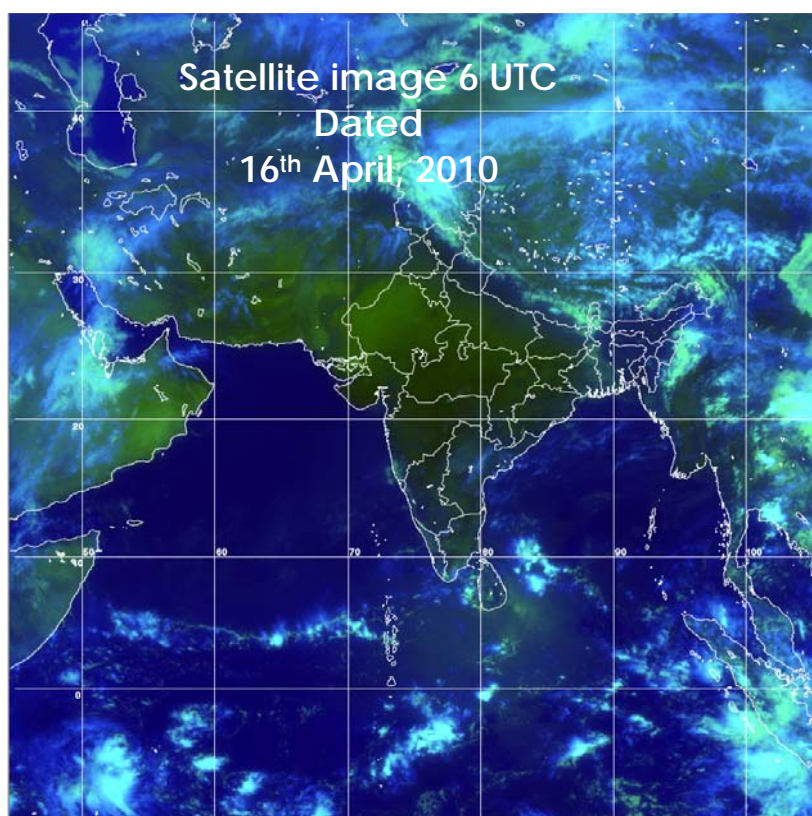




National Agromet Advisory Bulletin

Thursday, 15th April, 2010
(For the period 15th to 19th April, 2010)

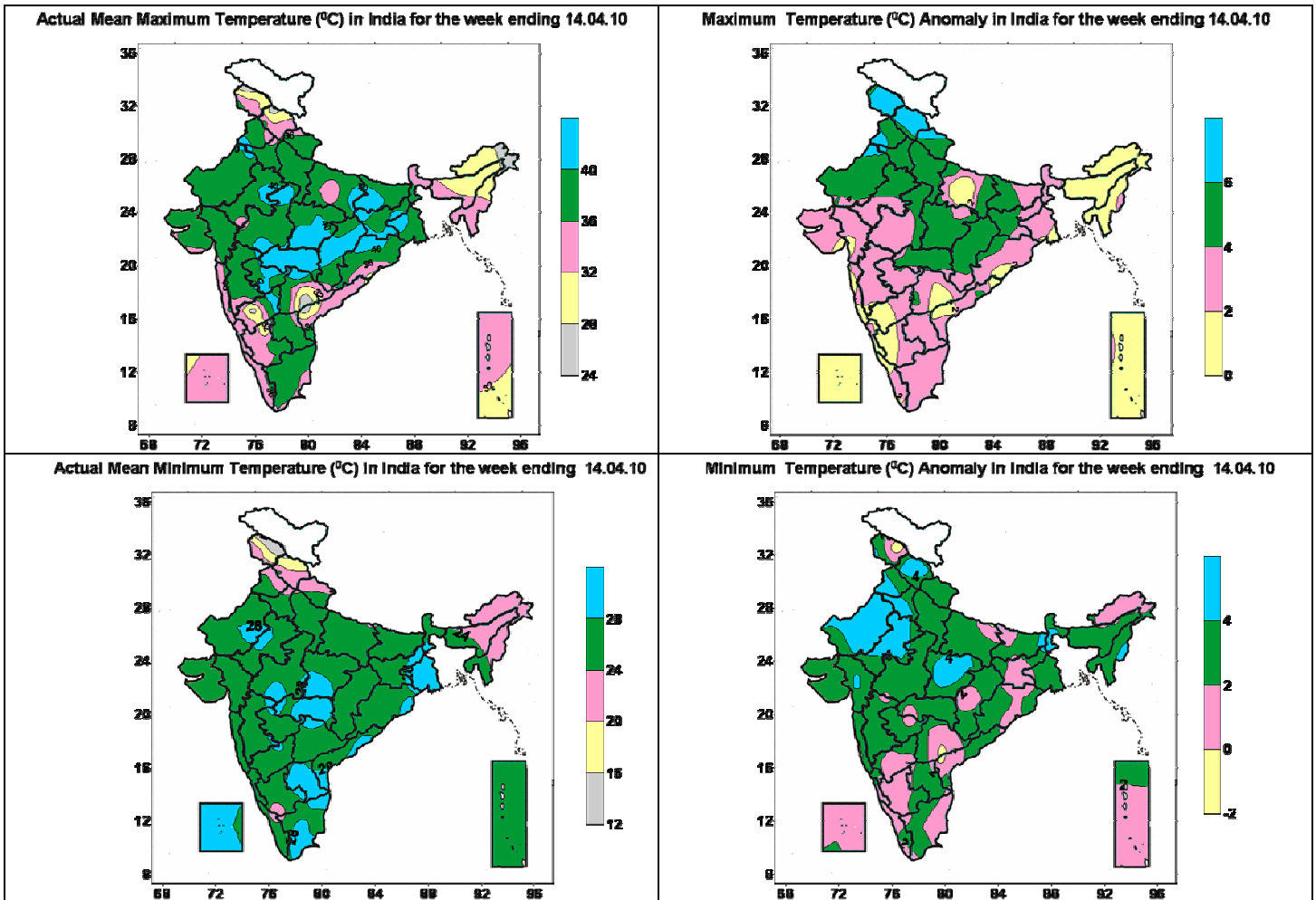


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Agricultural Meteorology Division
India Meteorological Department
Shivajinagar
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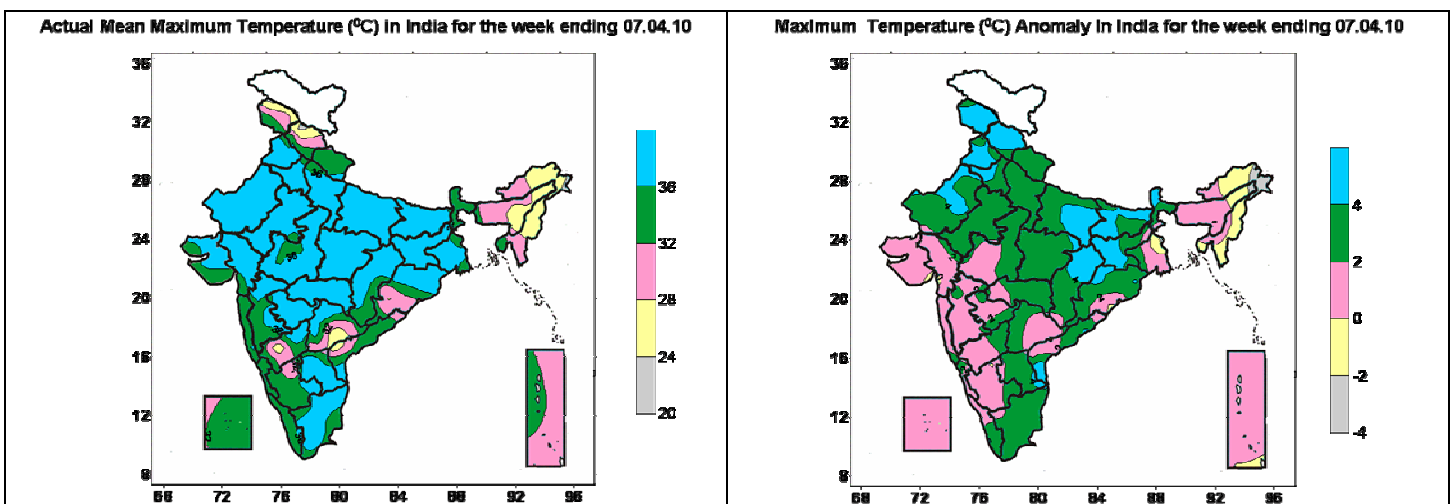
Executive Summary

