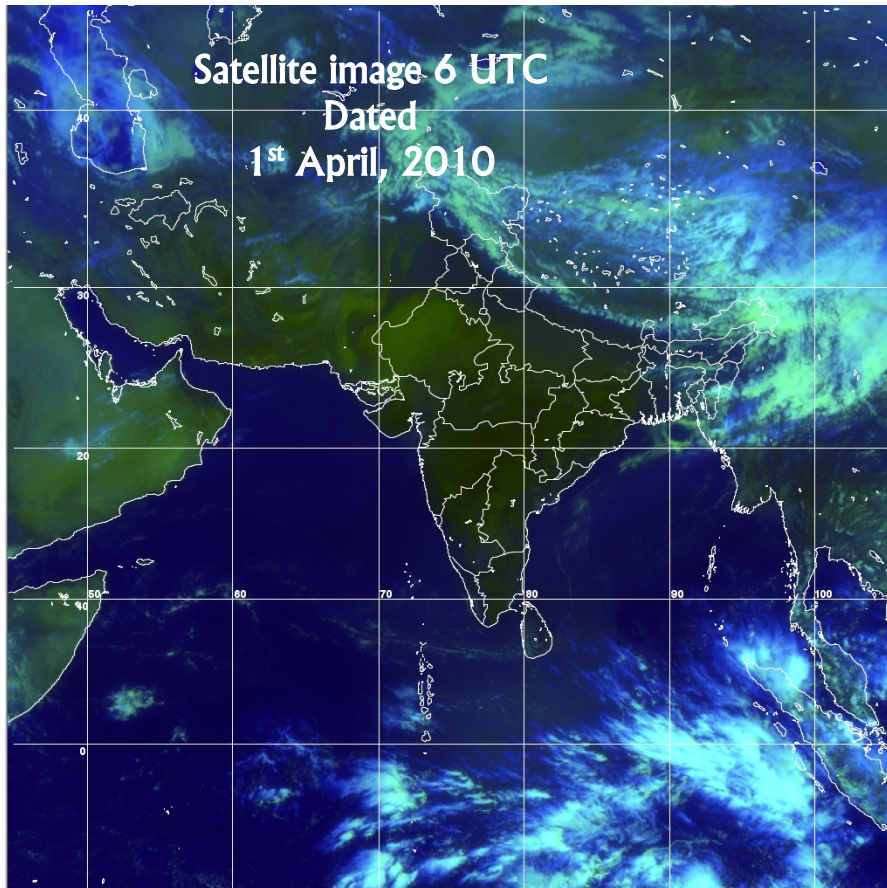




National Agromet Advisory Bulletin

Thursday, 1st April, 2010
(For the period 1st to 5th April, 2010)



