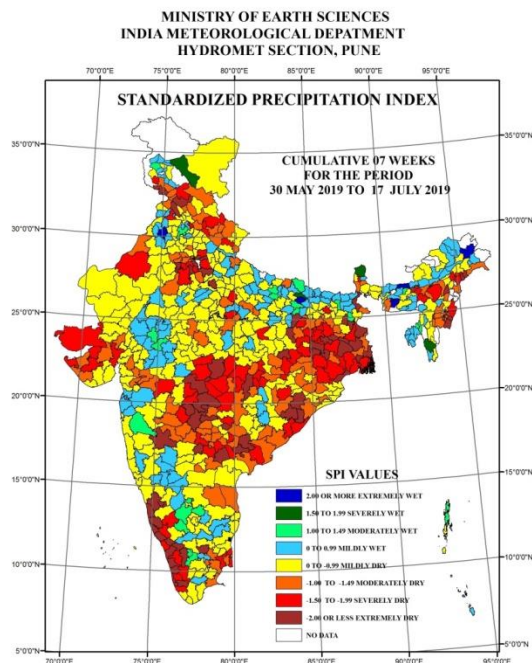
Difference in NOAA/VIIRS/BLENDED NDVI between week number 28 and week number 27



Agriculture vigour is good at many places over valley region of Jammu & Kashmir; and at isolated places in Jammu Division of Jammu & Kashmir.

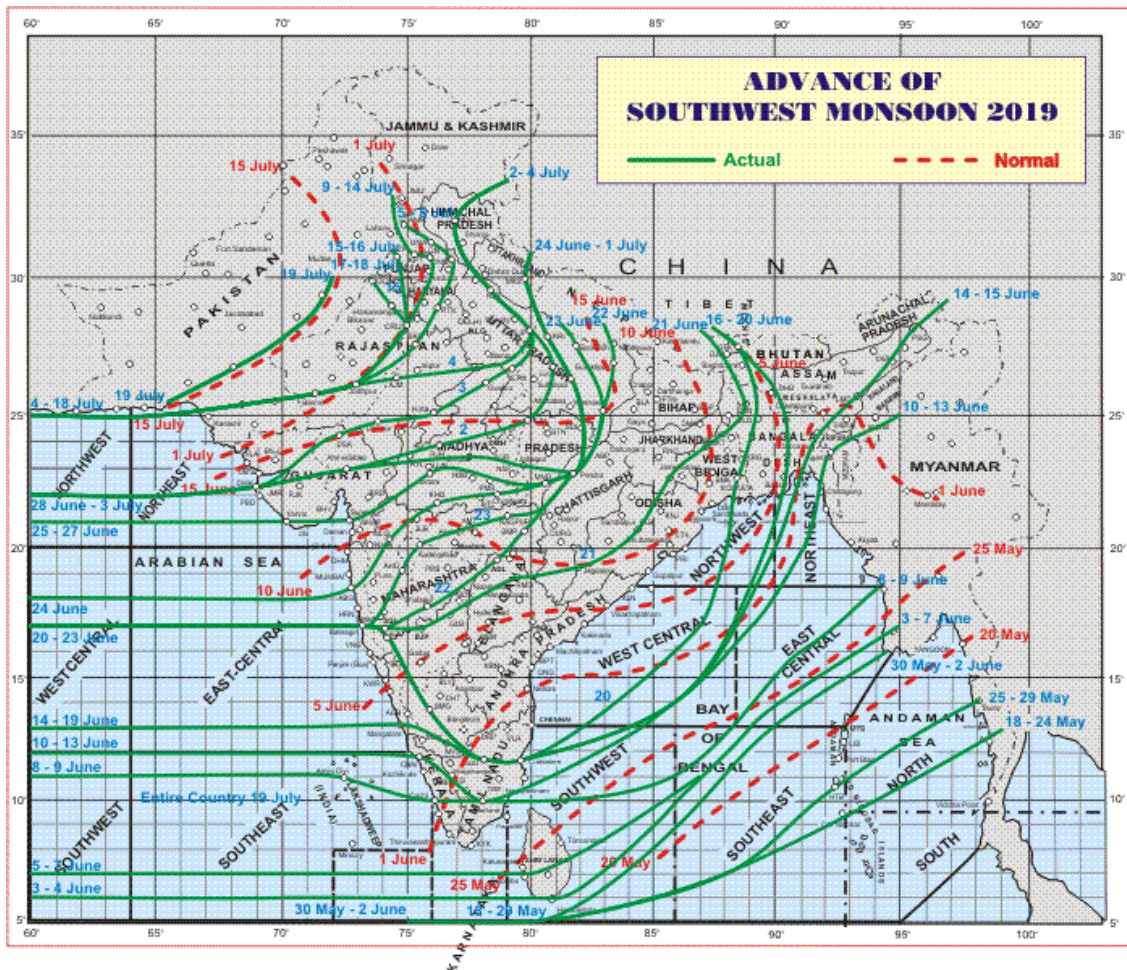
Moderate difference in agricultural vigour was noticed at many places over East Rajasthan, Maharashtra, Telangana, South Coastal Andhra Pradesh & Punjab and at few places over Gujarat, Madhya Pradesh, North Chhattisgarh, Odisha, Jharkhand, North Coastal Andhra Pradesh and Karnataka.

