



National Agromet Advisory Service Bulletin



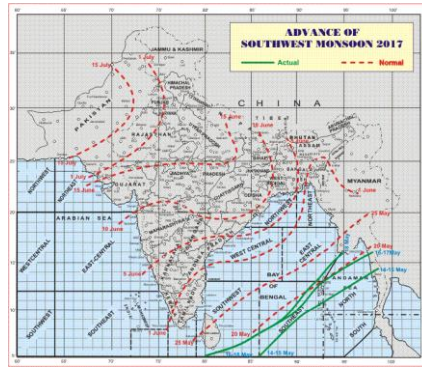
Friday 19th May 2017
(For the period 19th to 23rd May 2017)



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>

Monsoon watch



- The Northern Limit of Monsoon (NLM) continues to pass through Lat.5.0°/Long. 80.0° E, Lat. 8.0° N/Long. 87.0° E, Lat. 13.0°N/Long. 92.0° E and Lat. 16.0° N/ Long. 95.0° E. The NLM, is likely to persist over the same region during next 4-5 days.

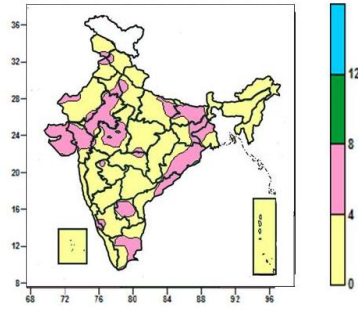
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 17.05.2017

Actual Mean Maximum Temperature (°C) in India for the week ending 17.05.2017	Mean Maximum Temperature (°C) Anomaly in India for the week ending 17.05.2017
Actual Mean Minimum Temperature (°C) in India for the week ending 17.05.2017	Mean Minimum Temperature (°C) Anomaly in India for the week ending 17.05.2017

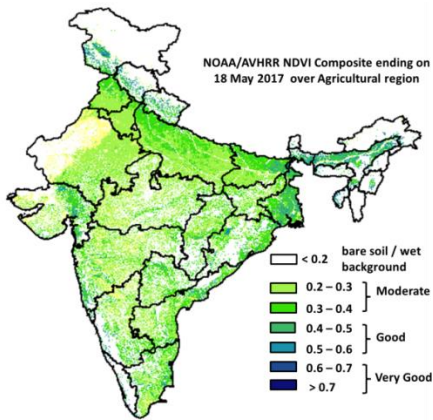
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 17.05.2017

Relative Humidity (%) over India for the week ending 17.05.2017	Cloud amount (okta) over India for the week ending 17.05.2017

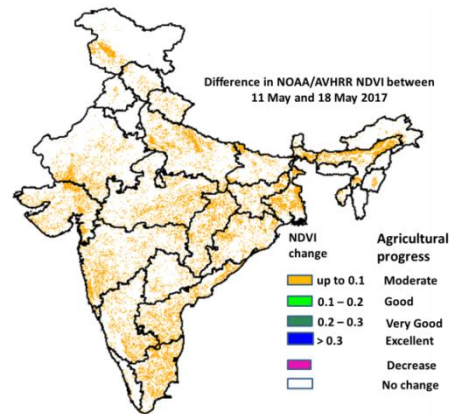
Wind speed (knots) over India for the week ending 17.05.2017



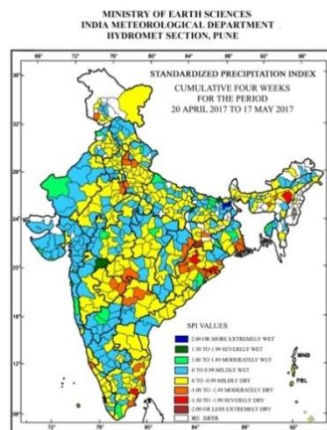
NOAA/AVHRR NDVI composite ending on 18th May 2017 over Agricultural regions of India



Difference in NOAA/AVHRR NDVI between 11th and 18th May 2017



Standardised Precipitation Index Four Weekly for the period 20th April to 17th May 2017



Weather Forecast for next 5 days valid upto 0830 hours of 24th May 2017

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

5 Day Rainfall Forecast (Mid day) 19th May 2017

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

Weather Warning during next 5 days

- **19 May (Day 1):** Thunderstorm accompanied with squall very likely at isolated places over Himachal Pradesh, Uttarakhand, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, South Interior Karnataka and Tamilnadu. Thunderstorm accompanied with gusty winds very likely at isolated places over Bihar, Jharkhand, West Bengal & Sikkim, Coastal Karnataka, Rayalaseema and Kerala. Heat wave conditions very likely at many places with severe heat wave at isolated places over Coastal Andhra Pradesh; heat wave very likely at isolated places over Vidarbha, Chhattisgarh, Odisha, Telangana, Rayalaseema and Tamilnadu. Heavy rain very likely at isolated places over South Interior Karnataka.
- **20 May (Day 2):** Thunderstorm accompanied with squall very likely at isolated places over Haryana, Chandigarh & Delhi, West Uttar Pradesh & Tamilnadu. Thunderstorm accompanied with gusty winds very likely at isolated places over Punjab, East Uttar Pradesh, Rajasthan, Odisha, Coastal Andhra Pradesh, Coastal Karnataka & South Interior Karnataka. Heat wave conditions very likely at a few places over Coastal Andhra Pradesh; heat wave very likely at isolated places over Vidarbha, Chhattisgarh, Odisha, Telangana, Rayalaseema and Tamilnadu.