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

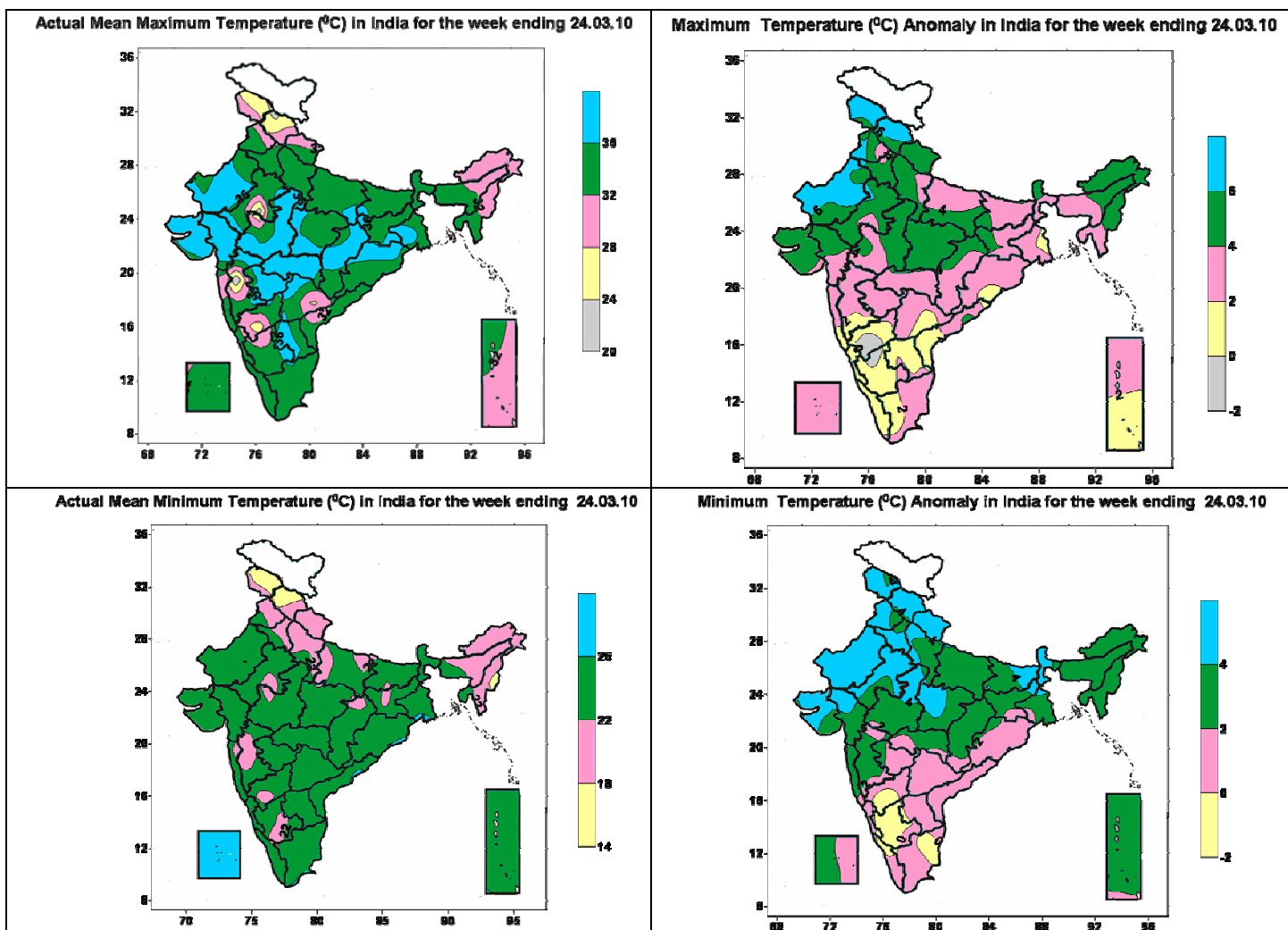
The bulletin is also displayed in the website (<http://www.imdaqrimet.org>) of the Division

Executive Summary

Major crops in different States

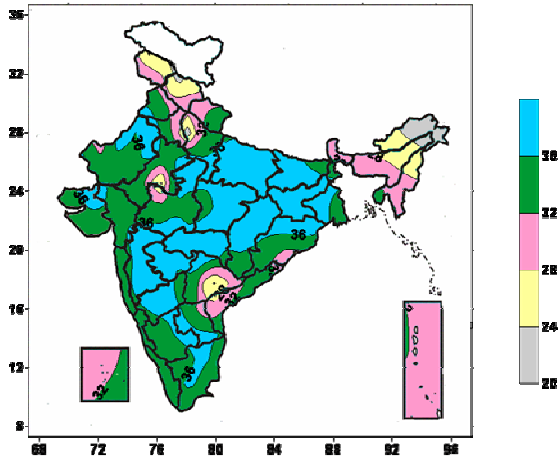
- Wheat is at grain formation stage in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, West Uttar Pradesh and North Rajasthan, at grain formation / early maturity / maturity stage in Madhya Pradesh and Jharkhand, at early maturity / maturity stage in Bihar, Gujarat and South Madhya Pradesh and at early maturity / maturity / harvesting stage in Maharashtra, Chhattisgarh, Assam and West Bengal.
- Summer / *boro* rice is at panicle initiation / flowering stage in Jharkhand, Orissa, Chhattisgarh, West Bengal and Assam.
- Mustard is at pod formation / early maturity stage in Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi and Jharkhand, at early maturity / maturity stage in Rajasthan, maturity / harvesting stage in Bihar, Orissa, West Bengal and Assam.
- Potato is at harvesting stage in Punjab and Sikkim.