**Standardised Precipitation Index
Cumulative 07 weeks for the period 30th May to 17th July 2019**



- Extremely/Severely wet conditions exist in Lower Dibang Valley district of Arunachal Pradesh, Baksa district of Assam, Gopalganj, Siwan districts of Bihar, East Garo Hills district of Meghalaya, Lunglei district of Mizoram, Bhatinda district of Punjab, North Sikkim district of Sikkim.
- Moderately wet conditions exist in Nalbari district of Assam, Buxar, West Champaran, Madhepura districts of Bihar, Baramula district of Jammu, Mandya, Tumkur, Chickballapur districts of Karnataka, Ratlam district of West Madhya Pradesh, Pune district of Maharashtra, Patiala district of Punjab, Pratapgarh district of Rajasthan, North Tripura district of Tripura, Ambedkar Nagar, Ballia, Basti districts of Uttar Pradesh, North and Middle districts of Andaman & Nicobar Islands, Sahibganj district of Jharkhand.
- Extremely/Severely dry conditions exist in Srikakulam, Vizianagaram, West Godavari districts of Andhra Pradesh, Darrang district of Assam, Aurangabad, Begusarai, Rohtas districts of Bihar, Ahmedabad, Kutch, Rajkot, Devbhumi, Dwarka, Morbi districts of Gujarat, Gurgaon, Mahendragarh, Mewat, Faridabad, Rewari, Panchkula, Palwal districts of Haryana, Chamba, Kangra districts of Himachal Pradesh, Jammu, Samba, Rajouri districts of Jammu, Dakshin Kannada district of Karnataka.
- Moderately/ mildly dry conditions experienced in remaining districts in the country.

Advance of SouthWest Monsoon 2019



- ♦ The southwest monsoon has further advanced into remaining parts of West Rajasthan and thus has covered the entire country today, the 19th July, 2019. The monsoon trough at mean sea level passes through Ganganagar, Hissar, Agra, Banda, Sidhi, Daltonganj, Bhubaneswar, then southeastwards towards Northwest Bay of Bengal

Weather Forecast for next 5 days valid upto 0830 hours of 24th July 2019

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

- ◆ 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 3-4 days

5 Day Rainfall Forecast (MID-DAY)
19th July 2019

Weather Warning during next 5 days

19 July (Day 1): ♦ **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** at isolated places very likely over Kerala & Mahe and South Interior Karnataka and **Heavy to very heavy rainfall** with **extremely heavy falls** at isolated places over Coastal Karnataka; **Heavy to very heavy rainfall** at a few places over Konkan & Goa and Lakshadweep; at isolated places over Madhya Maharashtra and Tamilnadu, Puducherry & Karaikal and **heavy rainfall** at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Rajasthan, Vidarbha, Chhattisgarh, Odisha, Andaman & Nicobar Islands, Marathawada, Coastal Andhra Pradesh, Rayalaseema, Telangana and North Interior Karnataka.

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

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are likely to prevail over southwest and central Arabian Sea, along & off Maldives area, Comorin area, Lakshadweep, Gulf of Mannar, South Bay Of Bengal, Gujarat coast and Kerala coast. Fishermen are advised not to venture into these areas.

20 July (Day 2): ♦ **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** at isolated places very likely over Kerala & Mahe and South Interior Karnataka and **Heavy to very heavy rainfall** with **extremely heavy falls** at isolated places over Coastal Karnataka; **Heavy to very heavy rainfall** at a few places over Lakshadweep; at isolated places over Konkan & Goa and **heavy rainfall** at isolated places over Vidarbha, East Rajasthan, Andaman & Nicobar Islands, Gujarat Region, Marathawada, Coastal Andhra Pradesh, Telangana, Madhya Maharashtra, Tamilnadu, Puducherry & Karaikal and North Interior Karnataka.

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

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are likely to prevail over southwest and central Arabian Sea, along & off Maldives area, Comorin area, Lakshadweep, Gulf of Mannar, Gujarat coast and Kerala coast. Fishermen are advised not to venture into these areas.

21 July (Day 3): **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** at isolated places very likely over Kerala & Mahe and South Interior Karnataka and **Heavy to very heavy rainfall** with **extremely heavy falls** at isolated places over Coastal Karnataka; **Heavy to very heavy rainfall** at a few places over Lakshadweep; **heavy rainfall** at isolated places over West Madhya Pradesh, Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Gujarat Region, Konkan & Goa, Marathawada, Telangana, Madhya Maharashtra, Tamilnadu, Puducherry & Karaikal and North Interior Karnataka.

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are likely to prevail over southwest & central Arabian Sea. Fishermen are advised not to venture into these areas.

