



National Agromet Advisory Service Bulletin

Thursday 18th April 2019
(For the period 18th to 23rd April 2019)



Issued by
India Meteorological Department

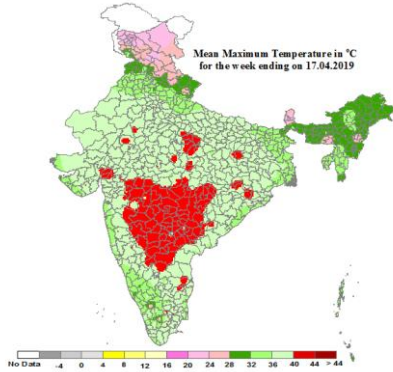
Weblink For

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

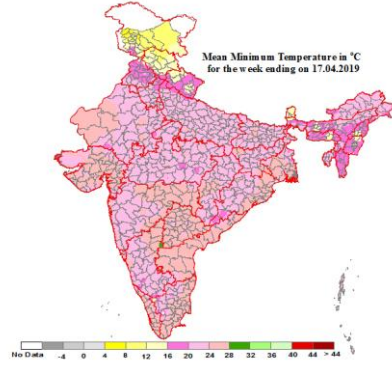
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 17.04.2019

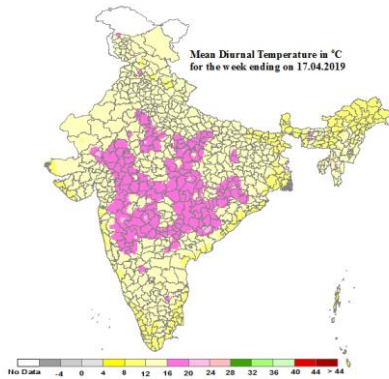
Mean Maximum Temperature (°C) for the week ending on 17.04.2019



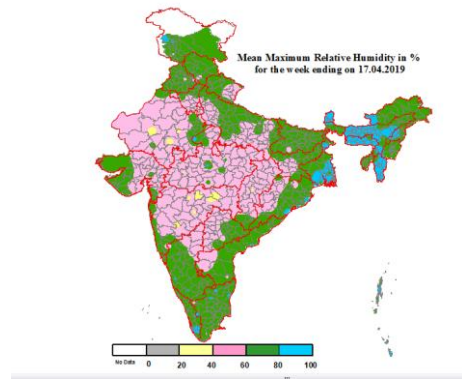
Mean Minimum Temperature (°C) for the week ending on 17.04.2019



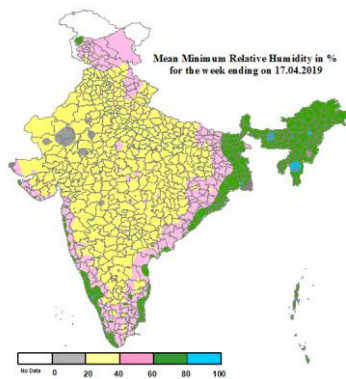
Mean Diurnal Temperature Variation (°C) for the week ending on 17.04.2019



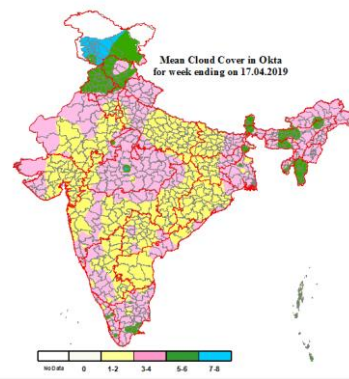
Mean Maximum Relative Humidity (%) for the week ending on 17.04.2019



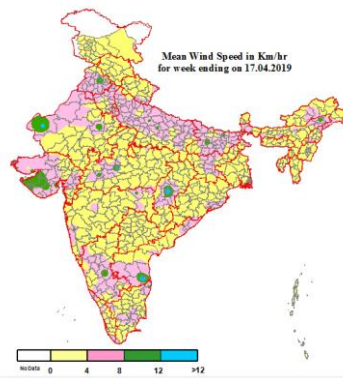
Mean Minimum Relative Humidity (%) for the week ending on 17.04.2019



Mean Cloud Cover (okta) for the week ending on 17.04.2019

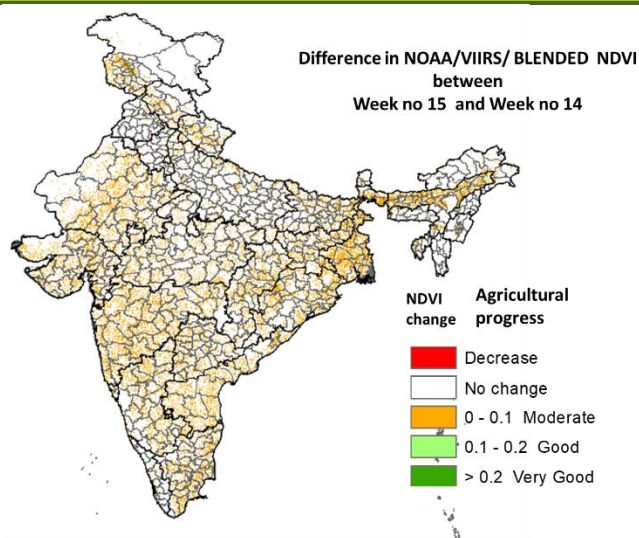
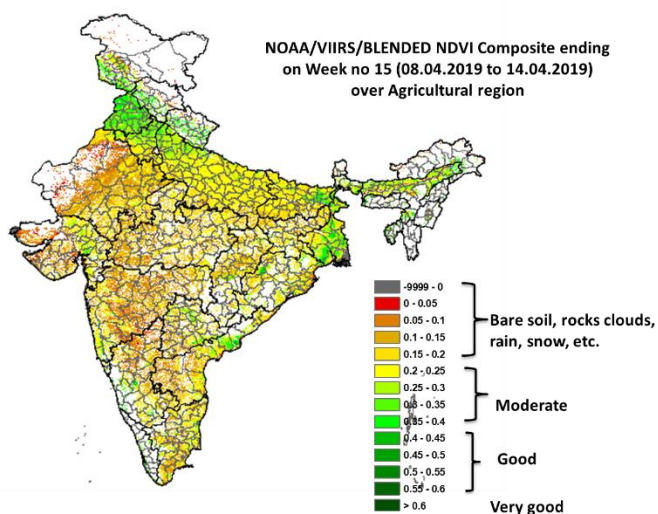