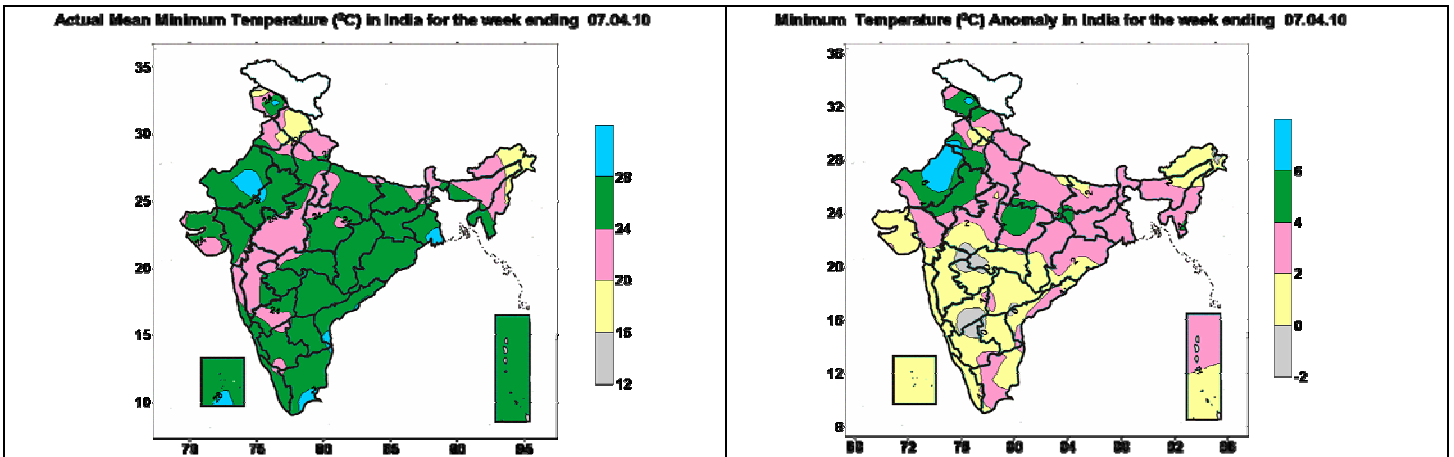
Significant Past Weather

Contour maps of Maximum and minimum temperatures for the week ending 14.4.10



Contour maps of Maximum and Minimum temperatures for the week ending 7.4.10





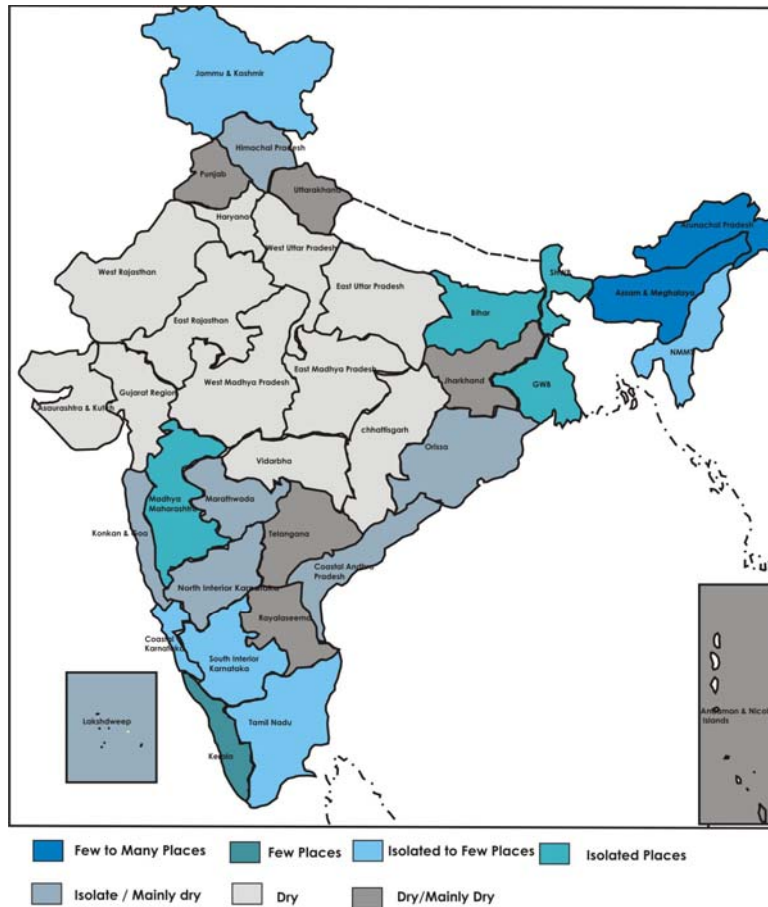
- Maximum temperature anomaly was 6⁰C and above over most parts of Jammu & Kashmir, Himachal Pradesh, 4 to 6⁰C over most parts of Uttarakhand, Punjab, Haryana, Delhi, Rajasthan, West Uttar Pradesh, Bihar, Jharkhand, East Madhya Pradesh, Chhattisgarh, Vidarbha.
- Maximum temperature anomaly has increased in parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Delhi, Rajasthan, West Uttar Pradesh, Madhya Pradesh, Vidarbha and Chhattisgarh as compared to last week and remains unchanged in most parts of Punjab, East Uttar Pradesh, Bihar, Jharkhand, Orissa, Andhra Pradesh, Tamil Nadu and Kerala.
- Rainfall occurred in most of the districts of Assam, Arunachal Pradesh, South Interior Karnataka, Kerala, Sikkim, Purnea district of Bihar, Coochbehar, West Dinajpur, Jalpaiguri districts of West Bengal. Rainfall occurred at some places in Jammu & Kashmir, Coastal Karnataka, Rayalaseema and Tamil Nadu. Either no significant rainfall occurred or dry or mainly dry weather prevailed in remaining parts of the country.

Rainfall situation in some of the States in the country for the week ending 14.4.2010

Districts	Actual (mm)	% Departure
Arunachal Pradesh		
Lohit	139.8	40
Lower Subansiri	61.0	77
Papumpara	70.6	105
Assam		
Barpeta	31.9	2
Dhubri	95.8	263
Dibrugarh	132.2	231
East Khasi Hills	114.7	41
Goalpara	40.3	6
Jorhat	99.0	66
Kokrajhar	50.2	-16
Lakhimpur	56.4	34
Sibsagar	76.2	45
Sonitpur	37.4	4
Tinsukia	88.3	205

Districts	Actual (mm)	% Departure
West Bengal		
SHWB		
Coochbehar	49.9	237
Jalpaiguri	30.3	71
Sikkim	76.6	75
Karnataka		
South Interior Karnataka		
Bangalore Rural	36.4	385
Bangalore Urban	26.0	294
Chamarajnar	36.4	191
Chickmagalur	20.4	113
Chitradurga	21.2	429
Hassan	20.6	104
Mysore	24.7	87
Kerala		
Ernakulam	41.7	11
Kozhikode	38.2	35

Weather Forecast (Valid upto 1430 hours of 18th April, 2010)



Rainfall is likely to occur at isolated places in Jammu and Kashmir for the next two days and at a few places thereafter. Rainfall is likely to occur at a few places during next 48 hours in Arunachal Pradesh, during 24 hours in Assam & Meghalaya and at many places thereafter. Rain is likely to occur at a few places or isolated places in Nagaland, Manipur, Mizoram and Tripura during the period. Rainfall is likely to occur at a few places over Kerala, at a few places/ isolated places will occur over Tamil Nadu, Coastal & South Interior Karnataka during the period. Isolated rain will occur over West Bengal, Sikkim, Orissa and Bihar. Either isolated rain will occur or dry or mainly dry weather will prevail in remaining days over remaining States of the country during the period.