22 July (Day 4): ♦ **Heavy to very heavy rainfall** at a few places with **extremely heavy falls** at isolated places very likely over Kerala & Mahe and Coastal & South Interior Karnataka; **Heavy to very heavy rainfall** at isolated places over Lakshadweep; **heavy rainfall** at isolated places over Himachal Pradesh, Uttarakhand, East Uttar Pradesh, West Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa, Madhya Maharashtra, Tamilnadu, Puducherry & Karaikal and North Interior Karnataka.

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

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are likely to prevail over southwest & central Arabian Sea. Fishermen are advised not to venture into these areas.

23 July (Day 5): ♦ **Heavy to very heavy rainfall** at isolated places over Coastal & South Interior Karnataka and Kerala & Mahe and **heavy rainfall** at isolated places over Himachal Pradesh,

Uttarakhand, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, North Interior Karnataka, Konkan & Goa, Madhya Maharashtra and Tamilnadu, Puducherry & Karaikal.

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

◆ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are likely to prevail over southwest & central Arabian Sea. Fishermen are advised not to venture into these areas.

Weather Outlook for subsequent 2 days from 24th to 26th July 2019

- ◆ There is likely reduction in distribution & intensity of rainfall activity over Kerala, Coastal & south interior Karnataka, and adjoining ghat districts of Tamilnadu.
- ◆ Rainfall activity very likely to increase over East & adjoining central India with fairly widespread to widespread rainfall with isolated heavy falls.
- ◆ Fairly widespread to widespread rainfall with isolated heavy falls likely over northeastern states and Western Himalayan Region.
- ◆ Isolated to scattered rainfall likely over the rest of the country.

Salient advisories

- Heavy to very heavy rainfall at a few places with extremely heavy falls at isolated places very likely over Kerala & Mahe and South Interior Karnataka from 19th to 22nd, Coastal Karnataka on 22nd; Heavy to very heavy rainfall with extremely heavy falls at isolated places over Coastal Karnataka from 19th to 21st; Heavy to very heavy rainfall at a few places over Konkan & Goa on 19th and Lakshadweep from 19th to 21st; at isolated places over Madhya Maharashtra and Tamilnadu, Puducherry & Karaikal on 19th, Konkan & Goa on 20th, Lakshadweep on 22nd, Coastal & South Interior Karnataka and Kerala & Mahe on 23rd; heavy rainfall at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Rajasthan, Chhattisgarh, Odisha, Rayalaseema on 19th, Vidarbha, Coastal Andhra Pradesh on 19th & 20th, Andaman & Nicobar Islands, Marathawada, Telangana from 19th to 21st, and North Interior Karnataka from 19th to 23rd, East Rajasthan on 20th & 23rd, Gujarat Region on 20th and 21st, Madhya Maharashtra, Tamilnadu, Puducherry & Karaikal from 20th to 23rd, West Madhya Pradesh on 21st and 22nd, Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa from 21st to 23rd, Uttarakhand on 22nd & 23rd, East Uttar Pradesh on 22nd and Uttar Pradesh, East Rajasthan, Madhya Pradesh on 23rd. 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.
- In flood affected areas of Assam where the paddy crop was completely destroyed, farmers are advised to sowing seeds for replanting with medium to short duration varieties in nursery bed within 1st week of August, Direct seeding with the photo insensitive short duration variety and adoption of submergence tolerance varieties for repeat flood prone areas. In partially affected fields, drain excess water and apply 1/3rd N2 + 50% K2O as top dressing during the tillering stage.
- In Kerala provide proper drainage facilities to the transplanted *viruppu* rice, coconut, vegetable fields and provide mechanical support to banana to avoid damage due to heavy rainfall and monitor suspected pest

& diseases during the rainy period.

- Due to receipt of deficient rainfall in South Telangana undertake direct sowing of rice.
- In Gangetic West Bengal the *Aman* paddy (wet seeded) is facing moisture stress due to receipt of deficient rainfall. Provide life saving irrigation.
- In Madhya Maharashtra, undertake sowing of alternate crops like soybean, cotton, hybrid sorghum, hybrid pearl millet, sunflower, maize and *kharif* onion with intercropping of pearl millet + pigeon pea (2:1), sunflower + pigeon pea (2:1), soybean + pigeon pea after receipt of sufficient rain. In Western Ghat zone continue sowing of *kharif* crops like groundnut, soybean, cotton and maize.
- In rest of the country undertake transplanting of rice and sowing of *kharif* pulses, sunflower, Bt. cotton, bajra, soybean, maize, sesamum, planting of rainfed sugarcane.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in all districts except Idukki, Kollam, Pathanamthitta, Thiruvananthapuram in Kerala, East Godavari, Guntur, Krishna, Sirkakulam, West Godavari, Yanam, Chittoor districts of Andhra Pradesh and Adilabad, B. Kothagudem, Kamareddy, Khammam, M. Malkajgiri, Mahabubabad, Nagarkurnool, Nizamabad, Suryapet, Wanaparthy districts of Telangana, Ariyalur, Chennai, Cuddalore, Dharmapuri, Kanchipuram, Nilgiris, Puducherry, Tiruvallur, Tiruvannamalai, Vellore, Villupuram in Tamilnadu, in all districts of Coastal Karnataka, in Belagavi, Raichur, Haveri and Yadgir districts of North Interior Karnataka and in Chikkamagaluru, Kodagu and Shivamogga districts of South Interior Karnataka during the week. Weather remained mainly dry over rest of the region.