Mean Wind Speed (km/hr) for the week ending on 17.04.2019



NOAA/VIIRS/BLENDED NDVI composite for the week number 15 (08.04.2019 to 14.04.2019) over Agricultural regions of India

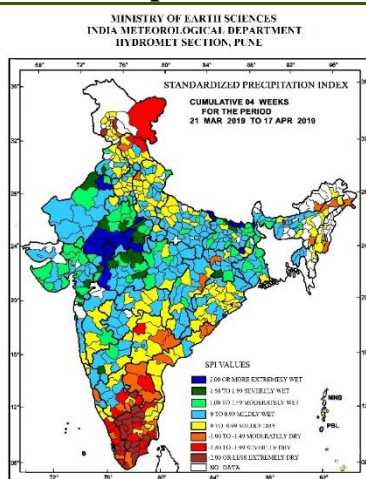
Difference in NOAA/VIIRS/BLENDED NDVI between week number 15 and week number 14



Agriculture vigour is good at isolated places over Gangetic West Bengal, interior Odisha and North Coastal Andhra Pradesh, South Interior Karnataka, Coastal Karnataka and Jammu Division. It was moderate over rest of the country.

Moderate difference in agricultural vigour was noticed at many places over West Bengal and North Eastern part of India.

**Standardised Precipitation Index
Cumulative 4 weeks for the period 21st March to 17th April 2019**



- Extremely/severely wet conditions experienced at a few districts of Rajasthan and Madhya Pradesh; Deoghar and Simdega districts of Jharkhand; West Champaran, Darbhanga, Kishanganj, Madhubani, Sitamarhi and Supaul districts of Bihar; Ropar and Muktsar districts of Punjab.
- Extremely/Severely dry conditions experienced in many districts of Tamil Nadu & Puducherry; at a few districts of Kerala; Bongaigaon district of Assam; Lahaul & Spiti district of Himachal Pradesh; Anantnag, Ladakh (Leh), Rajouri districts of Jammu & Kashmir; Cuddapah district of Andhra Pradesh; Nizamabad district of Telangana; Chamarajanagar, Kolar, Mysore, Tumkur and Chickballapur districts of Karnataka.
- Moderately dry conditions experienced at a few districts of Arunachal Pradesh; Andhra Pradesh; Cachar, Lakhimpur, Dibrugarh districts of Assam; Latehar district of Jharkhand; Saharanpur district of Uttar Pradesh; Kangra district of Himachal Pradesh; Doda, Srinagar districts of Jammu & Kashmir; Raigarh

district of Chhattisgarh; Khammam, Warangal districts of Telangana; Cuddalore, Nagapattinam, Trichy, Tirunelveli districts of Tamil Nadu & Puducherry; Udupi, Bangalore Urban, Mandya, Ramanagara districts of Karnataka; Kollam and Thrissur districts of Kerala.

Long Range Forecast of the 2019 Southwest Monsoon Rainfall

(Source-PRESS RELEASE, IMD, New Delhi, 15th April 2019 on Long Range Forecast of the 2019 Southwest Monsoon Rainfall)

Southwest monsoon seasonal (June to September) rainfall over the country as a whole is likely to be near normal. Quantitatively, the monsoon seasonal (June to September) rainfall is likely to be 96% of the Long Period Average (LPA) with a model error of $\pm 5\%$. The LPA of the season rainfall over the country as a whole for the period 1951-2000 is 89 cm.

Weather Forecast for next 5 days valid upto 0830 hours of 23rd April 2019

Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below:

Day maximum temperatures are very likely to rise by 4-6°C over most parts of the Northwest and central India and by 2-4°C over Gujarat and interior Maharashtra during next 3 days. No significant change likely over the rest of the country during this period. They are likely to remain above normal by 2-3°C over Kerala, Tamil Nadu and Andhra Pradesh during next 2 days.

5 Day Rainfall Forecast (Mid-day) 18th April 2019

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

% 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

◆ **18 April (Day 1):** ◆ Thundersquall (wind speed reaching 60-70 kmph) accompanied with hail and lightning at isolated places very likely over Odisha.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 30-40 kmph) and lightning** at isolated places very likely over Tamilnadu, Rayalseema, Telangana, West Bengal & Sikkim, Jharkhand, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 40-50 kmph) and lightning** at isolated places very likely over Kerala, South Interior Karnataka, Coastal Andhra Pradesh, Chhattisgarh and Uttarakhand.

◆ **Heavy rainfall** at isolated places very likely over Arunachal Pradesh, South Interior Karnataka and Kerala.

19 April (Day 2): ◆ **Thundersquall (wind speed reaching 60-70 kmph) accompanied with hail and lightning** at isolated places very likely over Odisha.

◆ **Thundersquall (wind speed reaching 50-60 kmph) accompanied with lightning** at isolated places very likely over Gangetic West Bengal.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 30-40 kmph) and lightning** at isolated places very likely over Tamilnadu, Coastal Andhra Pradesh, Jharkhand, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 40-50 kmph) and lightning** at isolated places very likely over Kerala and Telangana.

