



# *National Agromet Advisory Service Bulletin*



*Friday 12<sup>th</sup> May 2017*  
*(For the period 12<sup>th</sup> to 16<sup>th</sup> May 2017)*

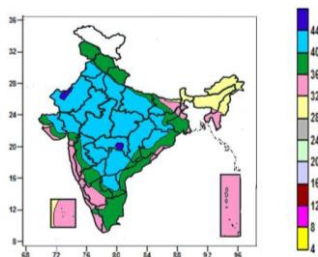


*Issued by*  
*National Agrometeorological Advisory Service Centre,*  
*Agricultural Meteorology Division,*  
*India Meteorological Department, Shivajinagar, Pune.*

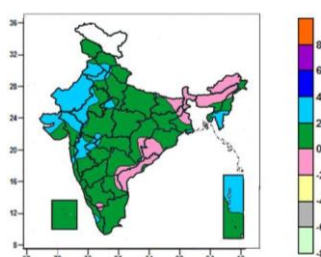
**Weblink For**  
**District AAS Bulletin:** <http://www.imdagrimet.gov.in/node/3545>  
**State Composite AAS Bulletin:** <http://www.imdagrimet.gov.in/node/3544>

**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 10.05.2017**

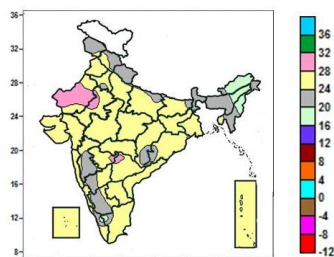
**Actual Mean Maximum Temperature (°C) in India for the week ending 10.05.2017**



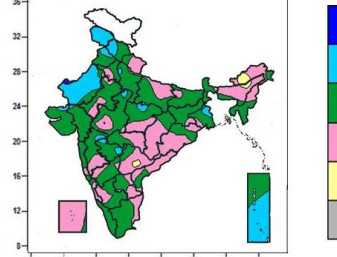
**Mean Maximum Temperature (°C) Anomaly in India for the week ending 10.05.2017**



**Actual Mean Minimum Temperature (°C) in India for the week ending 10.05.2017**

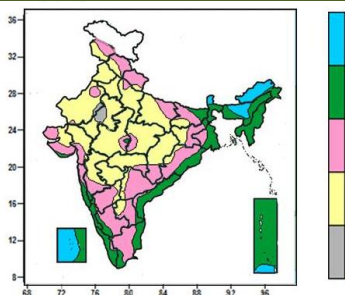


**Mean Minimum Temperature (°C) Anomaly in India for the week ending 10.05.2017**

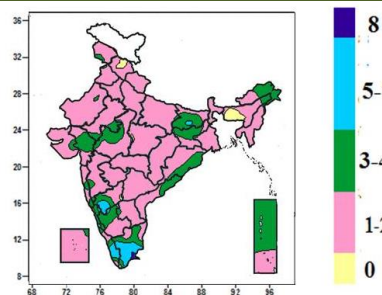


**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 10.05.2017**

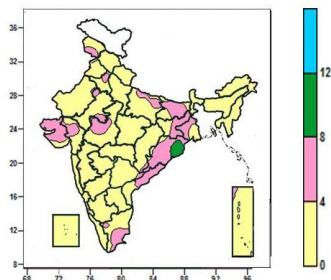
**Relative Humidity (%) over India for the week ending 10.05.2017**



**Cloud amount (okta) over India for the week ending 10.05.2017**

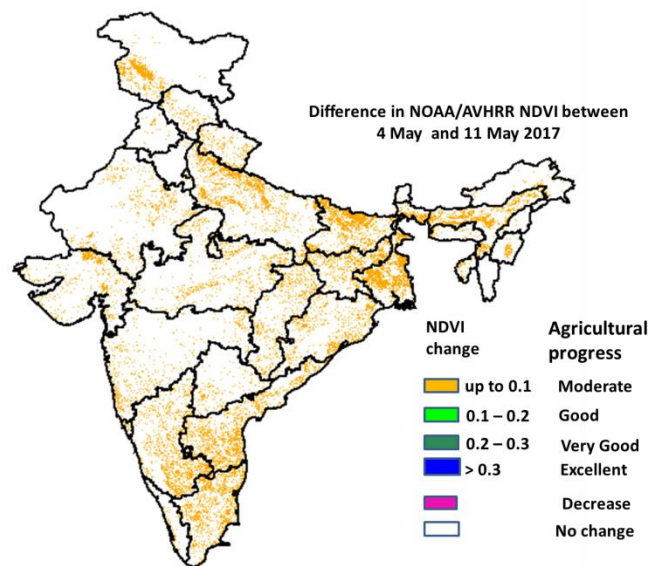
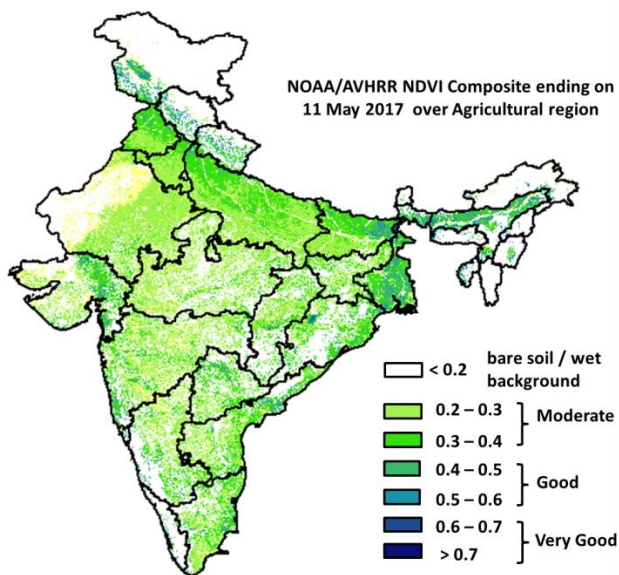


**Wind speed (knots) over India for the week ending 10.05.2017**

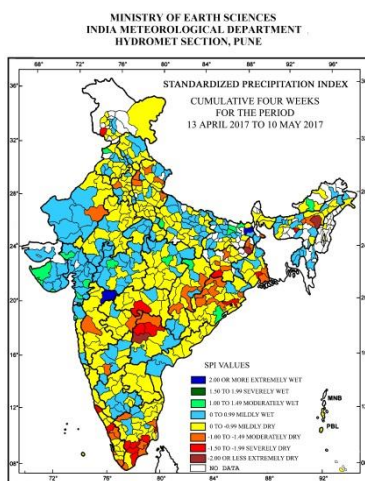


**NOAA/AVHRR NDVI composite ending on 11<sup>th</sup> May 2017 over Agricultural regions of India**

**Difference in NOAA/AVHRR NDVI between 4<sup>th</sup> and 11<sup>th</sup> May 2017**



**Standardised Precipitation Index  
Four Weekly for the period 13<sup>th</sup> April to 10<sup>th</sup> May 2017**



**Weather Forecast for next 5 days valid upto 0830 hours of 17<sup>th</sup> May 2017**

- Maximum temperature likely to rise gradually by 2-3°C over parts of central India during next 3-4 days.
- No significant change in maximum temperatures over rest parts of the country during next 2-3 days.