Advisories:

Kerala:

- In Problem area zone due to insufficient rainfall sowing of rice is delayed. As adequate rainfall is expected, during next five days, undertake sowing of rice nurseries after current spells of rain.

Andhra Pradesh:

- In North Coastal Andhra Pradesh, continue sowing of rice. Weather is congenial for incidence of Fall armyworm on maize. Spray Emamectin benzoate 0.4 g or chlorantraniliprole 0.4 ml per litre of water.
- In Scarce rainfall Zone of Rayalaseema, undertake sowing of Groundnut, Redgram, Bajra, Fox tail millet, Castor after receipt of sufficient rainfall for sowing.
- In High altitude tribal zone of North Coastal Andhra Pradesh continue nursery sowing of rice & Finger millet, and sowing of maize
- In Krishna Godavari Zone of Andhra Pradesh, undertake sowings of cotton as favorable weather conditions are prevailing. Continue field preparation for planting of sugarcane
- In Southern Zone of Andhra Pradesh, undertake transplanting of paddy. Cut the tips of the plants before transplanting and make 20 cm alleyways at every 2 mt. apart to facilitate free aeration and take up pest management practices.

Telangana:

- In Southern Telangana zone, undertake sowing of Castor. Undertake sowing of Redgram at closer spacing. Undertake sowing of Maize with short duration hybrids wherever lifesaving irrigation is available. Do not go for sowing of Cotton, Soybean. In view of shortage of water, don't take up growing of rice nurseries. However, go for direct seeding of rice under puddled conditions after receipt of sufficient rains.
- In Northern Telangana continue rice nurseries. Do not sow cotton and soybean in light soils under rainfed conditions. Undertake sowing of Redgram crop as intercrop in cotton and maize. The prevailing weather conditions are favorable for stem borer infection in paddy nursery, to control apply of 800g carbofuron 3G granules for 5 cents paddy nursery after spells of current rains

Tamil Nadu:

- In Cauvery Delta Zone, weather is congenial for incidence of black bug in kuruvai paddy which is in

tillering stage, spray Cholpyriphos 20 E.C 500 ml /acre or Neem seed kernel extract 5% on a non rainy day

- In Western Zone, high relative humidity and humid weather may cause leaf spot in turmeric and downy mildew Cucurbits and Onion, spray Mancozeb 1 kg/ha on non rainy day.
- In Coastal Zone, as an alternate crop for kuruvai rice, transplanting of ragi (TRY 1) can be done utilizing a seed rate of 5 kg/ha in clay textured soil and direct sowing may be done in coarse textured soil.

Karnataka:

- In North Interior Karnataka, carry out intercultural operations in earlier sown maize, soybean and green gram crops. Complete sowing of pigeon pea, sunflower, Bt. cotton, bajra, soybean, maize, sesamum and onion crops under sufficient moisture condition. For control of flower dropping in brinjal spray Planofix @1ml/4 liters of water + Boran 1g/litre of water after spells of current rain.
- In South Interior Karnataka drain out excess water from the standing crops Complete sowing of groundnut, cowpea, green gram, black gram, horse gram, field bean, ragi (direct sowing), Hybrid jowar, sesame, sunflower, cotton, castor, minor millets crops, horticulture crops (tomato, chilli, brinjal, radish, ladies finger, beans, watermelon, carrot, onion, mango, banana, sapota) after current spells of heavy rain.

Animal Husbandry

- In Karnataka, vaccinate the livestock for Black Quarter and foot and mouth diseases. Sheep/goats must be dewormed for maximum weight gain and good health. There is chance of Raniket, gumbra diseases in poultry; provide antibiotic drugs through water or through feed. Protect the birds from wet weather and wet floor.

Fishery

- Dry out the complete pond water and dry the pond bottom for 15 days and manure the pond with the 10-20% of total recommended manure (5 tons) before release of the fish seeds in to the fresh pond.

Agro Forestry

- Take up the planting of trees like glyrecidia, subabul, drumstick etc. on bunds.

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

Realised Rainfall : Rainfall occurred in all districts of Arunachal Pradesh; all districts of Assam except Darrang and Golaghat; all districts of Meghalaya; all districts of Mizoram except Champhai; Chadel, Churachandpur, Senapati, Tamenglong and Ukhrul districts of Manipur; Kephire, Kohima, Paren, Tuensang and Zunheboto districts of Nagaland and all districts of Tripura.

Advisories:

Arunachal Pradesh:

- Complete transplanting of *kharif* rice. Provide proper drainage and avoid water stagnation in maize field. Also provide mulching at the base of plant to protect from heavy and continuous rain.