20 April (Day 3): ◆ **Thundersquall (wind speed reaching 50-60 kmph) accompanied with lightning** at isolated places very likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 30-40 kmph) and lightning** at isolated places very likely over Tamilnadu, Coastal Andhra Pradesh, Rayalseema, Gangetic West Bengal and Odisha.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 40-50 kmph) and lightning** at isolated places very likely over Kerala, South Interior Karnataka and Telangana.

21 April (Day 4): ◆ **Thundersquall (wind speed reaching 50-60 kmph) accompanied with lightning** at isolated places very likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 30-40 kmph) and lightning** at isolated places likely over Coastal Andhra Pradesh.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 40-50 kmph) and lightning** at isolated places likely over Telangana, Uttarakhand, Sub-Himalayan West Bengal & Sikkim and Odisha.

◆ **Heat Wave conditions** at isolated pockets likely over Rajasthan.

22 April (Day 5): ◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 30-40 kmph) and lightning** at isolated places likely over Gangetic West Bengal.

◆ **Thunderstorm accompanied with gusty winds (wind speed reaching 40-50 kmph) and lightning** at isolated places likely over Sub-Himalayan West Bengal & Sikkim, Jharkhand, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

◆ **Heat Wave conditions** likely over some parts of Rajasthan.

Weather Outlook for subsequent 2 days from 23rd April to 25th April 2019

- Scattered to fairly widespread rain/thundershowers likely over Western Himalayan region, isolated to scattered over east and northeast India and isolated rain/thundershowers over plains of northwest India, South peninsula and Islands.
- Dry weather likely over the rest of the country.

Salient Advisories

- As thundersquall (**wind speed reaching 60-70 kmph**) accompanied with hail and lightning at isolated places very likely over **Odisha** on 18th & 19th, thundersquall (**wind speed reaching 50-60 kmph**) accompanied with lightning likely at isolated places over **Gangetic West Bengal** on 19th, over **Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura** on 20th & 21st, thunderstorm accompanied with gusty winds (**wind speed reaching 30-40 kmph**) & lightning at isolated places very likely over **West Bengal & Sikkim** and **Jharkhand** on 18th, over **Odisha** on 20th, over **Gangetic West Bengal** on 20th & 22nd, over **Sub-Himalayan West Bengal & Sikkim** on 21st, over **Tamilnadu, Rayalseema, Telangana** on 18th, over **Coastal Andhra Pradesh** on 19th to 21st, over **Tamil Nadu** on 19th & 20th, over **Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura** on 18th & 19th, thunder storm accompanied with gusty winds (**wind speed reaching 40-50 kmph**) and lightning at isolated places very likely over

Jharkhand, Sub-Himalayan West Bengal & Sikkim and Odisha on 22nd April, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Use hail net for orchard crops to protect from mechanical damage in Odisha. Undertake propping in sugarcane in Odisha, Coastal Andhra Pradesh and Tamil Nadu. Keep cattle in sheds during thundersquall/thunder storm period.

- As heat wave conditions likely over some parts of **Rajasthan** on 21st & 22nd April, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Do soil mulching or mulching with straw/polythene to conserve soil moisture.
- As rain/thundershowers likely at many places over **Arunachal Pradesh** on 20th & 21st April, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- In **Rajasthan**, as heat wave condition likely at some parts on 21st & 22nd April, grazing /feeding of cattle/goats may be done during morning/ evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Also provide balanced feed & adopt vaccination schedule. Provide curtains and proper ventilation in poultry house.

Detailed Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in Dharwad district of North Interior Karnataka, Jogulamba Gadwal and Warangal Urban district of Telangana, during the week. Weather remained mainly dry over rest of the States.
- Advisories:**
- Thunderstorm accompanied with gusty winds (**wind speed reaching 30-40 kmph**) and lightning at isolated places very likely over Tamilnadu, Rayalseema, Telangana on 18th, over Coastal Andhra Pradesh on 19th to 21st and Tamil Nadu on 19th & 20th, thunderstorm accompanied with gusty winds (**wind speed reaching 40-50 kmph**) and lightning at isolated places very likely over Kerala on 18th & 19th, over South Interior Karnataka, Coastal Andhra Pradesh on 18th and over Telangana on 19th & 20th April, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane.
- Kerala:**
- In Northern Zone, harvest matured mangoes. In Southern Zone, sowing of vegetable cowpea in rice fallow @60kg/ha is recommended.
- In coconut moisture stress leads to stunted growth, drooping of leaves, immature nut fall and decreased yield. Maintain optimum soil moisture in the orchards. To minimize the sun scorch on the trunk, application of lime solution on the trunk upto a height of 2-3 m may be done. Provide mulching in coconut gardens. Dried coconut leaves and coconut husk can be used as mulch. Coir pith is an excellent organic source to conserve the moisture in coconut gardens. Irrigate the palms using drip system @ 30-40lts/day/palm
- In High Altitude Zone, leaf rust disease in coffee may become severe in the prevailing weather conditions, apply fertilizers @ 85 kg urea, 150 kg rock phosphate and 66 kg Potash per hectare.
- In Central Zone, due to increase in temperature, attack of jassids in bhindi has increased, apply 2% neem oil emulsion once in a week or spray Lecanicillium Lecanii @ 20 g per litre of water.
- Andhra Pradesh:**
- In High Altitude Tribal Zone of North Coastal Andhra Pradesh undertake harvesting of rice and sunflower.
- In North Coastal Andhra Pradesh, weather is congenial for incidence of Sucking pest on sesame. Spray Dimethoate @ 2.0 ml per liter of water.
- In South Coastal Andhra Pradesh, continue sowing of summer pulses and planting of sugarcane.
- In Kurnool district of Scarce Rainfall Zone of Rayalaseema continue harvesting of rice.
- In Rayalaseem, in view of increase in temperatures there is possibility of leaf mite attack in rice. To control spray prophenophos @ 2 ml. or dicophol @ 3 ml./L of water.
- Telangana:**
- In southern Telangana prevailing weather conditions are congenial for the incidence of Blast disease in rice. To control, spray Tricyclazole @ 0.6 g or Isoprothiolane @ 1.5 ml or Kasugamycin @ 2.5 ml per litre of water twice in 10-15 days interval.