**Weather Warning during next 5 days**

- **12 May (Day 1):** Thunderstorm accompanied with squall very likely at isolated places over north coastal Odisha, Assam & Meghalaya, Karnataka, Coastal Tamilnadu and Kerala. Thunderstorm accompanied with gusty winds very likely at isolated places over Bihar, Sub-Himalayan West Bengal & Sikkim, Gangetic West Bengal, Jharkhand, Madhya Maharashtra, Chhattisgarh, Vidarbha, and Nagaland, Manipur, Mizoram & Tripura. Heavy rainfall very likely at isolated places over Andaman & Nicobar Islands.
- **13 May (Day 2):** Thunderstorm accompanied with squall very likely at isolated places over Kerala, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Thunderstorm accompanied with gusty winds very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Odisha and Coastal Andhra Pradesh. Heavy rainfall very likely at isolated places over Assam & Meghalaya.
- **14 May (Day 3):** Thunderstorm accompanied with squall very likely at isolated places over coastal Tamilnadu.

Thunderstorm accompanied with gusty winds very likely at isolated places over north Coastal Andhra Pradesh. Heavy rain very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, South Interior Karnataka and Andaman & Nicobar Islands.

- **15 May (Day 4):** Thunderstorm accompanied with squall very likely at isolated places over Interior Tamilnadu. Heavy to very heavy rainfall very likely at isolated places over Assam & Meghalaya and heavy rain very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura, South Interior Karnataka and Andaman & Nicobar Islands. Heat wave conditions very likely at isolated places over Jharkhand, Chhattisgarh, Interior Odisha and east Vidarbha.
- **16 May (Day 5):** Heavy to very heavy rainfall very likely at isolated places over Assam & Meghalaya; and heavy rain very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura and Andaman & Nicobar Islands. Heat wave conditions very likely at isolated places over Jharkhand, Chhattisgarh, Odisha and East Vidarbha.

**Weather Outlook for subsequent 2 days from 17<sup>th</sup> to 19<sup>th</sup> May 2017**

- Rain/thundershower very likely at many places over northeastern states; at a few places over south peninsular India, Bay Islands and western Himalayan region and at isolated places over east India.

**Meteorological sub-division wise detailed 5 day rainfall forecast (Mid day)  
12<sup>th</sup> May 2017**

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

**% Station Reporting Rainfall**

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

### Salient Advisories

- As rain/thundershowers likely at most places over **Andaman & Nicobar Islands** during the period, at most/many places over **Arunachal Pradesh** and **Nagaland, Manipur, Mizoram & Tripura** from 14<sup>th</sup> to 16<sup>th</sup>, over **Assam & Meghalaya** from 13<sup>th</sup> to 16<sup>th</sup>, at many places over **Sub-Himalayan West Bengal & Sikkim** during the period, over **Kerala** on 12<sup>th</sup> and 16<sup>th</sup> and over **South Interior Karnataka** on 14<sup>th</sup> and 15<sup>th</sup> May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- As heavy to very heavy rainfall very likely isolated places over **Assam & Meghalaya** on 15<sup>th</sup> & 16<sup>th</sup> and isolated heavy rain on 13<sup>th</sup> & 14<sup>th</sup>, heavy rain very likely at isolated places over **Nagaland, Manipur, Mizoram & Tripura** from 14<sup>th</sup> to 16<sup>th</sup>, over **Andaman & Nicobar Islands** on 12<sup>th</sup> and from 14<sup>th</sup> to 16<sup>th</sup> and over **Sub-Himalayan West Bengal & Sikkim** and **South Interior Karnataka** on 14<sup>th</sup> and 15<sup>th</sup> May, provide adequate drainage in standing crops and vegetable fields to avoid water stagnation.
- As thunderstorm accompanied with squall very likely at isolated places over **Assam & Meghalaya** on 12<sup>th</sup> and 13<sup>th</sup>, over **Nagaland, Manipur, Mizoram & Tripura** on 13<sup>th</sup>, over **Karnataka, North Coastal Odisha** on 12<sup>th</sup>, over **Coastal Tamil Nadu** on 12<sup>th</sup> and 14<sup>th</sup>, over **Interior Tamil Nadu** on 15<sup>th</sup> and over **Kerala** on 12<sup>th</sup> and 13<sup>th</sup> May, thunderstorm accompanied with gusty winds very likely at isolated places over **Sub-Himalayan West Bengal & Sikkim** on 12<sup>th</sup> and 13<sup>th</sup>, over **Coastal Andhra Pradesh** on 13<sup>th</sup>, over **North Coastal Andhra Pradesh** on 14<sup>th</sup>, over **Bihar, Gangetic West Bengal, Jharkhand, Madhya Maharashtra, Chhattisgarh, Vidarbha** and **Nagaland, Manipur, Mizoram & Tripura** on 12<sup>th</sup> and over **Odisha** on 13<sup>th</sup> May, provide support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugar cane and keep harvested produce at safer places.
- As heat wave conditions very likely at isolated places over **East Vidarbha** and **Chhattisgarh** on 15<sup>th</sup> and 16<sup>th</sup>, over **Jharkhand** and **interior Odisha** on 15<sup>th</sup> and over **Odisha** on 16<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture.
- In **Assam & Meghalaya**, drain out excess water from already planted ginger/turmeric and vegetables fields wherever excess rainfall occurred and maintain drainage channels to avoid water stagnation. Continue sowing of jute, transplanting of normal *ahu* rice after current spells of heavy rain.
- Utilising realised rainfall, continue nursery preparation for sowing of *kharif* rice in **Kerala**. In **South Interior Karnataka**, continue sowing of pulses like cowpea, green gram, black gram, horse gram and field bean and nursery sowing of chilli utilising the realised and expected rainfall. In **North Interior Karnataka**, continue sowing of sesame, black gram, green gram, cowpea and field bean, wherever sufficient rainfall is received.
- Utilising pre-monsoon showers, undertake deep ploughing of fields in **Central, West, East** and **South** region. Prevailing temperature is congenial for destroying eggs and pupating stages of insects and weed seeds after ploughing.
- In **North-eastern states**, farmers are advised to keep cattle in sheds during thunder squall and heavy rainfall periods.
- In view of the heat wave conditions very likely at isolated places over **Chhattisgarh, East Vidarbha, Jharkhand** and **Odisha**, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Grazing/feeding of cattle/goats may be done during morning/ evening hours. Avoid feeding between

1100 to 1500 hours. Apply 4-6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours. In poultry, arrange sprinklers and feed poultry birds with wet mash to increase the feed intake. Proper ventilation should be maintained for free circulation of air in the sheds. Hang curtains on north-west side of poultry house to reduce the effect of hot winds.