- **21 May (Day 3):** Thunderstorm accompanied with squall and hail very likely at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi and West Uttar Pradesh. Thunderstorm accompanied with squall very likely at isolated places over Punjab, East Uttar Pradesh & Rajasthan. Thunderstorm accompanied with gusty winds very likely at isolated places over Coastal Karnataka & South Interior Karnataka. Heat wave conditions very likely at many places over Coastal Andhra Pradesh; heat wave very likely at isolated places over Vidarbha, Telangana & Rayalaseema.
- **22 May (Day 4):** Thunderstorm accompanied with squall and hail very likely at isolated places over Jammu & Kashmir, Himachal Pradesh & Uttarakhand. Thunderstorm accompanied with squall very likely at isolated places over Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Rajasthan, Tamilnadu & Kerala. Thunderstorm accompanied with gusty winds very likely at isolated places over East Uttar Pradesh. Heat wave conditions very likely at many places over Coastal Andhra Pradesh; heat wave very likely at isolated places over Telangana & Rayalaseema. Heavy rain very likely at isolated places over Andaman & Nicobar Islands.
- **23 May (Day 5):** Thunderstorm accompanied with squall very likely at isolated places over Tamilnadu & Kerala. Heat wave conditions very likely at many places over Coastal Andhra Pradesh; heat wave very likely at isolated places over Telangana & Rayalaseema. Heavy rain very likely at isolated places over Andaman & Nicobar Islands.

Weather Outlook for subsequent 2 days from 24th to 26th May 2017

- Rain/thundershower very likely at many places over extreme south Peninsular India, Andaman & Nicobar Islands and northeastern states.
- Rainfall very likely at a few places over Odisha & Coastal Andhra Pradesh; at isolated places over east India and Western Himalayan region.

Salient Advisories

- As rain/thundershowers likely at most/many places over **Andaman & Nicobar Islands** during the period, at many places over **Sub-Himalayan West Bengal & Sikkim** and **Kerala** on 19th, 22nd and 23rd, over **Arunachal Pradesh, Coastal Karnataka and South Interior Karnataka** on 19th, over **Assam & Meghalaya** on 19th, 21st, 22nd and 23rd, over **Punjab, Haryana, Chandigarh & Delhi** on 21st May, over **West Uttar Pradesh** on 22nd, rain/snow likely at many places over **Jammu & Kashmir** on 22nd, over **Himachal Pradesh** on 21st and 22nd and over **Uttarakhand** on 19th, 21st and 22nd May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- As heavy rain very likely at isolated places over **Andaman & Nicobar Islands** on 22nd and 23rd, heavy rain at isolated places over **South Interior Karnataka** on 19th May, provide adequate drainage in standing crops and vegetables to avoid water stagnation.
- As thunderstorm accompanied with squall very likely at isolated places over **Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, South Interior Karnataka, Uttarakhand** and **Himachal Pradesh** on 19th, over **Tamil Nadu** on 19th and 23rd, over **Kerala** on 23rd, over **Punjab, East Uttar Pradesh** and **Rajasthan** on 21st, over **Haryana, Chandigarh & Delhi, West Uttar Pradesh** on 20th and 22nd, over **East Rajasthan** on 22nd May, thunderstorm accompanied with gusty winds very likely at isolated places over **Bihar, Jharkhand, West Bengal & Sikkim, Rayalaseema** and **Kerala** on 19th, over **Punjab, East Uttar Pradesh, Rajasthan, Odisha** on 20th, over **Coastal Karnataka** on 19th, 20th and 21st, over **South Interior Karnataka** on 20th and 21st, over **East Uttar Pradesh** on 22nd 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 thunderstorm accompanied with squall and hail very likely at isolated places over **Jammu & Kashmir, Himachal Pradesh** and **Uttarakhand** on 21st and 22nd, over **Haryana, Chandigarh & Delhi** and **West Uttar Pradesh** on 21st May, use hail net or hail cap for orchard crops and fruit vegetables to protect from mechanical

damage, 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.

- As heat wave conditions very likely at many places with severe heat wave at isolated places over **Coastal Andhra Pradesh** on 19th, heat wave conditions at many/few places from 20th to 23rd; heat wave very likely at isolated places over **Telangana, Rayalaseema** during the period, over **Tamil Nadu, Odisha, Chhattisgarh** on 19th and 20th, over **Vidarbha** from 19th to 21st 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.
- Utilising realised and expected 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. In **North Interior Karnataka**, continue sowing of sesame, black gram, green gram, cowpea and field bean, wherever sufficient rainfall is received.
- In view of heat wave conditions very likely at many places with severe heat wave at isolated places over **Coastal Andhra Pradesh**; heat wave at isolated places over **Telangana, Rayalaseema, Tamilnadu, Vidarbha, Chhattisgarh** 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 Coimbatore, Dindigul, Madurai, Nilgiris, Theni, Tirunelveli, Virudhunagar districts of Tamil Nadu, all districts except Kasaragod of Kerala; in Udupi, Uttar Kannada districts of Coastal Karnataka, in all districts of North Interior Karnataka except Bidar, Kalaburgi, Koppal, Raichur, Yadgir districts, in all districts of South Interior Karnataka except Bengaluru Rural, Chikaballapura, Chitradurga, Kolar and Tumakuru districts during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at many places over Kerala 19th, 22nd and 23rd, over Coastal & South Interior Karnataka on 19th May, along with heavy rain at isolated places over South Interior Karnataka on 19th May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - As thunderstorm accompanied with squall verly likely at isolated places over Tamil Nadu on 19th and 23rd, over South Interior Karnataka on 19th and over Kerala on 23rd May, thunderstorm accompanied with gusty winds very likely at isolated places over Coastal Karnataka, South Interior Karnataka, Tamil Nadu and Kerala on 19th 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 sugarcane and keep harvested produce at safer places and keep harvested produce at safer places.
 - As heat wave conditions very likely at many places with severe heat wave at isolated places over Coastal Andhra Pradesh on 19th, at many/few places from 20th to 23rd; heat wave very likely at isolated places over Telangana, Rayalaseema during the period and over Tamil Nadu on 19th and 20th 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/soil mulching to conserve soil moisture.
 - **Andhra Pradesh:**
 - In Krishna Godavari and North Coastal Zone Zone, in view of the prevailing heat wave conditions, apply frequent irrigation to the sugarcane crop. Place/spread the harvested leaves and trash of cane on the ground to avoid soil moisture loss.