Assam & Meghalaya:

- In Assam, continue transplanting of *Sali* paddy.
- In flood affected areas of Upper Brahmaputra valley zone of Assam where the paddy was completely destroyed, undertake sowing of flood resistant varieties of paddy in the nursery beds up to 1st week of August. To prevent lodging of sugarcane crops during the rainy season it is advised to provide mechanical support to the crops by using bamboo sticks or tying 4 to 5 canes together with their leaves.
- In Barak Valley Zone of Assam, due to floods it is advised to undertake short duration rice that can be transplanted after receding of flood water
- In Hill Zone of Assam, continue sowing of pigeon pea and cotton after current spells of heavy rain.
- In Lower Brahmaputra Valley Zone of Assam, complete sowing of pigeon pea after current spells of heavy rain
- In Central Brahmaputra Valley of Assam, continue sowing of arhar and sesame after current spells of heavy rain.
- In flood affected areas of Central Brahmaputra Valley and North Bank Plain Zone of Assam, if there is the total damage of seedlings or crops in the main field, farmers are advised to sow medium to short duration rice varieties in nursery bed within 1st week of August. 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 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. Maintain proper drainage in the field of ginger, turmeric and maize fields.

Manipur, Mizoram, Tripura and Nagaland:

- In Nagaland, continue nursery raising of RC/WRC rice. Undertake transplanting of rice and sowing of groundnut. Continue land preparation for sowing of soybean. If due to deficit of water, cultivation of paddy is not possible undertake sowing of alternative crops like maize, oilseed crops, pulses.
- In Nagaland, place Yellow sticky traps coated with grease and sticky oils to attract white flies in chilli crop. Spray NSKE – 4% (Neem seed kernel extract) – 4 kg Neem seed kernel in 100 liters of water against white flies in chilli after current spells of rain
- In Manipur, continue main field preparation for transplanting of kharif rice. Continue sowing of black gram and millet. To control Fall Army Worm attack in kharif maize at vegetative/ cob formation stage, apply Emamectin benzoate @ 4g/litre water or Spinosad @ 3ml/ litre water 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. Remove the tip of rice seedling which reduces stem borer infestation during transplanting. Drain out excess water in maize, green gram, ginger/turmeric and jhum rice field after current spells of rain
- In Tripura, maintain 2 to 5cm of water in rice fields after 30 days of transplanting.

➤ Animal Husbandry:

- In flood affected areas of Upper Brahmaputra valley zone of Assam, after recession of flood, domestic animals may be infected by worms. To reduce the problem, recommended dose of medicine in consultation with local veterinarian.
- In Barak Valley Zone of Assam due to flood like situation, poultry may be infected by diseases so farmers are advised to feed tetracycline powder with rice to their poultry, provide sufficient water with 1% salt and mineral mixture.
- In Meghalaya, undertake regular immunization of cattle & buffaloes against Foot & Mouth disease, Haemorrhagic septicaemia & Black Quarter. To prevent FMD spread spray 4% Sodium Carbonate solution (400 gm Na₂ Co₃ in 10 litres of water) or lime/bleaching powder should be spread every day at least once around the farm premise & at the entry/exit at least for 10 days. Deworm cattle & buffaloes by giving Albendazole @ 5-10 mg/kg body weight once and repeat after 21 days.

Fishery:

- In Lower Brahmaputra Valley Zone and Barak Valley Zone of Assam, increase in water level in the fish pond due to continuous rainfall may leads to overflow and destroying of embankment. This may cause escape of fish from pond. Raise nylon net around the pond to prevent escaping of fish. Bamboo piling may be used to protect these earthen dykes from erosion during rainy season.

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

Realised Rainfall: Rainfall occurred in Nicobar and North & Middle Andaman districts of Andaman & Nicobar Islands; in all districts of Bihar except Aurangabad, Jahanabad, Nawada, Rohtas and Sheikpura; in Deoghar, Dumka, Godda, Jamtara, Pakur, Palamu and Sahebganj districts of Jharkhand; in Ganjam, Khurda, Nawarangpur and Nayagarh districts of Odisha; in Birbhum, Kolkata, Murshidabad, Nadia and West Midnapore districts of Gangetic West Bengal and in all districts of Sub-Himalayan West Bengal and Sikkim. Weather remained dry over rest of the region.

Advisories:

Odisha:

- Complete the land preparation for nursery raising of Kharif paddy. Provide channels for draining out the excess water from cotton, sugarcane, groundnut, arhar and maize fields. Weather is optimum for sowing of green gram, black gram, cowpea, ragi, ginger and yam. July is the optimum time for mango and cashew planting. Go for sowing of okra and pumpkin.

Bihar:

- Undertake transplanting of 20 to 22 days old paddy in medium to low land areas. Continue sowing of pigeon pea. Undertake planting of mango, guava, papaya, banana, jackfruit, litchi and citrus plants. Undertake intercultural operations in vegetables such as bitter gourd, sponge gourd, cucumber, pumpkin,

bhindi, etc.