### *Detailed Zonewise Agromet Advisories*

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

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Kasargod, Kozhikode, Malappuram, Palakkad, Thiruvananthapuram and Thissur, in Dharampuri, Kanyakumari, Krishnagiri, Namakkal, Perambalur, Salem, Trichy and Vellore districts of Tamil Nadu, in Hyderabad, Khammam districts of Telangana, Dakshin Kannada, Uttara Kannada districts of Coastal Karnataka, Bagalkote, Belagavi, Haveri, Koppal districts of North Interior Karnataka, all districts of South Interior Karnataka except Ballari, Bengaluru Rural, Bengaluru Urban and Chikaballapura during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with squall very likely at isolated places over Karnataka on 12<sup>th</sup>, over Coastal Tamil Nadu on 12<sup>th</sup> and 14<sup>th</sup>, over Interior Tamil Nadu on 15<sup>th</sup> and over Kerala on 12<sup>th</sup> and 13<sup>th</sup> May, provide support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places.
  - Thunderstorm accompanied with gusty winds very likely at isolated places over Coastal Andhra Praesh on 13<sup>th</sup> and over north coastal Andhra Pradesh on 14<sup>th</sup> May, provide support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugar cane and keep harvested produce at safer places.
  - As rain/thundershowers likely at most/many places over Kerala on 12<sup>th</sup> and 16<sup>th</sup> and over South Interior Karnataka on 14<sup>th</sup> and 15<sup>th</sup> May, along with heavy rain at isolated places over South Interior Karnataka on 14<sup>th</sup> and 15<sup>th</sup> May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - **Andhra Pradesh:**
    - In Krishna Godavari Zone, continue harvesting of *rabi* blackgram/greengram in clear weather and keep harvested produce at safer places.
    - In the North Coastal Zone, continue land preparation for pre *kharif* crops viz., sesamum, bajra, mesta etc. and green manure crops and undertake inter-cultivation in planted and ratoon crops of sugarcane in between rows.
    - In Scarce Rainfall Zone of Andhra Pradesh, in mango, pomogranate and sweet orange orchards, remove the broken branches and fallen fruits due to squally wind and rainf and apply 10 % bordo mixture.
    - In High Altitude Tribal Zone, undertake summer ploughing and sowing of green manure crops and continue providing irrigation to maize crop (silking to cob development stage).
    - In the Krishna Godavari Zone, present weather is favourable for emergence of spodoptera in groundnut, release 50,000 tilinomous parasite eggs per acre, or spray 100 larvae NPV extract per acre preferably in the evening or spray 2 ml Quinolphos or 5 ml neem oil per litre of water.
    - In the Southern Zone, prevailing dry weather condition is congenial for incidence of sucking pests is in 15-30 days summer groundnut. To control spray Monocrotophos @ 1.6 ml/litre of water.
  - **Telangana:**
    - In North Telangana Zone, prevailing high temperatures may cause damage in newly planted banana. Farmers are advised to protect by covering mulch or by providing shade.
    - In South Telangana Zone, prevailing weather conditions are congenial for incidence of sucking pests. To control, spray Dimethoate @ 2 ml or Acephate @ 1.5 g per litre of water.
  - **Tamil Nadu:**
    - In the Western Zone, as mainly dry weather would prevail, continue harvesting of sesame based on the capsule maturity.
    - In the South Zone, continue harvesting of chilli.
    - In the Southern Zone, due to the prevailing weather conditions (hot and partly cloudy weather), incidence of thrips was noticed in tomato fields. To control, remove the affected plants from the field and apply Furidon granules @ 7 kgs/hectare on a non rainy day.
    - In Cauvery Delta Zone, in rice fallow cotton and irrigated blackgram, occurrence of aphid, thrips, mite, hoppers and white flies are being noticed due to the prevailing hot weather conditions. To control this spray Azadirachtin 0.03% (3 m /litre of water) along with sticking agent in the morning or evening using hand sprayer, If damage is more spray Imidacloprid 200 SL @ 40ml/acre with 200 litres of water on a non rainy day.

▪ **Kerala:**

- In Kerala, utilising the pre monsoon showers, continue nursery preparation for *kharif* rice and in Southern Zone, continue transplanting of brinjal and chilli. Continue planting of bananas (poovan, njalippoovan, robusta, and palayankodan varieties).
- In the Problem Area Zone, protect pepper already planted (1-3yrs) in open places with shade using dry arecanut or coconut leaves. Sawdust, dry leaves can be used to mulch the basin. Undertake prophylactic spraying of BM 1% or Fytolan 0.3 % for nursery diseases.
- In High Altitude Zone Sigatoka leaf spot disease may become severe due to increase in relative humidity, if found severe, spray 1% Bordeaux mixture or Tilt 25 EC (1ml/litre of water) after cutting the severely affected leaves and burning it.
- In the Northern Zone, summer rains may cause the increased attack of fruit flies in cucurbits. Keep pheromone traps. Spray Malathion @ 2 ml in one litre of water. Dissolve 10g of jaggery in the solution to attract the flies. Spray this solution on lower sides of the leaves after current spells of rain.
- In the Central Zone, due to hot and humid condition, incidence of fruit borer may occur in vegetables. Apply 5% Neem Kernel Suspension to control fruit borer in the initial stage. If the attack is severe, spray Flubendamide @ 2ml/10 litres of water or Chloramtraniliprol @ 3 ml/10 litres after current spells of rain.

▪ **Karnataka:**

- In Southern Dry Zone, continue sowing of pulses like cowpea, green gram, black gram, horse gram, field bean, chilli etc and green manure crops, utilising the realised and expected rainfall. Sowing of jowar (CHS-5), jowar + red gram (2:1), groundnut + red gram (4:1 or 8:2) crops by using seed drill under rainfed situation are advised.
- In the Eastern Dry Zone, under double cropping, continue sowing of sesame, black gram, green gram, cowpea and field bean, wherever sufficient rainfall is received. Strengthen the bund with fodder grass, which will facilitate conservation of rainwater due to pre-monsoon showers. Undertake ploughing across the slope, which will make insitu soil moisture conservation. Agro forestry on the bund involving Melia Dubia (Hebbevu), Silver oak and Causurina is recommended for sustainable income under abnormal extreme rainfall events.
- In North Dry Zone, taking advantage of available moisture, continue land preparation for sowing of *kharif* crop.
- In North East Transition Zone, continue summer deep ploughing. Procure seeds and other inputs required for *kharif* sowing. Apply irrigation at 15 -20 days interval in mango. Take up the repair of bunds and check dam so as to reduce the runoff and to check the soil erosion.