- In Scarce Rainfall Zone and High Altitude Tribal Zone of Andhra Pradesh, farmers are advised to go for the summer ploughings in those areas received sufficient rainfall. Prevailing high temperatures may cause damage to the newly planted banana. Farmers are advised to protect by covering mulch or by providing shade.
- In the Krishna Godavari Zone, remove and clean the debris from the fields to prevent insect larvae and egg mass from carrying to the next crop. Procure farm yard manure (FYM) and transport it to the field itself for application during last ploughing. Collect good quality seed materials from reputed firms. Follow seed treatments strictly.
- In Scarce Rainfall Zone Spray Fipronil @ 2 ml per litre of water to control thrips in musk melon.
- In High Altitude Tribal Zone, apply soil drenching with Ridomil-MZ @ 3 gm per one litre of water on sweet orange to avoid dry root rot.
- In the South Zone, spray Monocrotophos @ 1.6 ml/litre of water to control sucking pests and Monocrotophos @ 1.6 ml or Quinalphos @ 2 ml per litre of water to control leaf folder in groundnut at early vegetative stage. Spray Chlorpyrifos @ 2.5 ml or Cartaphydrochloride @ 2 gram or rynaxypyr @ 0.3 ml per litre of water in paddy crop to prevent leaf folder and stem borer at grain formation stage. Spray Profenofos @ 2 ml + Dichlorvos @ 1 ml per litre of water to prevent mealybugs in cotton crop.
- **Telangana:**
 - In North Telangana Zone, as dry weather would prevail, continue harvesting of matured rice and sesame.
 - In South Telangana Zone, prevailing weather conditions are congenial for incidence of fruit fly in mango. To trap the flies in the container, hang the plastic containers with mixture of Methyl Eugenol @ 2 ml + Carbofuran 3G @ 3g per litre of water in the orchard. Spray Wettable Sulphur @ 3 gm or Dicofol @ 5ml or Propargite @ 2ml per litre of water to control mite in sweet lemon orchard. Spray Dimethoate @ 2 ml or Acephate @ 1.5 g per litre of water to control sucking pests in vegetables.
- **Tamil Nadu:**
 - In Cauvery Delta Zone, summer ploughing can be done by utilizing the rainfall expected during this week to control weeds and insects larva in the soil and it will improve the rainwater infiltration also. Raising of green manure crops like daincha, sunnhemp and kolunji can be done to utilize the summer rainfall.
 - In the Western Zone, undertake planting of turmeric utilizing the realized rainfall in already prepared land.
 - In the Southern Zone Prevailing hot weather water management is important in sugarcane cultivation. To manage this Soak the setts in lime solution (80 kg Kiln lime in 400 lit) for one hour. Plant in deep furrows of 30 cm depth. Spray potash and urea each at 2.5 per cent during moisture stress period at 15 days interval. Spray Kaolin (60 g in 1 ltr. of water) to alleviate the water stress.
 - In High Rainfall Zone, give staking to banana trees as heavy winds are expected. Apply irrigation to fruit trees, spices, vegetables and horticulture crops.
 - In High altitude hilly zone, undertake planting potatoes using new disease resistant potato varieties Kufri Gridhari and Kufri Swarna.
 - In North western Zone, farmers are advised to make use of summer showers for summer ploughing and controlling soil-borne insects, pythogens and bacteria.
 - In North Eastern Zone, to control thrips and other sucking pest in cotton, spray Imidacloprid 200 SL @ 100 ml/ha (or) Dimethoate 30 EC @ 500 ml/ha or Azadirachtin 0.03% EC @ 500 ml/ha. To control shoot and fruit borer in Brinjal, apply Emamectin benzoate 5 SG @ 200 gm /ha.
 - In High altitude hilly zone, apply Paecilomyces Lilacinus @ 10 kg/ha at the time of sowing along with well decomposed farm yard manure to control nematode in carrot crop. Drench copper oxychloride @ 1 gm/litre of water to control damping off disease in garlic crop. Spray of Propargite @ 2ml/litre of water is recommended to control red spider mite, foliar in tea crop.
 - In South Zone, spray Fenthion @ 2 ml/lit of water or Malathion @ 2 ml/litre of water to control fruit fly in mango orchard and spray Copper Oxychloride @ 0.3 % once followed by 4 sprayings of Streptocyclin 100 ppm + Copper Oxychloride @ 0.3 % at monthly interval to control citrus canker disease in citrus plants under the prevailing weather conditions.
- **Kerala:**
 - In the Southern Zone, continue preparation of nursery for *Viruppu* rice.
 - In the Problem Area Zone, for sigatoka infestation in banana, give alternate sprays of Mancozeb (2 g/litre) and Carbendazim (1 gm/litre) or Tilt @ 1 ml/litre on a non rainy day.
 - 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. Harvest matured mangoes before ripening. Keep pheromone traps to control fruit flies.
 - In the Central Zone, apply Verticillium or Metarhizium @ 5 gm in 1 litre of water to control mosaic disease in vegetables arising due to high temperatures. Apply Trichoderma or pseudomonas culture in soil or spray 1% Bordeaux mixture on leaves and small branches to prevent quick wilt in the pepper crop. Spray pseudomonas @ 20 gm per litre of water to prevent Sigatoka disease in banana plants after current spells of rain.