- Regular monitoring of pests is advised in vegetables crops.

Jharkhand:

- Carry out transplanting of 15 days old rice seedlings after washing roots thoroughly and dipping the roots for 12 hr in Chloropyriphos @ 1ml/litre of water. In the SRI Method, 10-12 days seedlings should be transplanted, maintaining plant to plant spacing @ 25 cm with the help of marker. Undertake sowing of sweet potato, soybean, til, urd and cow pea crops. Undertake planting of mango, guava and litchi plants.

West Bengal:

- In Sub-Himalayan West Bengal, provide drainage in Mandarin orange, ginger and turmeric fields.
- For Aphid, hoppers, white fly and thrips in chilli crop, apply Imidachlorprid 17.8 SL@1ml/5lit. of water or Thiomethoxam @1g/3litres of water. For yellow mite apply Propargite 2.5 ml/litre of water. Undertake plant protection measures after current spells of rain.
- In Gangetic West Bengal, make arrangements for life-saving irrigation to Aman paddy in case of less rainfall. Prepare land for sowing of green gram/black gram.
- To control Yellow Vein Mosaic in lady finger, spray Imidachlorprid @ 5ml/15 litres of water and spray Acetamiprid @ 1.5 g/litre of water to check the vector and whitefly. Undertake plant protection measures after current spells of rain.

Andaman & Nicobar Islands:

- In Andaman & Nicobar Islands, prepare main field for transplanting of rice by leveling and cleaning of bunds and maintain bund height at 25 to 30 cm.

Animal Husbandry:

- In Bihar, vaccinate cattle against Anthrax, BQ and HS diseases.
- In Jharkhand, vaccinate cattle against FMD, HS, BQ and Anthrax diseases. Protect poultry birds against Ranikhet and Gamboro diseases.
- In Odisha, keep the cattle shed clean in rainy season. Use lime and bleaching powder for cleaning.
- In West Bengal, vaccinate cattle against FMD, BQ and HS diseases. Keep cattle and poultry sheds clean and dry.
- In Andaman & Nicobar Islands, farmers are advised to observe serious salivation in cattle and if found, take it to nearby veterinary hospital.

Fishery:

- In Odisha, after complete eradication of aquatic weeds, weed fishes and cat fishes from the pond, apply 100 kg of lime in the pond water.
- In Andaman & Nicobar Islands, take up breeding of carps by using hormones during rainy days and prepare nursery ponds for stocking spawns.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Rainfall All districts of KonKan & Goa, in Kolhapur, Nasik, Pune, Satara of Madhya Maharashtra., in valsad district of Gujarat Region. Weather remained mainly dry over rest of the the region.

Advisories:

Maharashtra:

- In Konkan region, continue transplanting of rice seedlings (20 to 22 days old) and nagli (30 days old). Drain out excess water and maintain 2-3 cm water level in the transplated fields. Drain out excess water from already sown groundnut.
- In Madhya Maharashtra, undertake sowing of contingency crops like soybean, cotton, hybrid sorghum, hybrid pearl millet, sunflower, maize and kharif onion with intercropping pearl millet + pigeon pea (2:1), sunflower + pigeon pea (2:1), soybean + pigeon pea. In Western Ghat zone continue sowing of kharif crops like groundnut, soybean, cotton and maize
- In Marathwada, undertake Light hoeing in germinated kharif sorghum, pearl millet and sugarcane for weed management.
- In Central Vidarbha deficient areas with insufficient soil moisture condition remaining sowing of kharif crops should be done upon receipt of sufficient rains. Preferably use early duration varieties with 20% higher seed rate. As far as possible avoid sowing of cotton. Otherwise under late sowing condition upon receipt of sufficient rains use only short duration varieties such as deshi early variety AKA-7 and American improved early variety AKH-081.
- In East Vidarbha continue transplanting of rice seedling (20 to 22 days old). Apply protective irrigation as per availability of water in emerged crops like cotton and soybean which are under moisture stress /

showing midday wilting symptoms.

➤ **Gujarat**

- In Middle Gujarat, continue land preparation for transplanting of tobacco and vegetable crops (tomato, chili, etc) and continue transplanting where seedlings are ready. Carry out gap filling in early sown pearl millet, green gram and groundnut crops. Apply irrigation at fruit development stage of banana and in cotton crop.
- In North Gujarat, undertake sowing of groundnut, pearl millet, sesame, maize, green gram, black gram and cluster bean crops after receipt of sufficient rainfall. Carryout hand weeding and intercultural operations in earlier sown cotton and vegetable crops. Undertake sowing of short duration pulses as inter crop in orchards.
- In Saurashtra & Kutch, undertake thinning in pulses, pearl millet, sesame. Carryout intercultural operations in earlier sown sesame, pearl millet, cotton and groundnut. Undertake transplanting of vegetable (tomato, chilli, brinjal and early cauliflower) where seedlings are ready and sowing of lady's finger, cluster bean, kidney bean, cowpea, tur, amaranthus etc. and cucurbits under sufficient moisture condition.
- In South Gujarat, continue land preparation for transplanting of rice and undertake new plantation of banana.
- In Saurashtra & Kutch, due to high temperature, mite infestation in lemon orchard is observed; to control, spray Propargite 57 % EC @10ml/10 liter of water on non rainy day
- In South Gujarat, due to cloudy weather, there are chances of incidences of sucking pests in cotton; spray Emidacloprid or Thiomithozam @ 4 ml/10 liters of water after current spells of rain.