Warning

- Heat wave conditions will continue over parts of Punjab, Haryana, Delhi, Rajasthan, Gujarat, Madhya Pradesh, Uttar Pradesh, Chhattisgarh and interior Orissa during next 48 hours.
- Isolated heavy rainfall with thunder squall may occur over Arunachal Pradesh, Assam and Meghalaya during next 48 hours.
- Isolated thundersquall may occur over Orissa & Gangetic west Bengal during next 48 hours.

Major crops in different States

- Wheat is at grain development / early maturity / maturity stage in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Jharkhand, Bihar, Jharkhand, Orissa and South Madhya Pradesh and at maturity / harvesting stage in Delhi, Gujarat, Chhattisgarh, Assam and West Bengal.
- Summer / *boro* rice is at tillering/ panicle initiation / flowering/ grain formation stage in Orissa, Chhattisgarh, West Bengal, Sikkim and Assam.
- Mustard is at pod development / early maturity stage in Himachal Pradesh, Punjab, Haryana, and Jharkhand, at early maturity / maturity stage in Rajasthan, maturity / harvesting stage in Delhi, Uttarakhand, Rajasthan, Bihar, Jharkhand, Orissa, West Bengal and Assam.
- Potato is at tuber formation/ maturity stage in Punjab, West Bengal.
- Sowing of summer green gram and black gram in Delhi, jute in West Bengal and Orissa, planting of ginger and turmeric in Assam and rice (third season) and vegetables in Kerala is in progress.

Salient advisories

- Heat wave to severe heat wave conditions prevails over Rajasthan. Heat wave conditions are also prevailing over parts of Himachal Pradesh, Punjab, Haryana and isolated pockets of Uttar Pradesh. In view of these conditions, farmers in the above States are advised to apply light and frequent irrigation to wheat wherever the crops are at grain formation/development stage to meet the excess evaporative demands. In view of above weather condition farmers are also advised to apply light and frequent irrigation in other standing crops in above mentioned States and also in Rajasthan.
- Due to increase in the maximum temperature white washing of lower portion of trunk of mango, litchi, citrus with thick solution of lime and small quantity of Copper Sulphate in order to protect the crop from heat in Jammu and Kashmir.
- Harvesting of the already matured mustard is advised in Haryana, Punjab, Uttar Pradesh, Uttarakhand, Rajasthan and Delhi as clear sky is forecasted for the next five days. Immediate threshing after drying is advised. Attack of painted bug will be more if crop is kept in the field for long time after harvest. Farmers are advised to plough the field deep in hot summer to destroy the various stages of pest under heat.
- There is possibility of infestation of powdery mildew disease in mango in Rajasthan, due to rise in temperature, which leads to flower and fruit drop in mango. Spray Karathane @ 1 ml / litre of water to manage the disease.
- As there was sufficient rainfall during last week and rainfall is likely during next few days, postpone irrigation to the standing crops in Assam and Arunachal Pradesh.
- Due to increase in RH and probable increase in temperature in the coming days in Assam, the condition has been suitable for the attack by 'blast' disease in Ahu rice. Spray Bavistin @ 1 gm per litre of water when the symptoms appear when the weather is dry. Weeding may be done in case of direct seeded Ahu rice.
- As there was no rainfall during last week and dry weather/ no significant rainfall is likely for the next five days, farmers in Andhra Pradesh, Karnataka (except in most of districts of South Interior Karnataka), Tamil Nadu and Kerala (except in Kottayam and Kozhikode districts) are advised to apply irrigation to standing *rabi* crops and horticultural / plantation crops. As there was sufficient rainfall during last week in the districts mentioned in Karnataka and Kerala, postpone irrigation to the standing crops.
- As maximum temperature is decreasing, farmers in Pilicode region in Kerala are advised to raise rice nursery for third season crop. Also undertake planting of ginger, turmeric and vegetable crops as intercrops in coconut gardens
- Under high temperature conditions spodoptera incidence is predominant pest in groundnut. Spraying of quinalpos @ 2 ml/l or monocrotopos @ 1.6ml/l is recommended to control the pest.

- Due to increase in day temperature from 34⁰ to 35⁰C in poultry farm, there is a probability of drop in feed intake, drops in egg weight and deterioration in shell quality. So farmers are advised to maintain optimum temperature between 18⁰ and 29⁰ C in poultry sheds for better production.
- In Kerala milch cows should be given proper protection against high temperature. Give more water to drink. Keep the body of the cattle cool by frequent watering. Tie the animals under shade. Farmers are advised to get their cattle vaccinated against the Foot and Mouth Disease. This should be done essentially before the rainy season starts.
- Due to increase in temperature premature fruit dropping may occur in mango at Akola, Dapoli, Mulde in Maharashtra. To reduce the same, provide irrigation to mango @ 150 to 200 litres / plant at fortnightly interval and spray 2% Urea (20 g / litre water).
- Due to cloudy weather, crops like cucumber, ridge gourd, bottle gourd, water melon etc. in Ahmednagar, Dhule, Nandurbar in Maharashtra are likely to be infested by downey mildew. Farmers are advised to spray Chlorothalonil or Mancozeb or Copper oxychloride @ 25 g in 10 litres water at 8-10 days interval.
- Rain/thunder shower due to local disturbances in weather is common during this time in Chhattisgarh Plains region. Hence, looking to the expected light rain/thundershowers, farmers are advised to keep the harvested product of rabi crops in safe places. If possible complete the threshing and keep the produced in stores before evening hours. Also at present Groundnut and Sunflower are in pod/grain filling stage. This stage is crucial for moisture hence it is advised to irrigate the crops frequently so that there will be no shortage of moisture.
- In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature, farmers are advised to apply light and frequent irrigation to the standing rabi crops in Bihar and Jharkhand. As there was no significant rain during last week in West Bengal except in Coochbehar, West Dinajpur and Jalpaiguri districts and no significant rain is likely to occur over the State, apply irrigation to sugarcane, vegetables and other standing crops. Postpone irrigation to the crops in above mentioned districts of West Bengal.
- In Kakahandi region of Orissa, temperature is exceeding 40 deg C and summer green gram and black gram are at flowering stage and summer maize is at grain filling stage. Hence farmers are advised to provide irrigation to safeguard the crops.
- Wheat crop is at grain development stage at some places of Jharkhand. Farmers are advised to apply light and frequent irrigation to wheat crop at grain filling stage to maintain moisture level in the soil to meet excess evaporative demand.
- As there is less possibility of rain during the period, harvest already matured crops of wheat, mustard and pulses in West Bengal, wheat, mustard, linseed, lentil, gram, peas and lathyrus in Bihar, wheat and mustard in Jharkhand and mustard in Orissa at the earliest taking the advantage of dry condition.
- Due to variation of temperature between day and night, *boro* rice may be infested with brown spot disease in South 24 Parganas and Purba Medinipore districts in West Bengal. Spray the crop with Ediphenphos 50 EC @ 1 ml / litre or Carbendazim 50 WP @ 1 g / litre or Tricyclozole 75 WP @ 0.6 g / litre of water when the above disease symptoms occur. Attack of stem borer may be also found in *boro* rice in these districts due to increase of temperature. Spraying alternatively with Triozophos 40 EC @ 1.2 ml / litre or Cartap WP @ 1 g / litre or Endosulfan @ 1.5 ml / litre is advised when 5% dead heart or white ear head or one egg mass per hill will be found.