- In the Southern Zone, spray 1% Bordeaux mixture to control bud rot in coconut plants. Spray Copper oxy chloride 4gm per 1 litre of water to control fungal diseases in young budded rubber plants 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 is advised. Wherever the farmers are intending to take up paddy and sugarcane in kharif season, a green manure crop can be grown insitu and incorporated in the soil.
- In Southern Transition Zone, undertake land preparation for sowing of *kharif* crops utilising the realised rainfall.
- In North East Dry Zone, undertake deep ploughing of land across the slope.
- In North Transition Zone, undertake land preparation for sowing of *kharif* crops. In mango, to control fruit drop, spray NAA (Naphthalene acetic acid) 20 ppm twice at an interval of 15 days.
- In the Eastern Dry Zone, under double cropping, continue sowing of sesame, black gram, green gram, cowpea and field bean, with available soil moisture. 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 East Transition Zone, continue summer deep ploughing. Procure seeds and other inputs required for *kharif* sowing. Take up the repair of bunds and check dam so as to reduce the runoff and to check the soil erosion.
- Mosaic virus was noticed in beans crop in Southern Dry Zone; to manage this disease remove the infected plants and spray Nimbicidine @ 5ml/litre of water after current spells of rain.
- **Animal Husbandry**
- In view of heat wave conditions very likely at many/at a few places over Coastal Andhra Pradesh, at isolated places over Telangana, Rayalaseema, Tamil Nadu, 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.
- In South Telangana Zone, prevailing weather conditions are congenial for the occurrence of Ranikhet disease in poultry. To prevent the diseases, vaccinate the birds.
- In Karnataka, vaccinate before onset of monsoon the animals (cow, buffalo, and bullock) against foot and mouth disease (FMD vaccination), BC vaccination against Black Quarter and also vaccinate cow, buffalo and bullock against Haemorrhagic Septicaemia. Vaccinate (ET vaccine) sheep and goats against Enterotoxemia before onset of monsoon. Feed dry fodder to animals after uniform mixing with 2% urea and 10% molasses or jiggery to improve palatability.

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

- **Realised Rainfall:** Rainfall occurred in Changlang, , East Siang, Papumpara, Tawang, Tirap, Lohit and West Siang districts of Arunachal Pradesh; Cachar, Chirang, Dhemaji, Dibrugarh, Goalpara, Golghat, Hailakandi, Jorhat, , Karimganj, Kokrajhar, Lakhimpur, Morigaon, N.C.Hills, Nowgaon, Sonitpur and Tinsukia districts of Assam; East Garo Hills, East Khasi Hills and West Garo Hills districts of Meghalaya; Aizwal district of Mizoram; Imphal East and Imphal West districts of Manipur; Dimapur and Kohima districts of Nagaland and all districts of Tripura 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 Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 19th 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:**
 - As rain/thundershowers likely at many places over Assam & Meghalaya on 19th, 21st, 22nd and 23rd, over Arunachal Pradesh on 19th May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - In Hill Zone of Assam, continue nursery sowing of *Sali* rice.
 - 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.
 - In Upper Brahmaputra Valley Zone of Assam, continue land preparation for *Sali* rice.
 - In North Bank Plain Zone and Barak Valley Zone of Assam, continue nursery sowing of *Sali* rice.
 - In Central Brahmaputra Valley Zone of Assam, complete sowing of jute.