• **Animal Husbandry**

- To protect the poultry birds from high temperatures, arrange fans and foggers in sheds, cover the sheds with paddy straw and arrange sprinklers in the Southern Telangana zone. Feed with wet mash to increase the feed intake and provide cool water for drinking
- Due to increase in temperatures in the Scarce Rainfall Zone of Andhra Pradesh, water tank and lines may be covered with gunny bags, ensure cool drinking water is available throughout the day, Foggers and sprinklers will help to reduce temperature, roof may be covered with coconut tree leaves or grass, white washing of roof and water tank to reduce heat absorption, ensure proper cross ventilation to avoid ammonia accumulation, pedestrian fans may be used to increase air flow and distribute feed in cooler parts of the day (early morning or late evening).
- In Cauvery Delta Zone of Tamil Nadu, to prevent the loss of milk production of the cattle due to heat stress, add 100 gram of baking soda to the feed. Increase the quantity of amino acids, vitamins and mineral content in cattle feed so as to compensate the less quantity of feed intake by cattle in summer.
- In Southern Dry Zone of Karnataka, maintain optimum room temperature in silkworm and poultry rearing houses; silage, hay and crop residues may be used for cattle feed in case of shortage of green fodder.

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

- **Realised Rainfall:** Rainfall occurred in Changlang, Dibang Valley, East Kameng, East Siang, Lohit, Lower Dibang Valley, Tawang, Tirap, Upper Subansari, West Kameng and West Siang districts of Arunachal Pradesh; Baksa, Barpeta, Bongaigaon, Chirang, Dhubri, Dibrugarh, Goalpara, Golghat, Hailakandi, Jorhat, Kamrup(Rural), Kamrup(Metro), Kokrajhar, Lakhimpur, Morigaon, Nowgaon, Nalbari and Tinsukia districts of Assam; East Garo Hills, East Khasi Hills and West Garo Hills districts of Meghalaya; Kohima district of Nagaland and North Tripura district of Tripura.
- **Advisories:**
  - As rain/thundershowers likely at most/many places over Assam & Meghalaya from 13<sup>th</sup> to 16<sup>th</sup>, over Nagaland, Manipur, Mizoram & Tripura from 14<sup>th</sup> to 16<sup>th</sup>, over Arunachal Pradesh from 14<sup>th</sup> to 16<sup>th</sup> May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - As heavy to very heavy/heavy rain very likely at isolated places over Assam & Meghalaya from 13<sup>th</sup> to 16<sup>th</sup> and heavy rain very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura from 14<sup>th</sup> to 16<sup>th</sup> May, provide adequate drainage in standing crops and vegetables to avoid water stagnation.
  - As thunderstorm accompanied with squall very likely at isolated places over Assam & Meghalaya on 12<sup>th</sup> and 13<sup>th</sup>

and over Nagaland, Manipur, Mizoram & Tripura on 13<sup>th</sup> and thunderstorm accompanied with gusty winds very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura on 12<sup>th</sup> May, provide support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places.

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

- In Hill Zone of Assam, continue transplanting of normal *ahu* rice, replanting of dead hills and nursery sowing of *Sali* rice after current spells of heavy rain.
- In Barpeta, Bongaigaon, Dhubri and Goalpara districts of Lower Brahmaputra Valley Zone of Assam, continue sowing of mesta and jute and nursery sowing of *Sali* rice after current spells of heavy rain. In Upper Brahmaputra Valley Zone of Assam, complete planting of ginger/turmeric and continue land preparation for *Sali* rice after current spells of heavy rain.
- In North Bank Plain Zone of Assam, complete sowing of jute and continue sowing of maize and in Central Brahmaputra Valley Zone of Assam, continue sowing of jute after current spells of heavy rain.
- In Meghalaya, continue raising of brinjal and transplanting of tomato, planting of ginger/turmeric and sowing of maize in high and mid altitudes after current spells of heavy rain.
- In Arunachal Pradesh, continue planting of ginger/turmeric, finger millet and nursery sowing of *jhum* rice. Adopt sowing of leguminous crops like cowpea, French bean, soybean etc. at 2-3 rows across the slope of *jhum* field at desirable intervals or ratios with rice to prevent soil erosion and conserve moisture and fertility. Undertake nursery raising for cole crops in higher altitudes/cold areas. Prepare half moon terraces in fruit crops (orange/banana/apple/peach) grown in steep slopes to prevent nutrient loss during heavy downpour and follow proper drainage and earthing up practices in low land/plain areas to avoid water stagnation in fruit orchards.
- In Arunachal Pradesh, to control bark eating caterpillar in citrus plants at flowering and fruiting stage, remove wooden frass and inject Dichlorovos (0.1%) @ 5ml with disposable syringe after current spells of rain.
- In Hill Zone of Assam, spray Phosphamidon @400-500ml/ha in 800 litre of water against stem borer infestation in sugarcane. Also spray Malathion 50 EC @ 1-1.5 litre/ ha in 500-700 litre of water against aphids, jassids and flea beetle in summer green gram and black gram after current spells of rain.
- In Central Brahmaputra Valley Zone of Assam, due to cloudy weather and rise in humidity, there are chances of occurrence of blast disease in *ahu* rice. Spray Bavistin @ 1 gm per litre of water. Also in summer black gram and green gram crops at seedling to flowering stage there is chance of pod borer and pod bug infestation. Spray Quinalphos @ 2.5 ml/litre for pod borer and Quinalphos followed by Dimethoate 2ml/litre of water in 5 days interval for pod bug to reduce the pest. Undertake plant protection methods after current spells of rain.

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

- In Nagaland, undertake planting of ginger, turmeric and large cardamom after current spells of heavy rain.
- In Manipur, continue nursery raising for main *kharif* rice. Raise community nursery in upland area/terrace so that it may be least affected with the heavy rains. Undertake sowing of *kharif* maize, soybean, groundnut and blackgram and harvesting of matured cob of *rabi* maize and planting of ginger/turmeric after current spells of heavy rain.
- In Mizoram, continue planting of ginger and turmeric and transplanting of pre-*kharif* rice. Undertake harvesting of *rabi* maize after current spells of heavy rain.
- In Tripura, continue sowing of *jhum* rice after current spells of heavy rain and maintain moisture in the field of cowpea at pod formation stage, *rabi* maize, urd/green gram at grain filling stage.
- In Manipur, spray Rogor@ 15ml/15 litre water against leaf folder in pre-*kharif* rice after current spells of rain.
- In Tripura, in the present weather condition, there is chance of attack of gandhi bug in *boro* rice at flowering stage. To manage the attacks apply Imidacloprid 2 ml per litre of water after current spells of rain.

• **Animal Husbandry**

- In North-eastern states, farmers are advised to keep cattle in sheds during thunder squall and heavy rainfall period. Do not allow the cattle for grazing during the rainy /thunder time.