- In Northern Telangana the prolonged dry weather is congenial for incidence of fusarium wilt in chillies. To control, soil drench with copper-oxy-chloride @ 3 g or carbendazim @ 1 g per liter of water.

Tamil Nadu:

- In Western Zone, light drizzling alone expected with increasing temperature and wind speed. Hence, irrigation may be continued to all crops based on soil moisture. Prevailing dry weather situation is favorable for spiraling white fly in tapioca and hence farmers are requested to monitor the crop carefully and keep yellow sticky trap in 5 to 6 places / ac or spray Prefenophos @2ml or Acephate @ 2gm/ liter of water.
- In North western Zone, due to current weather condition, button shedding occurred in coconut trees. Hence, apply farm waster (or) crop residue around the coconut tree and irrigate around the tree. Also, give root feeding of coconut tonic (200 ml / tree) 3 months interval to avoid button shedding in coconut.

Karnataka:

- In Coastal Karnataka, continue deep ploughing in rice field.
- In South Interior Karnataka, undertake land preparation and keep inputs ready for pre-monsoon crop sowing. For soil moisture conservation in mango orchard, weeds and crop residues mulching is recommended.
- In North Interior Karnataka, apply irrigation in groundnut, sugarcane crops and mango orchards. Continue deep ploughing and incorporate the crop residue in the soil. Take up the repairs of bunds and check dam so as to reduce the run off to check the soil erosion.
- In North Interior Karnataka, for the control of Anthracnose disease, spray the mango orchard with Carbendaizem @ 1 gram or Methyl thiophenate @ 1 gram or Chlorothalonil @ 2 gram dissolved in one litre of water on a non-rainy day.
- In South Interior Karnataka, drench with Carbendazim @ 1 g/litre of water to control panama wilt in banana. Take up plant protection measures by mixing adhesive gum in the spray mixture.
- In Coastal Karnataka and North Interior Karnataka, spray Carbaryl @4 g /litre (50wp) of water, or Imidacloprid @0.25ml / litre of water against leaf hopper in mango orchard.

Animal Husbandry

- In Karnataka, apply 4-6 inch thick thatch as a roofing material in poultry house; animals may preferably be grazed during early morning and late evening hours to avoid exposure to extreme hot conditions and during hot hours; animals must be tied and fed in shaded place or under the tree; this will also help in reducing the water requirement. Heaping of fodder, straw may be completed as early as possible to prevent the damage of fodder due to pre-monsoon rains.
- In South Zone of Tamil Nadu, considering the increase in temperature, to protect your cow from heat, give 3 grinded Indian gooseberries (Amla) to your cow along with the regular feed. Take one handful of Fenugreek & one handful of dried Indian gooseberry, soak and grind it, then mix it with cattle feed and fed to cow daily.

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

- **Realised Rainfall:** Rainfall occurred in Changlang district of Arunachal Pradesh; Baksa, Barpeta, Cachar, Chirang, Dhubri, Dibrugarh, Goalpara, Golghat, Jorhat, Kamrup(Rural), Kamrup(Metro), Kokrajhar and Udalgiri districts of Assam; East Khasi Hills, Ri-Bhoi and West Garo Hills, districts of Meghalaya; Wokha district of Nagaland and North Tripura district of Tripura.

- **Advisories:**

- Thunderstorm accompanied with gusty winds (**wind speed reaching 30-40 kmph**) and lightning at isolated places very likely over Assam & Meghalaya, Nagaland Manipur, Mizoram and Tripura on 18th & 19th, thundersquall (**wind speed reaching 50-60 kmph**) accompanied with lightning at isolated places very likely over Assam & Meghalaya, Nagaland Manipur, Mizoram and Tripura on 20th & 21st April, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle in sheds during thundersquall period.

Arunachal Pradesh:

- As rain/thundershowers likely at many places over Arunachal Pradesh on 20th & 21st April, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- Continue sowing of Jhum rice, planting of ginger, turmeric, sugarcane and banana. Continue sowing /transplanting of early kharif vegetables. Undertake harvesting of potato after current spells of rain.
- 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.
- Apply foliar spray of Dinocap (0.2%) or Carbendazim 50WP (0.1%) or Propiconazole (0.1%) using sticker against infestation of powdery mildew/ leaf eating insects in pea at pod formation stage if the infestation is high after current spells of rain.