- In Meghalaya, complete raising of brinjal and transplanting of tomato and continue planting of ginger/turmeric and sowing of maize in high and mid altitudes. Undertake nursery sowing and land preparation for transplanting of Sali rice/*kharif* rice.
- 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. Continue 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. Undertake sowing of soybean.
- 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 and spray Carbofuran 3G@ 30 kg/ha or Phorate 10G @ 10kg/ha to control stem borer in transplanted normal *ahu* rice 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.
- In North Bank Plain Zone of Assam, spray Mencozeb (Dithene M-45) @ 2g/litre or Carbendazim @1g/litre of water on dry weather for controlling the blast disease in *ahu* rice at tillering stage after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Nagaland, continue harvesting of potato in clear weather and undertake planting of ginger, turmeric and large cardamom.
- 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 main land preparation for transplanting of rice. Continue sowing of *kharif* maize, soybean, groundnut and blackgram and planting of ginger/turmeric.
- In Mizoram, continue planting of ginger and turmeric and transplanting of pre-*kharif* rice. Continue harvesting of *rabi* maize.
- In Tripura, maintain moisture in the field of cowpea at pod formation stage and in *rabi* maize, at grain filling stage. Undertake harvesting of urd/green gram.
- In Manipur, spray Rogor @ 15ml/15 litre water against leaf folder in pre-*kharif* rice on a non rainy day.
- 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 on a non rainy day.
- **Animal Husbandry**
- In Upper Brahmaputra Valley Zone of Assam, undertake immunizations against FMD, HS and BQ in cattle & buffaloes and pigs during this time.
- In Tripura, piglets are susceptible for swine fever due to change in weather and feed. The disease may be managed by Furazolidone, streptomycin etc. Taking advice of veterinary practitioner before providing of medicine is compulsory for confirmation and dosages.
- **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 Central Brahmaputra Valley Zone of Assam, prepare the fingerling rearing tanks and nurseries by cleaning them and applying agricultural lime for raising fingerlings. Apply cowdung at the rate of 500 gm per sq m. at least 15 days ahead of releasing fingerlings into the tanks. Farmers may release fish prawn in their ponds during this period.
- 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 heat wave conditions very likely at isolated places over Vidarbha on 19th, 20th and 21st 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, for rice and nagli nursery prepare raised beds of 120 cm width at the base and 90 cm width at the top

and 8 to 10 cm height. In mango orchards if harvesting is completed cut the dead wood and diseased branches and apply 1% bordeaux paste to the cut surface. Keep the orchards clean. For new plantations of Mango, Cashew, Coconut and Arecanut, clean the area by cutting small shrubs and plants. Also dig the pits and fill the pits with mixture of soil, 30 to 40 kg of FYM or Compost and 1 kg single super phosphate.

- In Madhya Maharashtra, as dry weather is expected undertake mulching. Use dry leaves, wheat straw, wood straw and polythene paper for mulch, to maintain the proper soil moisture. Undertake preparatory tillage operations such as ploughing, harrowing, land leveling and bunding as early as possible. Undertake deep ploughing to make soil porous so that the roots of the plants develop fully. Summer groundnut is at maturity stage. Harvest the matured crop during morning hours and keep at safer place. In sugarcane soil drenching with Chlorpyrifos 20 EC @ 12-15 ml per 10 liters of water may be done for control of shoot borer and termites. Continue planting of ginger and turmeric with irrigation facility.
- In Marathwada, as dry weather is expected apply fertilizer dose in sugarcane and irrigate the field. Also irrigate the vegetables and orchards. Land preparation may be done for sowing of kharif vegetables and kharif fodder crops. Apply irrigation regularly in newly planted mango orchard, to protect from high temperature. Spray fungicide in citrus orchard where rainfall is occurred to protect citrus fruits from diseases.
- In Vidarbha, apply light and frequent irrigation to vegetables and summer rice in grain filling stage. Apply 25 Kg Urea/ha in summer rice which is at panicle initiation stage also maintain water level of 5cm in the field. Groundnut crop is at pod development/maturity stage, harvest the crop when leaves turn yellow and leaves start shedding.
- In Konkan, due to partly cloudy sky and light rains in previous week there are chances of incidence of fruit fly in the mango orchards, install Rakshak fruit fly traps @ 4 traps per ha. Also collect and dispose fallen mango fruits to prevent further infestation of fruit fly.

▪ **Gujarat:**

- In North Saurashtra Zone of Gujarat, in view of prevailing high temperature, apply irrigation in summer vegetable, lemon orchards and fodder crops during evening hours. Undertake harvesting of summer green gram and black gram in time. Apply light irrigation in groundnut and sesame. Procure good quality seeds for kharif crops.
- In Middle Gujarat Zone, continue sowing of pigeon pea (green pod type). Complete harvesting/threshing of early varieties of summer rice. Carry out deep ploughing in harvested field for destruction soil pest and fungal spores.
- In North Gujarat Zone, continue land preparation for sowing of irrigated hybrid cotton and B.T. cotton. Apply irrigation in green gram, groundnut (pod development stage) and floriculture crops. Carry out leveling of plots to increase soil moisture holding capacity. 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, undertake land preparation for sowing of irrigated hybrid cotton and B.T. cotton. apply irrigation in pearl millet, green gram, vegetable crops.
- In South Gujarat Heavy Rainfall Zone, continue land preparation for kharif rice and prepare nursery beds. Apply irrigation in summer groundnut and pulses as per need of the crop. Undertake planting of disease and pest free grafts for new plantation of sapota and provide staking of wooden sticks.
- In South Gujarat Zone, undertake deep ploughing of fields. 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. To control of water evaporation from sugarcane field, spread dry leaves of sugarcane in between two rows of sugarcane.
- Apply irrigation in pulses, sesame in South Saurashtra Zone.
- 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 Vidarbha, protect the Livestock & poultry birds from heat wave.
- 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. Also keep animals under shed.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands, all districts of Gangtic West Bengal except Howrah, Kolkatta, North and South 24 Parganas, all districts of Sub-Himalayan West Bengal except Malda, North Dinajpur and South Dinajpur, in Balasore, Gajapati and Mayurbhanj districts of Odisha, Araria, Banka, Katihar, Kishanganj, Madhepura, Purnea, Saharsa, Supaul and West Champaran districts of Bihar, East Singbhum district of Jharkhand during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at most/many places over Andaman & Nicobar Islands during the period along with heavy rain at isolated places on 22nd and 23rd May, rain/thundershowers at many places over Sub-Himalayan West

Bengal & Sikkim on 19th, 22nd and 23rd 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 Andaman & Nicobar Islands.