Contour maps of Maximum and minimum temperatures for the week ending 24.3.10

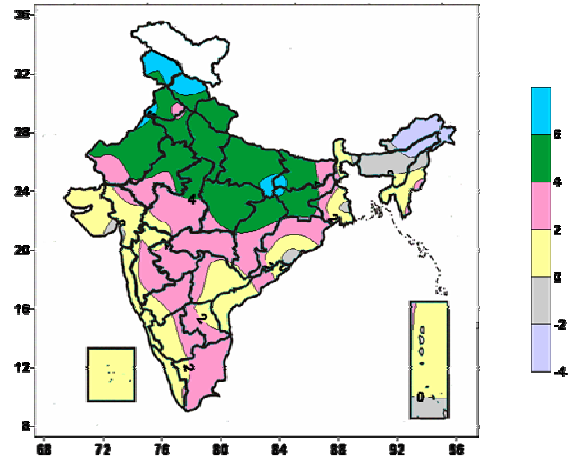


Contour maps of Maximum and minimum temperatures for the week ending 31.03.10

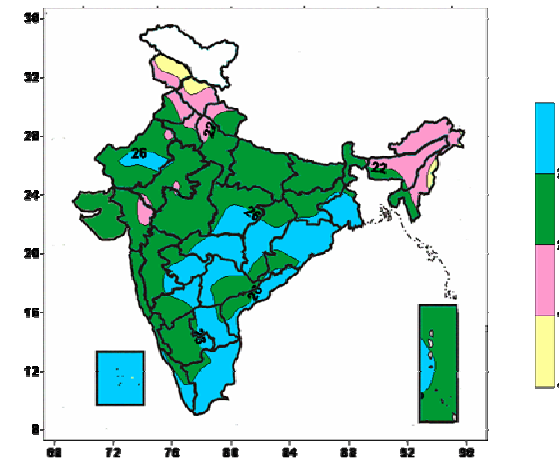
Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 31.03.10



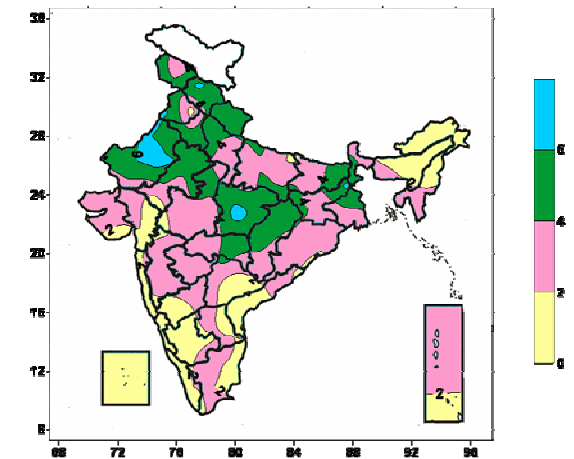
Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 31.03.10



Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 31.03.10



Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 31.03.10



Significant past weather

- Maximum temperature anomaly was 6°C and above over most parts of Jammu & Kashmir, Himachal Pradesh, 4 to 6°C over most parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Bihar, Jharkhand, East Madhya Pradesh, some parts of Jammu & Kashmir, Himachal Pradesh, West Madhya Pradesh, Chhattisgarh.
- Maximum temperature anomaly has declined in parts of Haryana and Rajasthan compared to last week and remains unchanged in most parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Delhi, Uttar Pradesh, Bihar, Jharkhand, East Madhya Pradesh, some parts of Jammu & Kashmir, Himachal Pradesh, West Madhya Pradesh and Chhattisgarh.
- Rainfall occurred in most of the districts of Assam, Arunachal Pradesh and Kerala. Coochbihar and Jalpaiguri districts of West Bengal also received rainfall during last week. Rainfall occurred at some places in Himachal Pradesh Jammu, Kashmir, South Interior Karnataka and Tamil Nadu. Either no significant rainfall occurred or dry or mainly dry weather prevailed in remaining parts of the country.

Forecast

- Rain is likely to occur at many places during next 24 hours in Assam and next 48 hours in Arunachal Pradesh and decrease thereafter. Rain is likely to occur at a few places in Nagaland, Manipur, Mizoram and Tripura during the period. Rainfall is also likely to occur at a few places in Jammu and Kashmir and Himachal Pradesh from 2nd April onwards. 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 may continue over parts of north Madhya Pradesh, Chhattisgarh and interior Orissa during next 24 hours.