Animal Husbandry

- In Gujarat, provide 30-35 gm mineral mixture in daily diet of animals. Care should be taken in rainy days for cattle and stored dry fodder.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in Rewa, Satna, Sidhi, Singrauli districts of East Madhya Pradesh, in Bijapur, Dantewara, Kondagaon, Sukma, Surajpur of Chhattisgarh.

Advisories:

Madhya Pradesh

- In Jabhua Hill and Satpura Plateau Zone, continue sowing of soybean and maize. Continue sowing of Bottle gourd, Pumpkin, cucumber, Bitter gourd and Ridge gourd. Earlier sown kharif crops suffering moisture stress condition, undertake intercultural and use bio mulch in between the rows of the crop for retaining soil moisture.
- In Satpura Plateau Zone, continue line sowing through seed drill for the crops like soybean, maize, arhar, urad and moong crops after proper seed treatment.
- In Central Narmada Valley Zone, continue nursery sowing of rice of early and medium duration varieties of rice. Continue sowing of soybean and maize. Undertake planting for new orchards.
- In Malwa Plateau Zone, continue sowing of pigeon pea and cotton and undertake planting of ginger and turmeric. Undertake intercultural operations in Kharif crops. In present weather conditions, rouging of viral infested crop should be done in chilli. Infected crop should be uprooted and buried in the soil. After rouging, spraying of Imidacloprid @ 0.3 ml per litre of water is advised to control the vector after current spells of rain.

Chhattisgarh:

- In North Hill Zone, complete the transplanting of rice as early as possible. In the transplanted rice field maintain water level upto 5 cm. In upland areas undertake intercropping of maize with Urd. Continue sowing of soybean, arhar, sesamum, and maize crops. Undertake planting of fruit crops i.e. Papaya, Guava, Mango, Litchi, and Pomegranate etc. Undertake sowing of brinjal, early tomato, chilli and onion in the nursery in the upland areas.
- In Chhattisgarh Plain Zone, continue nursery sowing of rice. Soybean and other pulses crops like arhar should be sown with proper drainage.
- In Bastar Plateau zone, for early and medium duration rice varieties go for line sowing method. Undertake plantation of banana. At nursery stage of rice crop for the control of insects like steam borer gall midge and white & brown hopper apply corbofuron 3 G@33 kg or phorat 10G @ 10 kg per /hectare and for cut worm clorpyrifos 20% 2500 mm or daiclorovash 80% 600 mm after current spells of rain.

➤ **Animal Husbandry:**

- In Madhya Pradesh, there is a possibility of spread of foot and mouth disease in animals for control, vaccinate the animals. Vaccinate the Goat to control PPR disease.
- In Chhattisgarh, dairy animal should not be allowed to drench in rain. Cattle shed should be kept dry as far as possible to prevent from foot rot disease. The rainwater should not be allowed to accumulate. In case the floor is cemented then the floor washing should be done with Phenyl and repair of roof top should be done to stop leakage.

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

Realised Rainfall: Rainfall occurred at most places except Chamba, Kinnaur, Kulu and Lahaul & Spiti districts of Himachal Pradesh; Doda, Kulgam, Reasi and Udhampur districts of Jammu & Kashmir and most of the places of Uttarakhand, in all districts of Punjab except Gurdaspur, Hoshairpur, in Chandigarh, Ambala, Fatehabad, Jind, Karnal, Kurukshetra, Panchkula, Sirsa, Sonapat, Yamunanagar districts of Haryana, in New Delhi and North Delhi districts, in all the districts of Uttar Pradesh except in Fatehpur, Agra, Auraiya, Etawah, Firozabad, Ghaziabad, Jalaun, Lalitpur, Mahamayanagar, Mahoba, Mainpuri, Mathura and Shamli districts. Weather remained mainly dry over rest of the the region.

Advisories:

Jammu & Kashmir:

- In Cold Arid Zone, undertake harvesting of barley. Carry out weeding operations in wheat crop. Carry out regular pruning of extra foliage in indeterminate tomato to get larger and quality fruit size. Carry out hoeing and weeding operations in cruciferous crops and onion in the open field conditions.
- In Sub Tropical Zone, continue transplanting of rice. Undertake sowing of kharif pulses. Carry out weeding operation in okra and turmeric fields.
- In Intermediate Zone, complete transplanting of rice. To carry out weeding in paddy, apply Butachlor granules 5G @ 30 Kg/ha 2-5 days after transplanting in standing water. Undertake sowing of kharif pulses. Ensure staking with plastic string in tomato and cucurbits (bottle gourd, bitter gourd, sponge gourd and cucumber) for better crop stand against gusty winds.