Zonewise Agromet Advisories

NORTH WEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, UP, RAJASTHAN]

- **Realised Rainfall:** Rainfall occurred at some places in Jammu & Kashmir during last week. No significant rainfall occurred in Himachal Pradesh. Dry weather prevailed over Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh and Rajasthan.
- **Rainfall Forecast:** Either dry or mainly dry condition will prevail or isolated rain will occur in all other days in all the States of the region except in Jammu and Kashmir where rainfall is likely to occur at a few places after two days.
- **Major Rabi Crops:**
 - Wheat (grain development / early maturity / maturity), mustard, gram and lentil (pod formation / early maturity / maturity) and vegetables (sowing / nursery sowing) in Himachal Pradesh.
 - Wheat, barley (grain development / early maturity), brown sarson (seed development / early maturity), vegetable crops (sowing / vegetative / flowering / fruiting / harvesting) in Jammu & Kashmir
 - Wheat (grain development /early maturity), mustard, lentil, gram (seed development /maturity), pea, rajmah (pod development) in Uttarakhand.
 - Wheat (grain development /early maturity), raya, rapeseed and mustard (pod development / maturity), potato (tuber development) in Punjab.
 - Wheat (grain development / early maturity), raya and mustard (pod development /maturity), summer sunflower, maize(early vegetative / vegetative) in Haryana
 - Wheat (grain development / maturity / harvesting); pea and gram (maturity / harvesting); mustard (maturity / harvesting) and vegetable crops (vegetative / flowering / fruiting / harvesting) in Delhi.
 - Wheat (grain formation/early maturity), gram, pea, and lentil (seed maturity/harvesting) in Uttar Pradesh.
 - Wheat (grain development / early maturity), gram and mustard (early maturity / maturity), vegetable crops (flowering / fruiting / harvesting) in Rajasthan.
- **Advisory:**
 - Heat wave to severe heat wave conditions prevails over Rajasthan. Heat wave conditions are also prevailing over parts of Himachal Pradesh, Punjab, Haryana and isolated pockets of Uttar Pradesh. In view of these conditions, farmers in the above States are advised to apply light and frequent irrigation to wheat wherever the crops are at grain formation/development stage to meet the excess evaporative demands. In view of above weather condition farmers are also advised to apply light and frequent irrigation in other standing crops in above mentioned States and also in Rajasthan.
 - Due to chances of rainfall/thundershowers farmers are advised to delay sowing of bhindi and Radish and also application of urea in tomato, chilli, brinjal, bhindi, cucumber, sponge gourd and ridge gourd crop for 3 to 4 days in Jammu and Kashmir.
 - Due to increase in the maximum temperature white washing of lower portion of trunk of mango, litchi, citrus with thick solution of lime and small quantity of Copper Sulphate in order to protect the crop from heat in Jammu and Kashmir.As temperature is suitable, it is the optimum time for the sowing of okra, cucumber, beans, muskmelon, water melon, round gourd, bottle gourd, sponge gourd and bitter gourd in Jammu and Kashmir.
 - Isolated rain received during last week and expected rain at a few places help growth of wheat at grain formation stage and farmers are advised not to apply irrigation to the crop in Jammu and Kashmir.
 - In Himachal Pradesh, it is right time to start sowing of pea in Miyad, Chandra, Tod valley of Lahaul and also in areas of Spiti valley where snow has melted. Use pea varieties like Azad P1 and P 89.
 - It is the right time for sowing of ageti bhindi in Himachal Pradesh (var. P-8, Prabhini kranti, Arka anamika) and frenchbean (var. Contender), Khira , summer squash , bitter gourd ,tori, in polyhouses

and also for transplanting and nursery sowing of brinjal(Arka Nidhi, PPC), Shimla mirch (California wonder), pepper (Surjmukhi) and tomato in polyhouses.

- In areas of Himachal Pradesh where the snow cover has melted, especially in Spiti and Tod valley, go for immediate application of 220 g SSP and 115 g MOP for 1st year old plant and increase the dose with age as it's multiple.
- Use nets to protect stone fruits from hailstorm in mid hills of Himachal Pradesh.
- In Rajasthan, it is right time for sowing cucurbitaceae vegetables like melon, bottlegourd, ridgegourd, bittergourd, pumpkin and smoothgourd etc. and for raising nursery for summer marigold.
- Heat wave conditionss may cause damage to horticultural crop in Rajasthan. Give light and frequent irrigations. Also looking for the increase in temperature in Rajasthan, water requirement is higher in vegetables so irrigation in vegetable crops should be done.
- Under prevailing weather light irrigation is also advised in onion crop in Delhi.
- Weather conditions are favourable for sowing of summer green gram and black gram in Delhi, select varieties for - Green gram – Pusa Ratna, Pant mung 1, Samrat, SML-668, Pusa Vaisakhi, Pusa Vishal, Pusa 105, PDM-11, SML-32; for Black gram – Pusa 1, Ajad Urd 2, Narender Urd-1, T-9, P.D.U.-1. Seeds should be treated with crop specific *Rhizobium* culture as well as phosphorus solubilising bacteria. Seed rate – 15-20 kilogram per hectare. Depth of sowing should be 4-5 centimeter and row to row spacing should be 25-30 centimeter.
- Harvesting of the already matured mustard is advised in Haryana, Punjab, Uttar Pradesh, Uttarakhand, Rajasthan and Delhi as clear sky is forecasted for the next five days. Immediate threshing after drying is advised. Attack of painted bug will be more if crop is kept in the field for long time after harvest. Farmers are advised to plough the field deep in hot summer to destroy the various stages of pest under heat.
- In Rajasthan, deep summer ploughing is recommended just after harvesting of *rabi* crops to control soil borne insects, diseases and nematode attack. This will also help in conserving rainfall in situ.
- There is possibility of infestation of powdery mildew disease in mango in Rajasthan, due to rise in temperature, which leads to flower and fruit drop in mango. Spray Karathane @ 1 ml / litre of water to manage the disease.
- collar rot, wilt and root rot in gram in Jammu & Kashmir, rogue out the severely infested plants and drench the affected areas with thiram or carbendazim and for leaf blight, spray mancozeb @ 0.25 % or carbendazim @0.1 % at disease appearance and repeat the spray after 10-15 days.
- Prevailing weather conditions may favour for the infestation of jassids in bhindi crop and fruit borer & pod borer in tomato crop under such situation farmers are advised to spray the crop with endosulphan 35EC @ 0.07% during clear weather.
- Weather conditions are favourable for late blight in appeain potato growing areas like Palam and Nagrota in Himachal Pradesh. To control spray Dithane M-45 ,25 gram in 10litres of water and repeat the spray at 10-15 days interval.
- Due to dry weather there are chances of occurrence of Powdery mildew in Himachal Pradesh, to control spray Hexacoazole @ 100ml per 200 liters of water after petal fall
- Summer is approaching. So take adequate steps to protect the animals from summer heat and stress in Punjab and Haryana. Keep the animal and poultry sheds clean and dry. Regularly deworm the calves with piperazine liquid (4ml kg body weight) first at 10 days of age, then 15 days of and then monthly upto 3 months of age and then 4 monthly upto 1 year of age. Make sure that all the animals are vaccinated against FMD. Increase protein level in the concentrate by increasing oilseed cakes by 5-7 per cent. Do not feed excess wheat/cereal to dairy animals. This can be fatal. It is best time to replace the stock. Reduce the thickness of litter and change the wet litter. Provide the cool and fresh water to birds. Provide sufficient water to avoid excess movement of birds. Proper vaccination schedule must be followed. White wash the poultry shed from outside especially roof. This will help to reflect the sun rays.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]