- Isolated heavy rainfall accompanied with thundersquall may occur over Arunachal Pradesh and Assam & Meghalaya during next 48 hours.

Salient advisories

• North West India

- In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature conditions, farmers in Punjab, Haryana, Uttar Pradesh and Delhi are advised to apply light and frequent irrigation to wheat wherever the crop is at milk / dough 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. Irrigation should be applied in the evening to avoid lodging of crops due to high wind velocity during day time.
- As weather will remain cloudy with consistent light rains during 31st March and 1st April with the increase of rainfall thereafter, defer sowing of pea as well as sowing of nurseries of vegetable crops like capsicum, tomato, cucumber, cabbage and cauliflower, summer squash etc. for 2-3 days or more in Himachal Pradesh and mash, summer moong and jowar in Jammu and Kashmir.
- Use nets to protect stone fruits from hailstorm in mid hills of Himachal Pradesh.
- Downy mildew in cole crops is appearing in Himachal Pradesh as weather is conducive; for the control spray Dithane M-Z @ 2-3 g per litres of water at the interval of 10-15 days.
- In present weather condition, in cucurbitaceous crop attack of red pumpkin beetle has been reported on a large scale in Delhi. Spraying of Carbaryl @ 1 g per litre of water is advised in the evening hours preferable between 4-6 pm when the pest is active.
- 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.

• Western India

- As there is increase in evaporation due to high temperature, apply irrigation to groundnut crop at pegging stage and green gram at pod formation stage. Also apply irrigation to other standing crops like bajra, vegetables etc.
- Due to increase in air temperature, farmers are advised to protect banana bunch in Gujarat with plastic sheet. To reduce the transpiration rate in banana in Maharashtra, spray mixture of 800 g Kaolin dissolved in 10 liters of water.
- Due to increase in temperature fruit dropping may occur in mango in Maharashtra; to reduce the dropping, mulching with grass and application of water @ 100 to 150 litres / plant may be done.
- In view of high temperature during next week, keep animals under shade during noon hours and provide clean drinking water. Make arrangement of curtains for poultry house.

• North East India

- As there is possibility of rain at many places, undertake harvesting of already matured wheat, pea, *arhar* and mustard immediately before onset of rain.
- In view of rainfall at many places along with isolated heavy rainfall accompanied with thunder squall, farmers are advised to postpone sowing as well as irrigation, intercultural operation and application of plant protection measures and fertilizers.

• East India

- Wheat crop is at grain filling 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.
- 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, Jharkhand and Orissa.

- As day length is optimum for sowing of jute in West Bengal and Orissa, farmers are advised to sow jute. 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 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.
 - Due to high maximum temperature, anthracnose disease may occur on the upper surface of the leaves of betel vine in South 24 Parganas district in West Bengal. Farmers are advised to spray the vine with Bordeaux mixture (4:4:50) @ 0.5% or with any copper oxyclozide preparation @ 0.3–0.4% at 7 days intervals.
- **Central India**
 - In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature and heat wave conditions over central India, farmers are advised to apply light and frequent irrigation to the standing crops to meet the excess evaporative demands.
 - Weather is conducive for the incidence of termites in wheat in Madhya Pradesh; apply Chloropyrifos 20 EC with irrigation water.
- **South India**
 - In view of prevailing dry weather condition, irrigate the coconut crop frequently depending on the soil condition to reduce the nut fall and to increase the nut setting in Kerala. Mulch the basin with dry palm leaves for reducing the heat load at the root zone and for water conservation.
 - Mulch banana, pepper and betel vine crop with dried leaves to protect from scorching sun in Kerala.
 - Dry condition is congenial for leaf hoppers at flowering stage of mango in Karnataka. To control, spray Rogor or Metasistox @ 2ml/l + Wettable sulphur @ 3g/l. Spray 1.7 ml Dimethoate 30 EC plus wettable sulphur 3.0 grams per liter of water to control Jassids and powdery mildew of Mango.
 - Weather is conducive for blast and sheath rot diseases in rice in High Altitude zone in Kerala; spray 2 g pseudomonas in 1 litre of water at weekly intervals.
 - Dry conditions in Kerala may favour 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 increase in day temperature from 34⁰ to 35⁰C in poultry farm in Karnataka, 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.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred at some places in Himachal Pradesh and Jammu & Kashmir during last week. Dry weather prevailed over Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh and Rajasthan.
- **Rainfall Forecast:** Rainfall is likely to occur at a few places in Jammu and Kashmir and Himachal Pradesh from 2nd April onwards. Either dry or mainly dry condition will prevail or isolated rain will occur in all other days in all the States of the region.
- **Major Rabi Crops:**