Assam:

- In Lower Brahmaputra Valley of Assam, continue planting of banana, pineapple, citrus crop, papaya, colocasia and sowing of maize and cow pea. Continue transplanting of ahu rice. Standing water up to a depth of 2-3cm should be maintained in nursery at least 2-3 days prior to uprooting of seedling. Due to favorable weather, there is chance of attack of Gundhi bug in Boro rice at milky stage. To control the pest, apply 5% Malathion dust @ 2-3 kg per bigha of land to control the pest on non rainy days.
- In Barak Valley Zone of Assam, due to high temperature and humidity, there is chance of attack of Yellow Vein Mosaic disease on okra crop. To control the disease spray Rogar @ 2 ml/litre of water after current spells of rain.
- In North Bank Plain Zone of Assam, undertake transplanting of Ahu rice. Continue sowing of maize and planting of sugarcane and ginger/turmeric.
- In Upper Brahmaputra Valley of Assam, continue transplanting of Ahu rice in the main field. Taking advantage of congenial weather in the coming 5 days farmers are advised to go for gap filling within 7-10 days after transplanting of ahu rice seedlings.
- In Central Brahmaputra Valley of Assam, continue sowing of summer pulses and summer vegetables. Continue land preparation and sowing of Capsularis jute and planting of ginger, turmeric, papaya, coconut. Undertake harvesting of matured wheat crop.
- In Hill Zone of Assam, continue transplanting of early ahu rice and nursery raising of transplanted normal ahu rice. Continue land preparation and sowing of summer green gram and black gram and planting of ginger.

Meghalaya, Manipur, Mizoram, Tripura and Nagaland:

- In Meghalaya, continue sowing of maize at high and mid altitude region. Continue transplanting of tomato, chilli, brinjal and capsicum. Continue sowing of okra, cole crops (cabbage, cauliflower, broccoli) and root crops (radish, carrot).
- In Nagaland, continue sowing of green gram and nursery preparation Naga king chilli. Continue sowing of Jhum rice in Longleng districts. Continue sowing of maize in Kohima, Longleng districts. While germinating, install yellow sticky trap for monitoring white flies and hopper in the field of okra crop.
- In Manipur, maintain 5-8 cm water level in the field of pre-kharif rice. Continue nursery raising for sowing of kharif rice and land preparation for sowing of kharif maize, soybean/ groundnut. Use Methyl Eugenol as trap @ 4-10 traps/sangam against red pumpkin beetle attack in cucurbits crops. Spray Dichlorovos 76 @ 0.5 ml/litre of water against fruit borer in tomato on a non rainy day.
- In Mizoram, continue sowing of maize, cowpea and okra. Undertake land preparation/sowing of Jhum rice, green gram, black gram and cucurbitaceous crops.
- In Tripura, continue land preparation for sowing of Jhum rice. Maintain 5cm standing water in the field of Boro rice. Weather is conducive for Fruit & Shoot Borer infestation in summer brinjal and tomato. To manage the attack, apply Cypermethrin @ 1.5ml or Flubendamid 0.5 ml per litre of water.

Animal Husbandry:

- In Manipur and Tripura, vaccinate pigs against swine fever after the age of 3 months and vaccinate cattle against FMD.
- In Meghalaya, provide coccidiostatic like Amprolium @ 25-65 mg/kg feed once a day as a preventive measure against coccidiosis disease in poultry.
- In Nagaland, Supply of plenty of clean and cool water must be ensured during summer months. Provide Electral Energy Electral Energy (1-2 gm/liter) in water during hot hours.
- In Mizoram, carry out deworming in goat.
- In Upper Brahmaputra Valley of Assam, as maximum temperature has started increasing gradually, due care should be taken to ensure timely supply of adequate water to broiler chicks. Water may be provided through nipple drinker, bell drinker or tower drinker.
- In Lower Brahmaputra Valley of Assam, as a prophylactic measure the mouth and legs of healthy livestock should be washed periodically with baking soda and should be timely vaccinated. Infected cows and buffaloes should be kept separately. Potash should be applied in the areas where lesions have developed followed by washing with fresh water and thereafter application of alum. Local veterinarian should be consulted as early as possible for proper diagnosis and immediate treatment.

Fishery:

- In Barak Valley Zone, there is chance of bacterial disease in the fishes. To control the diseases apply lime @ 6 kg per bigha of pond.
- In Tripura, to avoid bacterial disease liming should be done @10kg/kani. During this time farmers either dig new pond or maintain his new pond by re digging. After digging before rain apply FYM 2400 kg and Lime 80 kg per kani may be applied.

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

Realised Rainfall: Araria, Darbhanga, Kathihar, Kishanganj, Madhubani, Purnia, Sitamarhi and Supaul districts of Bihar, Jajpur and Malkangiri district of Odisha, Murshidabad in Gangetic West Bengal and all districts in Sub-Himalayan West Bengal and Sikkim except North and South Dinajpur

Advisories:

- As thundersquall (**wind speed reaching 60-70 kmph**) accompanied with hail and lightning at isolated places very likely over Odisha on 18th & 19th, thunderstorm accompanied with gusty winds (**wind speed reaching 30-40 kmph**) & lightning at isolated places very likely over West Bengal & Sikkim and Jharkhand on 18th, over Odisha on 20th, over Gangetic West Bengal on 20th & 22nd, over Sub-Himalayan West Bengal & Sikkim on 21st, thundersquall (**wind speed reaching 50-60 kmph**) accompanied with lightning over Gangetic West Bengal on 19th, thunder storm accompanied with gusty winds (**wind speed reaching 40-50 kmph**) and lightning over Jharkhand, Sub-Himalayan West Bengal & Sikkim and Odisha on 22nd April, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Use hail net for orchard crops to protect from mechanical damage and undertake propping in sugarcane in Odisha.

Odisha:

- Apply irrigation to summer paddy crop and maintain water level up to 5-7cm. Go for sowing of summer vegetables such as okra, bitter gourd, ridge gourd and cucumber. Go for planting of ginger. Go for harvesting of onion if 60 to 70% onion leaves turn yellow. After harvest, onions should be dried thoroughly.
- To avoid fruit rot in brinjal, spray 1.5 g Streptocycline +20 g Copper Oxychloride in 10 litres of water. To control Chilli thrips, apply Dimethoate @ 2 ml/litre of water.