• **Fishery**

- In Barak Valley Zone of Assam, due to rainfall, the pond are fill up with the rain water so there may be chances of bacterial disease to the fishes. Apply lime @ 6 kg per bigha of land. to control the diseases.
- In Tripura, as pre monsoon rain has started, prepare for new stocking. Remove unwanted fishes and predatory fishes by repeated netting from the ponds where drain out is not possible.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.

• **Advisories:**

▪ **Maharashtra:**

- As thunderstorm accompanied with gusty winds very likely at isolated places over Madhya Maharashtra and Vidarbha on 12<sup>th</sup> May, provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane.



- As heat wave conditions very likely at isolated places over East Vidarbha on 15<sup>th</sup> and 16<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture.
- In Konkan, plough the fields and make preparation of rice nursery. As dry weather prevailed and there is increase in maximum temperature mulching with grass should be done to avoid the water loss in mango orchards. In cashew cut the dead wood and diseased branches and apply 1% Bordeaux paste to the cut surface.
- In Madhya Maharashtra, preparatory tillage operations such as ploughing, harrowing, land leveling and bunding should be done as early as possible. Deep ploughing should be done to make soil porous so that the roots of the plants develop fully. Previous crop residue, farm waste, stones from the field should be collected and removed from the field. Summer groundnut is at grain filling and maturity stage. Reduce the intervals between two irrigation & irrigation should be given during evening hours. Cultivation of ginger and turmeric may be continued.
- In Marathwada, start deep ploughing of fields for sowing of *kharif* crops. Cultivation of ginger and turmeric should be continued. Apply organic mulches in custard apple orchard. Apply mulching in summer vegetable with organic mulch to conserve the moisture. Use shade net around the field to protect the crop from high temperature.
- In Vidarbha, summer rice is at panicle initiation/grain filling stage, maintain water level upto 2 to 3 cm in the field. Harvest the matured early varieties of rice and dry the harvested crop in sun and thresh them. Harvest the matured sunflower crop @ 20% moisture in the seed. Groundnut crop is at pod development/maturity stage, harvest the crop when turn yellow and leaves start shedding.
- In Vidarbha incidence of brown plant hoppers noticed in summer rice for it's control spray Imidacloprid 17SL @ 2.2 ml or Thiamethoxam 25WG 2 g per 10 liters of water.
- **Gujarat:**
  - In Middle Gujarat Zone, undertake sowing of pigeon pea (green pod type). Maintain optimum water level in transplanted rice. Collect mature pods of green gram and black gram. Undertake intercultural operations in pearl millet. Timely irrigate the mango orchards.
  - In North Gujarat Zone, undertake land preparation for sowing of irrigated hybrid cotton and B.T. cotton. Apply irrigation in green gram and floriculture crops. Continue harvesting of matured fruits and vegetable crops. Construct the bunds in advance to reduce soil erosion in field and plan for khet Talavadi (Farm ponds) to collect runoff water.
  - In Bhal and Coastal Zone of Gujarat, apply irrigation to vegetable, fruit and fodder crops at 7 to 9 days interval. Continue harvesting of matured onion bolls and keep at well aerated place.
  - In South Gujarat Zone, new grafts and newly planted fruit crops be protected from sun burn by erecting temporary shed and irrigating the fruit crops. Provide water by drip irrigation for 1/2 to 3/2 hrs to fruit crops; if drip irrigation is not available provide 12 to 15 litre water to every graft.
  - In South Gujarat Heavy Rainfall Zone, continue land preparation for *kharif* rice and prepare nursery beds. Maintain optimum water level in transplanted summer rice field.
  - In North Saurashtra Zone of Gujarat, in view of prevailing high temperature, apply irrigation in groundnut, vegetable crops at regular intervals.
  - Under present weather condition infestation of whiteflies is observed in summer sown sesame in North Saurashtra Zone; to control, spray Acetamiprid 20 % SP @ 5g /10 litre of water.
- **Animal Husbandry**
  - In Gujarat, cross breed cattle should be bathed thrice a day; add 30-35 g mineral mixture in daily food; cover roof of animal shed with paddy straw; provide cool drinking water 4-5 times a day. Put curtains on south-west side of poultry house and sprinkle water on curtains during noon time.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Sub-Himalayan West Bengal & Sikkim except Malda, North Dinajpur and South Dinajpur, in Hooghly district of Gangetic West Bengal, Buxar, Darbhanga, Gopalganj, Kishanganj, Madhubani, Muzaffarpur, Purnea, Samastipur, Supaul districts of Bihar, East Singbhum district of Jharkhand, Balasore, Deogarh, Gajapati, Ganjam, Kandhamal, Keonjhar, Malkangiri, Mayurbhanj, Nawarangpur districts of Odisha during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers likely at most places over Andaman & Nicobar Islands and at many places over Sub-Himalayan West Bengal & Sikkim during the period, along with heavy rain at isolated places over Andaman & Nicobar Islands on 12<sup>th</sup>, 14<sup>th</sup> to 16<sup>th</sup> and over Sub-Himalayan West Bengal & Sikkim on 14<sup>th</sup> and 15<sup>th</sup> May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of crops and keep harvested produce at safer places. Provide adequate drainage in standing crops and vegetables to avoid water stagnation.
  - As thunderstorm accompanied with gusty winds very likely at isolated places over, Sub-Himalayan West Bengal &

Sikkim on 12<sup>th</sup> and 13<sup>th</sup>, over Gangetic West Bengal, Bihar, Jharkhand on 12<sup>th</sup> and over Odisha on 13<sup>th</sup> May, provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane.

- As heat wave conditions very likely at isolated places over Jharkhand on 15<sup>th</sup> and 16<sup>th</sup>, over Interior Odisha on 15<sup>th</sup> and over Odisha on 16<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture.

▪ **Odisha:**

- As thunderstorm accompanied with squall very likely at isolated places over north Coastal Odisha on 12<sup>th</sup> May, provide support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places.
- In West Central Table Land Zone, maintain around 3-5 cm of water in paddy during panicle initiation stage. Undertake sowing of okra.
- In North Western Plateau Zone, undertake deep summer ploughing and keep inputs ready for *kharif* paddy. Undertake harvesting of *rabi* paddy and groundnut. Undertake planting of ginger.
- In North Central Plateau Zone, undertake harvesting of matured pulses and cultivation of ginger on raised bed.
- In North Eastern Coastal Plain Zone, undertake deep summer ploughing utilising the pre-monsoon rain. Undertake harvesting of summer rice. In North Eastern Ghat Zone, complete sowing of cowpea.
- In Eastern Ghat High Land Zone, undertake harvesting of rice and sowing of vegetables.
- In North Central Plateau Zone, due to wider gap between day and night temperature there is possibility of Aphid attack in mustard. Spray Thiomethoxam @ 1g/3l of water if the infestation crosses the ETL.