- **Realised Rainfall:** Purnea district of Bihar, Coochbehar and Jalpaiguri of West Bengal, Sikkim received rainfall and rest of the districts received no significant rainfall during last week. Dry weather prevailed over Jharkhand and Orissa.
- **Rainfall Forecast:** Isolated rain will occur over West Bengal, Sikkim, Orissa and Bihar. Mainly dry weather will prevail over Jharkhand.
- **Major Rabi Crops:**
 - Wheat (grain development/early maturity), maize (cob formation), potato (maturity/harvesting), gram, pea, and lentil (pod development/maturity), mustard (pod maturity/harvesting), summer maize, moong and sunflower(early vegetative) in Bihar
 - Wheat (grain development), rai, *toria*, gram, mustard (pod development/maturity), peas (pod development), arhar (pod formation/maturity) in Jharkhand
 - Wheat (grain development), pulses (pod development /maturity), sunflower, groundnut (vegetative), mustard (maturity/harvesting), summer rice (active tillering/panicle initiation) in Orissa
 - Wheat (early maturity / maturity), Sugarcane (vegetative), vegetable crops (vegetative / flowering / fruiting / harvesting), mustard (maturity / harvesting), *boro* rice (tillering / panicle initiation / flowering), potato (maturity / harvesting) in West Bengal
 - High hills (1500- 2000 m) in Sikkim: Large Cardamom (vegetative), Wheat (maturity / harvesting), Seed Potato (vegetative, *Kharif* Vegetable (sowing / nursery sowing). Medium hills (1000 - 1500 m): Large Cardamom (vegetative), Orange (early flowering), *Rabi* Potatoes (tuberization), Mustard (harvesting), Wheat (harvesting), Maize(early vegetative / vegetative), *Kharif* Vegetable(sowing / nursery sowing), Ginger(land preparation). (c) Low Hills (Below 1000 m): Large Cardamom(vegetative / germination), *Rabi* Potatoes(tuberization), Mustard(harvesting),Wheat(grain formation / maturity), Maize (early vegetative / vegetative), *Kharif* Vegetables(sowing / nursery sowing), Ginger(land preparation).
- **Advisories:**
 - In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature, farmers are advised to apply light and frequent irrigation to the standing rabi crops in Bihar and Jharkhand. As there was no significant rain during last week in West Bengal except in Coochbehar, West Dinajpur and Jalpaiguri districts and no significant rain is likely to occur over the State, apply irrigation to sugarcane, vegetables and other standing crops. Postpone irrigation to the crops in above mentioned districts of West Bengal.
 - In Kakahandi region of Orissa, temperature is exceeding 40 deg C and summer green gram and black gram are at flowering stage and summer maize is at grain filling stage. Hence farmers are advised to provide irrigation to safeguard the crops.
 - As there was excess rainfall during last two weeks in Sikkim, farmers are advised to postpone irrigation to large cardamom, potato and maize. Undertake land preparation and sowing of maize.
 - Wheat crop is at grain development stage at some places of Jharkhand. Farmers are advised to apply light and frequent irrigation to wheat crop at grain filling stage to maintain moisture level in the soil to meet excess evaporative demand.
 - As there is less possibility of rain during the period, harvest already matured crops of wheat, mustard and pulses in West Bengal, wheat, mustard, linseed, lentil, gram, peas and lathyrus in Bihar, wheat and mustard in Jharkhand and mustard in Orissa at the earliest taking the advantage of dry condition.
 - Under irrigated conditions, continue sowing operation of jute in West Bengal and Orissa. If there is no irrigation facility, postpone the sowing till rainfall occurs. The recommended varieties are Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali etc. in West Bengal and JRO-524 (Naveen) in Orissa.
 - Due to variation of temperature between day and night, *boro* rice may be infested with brown spot disease in South 24 Parganas and Purba Medinipore districts in West Bengal. Spray the crop with Ediphenphos 50 EC @ 1 ml / litre or Carbendazim 50 WP @ 1 g / litre or Tricyclozole75 WP @ 0.6 g / litre of water when the above disease symptoms occur. Attack of stem borer may be also found in

boro rice in these districts due to increase of temperature. Spraying alternatively with Triozophos 40 EC @ 1.2 ml / litre or Cartap WP @ 1 g / litre or Endosulfan @ 1.5 ml / litre is advised when 5% dead heart or white ear head or one egg mass per hill will be found.

- Due to high humidity and increased temperature in the flowering and fruiting stages, chilli may be infested with blight and die. Black depressed small black, circular spots are appeared on the skin of fruits. Two spraying any one of the fungicides like Carbendazim 50WP @ 1g or Saaf @ 2g / litre of water at 10 days intervals, when the disease symptoms are appeared.
- In the prevailing weather condition, there is a possibility of the increased attack of Anthracnose leading to black spot in mango in New Alluvial zone in West Bengal. To control it, spray 1 ml Carbendazim per lt. of water.

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

- **Realised Rainfall:** Rainfall occurred in most of the districts of Assam and Arunachal Pradesh during last week.
- **Rainfall Forecast:** Rainfall is likely to occur at a few places during next 48 hours in Arunachal Pradesh, during 24 hours in Assam & Meghalaya and at many places thereafter. Rain is likely to occur at a few places or isolated places in Nagaland, Manipur, Mizoram and Tripura during the period.
- **Major Rabi Crops:**
 - Wheat (maturity / harvesting), pea, arhar (maturity / harvesting), vegetables (vegetative / flowering / fruiting / harvesting), *boro* rice (flowering / grain formation), *ahu* rice (sowing / seedling / transplanting), sugarcane (planting), maize, jute, mesta (sowing) in Assam.
 - Pea, potato (harvesting), maize (grain formation) in Arunachal Pradesh.
- **Advisory:**
 - Considering rainfall during last week and expected rainfall during next few days, postpone irrigation to the standing crops in Assam and Arunachal Pradesh.
 - As there is possibility of rain, undertake harvesting of already matured crops of wheat, rajmah, pea, potato and arhar in Assam and Arunachal Pradesh immediately before onset of rain.
 - Utilizing the recent pre-monsoon showers and expected rain, undertake sowing of the crops like maize, jute, mesta and summer vegetables like Ladies finger, ridge gourd etc. and also planting of sugarcane setts. High yielding varieties of maize are Ganga-5, Highstars, NLD, Dhawal, Navjot, Kissan, Vijay etc. Select varieties from Dhansiri, Kalang, Luhit, CO-Jor- 1, CO-Jor- 2 etc. for planting of sugarcane in Assam.
 - Field must be ploughed and get ready for planting of ginger and turmeric in Assam. Recommended varieties are Nadia, Thingpui, Thinglaedum, Thengria. Turmeric pieces weighing 30-35 g having 1 or 2 buds must be used as seed and sown at 25cm X 40-45cm. Suitable high yield variety is Megha Turmeric. Seed should be treated with Captan 50 WP@ 3gm/kg seed.
 - It is right time for collection of terminal cuttings (pencil thickness) for passion fruit in Assam. Dip the cuttings in 500 ppm IBA (IBA 100mg dissolved in 20 ml of distilled water) for 5 mins and place the cutting in polybags filled with soil, sand & FYM in the ratio 2:1:1 in slanting position.
 - Undertake sowing of Bao rice seeds and normal direct seeded ahu rice seeds within April utilizing recent rainfall. The recommended varieties of Bao rice for Nagaon and Morigaon districts are Maguri, Kekua Bao, Negheri Bao, Tara Bao etc. The recommended varieties of normal ahu rice is Gobind, IR-50, IR-36, Lachit, Chilarai etc. in Assam.
 - As the rainfall during the last week has made the weather favourable in Assam, farmers may go for cultivation of summer vegetables like Lady's finger, ridge gourd, etc. Apply 5% malathion dust to the field @ 3 kg per bigha before sowing of seeds. Apply in fair weather 'Rogor' to early sown bhindi seedlings if they are 25 days or more old. Spray 5% malathion (50 EC) @ 2 teaspoonful to 5 litre of water, if the stems and fruits are attacked by borers.
 - In Assam, Green manuring crops can be grown after the first showers as it improves the low fertility status of soils, acts as cover crops in soil erosion areas. The crops like cow pea, Dhaincha, Sun hemp,

Maize etc can be grown. Also start pit preparation and planting of new orchards for coconut and arecanut in Assam.