Himachal Pradesh:

- In Mid Hills Sub Humid Zone, spray Redomil gold 25 gram /10 litres of water to control fruit borer and leaf spot diseases in tomato. Undertake hoeing and weeding operations in fruit crops after current speels of rain.
- In Mild Hills Sub Humid Zone, spray Myclobutanil (80 gm) or Mancozeb (600gm) or Propineb (600 gm) or Dodine (150 gm) per 200 litres of water on apple trees for the control of scab. Spray Metiram 55%+Pyraclostro bin 5% @ 300 gm per 200 litres of water on apple trees for the control of alternaria leaf spot/blight/premature leaf fall after current speels of rain.
- In High Hill Temperate Dry Zone, spray Malathion 50EC 1ml/1litre of water to control cabbage butterflies. Spray mancozeb 600gm or difenoconazole 30ml/200litre of water to control scab in apple after current speels of rain.

Punjab, Haryana and New Delhi

- In Punjab, continue transplanting of vegetables (tomato, chilli, brinjal, cauliflower). Complete sowing of cotton including Bt cotton or desi Cotton and planting of turmeric. Complete the transplanting of rice. Complete the sowing of mash and moong. Undertake necessary intercultural operations in the cotton fields to keep the field free from weeds.
- In Haryana, continue sowing of cotton, transplanting of matured seedlings of tomato, cauliflower, cabbage in prepared field and complete the sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish. Complete transplanting of rice and continue land preparation for sowing for pulses i.e. green gram, lobia, moth. Due to possibility of rain farmers are advised to drain out the excess rain water in the cotton crop if required. Farmers are advised to withhold irrigation and spray.
- In Delhi, undertake transplanting of nursery for early cauliflower, tomato, chilli, brinjal whose seedlings are ready and land preparation of rice. Undertake sowing of soybean, maize, bajra and short duration varieties of pigeon pea. Undertake sowing of cucurbits. Constant monitoring of cucurbitaceous crops against attack of fruit fly, use of 'Methyl Eugenol trap is recommended. After detecting the symptoms, spray Rogor @ 2 ml + 10 g sugar or jaggary/litre water at 50 litres/ha when sky is clear.

- In Western Plain Zone of Punjab, prevailing weather is favourable for the development and spread of fruit rot in chilli, give 3-4 sprays of Folicur @ 250 ml of Indofil M-45 or blitox 50 WP @ 750 gm/acre at 10 days interval during clear weather.
- In Undulating Plain Zone of Punjab, prevailing weather conditions may increase attack of fruit borer in tomato and fruit & shoot borer in brinjal, spray Coragen 18.5 SC @ 60 ml in tomato and 80 ml in brinjal for control of the insects during clear weather

Uttar Pradesh

- In East Uttar Pradesh, undertake transplanting of paddy. Undertake sowing of groundnut, arhar, soybean, sunflower, lobia, jowar, bajra and maize. Undertake planting of new fruit orchards.
- In West Uttar Pradesh, continue transplanting of paddy. Farmers are advised to transplant 20-25 days old paddy seedling in those prepared fields with spacing of 20 x 10 (R x P) cm. Continue sowing of maize and sorghum. Pick up mature fruits of standing crops like brinjal, chilli, etc.

Uttarakhand:

- In Hill Zone, carry out weeding in rainfed potato and ginger. Avoid water logging in tomato, chilli, capsicum, brinjal and cucurbitaceous crops in valley zone. Continue planting of lemon saplings.
- In Bhabar and Tarai Zone, undertake transplanting of rice. Continue transplanting of cole crops. Drain out excess water from vegetable fields.
- In Sub-Humid Sub-Tropic Zone, continue transplanting of rice. Drain out excess water from vegetable fields.

Rajasthan:

- Attack of Fall Army Worm reported in southern Rajasthan, spray of Thiomethocsam 12.6 ml or Lemdasaihelothrin 9.5 ZC 200 ml or Choletraniliprol 18.5 SC 150 ml or Spinotoram 11.7 SC 250 ml/ha.
- In Transitional Plain Zone of Inland Drainage, undertake sowing of Guar, Moong, Cowpea, Moth, Til, Ground nut, Bajra.
- In Flood Prone Eastern Plain Zone, undertake planting of ber, aonla, falsa and pomegranate and agroforestry tree saplings. Also undertake sowing of Til, Bajara and sorghum.
- In Semi-Arid Eastern Plain Zone, undertake planting of fruit crops like mango, plum, pomegranate, Aonla. Also those farmers who have not yet done sowing of kharif crops like pearl millet, sorghum, maize, green gram, cowpea & cluster bean may complete sowing of the same at the earliest possible.

Animal Husbandry:

- In Uttar Pradesh, undertake vaccination for cow and buffalos to prevent the foot and mouth disease as per schedule.

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