- Wheat (grain formation), mustard, gram and lentil (pod formation) and vegetables in Himachal Pradesh.
- Wheat, barley (grain formation), brown sarson (seed formation), vegetable crops (sowing / vegetative / flowering / fruiting / harvesting) in Jammu & Kashmir
- Wheat (grain formation), mustard, lentil, gram (seed formation/maturity), pea, rajmah (pod formation) in Uttarakhand.
- Wheat (grain formation), raya, rapeseed and mustard (pod formation/maturity), potato (tuber formation) in Punjab.
- Wheat (grain formation), raya and mustard (pod formation/maturity), summer sunflower, maize (early vegetative) in Haryana
- Wheat (grain formation); pea and gram (early maturity / maturity); mustard (early maturity / maturity) and vegetable crops (vegetative / flowering / fruiting / harvesting) in Delhi.
- Wheat (grain formation), gram, pea, and lentil (seed maturity/harvesting) in Uttar Pradesh.
- Wheat (grain formation), gram and mustard (early maturity / maturity) vegetable crops (flowering / fruiting / harvesting) in Rajasthan

- **Advisory:**

- As weather will remain cloudy with consistent light rains during 31st March and 1st April with the increase of rainfall thereafter, defer sowing of pea as well as sowing of nurseries of vegetables like capsicum, tomato, cucumber, cabbage and cauliflower, summer squash etc. for 2-3 days or more in Himachal Pradesh and mash, summer moong and jowar in Jammu and Kashmir.
- Isolated rain in last week and expected rain at a few places help growth of wheat and farmers are advised not to apply irrigation to the crop in Himachal Pradesh and Jammu and Kashmir.
- In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature conditions, farmers in Punjab, Haryana, Uttar Pradesh and Delhi are advised to apply light and frequent irrigation to wheat wherever the crops are at milk 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. Irrigation should be applied in the evening as due to high wind velocity during day time lodging may occur.
- Under prevailing weather light irrigation is also advised in onion crop in Delhi.
- Use nets to protect stone fruits from hailstorm in mid hills of Himachal Pradesh.
- Harvesting of the already matured mustard is advised in Haryana, Punjab, Uttar Pradesh, 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.
- 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.
- In present weather conditions planting of sugarcane sets should be done as early as possible in Delhi. Sowing of hybrid cluster bean (Pusa Komal, Pusa Sukamol) can also be done in present weather.
- Downy mildew in cole crops is appearing in Himachal Pradesh as weather is conducive; for the control spray Dithane M-Z @ 2-3 g per litres of water at the interval of 10-15 days.
- Climate is also conducive in Himachal Pradesh for the attack of aphids in ghobi sarson; for control apply Rogor @ 1 ml per litre of water.
- In present weather condition, in cucurbitaceous crop attack of red pumpkin beetle has been reported on a large scale in Delhi. Spraying of Carbaryl @ 1 g per litre of water is advised in the evening hours preferable between 4-6 pm when the pest is active.
- 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.

- Weather conditions are favourable for aphids in maize and powdery mildew disease in pea in Rajasthan. To control aphids in maize spray Methyl Demeton 25 EC @ 1 litre / ha or Phosphomidan 85 WSC @ 300 ml / ha at the time of aphid infestation on tassel. To control powdery mildew disease in pea, spray 2g wettable Sulphur / litre of water or 1 ml Kerathane / litre of water.