- With the onset of pre-monsoon rain in Assam, farmers are advised to prepare land for cultivating fodder crops. The fodders like Napier, Para, Guinea etc can successfully be grown in this time for providing high quality green foods for cattle's. The fodder crops can also be grown as intercrop in coconut and arecanut garden.
- Farmers are advised to provide support to the plants particularly to the tall and semi dwarf varieties to prevent from lodging during squall and rain in Assam.
- Due to increase in RH and probable increase in temperature in the coming days in Assam, the condition has been suitable for the attack by 'blast' disease in Ahu rice. Spray Bavistin @ 1 gm per litre of water when the symptoms appear when the weather is dry. Weeding may be done in case of direct seeded Ahu rice.
- To prevent Black Heart Disease in potatoes in Assam, it should not be stored and transit at high temperature (above 32⁰C). The storage rooms should be well ventilated and bags should not be piled up very high.
- **Animal Husbandry:**
 - Immunizations against FMD, HS and BQ in cattle & buffaloes and swine-fever in pigs may be carried out during pre-monsoon season.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- **Realised Rainfall:** Most of the districts of South Interior Karnataka, Kerala received rainfall. No significant amount of rainfall occurred in Tamil Nadu, Coastal & North Interior Karnataka, Telengana, Rayalaseema during last week. Dry weather prevailed over remaining parts of the region.
- **Rainfall Forecast:** Rainfall is likely to occur at a few places over Kerala, at a few places/ isolated places will occur over Tamil Nadu, Coastal & South Interior Karnataka during the period. Either isolated rain will occur or mainly dry weather will prevail over remaining parts of the region during the period.
- **Major Rabi Crops:**
 - Cotton is at boll maturity/picking and other *rabi* crops are at grain development/ maturity stage in Andhra Pradesh.
 - Pigeon pea and sunflower (maturity / harvesting), Vegetables (Flowering / fruiting / harvesting), *Rabi* Sorghum (grain development / maturity), Bengal gram (maturity / harvesting) in Karnataka.
 - Rice (grain maturity/harvesting), Vegetables (flowering / fruiting / harvesting) and plantation crops (coconut, arecanut, pepper and cashew) in Kerala.
 - Rice (grain development), pulses (pod maturity), cotton (picking) in Tamil Nadu.
- **Advisories:**
 - As there was no rainfall during last week and dry weather/ no significant rainfall is likely for the next five days, farmers in Andhra Pradesh, Karnataka (except in most of districts of South Interior Karnataka), Tamil Nadu and Kerala (except in Kottayam and Kozhikode districts) are advised to apply irrigation to standing *rabi* crops and horticultural / plantation crops. As there was sufficient rainfall during last week in the districts mentioned in Karnataka and Kerala, postpone irrigation to the standing crops.
 - Heat wave conditions prevail over Telangana region in Andhra Pradesh. Farmers are advised to apply light and frequent irrigation to overcome heat injury on standing crops.
 - To mitigate drought situation in Belgaum region, spray sugarcane crop with MOP @ 2.5 grams per litre at 15-20 days interval.
 - Undertake harvesting of summer green gram and black gram in Northeast transition zone of Karnataka. After harvesting, undertake summer ploughing to kill pupae and to destroy soil borne pathogens.
 - Light rainfall is expected in Brahmarvar region; hence farmers are advised to take precautions in drying of pulse crops like green gram, black gram, cow pea and cashewnut etc.

- Farmers in Central Dry zone of Karnataka are advised to apply irrigation to arecanut and coconut and pepper as temperature is increasing and to avoid sun scorching.
- Farmers in Central zone of Kerala are advised to undertake mulching in the coconut basin using husks to reduce evapotranspiration. Coir pith @ 25 kg/palm is an ideal mulching material to preserve moisture. Irrigation can be continued. Protect palms from sun by wrapping stems with areca sheath or whitewash the exposed portion.
- As maximum temperature is decreasing, farmers in Pilicode region are advised to raise rice nursery for third season crop. Also undertake planting of ginger, turmeric and vegetable crops as intercrops in coconut gardens
- Farmers in north eastern zone in Tamil Nadu are advised to spray 0.5% of Potassium Chloride to withstand the moisture scarcity.
- Under high temperature conditions spodoptera incidence is predominant pest in groundnut. Spraying of quinalpos @ 2 ml/l or monocrotopos @ 1.6ml/l is recommended to control the pest.
- Dry conditions in Karnataka favour the incidence of sucking pests in vegetable crops. Spray Dimethoate 2 1.7 ml/litre of water
- Prevailing weather conditions are congenial for the incidence and spread of murda disease, powdery mildew and die back disease in chilli in Belgaum and Haveru regions. Hence to manage the severity of murda disease, spray imidachloprid (17.8 SL) @ 0.30 ml/liter plus fenzaquin (10 EC) @2 ml/L or Dicofal @ 2.5 ml/litre. To control powdery mildew spray carbendizim (80% WS) @ 1 g/litre or hexacenazole 1 ml/litre. Die back disease may be managed by spraying with hexacenazole @ 1 ml/litre.
- Dry conditions in Kerala may favour the multiplication of white flies and jassids which act as vectors for spreading crinkling in cucurbits especially bitter gourd. Spraying of neem oil + castor oil garlic emulsion may be undertaken.
- Due to prevalence of higher relative humidity, arecanut crop may infested with koleroga, hence farmers are advised to go for spraying of 1% Bordeaux mixture to control.
- Dryness can aggravate the incidence of pests like aphids, mites etc. in vegetables in Kerala. Farmers are advised to look out for symptoms like leaf crinkling, brittleness / rough leaves etc. Placing a yellow board smeared with castor oil among the vegetable crops will help to control the pests causing this condition.
- In rice fallow cotton present weather conditions are favourable for occurrence of jassids, thrips, hoppers, and white flies. To check the prevalence of these insects use yellow trap smeared with castor oil or white grease and spray any one of the blue labelled systemic insecticide along with sticking agent at recommended dose.
- **Animal Husbandry**
- **Andhra Pradesh**
 - To minimize the summer effect on poultry birds, the following management practices need to be adopted
 - Arrange fans and foggers in sheds.
 - Cover the sheds with rice straw and arrange sprinklers.
 - Feed poultry birds with wet mash to increase the feed intake.
 - Provide cool water for drinking.
- **Karnataka**
 - Due to increase in day temperature from 34⁰ to 35⁰C in poultry farm, there is a probability of drop in feed intake, drops in egg weight and deterioration in shell quality. So farmers are advised to maintain optimum temperature between 18⁰ and 29⁰ C in poultry sheds for better production.
- **Kerala**
 - Milch cows should be given proper protection against high temperature. Give more water to drink. Keep the body of the cattle cool by frequent watering. Tie the animals under shade. Farmers are advised to get their cattle vaccinated against the Foot and Mouth Disease. This should be done essentially before the rainy season starts.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Either isolated rain will occur or dry/ mainly dry weather will prevail over the region during the period.
- **Major Rabi Crops:**
 - In Maharashtra: Vegetables (vegetative/flowering/fruited /harvesting) and summer rice (grain formation/ grain maturity in South Konkan and flowering/grain formation in East Vidarbha), summer groundnut (pod formation/ pod maturity in South Konkan and flowering / pegging / pod formation in other region), summer sunflower (floral bud initiation/ flowering), summer maize (vegetative / tasseling & silking/ cob initiation), summer *bajra* (flowering/ grain formation).
 - In Gujarat: wheat (maturity / harvesting), green gram (pod formation), summer groundnut (flowering / pegging) and vegetables (vegetative / flowering / fruited / harvesting).
- **Advisory:**
 - Conserve moisture in the crop field of *rabi* crops at maturity stage.
 - As there is increase in evaporation due to high temperature, apply irrigation at groundnut crop at pegging stage and green gram at pod formation stage. Also apply irrigation to other standing crops like *bajra*, vegetables etc.
 - In view of persisting heat wave conditions in Eastern Vidarbha Zone, farmers are advised to apply light & frequent irrigation to standing crops.
 - Due to clear sky forecast during next week, harvest isabgul and castor in Gujarat taking the advantage of dry weather.
 - To reduce the transpiration rate in banana, spray mixture of 800 g Kaolin dissolved in 10 liters of water in Maharashtra.
 - Due to increase in evaporation, farmers are advised to apply irrigation in groundnut at 8-10 days interval in Maharashtra.
 - As dry weather prevailed during last week over the State and dry weather is likely to prevail during next five days, apply protective irrigation to the standing crops of Maharashtra. In view of persisting high temperature in East Vidarbha, farmers are advised to apply light and frequent irrigation to the standing crops.
 - As dry weather is prevailing for last few weeks and also there is possibility of only isolated rain during next five days along with persistent high temperature, apply irrigation to rice, *bajra*, groundnut, greengram etc. in Gujarat.
 - Due to increase in temperature premature fruit dropping may occur in mango in Maharashtra. To reduce the same, provide irrigation to mango @ 150 to 200 litres / plant at fortnightly interval and spray 2% Urea (20 g / litre water).
 - Due to cloudy weather, crops like cucumber, ridge gourd, bottle gourd, water melon etc. in Maharashtra are likely to be infested by downy mildew. Farmers are advised to spray Chlorothalonil or Mancozeb or Copper oxychloride @ 25 g in 10 litres water at 8-10 days interval.
 - Due to increase in temperatures summer chilli is likely to be infested by thrips & mites in Maharashtra, spray Methyl dimeton 25 EC @ 15 ml or Dimethoate 30 EC 2 16 ml + Sulphur 80 % @ 20 g in 10 litres water.
 - Due to dry weather forecast next week harvest isabgul crop in Gujarat during noon time and dry in cemented barnyard. Also harvest castor taking the advantage of dry weather.
 - Due to increase in air temperature, farmers are advised to protect banana bunch with plastic sheet in Gujarat.
 - Due to high temperature forecast, keep animals under shade during noon hours and provide clean drinking water in Gujarat. Put curtains on north-west side of poultry house and sprinkle water on curtains during noon time.