- As thunderstorm accompanied with gusty winds very likely at isolated places over Bihar, Jharkhand, West Bengal & Sikkim on 19th, over Odisha on 20th 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.

▪ **Odisha:**

- As thunderstorm accompanied with squall very likely at isolated places over Odisha on 19th 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.
- As heat wave conditions very likely at isolated places over Odisha on 19th and 20th 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 West Central Table Land Zone, maintain around 3-5 cm of water in paddy during panicle initiation stage. Continue sowing of okra.
- In North Eastern Plateau Zone, continue deep summer ploughing and keep inputs ready for *kharif* paddy. Continue harvesting of *rabi* paddy and groundnut. Undertake planting of ginger.
- In North Central Plateau Zone, continue harvesting of matured pulses and cultivation of ginger on raised bed.
- In North Eastern Coastal Plain Zone, continue deep summer ploughing utilising the pre-monsoon rain. Continue harvesting of summer rice.
- In North Eastern Ghat Zone, complete sowing of cowpea.
- In Eastern Ghat High Land Zone, continue 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 on a non rainy day.

▪ **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 in view of light rainfall, continue land preparation and sowing of jute. Apply irrigation in *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, complete harvesting of matured pods of groundnut crop as soon as possible.
- 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.
- 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 Coastal Saline Zone, spray Spinosad 48EC @ 1ml/litre of water against shoot and fruit borer in brinjal and okra if infestation is above ETL.
- In the New Alluvial Zone in prevailing weather conditions there is chance of attack of stem borer. Apply Cartap 4 G @ 25 Kilogram per hectare or Phorate 10 G @ 10 Kilogram per ha.
- 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 g per litre of water after current spells of rain.

▪ **Andaman and Nicobar Islands:**

- In Andaman and Nicobar Islands, make besin around the coconut and arecanut. Harvest the rain water as rainfall is expected during next five days. Provide adequate drainage in vegetable fields.

▪ **Bihar:**

- In North East Alluvial Zone of Bihar, continue planting of turmeric and ginger utilising the realised rainfall. Maintain minimum water (2-3cm) in *Boro* rice field. In South Bihar Alluvial Zone, sowing of green gram, cluster bean, senai, gwar etc may be done for green manure during this week. Keep inputs ready for sowing of *kharif* crops.
- In North West Alluvial Plain Zone of Bihar, continue planting of turmeric and ginger. Continue land preparation for sowing of *kharif* maize and continue seed bed preparation for rice nursery.

- In South Bihar Alluvial Zone of Bihar, continue 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 Chlorantraniliprole 0.4% GR @ 10Kg/ha. To control yellow stem borer in rice, apply Fipronil 0.3% GR @ 20-25 Kg/ha or Chlorantraniliprole 0.4% GR @ 10Kg/ha after current spells of rain.
- In North East Alluvial Zone of Bihar, to control brinjal fruit & shoot borer or tomato fruit borer, apply Indoxacarb 15.8 EC @ 1ml/litre of water after current spells of rain.
- **Jharkhand:**
 - In South Eastern Plateau Zone, continue 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. continue planting of turmeric, ginger and yam.
 - In Western Plateau Zone, prepare the field and continue 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 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.
 - In the Hill Zone, undertake primary (2-4 weeks), booster (5 weeks) and repeat vaccination (6-12 month) to prevent swine fever.
 - 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.
- **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 district 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, apply irrigation moong and urad at flowering/pod development stage. Continue picking up of matured okra and cucurbits. Continue deep ploughing of the field and keep inputs ready for sowing of *kharif* crops. Undertake nursery preparation for rainy season vegetables.
 - 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. Continue nursery preparation for tomato, chilli, brinjal and early cauliflower.
 - In Kymore Plateau and Satpura Hill Zone, continue deep summer ploughing.
 - In Vindhya Plateau Zone, continue deep summer ploughing and testing of soil samples.
 - In Bundelkhand Zone, apply irrigation in vegetables and continue 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. Continue 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 heat wave conditions very likely at isolated places over Chhattisgarh on 19th and 20th 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, continue deep summer ploughing in vacant fields and keep inputs ready for sowing of *kharif*

rice. Summer rice is at grain filling stage, maintain water level in field.