▪ **West Bengal:**

- In Coastal Saline Zone, continue sowing of green manuring crop like cluster bean, daincha, etc. after harvesting of *Boro* paddy in order to fertilize the field and conserve moisture in soil.
- In the New Alluvial Zone, continue land preparation for jute cultivation. Give irrigation to *Boro* rice as per requirement.
- In Terai Zone, continue harvesting of matured pod of legume vegetables. In the Old Alluvial Zone, complete planting of ginger and turmeric.
- In Laterite and Red Soil Zone, in view of rainfall occurring over the next three days, complete harvesting of matured pods of groundnut crop as soon as possible. Keep harvested produce in dry shade. If crop is reaching maturity stage, remove excess water from field by preparing drainage channels.
- In Laterite and Red Soil Zone, spray Neem oil @ 20ml/litre of water against leaf webber and capsule borer in sesame at pod setting stage. Spray Carbendazim @ 1 gram per litre of water at clear weather conditions to prevent fruit rot in chilli crop on a non rainy day.
- In the Hill Zone, continue planting of ginger and turmeric and pit preparation for planting of Mandarin orange. Undertake harvesting of matured pods of beans.
- In Old Alluvial Zone, to control the rice stem borer infestation, spray with Neem oil 1% @ 3ml/litre of water at the evening hour and spray Imidachloprid @ 0.2 ml per litre of water to control leaf curl in chilli crop after current spells of rain.
- In Terai Zone, in case of brown colour spots in leaves in paddy crop, apply Tricyclozole @ 0.75 gram per litre of water or Hexaconazole @ 1 ml per litre of water. If crop is in milking stage, protect it from Gundi bug by spraying Fipronil 5 SC @ 1 ml per litre of water. In case of seedling blight or spot on leaves in Jute crop, apply (Carbendazim + Mencozeb) @ 2 grams per litre of water. Undertake plant protection measures after current spells of rain.

▪ **Andaman and Nicobar Islands:**

- In Andaman and Nicobar Islands, make besin around the coconut and arecanut. Undertake rain water harvesting as as heavy rainfall is expected during next five days.

▪ **Bihar:**

- In North East Alluvial Zone of Bihar, undertake planting of turmeric and ginger utilising the realised rainfall. Maintain minimum water (2-3cm) in *Boro* rice field. Keep inputs ready for sowing of *kharif* crops.
- In North West Alluvial Plain Zone of Bihar, undertake planting of turmeric and ginger. Undertake land preparation for sowing of *kharif* maize and undertake seed bed preparation for rice nursery.
- In South Bihar Alluvial Zone of Bihar, undertake deep ploughing of fields utilising the realised rainfall and send soil sample for testing.
- In North East Alluvial Zone of Bihar, to control stem borer in maize, apply Fipronil 0.3% GR @ 20-25 Kg/ha or Chlorantraniliprale 0.4% GR @ 10Kg/ha. To control yellow stem borer in rice, apply Fipronil 0.3% GR @ 20-25 Kg/ha or Chlorantraniliprale 0.4% GR @ 10Kg/ha.
- 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.

▪ **Jharkhand:**

- In South Eastern Plateau Zone, undertake planting of turmeric, ginger and yam.
- In Central and North Eastern Plateau Zone, summer rice crop is at flowering to milking stage at this stage water should be maintained in the field. Undertake planting of turmeric, ginger and yam.
- In Western Plateau Zone, prepare the field and undertake sowing of ginger and turmeric with improved variety.
- In South Eastern Plateau Zone, there are chances of Gundhi Bug infestation at panicle emergence stage in rice and more likely to be prone at milking stage, apply Quinalphos 1.5 per cent dust @ 10 kg per acre during evening time. High difference in day and night temperature favours Blast disease occurrence hence, spray Tricyclazole @ 0.6 g per liter of water.

• **Animal Husbandary**

- In the Coastal Saline Zone of West Bengal, undertake vaccination against F-strain drop in nostril for Ranikhet disease. Maintain cage temperature at 102<sup>0</sup>F to 103<sup>0</sup>F. Cover cage with wet jute bags if temperature increases.
- In the Terai Zone, undertake routine vaccination of cattle, buffalo and goat for Foot and Mouth disease (FMD).
- In Andaman and Nicobar Islands, provide the day old chicks with RD vaccine as eye drops and 10-days old chicks with IBD vaccine as nasal/eye drops. To cure anaemia in piglets provide ferrous sulphate @ 0.5 kg dissolved in 10 litre of hot water.
- In Jharkhand and Odisha, in view of heat wave conditions, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Grazing/feeding of cattle/goats may be done during morning/evening hours. In poultry, arrange sprinklers and feed poultry birds with wet mash to increase the feed intake.

• **Fishery**

- In Coastal Saline Zone in West Bengal, increase water level and supply less feed to prevent low oxygen. Dip fishes in solution of 30-40 gram salt @ 20 litres of water to prevent wounds at tail.

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

- **Realised Rainfall:** Rainfall occurred in Bastar and Kondagaon districts of Chhattisgarh and weather remained mainly dry/dry over rest of the region during the week.

• **Advisories:**

▪ **Madhya Pradesh:**

- In Satpura Plateau Zone, apply irrigation and continue weeding in moong, urad and sugarcane. Apply irrigation in vegetables in Nimar Valley Zone and in moong in Grid Zone.
- In Malwa Plateau Zone, continue weeding in moong and urad. Continue picking up of matured okra and cucurbits. Continue deep ploughing of the field and keep inputs ready for sowing of *kharif* crops.
- In Jhabua Hill Zone, apply irrigation in cucurbits, green gram and groundnut. Continue field preparation and arrange for improved varieties of rhizomes for cultivation of ginger and turmeric.
- In Central Narmada Valley Zone, apply irrigation in vegetables and moong. Apply irrigation in sugarcane and continue earthing up. Undertake nursery preparation for tomato, chilli, brinjal and early cauliflower.
- In Kymore Plateau and Satpura Hill Zone, continue deep summer ploughing.
- In Vindhya Plateau Zone, undertake deep summer ploughing and testing of soil samples.
- In Bundelkhand Zone, apply irrigation in vegetables and undertake deep summer ploughing to destroy the seeds of weeds, spores of diseases and eggs of insects. Continue seed bed preparation for sowing of *kharif* onion. Undertake picking up of matured okra.
- In Grid Zone, due to rise in temperature there may be chances of attack of sucking pests in brinjal, chilli and tomato, spray Methyl Demeton 25 EC @ 1ml/litre of water.
- In Central Narmada Valley Zone, for control of stem fly and fruit borers in brinjal, tomato, okra spray Triazophos @ 30 ml/pump.

▪ **Chhattisgarh:**

- As thunderstorm accompanied with gusty winds very likely at isolated places over Chhattisgarh on 12<sup>th</sup> May, provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane.
- As heat wave conditions very likely at isolated places over Chhattisgarh on 15<sup>th</sup> and 16<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture
- In North Hill Zone, as mainly dry weather continue intercultural operations in vegetables. Continue deep summer ploughing in vacant fields and keep inputs ready for sowing of *kharif* rice.
- In Bastar Plateau Zone, continue planting of summer sweet potato and intercultural operations in vegetables.
- In Chhattisgarh Plain Zone, apply irrigation in vegetables, summer rice, groundnut and sunflower as per requirement. Keep inputs ready for sowing of *kharif* crops.