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

- **Realised Rainfall:** In West Bengal, Coochbehar and Jalpaiguri districts received rainfall and rest of the districts received no significant rainfall during last week. Dry weather prevailed over Jharkhand, Bihar, Orissa & Sikkim.
- **Rainfall Forecast:** Either isolated rain will occur or dry or mainly dry weather will prevail over the region during the period.
- **Major Rabi Crops:**
 - Wheat (grain development), maize (flowering), potato (maturity/harvesting), gram, pea, and lentil (pod formation/maturity), mustard (pod maturity/harvesting), summer maize, moong and sunflower(early vegetative) in Bihar
 - Wheat (grain formation), rai, *toria*, gram, mustard (pod formation/maturity), peas (pod formation), arhar(pod formation/maturity) in Jharkhand
 - Wheat (grain formation), pulses (pod formation/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 to 2000 m) in Sikkim: Large Cardamom(vegetative / germination), Wheat(maturity / harvesting), Seed Potato(vegetative, *Kharif* Vegetable(sowing / nursery sowing). (b) Medium hills (1000 to 1500 m): Large Cardamom(vegetative / germination), Orange(orchard trees / 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:**
 - 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.
 - Wheat crop is at grain filling 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.
 - 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, Jharkhand and Orissa.
 - As there was no significant rain during last week in West Bengal except in Coochbehar 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.
 - As no significant rain is likely to occur in Sikkim, farmers are advised to apply irrigation to large cardamom, potato and maize.
 - As day length is optimum for sowing of jute in West Bengal and Orissa, farmers are advised to sow jute. 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 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.
- Due to high maximum temperature, anthracnose disease may occur on the upper surface of the leaves of betel vine in South 24 Parganas district in West Bengal. Farmers are advised to spray the vine with Bordeaux mixture (4:4:50) @ 0.5% or with any copper oxychloride preparation @ 0.3–0.4% at 7 days intervals.
- Due to high humidity and increased temperature, there is possibility of infestation of fruit and shoot borer in ladies finger in Purba Medinipore district in West Bengal. Farmers are advised to remove and destroy attacked shoots and fruits and also to spray Dichlorvos @ 1.5 ml / litre or Carbaryl WP @ 2 g / litre or Cartap hydro chloride @ 1 g / litre of water; remove all fruits before spraying.
- Under prevailing weather condition, there is a possibility of spread of blast disease in *boro* rice in New Alluvial zone in West Bengal. To prevent apply Hinosan or Kitazin with proper caution due to forecast of higher wind speed.
- In the prevailing weather situation, there is a possibility of attack of the disease leading to leaf-rolling in sesame in New Alluvial zone in West Bengal. Uproot the infected plants.
- 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.
- High humidity may cause the outburst of leaf blight in *boro* rice in Red Laterite zone in West Bengal; apply carbendazim 50 WP and try to use less nitrogen fertilizer.

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

- **Realised Rainfall:** Rainfall occurred in Assam and Arunachal Pradesh during last week.
- **Rainfall Forecast:** Rain is likely to occur at many places during next 24 hours in Assam and next 48 hours in Arunachal Pradesh and decrease thereafter. Rain is likely to occur at a few places in Nagaland, Manipur, Mizoram and Tripura during the period.
- **Major Rabi Crops:**
 - Wheat (early maturity / maturity), potato (harvesting), pea, arhar (maturity / harvesting) and mustard (maturity / harvesting), vegetables (vegetative / flowering / fruiting / harvesting), *boro* rice (tillering / panicle initiation / flowering), early *ahu* rice (seedling / transplanting) in Assam
 - Pea, potato (harvesting), maize (grain formation) in Arunachal Pradesh.
- **Advisory:**
 - As there is possibility of rain at many places, undertake harvesting of already matured wheat, pea, *arhar* and mustard immediately before onset of rain.
 - In view of rainfall at many places along with isolated heavy rainfall accompanied with thunder squall, farmers are advised to postpone sowing of crops like direct seeded early *ahu* rice, mesta, *Bao* rice, maize, different summer vegetables etc. and also nursery sowing of regular *ahu* rice.
 - In view of prevailing weather farmers are also advised to postpone irrigation, intercultural operation and application of plant protection measures and fertilizers.

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

- **Realised Rainfall:** Most of the districts of Kerala received rainfall. Rainfall occurred at some places in South Interior Karnataka and Tamil Nadu during last week. Dry weather prevailed over remaining parts of the region.