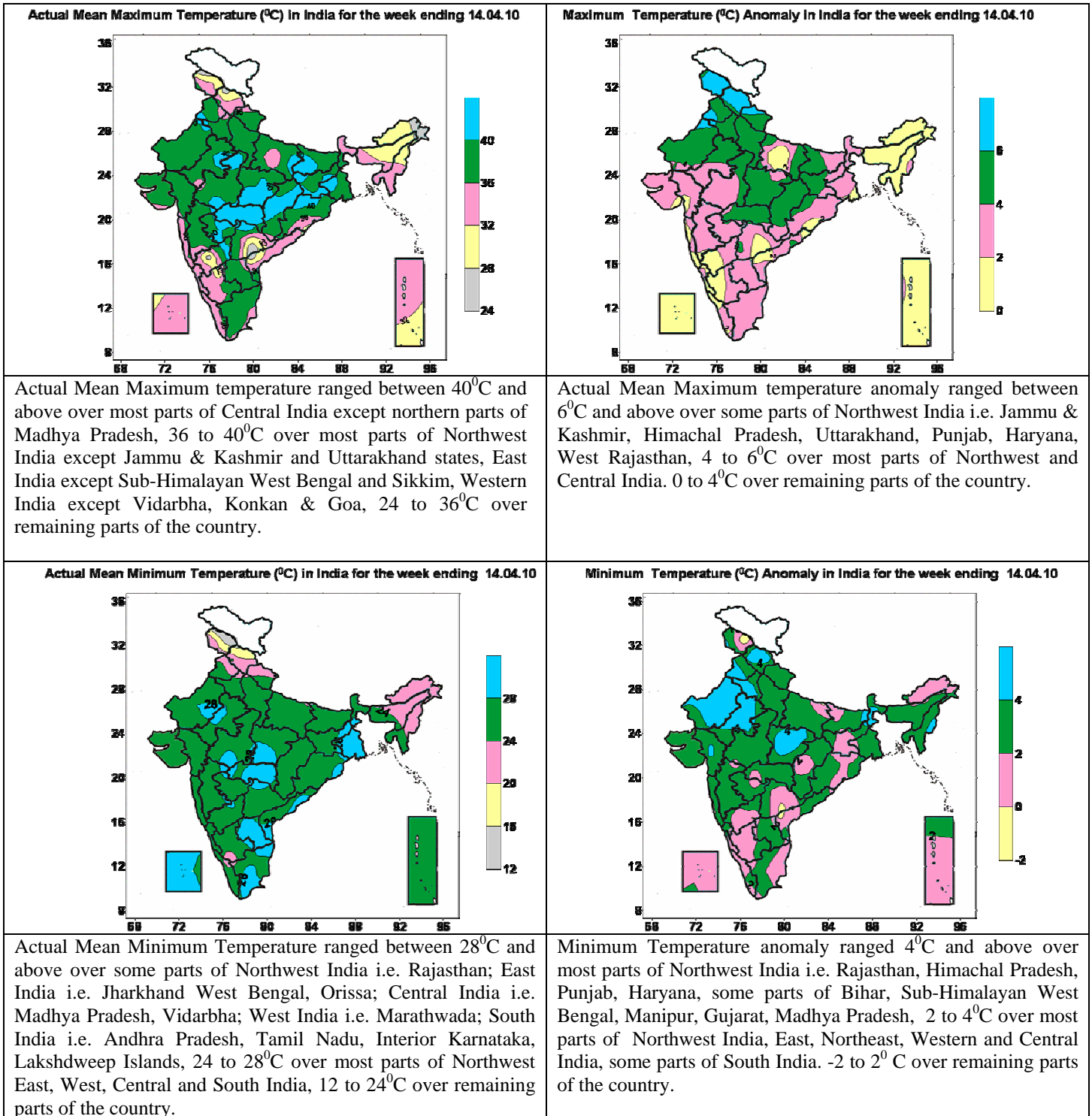
- The growth of fishes and water in the pond may be checked periodically in Maharashtra. Natural feed and supplementary feed like groundnut cake, rice or whet bran be mixed in 1:1 proportion and mixed with water and given twice a day.