Bihar:

- Maintain optimum soil moisture in green gram and black gram fields for proper germination and seedling growth. Harvest matured wheat crop and lentil and store it in a safe place. Do not irrigate maize crop as there is a chance of rainfall. Carry out intercultural operations in summer vegetables like cucumber, pumpkin, lady's finger, sponge guard, etc.
- Monitor for infestation of fruit and shoot borer in Lady's finger. If found, spray Malathion 50EC@ 1.0ml or Dimethoate 30EC@1.5 ml per litre of water. Monitor infestation of red pumpkin beetle in cucurbitaceous crop. Spray Dichlorvos 76EC @ 1 ml /litre of water on a non rainy day.

Jharkhand:

- Continue harvesting of timely-sown wheat crop. Dry & thresh the crops and store the dry grains. Maintain proper water level in rice fields. Take up intercultural operations in summer mung field.
- Spray Sulfex @ 2 gm per litre of water against Powdery mildew disease in fruit orchards. Spray bioinsecticide like Halt, Delfin or Biolep @ 1.5 gm per litre of water in Brinjal and Bhindi (Lady's finger) against fruit borer and in Cauliflower and Cabbage against white fly insect.

West Bengal:

- In Sub-Himalayan West Bengal, continue pit preparation for planting of new orchards of Mandarin orange. Take up land preparation for sowing okra. Carry out harvesting of potato crop immediately. Continue planting of ginger and turmeric. To control chilli fruit rot, spray Carbendazim + Mancozeb @ 2.5g/litre of water. Spray Neem oil 10000 ppm @ 3ml/litre with sticker @ 0.5ml/litre at evening hours to control insect/pest population for rice.
- In Gangetic West Bengal, avoid excess irrigation to Boro rice crop. Harvest early transplanted paddy crop @ 80% maturity to avoid losses due to Norwesters. Cut the head of sunflower crop and dry under sunlight for extracting seed immediately. Apply Spinosad @ 1.5 ml per litre of water for fruit and shoot borer in tomato and brinjal crops. For preventing pod borer attack in black gram and green gram, apply FEM@4ml/10litres of water twice at an interval of 10 days. For white fly attack spray Overon@1ml/litre of water.

Andaman & Nicobar Islands:

- In Andaman Islands, provide irrigation to vegetable crops as dry weather will prevail. Carry out weeding and earthing up in black pepper and provide one irrigation during evening hours.
- In Nicobar Islands, collect and chop the available unwanted organic materials and fill the vermin-compost tank for compost preparation. Carry out weeding and earthing up in black pepper and provide one irrigation during evening hours.

Animal Husbandry:

- In Jharkhand, in summer season, cattle must be protected against intense heat. To keep their room cool, jute bags may be hanged as curtains on the windows and they should be kept wet from time to time. Also make available plenty of fresh water for drinking and bathing.
- In Odisha, provide sufficient clean drinking water to animals and poultry birds.
- In West Bengal, provide only tap water to poultry birds for drinking purpose. Add electrolyte in water. Avoid grazing cattle during mid day.

- In Andaman & Nicobar Islands, provide clean drinking water with electrolyte to poultry birds to reduce heat stress. Pox clinical cases are reported in poultry. It is advised to segregate the diseased birds from healthy birds and clean the pox lesions with dettol or savlon and apply turmeric or neem leave paste.

Fisheries:

- In West Bengal, pond preparation should be done through cultivation of Dhaincha @ 1-1.5kh/bigha for 30-45 days for seasonal & new pond.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Weather remained mainly dry over the region.

Advisories:

Maharashtra:

- In South Konkan, undertake harvesting of matured mangoes. Keep the harvested fruits in shade to prevent spongy tissue disease and from heat. Continue harvesting of early sown varieties of rice. Remove water from the fields at least 8-10 days before harvesting. Continue harvesting of early sown groundnut. Dry the harvested pods in sunshine for 3 to 4 days. To control shoot and fruit borer in okra, spray spray Cypermethrin 25% EC @ 3ml or Lambda cyhalothrin 5% EC @ 6ml per 10 liters of water.
- In Madhya Maharashtra, for control of shoot fly in sugarcane, spray Chlorantraniliprole 18.5% SC @ 4 ml per 10 litres of water. Apply irrigation to vegetables (drip or sprinkler method) and groundnut. For control of jassids and thrips in groundnut, spray of Thiamethoxam @ 4 g or Dimethoate @ 14 ml per 10 liters of water. Apply mulching in newly planted mango orchards.
- In Vidarbha, apply irrigation to summer sesame, green gram, groundnut, vegetables and orchards, to control brown hopper in rice, spray Imidacloprid 17.8% SL @ 2.5 ml or Fipronil 5% SC @ 20ml in per 10 litres of water, to control tikka disease in groundnut, spray Deltamethrin 2.8% @ 500 ml/ ha in 500 liters of water.

Gujarat:

- In Middle Gujarat, carry out weeding operations in green gram, cowpea, bajra and groundnut crops. Due to high temperature conditions, reduce interval between two irrigations. In present dry weather condition, spread plastic or fodder as mulch in vegetable crops for conserving soil moisture. Protects the papaya fruits with gunny bags against high temperature and maintain the proper moisture near root zone area.
- In North Gujarat, apply irrigation in pearl millet, groundnut, sesame, cluster bean crops. Carry out intercultural operations in pearl millet, sesame, green gram, cowpea, groundnut, cluster bean and vegetable crops. Continue harvesting of matured papaya fruits and wheat crops.
- In Saurashtra & Kutch, undertake deep ploughing of the fields. Apply light irrigation in groundnut, pearl millet, sesame, pulses, vegetable crops and mango orchards. Carry out intercultural operations in pearl millet, sesame, green gram, black gram and vegetable crops. Continue harvesting of matured papaya fruits.
- In South Gujarat, undertake deep ploughing of the fields and pruning in bare orchards. Undertake Pruning in bare orchards. To control water evaporation from sugarcane field, spread dry leaves of sugarcane in between two rows of sugarcane crop. As there is increase in temperature, apply irrigation in vegetable and fruit crops. Undertake weeding in summer pulses and groundnut crops.
- In North Gujarat, weather condition is favourable for transmittion of leaf curl disease and sucking pest like mites and thrips in vegetable crops; leaf curl disease is transmitted through the whitefly; to control it, spray Imidachloprid 17.8% s.l. @ 2.8 ml or Methylodematon 25% e.c. @ 10 ml/10 litres of water.
- In Saurashtra & Kutch, in all vegetable crops, thrips infestation is observed above ETL; spray neem seed extract 5 % @500 ml or neem seed oil @50 ml with Profenofos @20 ml or Imidacloprid 30.5 SC @3 ml or Lemdacyhelothrin @10 ml/10 litres of water for thrips control.

Animal Husbandry

- In Gujarat, due to low intake of feed in summer, add mineral mixture to fulfill the required necessary nutrients and keep the animals in shades to protect against direct sun heat. Make arrangement of curtains for poultry house.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in Mandsaur, Neemuch, Sheopurkalani district of Madhya Pradesh and Kondagaon district of Chhattisgarh. Weather remained mainly dry over rest of the region during the week.

Madhya Pradesh:

- In East Madhya Pradesh, continue harvesting of matured gram and wheat. In Kymore Plateau and Satpura Hill Zone, undertake sowing of moong and summer vegetables and sowing of watermelon, melon, cucumber etc.
- In West Madhya Pradesh, farmers' having irrigation facility is advised to start sowing of summer moong in fallow fields and choose the improved varieties and treat the seed with Rhizobium culture before sowing. Apply irrigation in the vegetable and orchard crops at evening time and regular monitoring the crops against insect-pest disease infestation.
- In present weather, in mango orchards, wrapping of plastic sheets around mango tree trunk should be done for preventing climbing of young (nymphs) mealy bugs. Apply grease to seal any cracks in the polythene sheets. Apply irrigation in fruit orchards at regular intervals to keep optimum moisture in the basin.

- In Malwa Plateau Zone, rouging of viral infested crop should be done in chilli. Infected plants should be uprooted and buried in the soil. After rouging, spraying of Imidacloprid @ 0.3 ml per litre of water is advised to control the vector.

Chhattisgarh:

- As thunder storm accompanied with gusty winds (wind speed reaching 40-50 kmph) & lightning Chhattisgarh on 18th April, provide mechanical support to young fruit plants, banana and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane.
- In Chhattisgarh Plain zone, farmers are advised for proper water management in summer vegetables, summer maize, groundnut and sunflower as per the requirement. Farmers having drip irrigation system for vegetables and plantation crops should regulate the water discharge rate accordingly to maintain proper soil moisture around root zone. Maintain optimum water level in summer rice.
- In Bastar Plateau Zone, complete harvesting of wheat. After the harvest of wheat crop, deep ploughing should be done for sowing of green manure crops in the month of May.
- Undertake sowing of sponge gourd, cucumber, ridge gourd watermelon, muskmelon and bitter gourd. In mango orchards, for control of infestation of mango hopper/sucking pests, fumigation of 10 part disel+ 1 part Imidacloprid should be carried out under the tree and at all four direction.

Animal Husbandry

- In Madhya Pradesh, Vaccinate the chicks at 7 days (F1) and at 6 weeks with R2B. Vaccinate the poultry birds to prevent Ranikhet disease. (first F-1 in age of 7 days & second R2B in age of 8 weeks).To prevent Rani khet disease vaccinate the poultry. Provide mineral mixture and fresh and clean water to birds.
- In Chhattisgarh, special attention should be given to milch animals with regard to feed and water in view of the prevailing high temperature. Give lot of clean water to the animals and keep them in the shaded place. If possible arrange the fogger in animal shed and sprinkling of water should be done at an interval of every four to five hours. There is a chance of attack of Heat stroke in cattle at present weather condition. Hence, farmers are requested to avail plenty of drinking water for them and do not allow them to remain in sunlight during noon hours. To keep their room cool, Jute bag may be hanged as curtain in the windows and it should be wetted time to time.

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

- **Realised Rainfall:** Rain occurred in Baramula, Kupwara, Ramban, Reasi and Udhampur districts of Jammu & Kashmir, Amritsar, Faridkot, Muktesar in Punjab, Baran, Bhilwara, Chittorgarh, Kota, Rajasmand in East Rajasthan, Hanumangarh and Sriganganagar in West Rajasthan. Weather remained mainly dry/dry over rest of the region.

Advisories:

Jammu & Kashmir:

- In Intermediate Zone, continue sowing of okra and French bean. Apply need based irrigation in solanaceous vegetables (tomato, brinjal and chilli). Apply irrigation to wheat crop in grain filling stage. Monitor gram for attack of pod borer. Install helileur pheromone traps @ 7 traps per hectare for early detection of pod borer in gram. If attack of the insect observed, install 20 helileur pheromone traps per hectare. Spray neem oil (bio pesticide) @ 2 ml per litre of water as a precautionary measure. Further, if pod borer is not controlled, spray Cypermethrin @ 1.5 ml/1 litre of water or Chloropyriphos 20 EC @ 2.0 ml /litre of water. Application of insecticide should be done on clear sunny day.
- In Valley Temperate Zone, provide proper drainage facilities and follow field sanitation in saffron fields. In apple, ensure orchard sanitation through destruction of pruned or diseased/infected twigs by burning. Adopt proper central drainage system. Maintain a gap of 3-4 days between insecticide and fungicide spray. Avoid mixing of fungicides, insecticide and spray suspensions. Adjuvants/Stickers may be added for better efficacy of fungicides especially during rainy days. Stickers should not be used with Dodine. Do not spray pesticides during bloom. Same systemic fungicides should not be repeated continuously in two sprays. Carry out weeding and hoeing operations in agro forestry systems.
- In Sub Tropical Zone, undertake harvesting of early sown wheat and late sown pea. Continue sowing of summer pulses. Maintain optimum soil moisture condition in okra to prevent root rot. Monitor the gram crop at regular intervals for attack of pod borer. Spray Cypermethrin @ 1.5 ml/ litre of water or Chlorpyriphos 20 EC @ 2.0 ml /litre of water if pod borer is observed or install pheromone trap @ 2/kanal to control pod borer.

Himachal Pradesh:

- In High Hill Temperate Zone, carry out pruning of unwanted branches in apple trees. Undertake grafting work in apple nursery.
- In Mid-Hills Sub-Humid Zone, apply light irrigation to vegetables, nurseries and fruit crops. Undertake grass mulching of 6 inches thickness in the basins of temperate fruit trees. Continue harvesting of gerbera at fully flower open stage and that of alstroemeria at coloured bud stage. Continue planting of marigold seedlings in the fields.

Punjab, Haryana:

- In Punjab, undertake sowing of summer moong, summer mash, bhindi, cowpea and cucurbits. Undertake transplanting of vegetables (tomato, chilli, brinjal). In Western Plain Zone of Punjab, apply paddy straw or rice husk or sugarcane trash @ 20-25 q/acre between the rows of sugarcane to reduce soil temperature and moisture loss.
- In Haryana, prepare the field and undertake sowing of cotton, continue transplanting of matured seedlings of tomato, cauliflower, cabbage in prepared field and undertake sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish. Complete the sowing operation of green gram and black gram. Due to possibilities of moderate winds, make bundle of harvested mustard crop to avoid the spreading in the field. Undertake threshing of the harvested mustard & barley crop.
- In Delhi, continue sowing of spinach, coriander, fenugreek. Continue preparation of seedling of early cucurbitaceous crops in small polythene bags and nursery preparation of chilli, tomato and brinjal crops in poly house. Continue sowing of lady finger. Undertake sowing of green gram. Incidences of powdery mildew disease in cucurbitaceous crops and late pea may be occurring at present temperature. If symptoms found, spray Carbendazim @ 1.0 gram per litre is advised under clear sky.

Uttar Pradesh:

- In East Uttar Pradesh, continue harvesting and threshing of wheat and barley. Undertake weeding and irrigation to onion, bitter gourd, gourd, cucumber, watermelon. Undertake sowing of ladies finger and planting of sugarcane. Undertake cultivation of ladies finger, moong and lobia as intercrop in sugarcane.
- In West Uttar Pradesh, continue harvesting and threshing of gram, wheat and barley. Undertake sowing of Sorghum (Jowar) and Bajra. For Jowar use seeds like MP chery, PC-23, JC-69, SSG-59-3 @ 35-40 Kg per ha and for Bajra use variety of seed like Raj-171, L-72,L-74 @ 8-10 Kg per hectare.

Uttarakhand:

- As thunder storm accompanied with gusty winds (**wind speed reaching 40-50 kmph**) & lightning over Uttarakhand on 18th April, provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds.
- In Bhabar and Tarai Zone, undertake harvesting of wheat and barley when their spikes turn golden and grain becomes hard. Carry out plucking of green pea pod. Undertake transplanting of brinjal, tomato and capsicum in high hills, apply saving irrigation and make necessary arrangement for moisture conservation. Undertake sowing of French beans.
- In Hill Zone, carry out weeding in onion and garlic. Continue transplanting in tomato, brinjal, chilli and capsicum.
- In Sub-Humid Sub-Tropic Zone, complete sowing of autumn sugarcane crop. Complete sowing of summer maize.

Rajasthan:

- As heat wave conditions likely over some parts Rajasthan on 21st & 22nd April, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Do soil mulching or mulching with straw/polythene to conserve soil moisture.
- In Flood Prone Eastern Plain Zone, harvest the wheat crop in clear days. Dry the grains properly. Use fully dry and disinfected gunny bags for storage. The seed moisture content should not be more than 10-12% for seed storage. Store quality wheat grains for seed purpose after treating each quintal seed with 8 ml Decamethrin 2.8 EC dissolve in one litre water.
- In Sub Humid Southern Plain and Aravali Hill Zone, complete harvesting of wheat and barley. Due to rise in temperature, evapotranspiration rate will be increased, hence, irrigation should be applied in standing crops at 5 to 6 days intervals to maintain proper soil moisture.
- In Semi Arid Eastern Plain Zone, attack of mango hopper may there, spray Malathion 50 EC @ 1.0 ml per litre water.

Animal Husbandary

- In Rajasthan, as heat wave condition likely at some parts on 21 & 22nd April, grazing /feeding of cattle/goats may be done during morning/ evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Also provide balanced feed & adopt vaccination schedule. Provide curtains and proper ventilation in poultry house.
- In Uttar Pradesh, arrange nutritious and digestive fodders for cattle. Keep them under shed/shade to protect from heat. Undertake deworming in poultry. Maintain cleanliness in the poultry shed, keep checking their health, and consult the veterinarian if necessary.

The Agromet Products in this Bulletin are generated by Agrimet Division, weather forecast issued by NWFC, New Delhi and AgrometAdvisories are prepared based on the DAAS Bulletins issued by different Agrometeorological Field Units.