- In Chhattisgarh Plain Zone, undertake intercultural operations in vegetables and apply irrigation. Apply irrigation in summer rice, groundnut and sunflower as per requirement. Keep inputs ready for sowing of *kharif* crops. Undertake harvesting of matured vegetables.
- 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, apply irrigation in citrus plants, banana and papaya orchards and in North Hill Zone, apply irrigation in mango and litchi orchards.
- **Animal Husbandry**
- 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 Anantnag, Baramula, Doda, Srinagar districts of Jammu & Kashmir, Chamba district of Himachal Pradesh, Bahraich, Kheri, Shrawasti districts of East Uttar Pradesh, Champawat, Nainital, Pithorgarh, Rudraprayag, Uttarkashi districts of Uttarakhand during the week and weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As thunderstorm accompanied with squall and hail very likely at isolated places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand on 21st and 22nd, over Haryana, Chandigarh & Delhi and West Uttar Pradesh on 21st May, use hail net or hail cap for orchard crops and fruit vegetables to protect from mechanical damage, 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.
 - As thunderstorm accompanied with squall very likely at isolated places over Uttarakhand and Himachal Pradesh on 19th, over Punjab, East Uttar Pradesh and Rajasthan on 21st, over Haryana, Chandigarh & Delhi, West Uttar Pradesh on 20th and 22nd, over East Rajasthan on 22nd May, thunderstorm accompanied with gusty winds over Punjab, Rajasthan on 20th, over East Uttar Pradesh on 20th and 22nd May, provide support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane. Keep harvested produce at safer places.
 - As rain/snow likely at many places over Jammu & Kashmir on 21st, over Himachal Pradesh on 21st and 22nd, over Uttarakhand on 19th, 21st and 22nd May, rain/thundershowers likely at many places over Punjab, Haryana, Chandigarh & Delhi on 21st, over West Uttar Pradesh on 22nd May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - **Jammu & Kashmir:**
 - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, undertake land preparation and nursery raising of early transplanted rice (var. IET-1410, K-39, Ratna, PC-19, Jaya).
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, complete harvesting of wheat, mustard, gram and pea after current spells of rain. Drain out excess water in maize field as crop is very sensitive to water logging conditions. Complete sowing of turmeric in lower and intermediate areas and French bean in temperate areas. Carry out weeding and hoeing operations in tomato, brinjal and chilli crop.
 - In Valley Temperate Zone of Jammu and Kashmir, undertake sowing of maize. Continue transplanting of cucurbits, cole and solanaceous crops. Continue nursery sowing for summer rice. Open drainage channels to avoid water stagnation in saffron field.
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, due to possibility of humid weather there may be possibility of bacterial wilt in tomato, brinjal chilli and cucurbits. If observed, apply Streptocyclin Sulphate @ 1.0 gm/10 liter of water after current spells of rain and repeat the spray at the time of flowering.
 - **Uttarakhand:**
 - In Udham Singh Nagar district of Bhabar and Tarai Zone, give irrigation to urd, moong and cowpea (lobia) crops. After plucking of pods turn these crops in the field so that they can be utilized as green manure. Continue sowing of dhaincha and Sanai, after harvesting of the matured *rabi* crops.
 - In Nainital district of Bhabar and Tarai Zone, in mid and high hilly regions, irrigation or mulching should be used to maintain the availability of moisture in fruit plants. If seedlings of tomato, brinjal and capsicum are transplanted

one month prior then top dressing of Urea should be done and moisture conservation should also be done. In high hilly regions, top dressing of Urea should be done in potato crop and cover them with soil and organic mulch should be used for moisture conservation. Thickness of mulch should be 8-10 cm.

- In Hill Zone, continue 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 barnyard 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.

▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, apply light irrigation in vegetable crops as per requirement. 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 High hills regions continue sowing of peas, French bean, Oglra, palak, raddish, turnip and carrot in addition to transplanting of cabbage, cauliflower, broccoli and exotic vegetables. Continue sowing of fodder maize alongwith cowpeas and soybean in irrigated areas. In lower regions, undertake sowing of cucurbits crops in this week. Undertake sowing of green manure crop cluster bean, daincha, senai, lobia etc.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, apply second half dose of nitrogen i.e. 1 Kg. Cal. Nitrate + 500 gm. Urea in full grown apple trees after fruit set in lower valley areas. Or spray urea @ 1.0 kg. in 200 litres of water, where there is dry conditions after current spells of rain.
- 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 Difenoconazole @ 30 ml in 200 litres of water after current spells of rain.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, present weather is conducive for attack of leaf spots on young leaves in soft seeded varieties (Sindhuri and Mridula) of pome granate, for control spray Bavistin @ 100 gm + Streptocycline @ 20 gm. in 200 litres of water after current spells of rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of shoot and fruit borer in brinjal and tomato crops, for control spray Spinosad 48 EC @ 1 ml per 4 litres of water after current spells of rain.

▪ **Punjab, Haryana and Delhi:**

- In Punjab, undertake sowing of rice nursery with recommended varieties i.e. PR 126, PR 124, PR 123, PR 122, PR 121, PR 116, PR 114, PR 115, PR 113.
- In Western Plain Zone of Punjab, continue 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.
- 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 cotton including Bt cotton or Desi cotton with recommended varieties/hybrids (RCH 650 BG II, NCS 855 BG III, Ankur 3028 BG II, MRC 7017 BG II, MRC 7031 BG II) 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 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.
- In Eastern Zone of Haryana, continue planting of spring season sugarcane.
- In New Delhi, continue sowing of okra. Seed rates should be 10-15 kilogram per acre. Continue sowing of French bean, cluster bean, summer radish as present temperature is suitable for germination of seeds. Continue transplanting of young seedlings of brinjal and chilli. Complete sowing of green gram and black gram. Continue harvesting of matured mustard and wheat. Continue direct sowing of amaranthus, bhindi, bottle gourd, hybrid cluster bean and summer radish. Undertake field preparation for sowing of pigeon pea with varieties- Pusa 2001, Pusa 991, Pusa 992, Parasmanak, 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, hairycatterpillar 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 after current spells of rain.