- In Bastar Plateau Zone, for the control of powdery mildew disease in cucurbits, apply Kerathan @ 1 gm powder dissolved in one litre of water.
- **Horticulture**
- In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, apply irrigation in mango, pomegranate, sapota and citrus orchards. In Central Narmada Valley Zone, continue planting of papaya in polybags.
- In Chhattisgarh Plain Zone, continue planting of papaya in polybags. Apply irrigation in citrus plants and in North Hill Zone, apply irrigation in mango and litchi orchards.
- **Animal Husbandry**
- In Madhya Pradesh, provide green fodder, clean and fresh water to cattle three times in a day. Vaccinate the cattle for control of FMD and HS disease.
- In Chhattisgarh, in view of heat wave conditions, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Grazing/feeding of cattle/goats may be done during morning/evening hours. In poultry, arrange sprinklers and feed poultry birds with wet mash to increase the feed intake.

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

- **Realised Rainfall:** Rainfall occurred in Kullu district of Himachal Pradesh during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - **Jammu & Kashmir:**
    - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, complete harvesting of wheat at the earliest to avoid loss due to shattering of grains. Apply irrigation in mash and moong as per requirement. Complete harvesting of *rabi* pulses (pea, gram, lentil etc.) in clear weather. Complete sowing of diancha for green manure.
    - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, continue harvesting of mustard, gram and pea. Give light irrigation to okra crop. Continue sowing of maize utilising the realised and expected rainfall. Continue sowing of turmeric in lower and intermediate areas and French bean in temperate areas. Undertake sowing of maize with optimum soil moisture in the temperate areas ( below 1500m).
    - In Valley Temperate Zone of Jammu and Kashmir, continue transplanting of cucurbits, cole and solanaceous crops. Undertake nursery sowing for summer rice and land preparation for summer maize. Open drainage channels to avoid water stagnation in saffron field.
    - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, weather conditions are favourable for out break of fruit fly attack on cucurbits, to control spray Malathion @ 2.5 g/litre on a non rainy day and repeat at an interval of 10 days.
  - **Uttarakhand:**
    - In Udham Singh Nagar district of Bhabar and Tarai Zone, complete harvesting of like lentil, gram and wheat and barley. Continue sowing of dhaincha and Sanai, after harvesting of the matured *rabi* crops. Complete sowing of turmeric, ginger and arbi.
    - In Nainital district of Bhabar and Tarai Zone, complete harvesting of wheat and pulses. In irrigated valley regions, complete sowing of French bean with varieties Arkakomal or Contender. Complete transplanting of the seedlings of tomato, brinjal and capsicum. Irrigation should be given after transplanting. Thick layer of organic mulch should bespread over transplanted seedlings for moisture conservation.
    - In Hill Zone, undertake land preparation as well as nursery sowing of summer paddy seeds in the valley where irrigation facility is available. Continue transplanting of tomato, brinjal, capsicum cucurbits in poly houses. Complete sowing of French bean and okra in High to Mid altitude areas. Continue land preparation in high altitude areas for sowing of pea, French bean, lobia, ginger, turmeric, rajama and potato. Complete sowing of barnyarn millet, French bean, ginger, turmeric and undertake land preparation for sowing of finger millet.
    - In Sub Humid and Sub Tropic Zone of Uttarakhand, complete harvesting of matured *rabi* crops. Intercultural operation in summer vegetables and sugarcane are advised under moist soil condition. Give light irrigation to Urad and moong after 20-25 days of sowing.
    - In Udham Singh Nagar district of Bhabar and Tarai Zone, there may be attack of fruit borer in tomato, fruit should be used only after 3 days and 5 days of spraying of Chlorantraniliprole 18.5 SC @ 150ml/Ha and Indoxacarb 14.5 SC @ 500ml/ha respectively on a non rainy day.
  - **Himachal Pradesh:**
    - In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, undertake nursery preparation for paddy. Continue intercultural operation and weeding in moong and mash in irrigated areas. In lower regions, continue sowing of cucurbits crops, early okra, spinach, coriander, fenugreek. Continue nursery sowing of tomato, brinjal, chillies and capsicum crops in poly house. In lower regions, undertake sowing of cucurbits crops.

- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Solan, Shimla, Bilaspur, Sirmaur districts, undertake planing of ginger and sowing of okra. Treat the soil from cut worm in tomato plantation, apply Chlorpyrifos @ 20 ml per 10 litres of water around the plantation area.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, continue sowing of potato. Continue sowing of peas using 25 kg seed/hectare. Continue beds preparation for sowing of vegetable nursery in poly house.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, present weather is conducive for apple scab during pink bud stage, for control, spray Mancozeb @ 600 g or Difenconazole @ 30 ml in 200 litres of water on a non rainy day.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, present weather is conducive for attack of stigmna blight in stone fruit, for control spray Captan @ 600 gm in 200 litres of water after the fruit set on a non rainy day.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of red pumpkin beetle in cucurbitaceous crops, for control spray Dichlorvos 76 EC (DDVP) @ 1 gram per litre of water on a non rainy day.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Solan, Shimla, Bilaspur, Sirmaur districts, present weather is conducive for attack of leaf spot disease in strawberry crop, for control spray Hexaconazole / Carbendazim @ 100 gram in 200 litres of water on a non rainy day.
- **Punjab, Haryana and Delhi:**
- In Western Plain Zone of Punjab, complete harvesting of matured wheat crop. Continue land preparation and complete the cotton sowing in the first fortnight of this month.
- In Western Plain Zone of Punjab, complete sowing of summer moong and summer mash. Continue harvesting of matured mustard.
- In Undulating Plain Zone of Punjab, continue harvesting of matured wheat crop and also keep the produce in dry and clean store for marketing and complete harvesting of lentil and gram crop.
- Complete sowing of summer moong and recommended varieties/hybrids of cotton including Bt cotton or Desi cotton in Western Zone of Punjab. Continue transplanting of Chilli in Central and Western Zone of Punjab and irrigate the crop. In Western Zone of Punjab, prepare the field for sowing of okra.
- In Central Plain Zone of Punjab, continue planting of sugarcane with recommended varieties.
- In Western Zone of Haryana, continue harvesting of matured early sown mustard and wheat crop and apply the irrigation in late sown wheat crop. Complete sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish and apply irrigation to planted vegetable crops. Due to variable weather in next two days farmers are advice to withhold the sowing of Desi cotton. Undertake sowing of Arhar.
- In Eastern Zone of Haryana, continue planting of spring season sugarcane and harvesting of matured wheat crop.
- In New Delhi, continue sowing of okra, French bean, cluster bean, summer radish. Undertake field preparation for sowing of pigeonpea with varieties- Pusa 2001, Pusa 991, Pusa 992, Paras manak, UPAS 120 and sowing of cotton with recommended varieties: -H-777, H-974, H-1098.
- In Undulating Plain Zone of Punjab fruit borer in tomato may be noticed due to favourable weather conditions, spray Indoxcarb 14.5 SC @ 200 ml/acre. Due to congenial weather powdery mildew may appear in mango, spray Karathane @ 500 ml in 500 litre of water. Due to rainfall activity in past week, insect-pest attack may increase in pluses, whitefly population may increase in okra, yellow vein mosaic virus attack may also increase. To control semi-looper, hairy caterpillar and podborer attack in pulses, spray Ekalux @ 400mL, Nuvan @ 200mL and Indoxacarb @ 200 mL and to control whitefly and yellow vein mosaic, spray Malathion @ 50mL/acre on a non rainy day.
- **Uttar Pradesh:**
- In Central Plain Zone of Uttar Pradesh, undertake sowing of multi harvesting fodder crop like maize, lobia, dhaincha. Apply 60 to 65 kg Nitrogen(130 to 163 Kg Urea) as top dressing in sugarcane crop.
- In Eastern plain Zone of Uttar Pradesh, undertake nursery sowing of paddy.
- In North Eastern plain Zone of Uttar Pradesh, undertake harvesting of pea, mustard crop.
- In Bundelkhand Zone of Uttar Pradesh, apply light irrigation in urad, moong as per requirement. Complete sowing of *bhindi*, cucurbitaceous vegetables. Apply irrigation to spinach, fenugreek, radish, carrot and cabbage, cauliflower, tomato, chilli, brinjal crop as per requirement. Undertake land preparation for sowing of *kharif* maize, jowar, groundnut, arahar, urad, mung, linseed, and fodder crops.
- In Western Plain Zone of Uttar Pradesh, apply light irrigation in all vegetable and fodder crops. Irrigation should be done in the morning or evening hours as per requirement. Optimum moisture level should be maintain in cucurbitaceous crops by light and frequent irrigation as dry conditions may lead to poor pollination and thus drop in yield of the crop. Apply light irrigation in the mature onion and garlic crops one week before digging.
- In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of red pumpkin beetle in cucurbitaceous crops, for control broadcast Malathion @ 5 %.