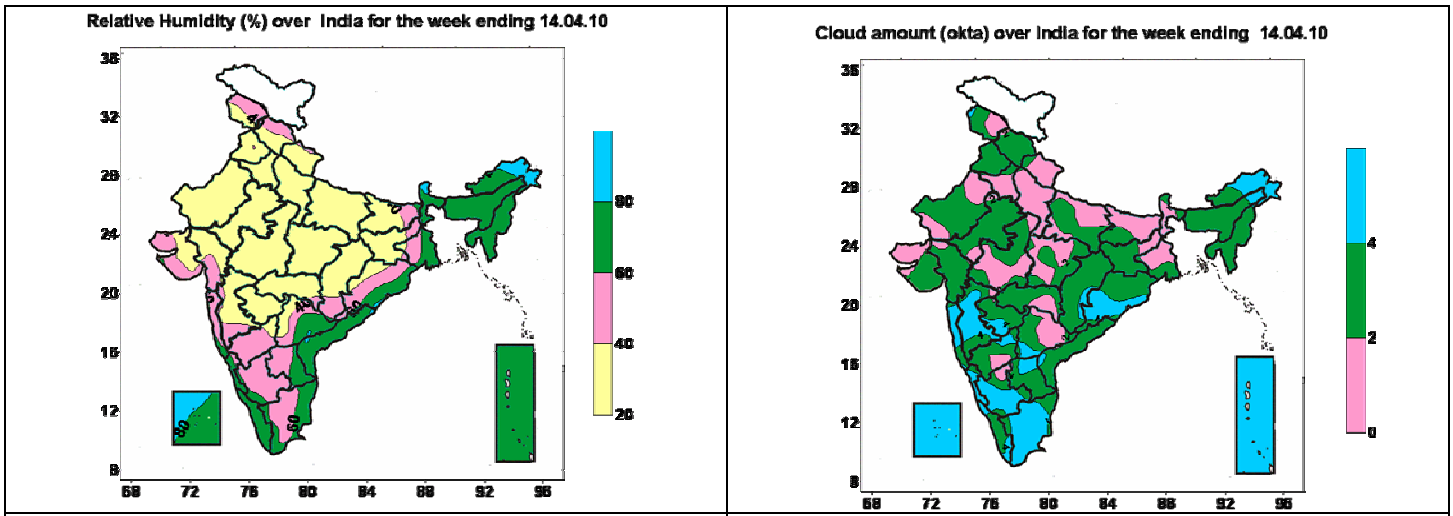
CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Dry weather will prevail over the region during the period.
- **Major Rabi Crops:**
 - Wheat (maturity/harvesting), pulses and gram (grain maturity/ harvesting), sugarcane (cane development), cotton (boll development / maturity/picking) and vegetable crops (flowering/fruited) in Madhya Pradesh.
 - Wheat (maturity / harvesting), *boro* rice (flowering / grain formation), sesame (vegetative / flowering / pod formation) in Chhattisgarh.
- **Advisory:**
 - In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature over central India, farmers are advised to apply light and frequent irrigation to the standing crops to meet the excess evaporative demands.
 - As present weather conditions are favourable, farmers in Grid zone of Madhya Pradesh are advised to undertake sowing of summer moong and sunflower under irrigated conditions.
 - Weather conditions are favourable for proper germination of maize to be grown for green cobs in Chattisgarh Plain zone. Hence, the farmers who have assured irrigation facility are advised to complete the sowing of summer maize at the earliest.
 - Evaporations rates are presently quite higher due to prevailing dry weather condition as well as high temperature and it is being recorded between 12-13 mm / day. This has increased the water requirements of summer crops like summer rice, vegetables, sunflower, green gram, groundnut etc. Hence, farmers are advised to apply light and frequent irrigation to these crops.
 - After harvesting of *rabi* crops deep ploughing is advised wherever sufficient soil moisture is there in the fields, particularly in those fields where wilt, stem rot and nematode diseases are frequently observed, to facilitate soil solarisation to control these pests and diseases.
 - Rain/thunder shower due to local disturbances in weather is common during this time in Chhattisgarh Plains region. Hence, looking to the expected light rain/thundershowers, farmers are advised to keep the harvested product of rabi crops in safe places. If possible complete the threshing and keep the produced in stores before evening hours. Also at present Groundnut and Sunflower are in pod/grain filling stage. This stage is crucial for moisture hence it is advised to irrigate the crops frequently so that there will be no shortage of moisture.
 - Under prevailing weather condition in Madhya Pradesh incidence of sucking pests may occur in chilli, tomato, brinjal; spray Dimethoate @ 1 ml per litre of water or Phosphomidan @ 3 ml per 10 litres of water. Incidences of hopper in mango may also occur; spray with Imidachloprid 200 SL @ 0.25 ml per litre of water or Endosulfan 35 EC @ 1.5 ml per litre of water in mango plantation.
- **Animal Husbandry**
 - Due to forecast of high temperature in coming days in Madhya Pradesh, farmers are advised to provide clean drinking water to cattle. Prevent young calves from scorching sun.

Annexure I

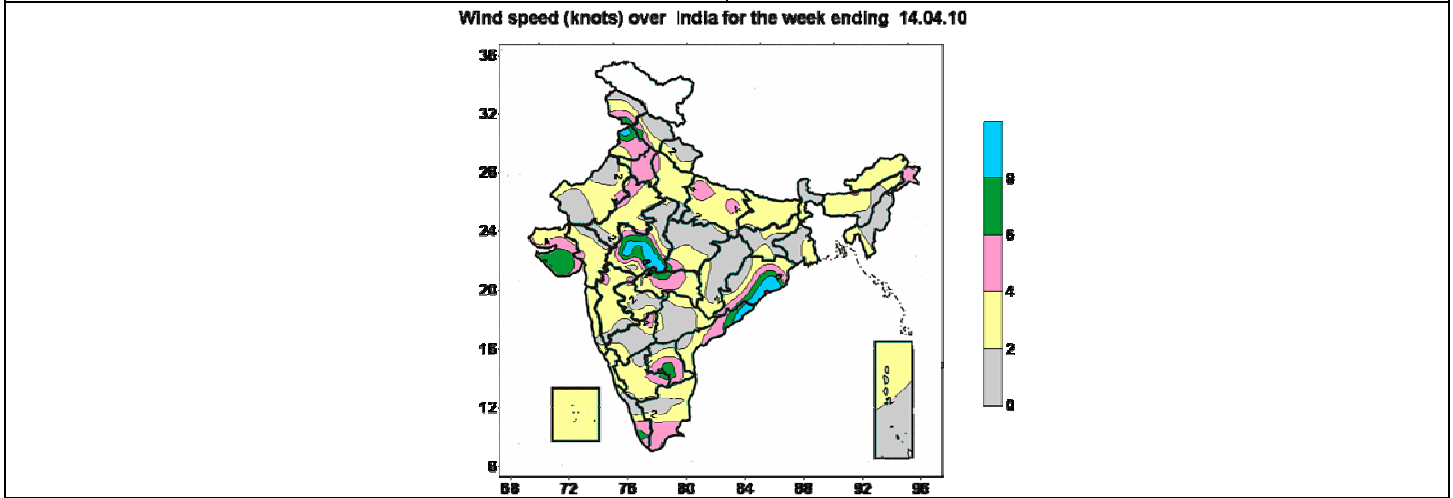
Contour maps o for the week ending 14.04.10





Relative humidity between 80% and above over some parts of East, Northeast India i.e. Sikkim, Arunachal Pradesh and South India i.e. Lakshdweep Islands, 60 to 80% over most parts of Northeast India, South India (costal parts of the region), some parts of East India i.e Coastal Orissa, West Bengal. 20 to 60% over remaining parts of the country.

Cloud amount 4 okta and above over most parts of South India i.e. Lakshdweep, Andaman & Nicobar Islands, Tamil Nadu, Coastal & South Interior Karnataka etc. , some parts Western i.e Konkan, Madhya Maharashtra, Marathwada sub-divisions, East and Northeast India i.e. Orissa, Assam, Arunachal Pradesh, 0 to 4 okta over remaining parts of the country.



Wind speed ranged between 8 knots and above over some parts of Jammu & Kashmir, Himachal Pradesh, Punjab in Northwest India, West Madhya Pradesh in Central India, Orissa in East India and Coastal Andhra Pradesh in South India, 6 to 8 knots over some parts of Jammu & Kashmir, Himachal Pradesh, Punjab in Northwest India, Gujarat in West India, Orissa in East India, West Madhya Pradesh, Vidarbha in Central India, Coastal Andhra Pradesh, Rayalaseema, Kerala, Tamil Nadu in South India, 0 to 6 knots over remaining parts of the country.