▪ **Uttar Pradesh:**

- In Central Plain Zone of Uttar Pradesh, continue sowing of multi harvesting fodder crop like maize, lobia, dhaincha. Apply light irrigation in maize, jwar, bajra and mung crop as per requirement at 15 to 20 days of intervals. Apply light irrigation as per requirement to bitter guard, radish and water melon.
- In Eastern plain Zone of Uttar Pradesh, continue nursery sowing of rice. Continue direct sowing of rice in irrigated areas. Continue sowing of dhaincha for green manure, for sowing use 50 kg seeds per hectare.
- 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, continue field preparation for sowing of cotton and pigeonpea. Before sowing pigeon pea seeds should be treated with crop specific Rhizobium culture and Phosphate Solublesing Bacteria. This treatment increases the crop production. 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 stem borer in maize crop, for control spray Methyle-O-Dimeton 25 EC @ 1 litre or Quinalphos 25 EC @ 2 litres in 500 to 600 litres of water per hectare.
- In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of pod borer in urad crop, for control spray Quinalphos 25 % EC @ 1.25 litres in 600 to 800 litres of water per hectare.
- 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 litre 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. Undertake broadcasting of 40-44 kg urea in chilli after one month transplanting and after 40-45 days again repeat this doses.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, undertake harvesting of *rabi* onion. Undertake land preparation for sowing of irrigated groundnut. Prepare field by one ploughing by soil inverting plough & 2-3 harrowing. Incorporate 250 kg gypsum /ha in last ploughing at time of sowing. Time for the sowing of irrigated cotton in this zone is from 10 May to 31 May. Bikaneri Nerma (190-200 days), Ganganagar Ageti (170-180 days), RST-9 (185-200 days) & RG-8 (Desi, 170-180 days) are improved varieties of cotton.
- 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 Irrigated North Western Plain Zone, Hanumangarh and Sriganganagar, Continue sowing of BT cotton and American cotton. Apply irrigation in sugarcane crop at 15 days of intervals as per requirement. Undertake nursery sowing of paddy.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, undertake deep ploughing in hot summer to destroy soil borne pests. Do not burn mustard or other crop residues. Incorporate it in field during ploughing to improve soil health.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, prevailing dry weather condition is congenial for attack of mealy bug in okra, for control spray Acephate 70 SP @ 1 g or Profenophos @ 3 ml per litre water on a non rainy day.
- In Irrigated North Western Plain Zone, in Hanumangarh and Sriganganagar districts, prevailing weather condition is congenial for attack of termite in sugarcane crop, for control Imidachloprid 17.8 SL @ 125 ml or Chlorpyrifos 20 EC @ 1.25 litres along with irrigation per bhiga.
- In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, prevailing weather condition is congenial for attack of stem and fruit borer in okra for control spray Malathion @ 2 ml or Thioron @ 1 ml in one litre of water on a non rainy day.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, prevailing dry weather condition is congenial for attack of thrips, jassids and white fly in zaid moong for control spray Dimethoate 30EC @ 800 ml in 800 litres of water per hectare on a non rainy day.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing dry weather condition is congenial for attack of mosaic virus in chilli crop, for control spray Malathion 50EC @ 1.0 ml per litre water before & after flowering on a non rainy day.

- **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 Irrigated North Western Plain Zone, Hanumangarh and Sriganaganagar, prevailing weather condition is congenial for attack of sucking pest (thrips, leaf minor, mites etc.) in kinnow orchards, for control spray Monochrotophos 36 SL @ 1 ml per litre of water.
- In Irrigated North Western Plain Zone, Hanumangarh and Sriganaganagar, prevailing dry weather condition is congenial for fruit drop in kinnow orchard, for control spray 2,4-D (horticultural grade) @ 2 gm per 100 litres of water or spraying the solution of Propineb 70 WP @ 2 gm per litre + 20 mg Gibbralic acid per litre of water.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, due to rise in temperature farmers are advised to protect young fruit plants from heat by providing thatches/cover but ensure free circulation of air. Spray 2,4-D @ 10mg/litre of water against fruit drop.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, protect fruit plants from termite attack. If observed treat the affected area with Chlorpyrifos @ 2 ml/ liter of water or Imidacloprid @ 7 – 8 ml/15 liters of water on clear sunny day.
- In Nainital district of Bhabar and TaraiZone,in mid and high hilly regions, irrigation or mulching should be used to maintain the availability of moisture in fruit plants.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts of Himachal Pradesh, present weather is conducive for attack of Mango plant hopper in mango trees, for control spray, Buprofezin 25% SC @ 1 to 2 ml per litres of water after current spells of rain.

- **Floriculture**

- 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 after current spells of rain.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, continue planting of tuberose bulbs. Due to increase in temperature, farmers are advised to cover stock of Chrysanthemum with shade net.
- In Valley Temperate Zone of Jammu and Kashmir, this is the ideal time for planting bare -rooted rose plants. Start preparation of land for sowing seeds of herbaceous perennials.

- **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, keep colonies in shade or cover with wet gunny bags. Provide adequate space to the colonies for brood rearing and storage of nectar.

- **Animal Husbandry**

- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, treat animals with Albendazole @ 20-25 ml for adults and 10-15 ml for small and young animals to control internal parasites and worms. Do not administer this medicine to pregnant animals.
- In Rajasthan, vaccinate livestock against HS (Hemorrhagic Septicemia) and arrange to prevent from mastitis and mites, worms etc.
- In Himachal Pradesh, monitor the animals for FMD and advised Vaccination. Ecto-parasite attack is expected in this weather, for control, sparyButox @ 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.
- In Uttarakhand it is advised that neat, fresh and cold water should be given to the animals three times in a day. Availability of sufficient water in the body of animals maintains the balance between the temperature of their skin and environment which save the animals from the effect of loo (summer wind).

- **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.