- In North Eastern plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of top borer in sugarcane crop, for control spray Quinalphos @ 1.5 litres in 800 to 1000 litres of water per hectare.
- **Rajasthan:**
- In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, undertake deep summer ploughing in vacant field. Continue sowing of green manuring crops like as daincha, sunhemp etc. for increase the soil fertility
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, continue picking of summer watermelon and muskmelon. Undertake field preparation for sowing of cotton crop.
- In Jaisalmer and Bikaner districts of Arid Western Plain Zone, It is right time for sowing of American cotton, use 16 kg seed with 65-70 cm row to row and 20-25 cm plant to plant spacing. Apply 50 kg nitrogen and 40 kg phosphorus per ha as basal application at the time of sowing.
- In Southeastern Humid Plain Zone, in Jhalawar, Kota, Bundi, Baran districts, apply light irrigation to summer mung and urad at 15 days intervals as per requirement. Apply light irrigation to timely sown sugarcane crop as per requirement.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, apply irrigation to moong crop as per requirement.
- In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, prevailing dry weather condition is congenial for attack of stem and fruit borer in okra, for control of spray Malathion @ 2 ml or Thioron @ 1 ml in one litre of water.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, prevailing dry weather condition is congenial for attack of fruit fly in cucurbits crop, for control spray Malathion 50 EC @ 1ml per litre of water during morning or evening hours at 15 days interval.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, prevailing dry weather condition is congenial for attack of leaf curl and mosaic disease in chilli crop, for control uproot & burn affected plants, spray Dimethoate 30 EC @ 1.0 ml per litre water.
- **Horticulture**
- In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of premature fruit drop in mango, for control spray Naphthalene acetic acid @ 15 PPM or spray Plenofix @ 4 ml per 9 litres of water.
- In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of leaf spot or leaf rot in banana trees, for control spray Bavistine or Carbendezim @ 1 gm per litre of water.
- In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, undertake nursery preparation of papaya.
- In Jaisalmer and Bikaner districts of Arid Western Plain Zone, prevailing dry weather condition is congenial for fruit drop in citrus plants, for control spray Planofix @ 2 ml per litre of water.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, right time for raising nursery for planting papaya. Use 250 gm seed for raising plants for one hectare. Honey dew, Coorg Honey dew, Pusa delicious, Pusa Nanaha and CO-2 are improved varieties of papaya.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Solan, Shimla, Bilaspur, Sirmaur districts, present weather is conducive for attack of powdery mildew diseases in mango trees, for control spray Dinocap @ 100 ml or Carbendazim @ 100 gram or Hexaconazole @ 100 ml in 200 litres of water.
- **Floriculture**
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, raise nursery for summer marigold using 700-800g / ha seed in 15 cm raised beds at 6 cm spacing in rows at 2 cm depth.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts of Himachal Pradesh, complete pinching and staking in carnation. Transplant the bulbs of gladiolus and rajnigandha. It is optimum time for raising nursery of summer annuals like gladiolus, portulaca, gomphrina and china aster etc. Weather is conducive for appearance of aphids in rose, for control spray Rogor @ 1 ml per litre of water.
- **Apiculture**
- In Himachal Pradesh, insert the brood chamber without frame for ensuring aeration. Dust sulphur on sealed brood in the colony and not on larvae to control mites attack on honeybees. Also insert empty frame /combs for egg laying to the queen as the population starts builds up.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, migrate bee colonies near floral resources. Prepare colonies for honey flow. It is the right time to start bee keeping especially for beginners as pollen and nectar are in plenty and bee activity is at its peak with least problems.
- **Animal Husbandry**
- In Rajasthan, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Grazing /feeding of cattle/goats may be done during morning/evening hours. Also provide balanced feed & adopt vaccination schedule.
- In Himachal Pradesh, monitor the animals for FMD and advised Vaccination. Ecto-parasite attack is expected in this

weather, for control, spray DDT @ 2ml per litre in cow shed and give mixture of hay & green fodder. Protect the animals from ticks by spraying Cypermethrin @ 2 to 2.5 ml per litre of water.

- **Fishery**

- In Himachal Pradesh, maintain water level to five feet. Add supplementary feed (rice/wheat bran & mustard oil cake and rice/wheat bran) @ 2-3% of total fish biomass on daily basis.

- **Poultry**

- In Himachal Pradesh, as temperature is rising, so ensure proper ventilation in poultry houses. Replace the poultry houses with fresh litter and keep the houses clean and ensure drinking water to the birds. Normal feeding schedule should be continued. For precautionary measures spray Formaline 40% @ 1litre in 9 litres of water in outside or surrounding of farm.

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