- **Rainfall Forecast:** Either isolated rain will occur or dry/ mainly dry weather will prevail over the region during the period.
- **Major Rabi Crops:**
 - Cotton is at boll maturity 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 formation / development), pulses (pod maturity), cotton (picking) in Tamil Nadu
- **Advisories:**
 - As there was no rainfall during last week and dry weather is likely to prevail for the next five days, farmers in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu are advised to apply irrigation to standing *rabi* crops and horticultural / plantation crops.
 - Farmers in northern dry zone in Karnataka are advised to undertake sowing of sweet gourd, ridge gourd and transplanting of onion under irrigated condition.
 - Undertake soil solarization as temperature is rising for healthy nursery growing.
 - In view of prevailing dry weather condition, irrigate the coconut crop frequently depending on the soil condition to reduce the nut fall and to increase the nut setting in Kerala. Mulch the basin with dry palm leaves for reducing the heat load at the root zone and for water conservation.
 - Mulch banana, pepper and betel vine crop with dried leaves to protect from scorching sun in Kerala.
 - To avoid the evaporative loss of soil moisture after receiving the rain, farmers in Tamil Nadu are advised to go for mulching the inter row spacing with crop residues or weed biomass. Conserve moisture in orchard crops as dry weather conditions prevail during these days.
 - Banana bunches should be covered with leaves to prevent sun scorching.
 - Farmers in north eastern zone in Tamil Nadu are advised to spray 0.5% of Potassium Chloride to withstand the moisture scarcity.
 - Under these high temperature conditions in Northern Telangana zone incidence of panicle mite may occur in rice crop which is at panicle initiation stage. To control the pest spray Profenophos @ 2ml/l or Dicofol @ 5ml / litre of water.
 - Under present weather condition incidence of early shoot borer is noticed in sugarcane in Southern Telangana zone. To control, adopt IPM measures.
 - Dry condition is congenial for leaf hoppers at flowering stage of mango in Karnataka. To control, spray Rogor or Metasistox @ 2ml/l + Wettable sulphur @ 3g/l. Spray 1.7 ml Dimethoate 30 EC plus wettable sulphur 3.0 grams per liter of water to control Jassids and powdery mildew of Mango.
 - Weather is also conducive for blast and sheath rot diseases in rice in High Altitude zone in Kerala; spray 2 g pseudomonas in 1 litre of water at weekly intervals.
 - 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.
 - 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.
 - Since high temperature is expected in coming days which is conducive for mealy bug incidence in cotton, sunflower, vegetables and fruit crops like guava in Western zone in Tamil Nadu, look out for the incidence and spray fish oil resin soap 4%.
- **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.
- Due to high day temperature between 36⁰-37⁰C, the dairy farmers are advised not to allow grazing of animals between 12 pm to 5 pm, and also advised to supply adequate quantity of drinking water, sprinkle the water on the animals before milking & keep the floor cool and clean. Calves may be dewormed during summer months to increase the appetite of the animals.
- Undertake summer deep ploughing to expose the pupae and eggs of insect pests and weed seeds as temperature is rising.

- **Kerala**

- Cattle should be provided with drinking water since dry conditions are being expected. In the case of poultry bred under deep litter system, farmers are advised to see that the litter is not damp. Animals may be kept cool by sprinkling water over the body.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Dry condition is likely to prevail during the period over the region.
- **Major Rabi Crops:**
 - In Maharashtra: wheat (harvesting), mustard, linseed (seed maturity / harvesting), vegetables (vegetative / flowering / fruiting / harvesting) and summer rice (flowering / grain formation / grain maturity in south Konkan and panicle initiation / flowering in East Vidarbha), summer groundnut (pegging / pod formation in South Konkan and vegetative / flowering over remaining parts of the States), summer sunflower (vegetative / floral bud initiation), summer maize (vegetative / tasseling and silking), summer *bajra* (vegetative / flag leaf initiation / flowering).
 - In Gujarat: wheat (early maturity / maturity), mustard (maturity / harvesting), gram (maturity / harvesting), summer groundnut (vegetative / flowering / pegging) and vegetables (vegetative / flowering / fruiting / 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.
 - Due to clear sky forecast during next week, harvest isabgul and castor in Gujarat taking the advantage of dry weather.
 - In view of dry weather condition also complete the harvesting of already matured mustard, linseed & wheat in Maharashtra.
 - Due to increase in air temperature, farmers are advised to protect banana bunch in Gujarat with plastic sheet. To reduce the transpiration rate in banana in Maharashtra, spray mixture of 800 g Kaolin dissolved in 10 liters of water.
 - Due to increase in temperature fruit drooping may occur in mango in Maharashtra, to reduce the drooping, mulching of roots with grass and application of water @ 100 to 150 litres / plant may be done.

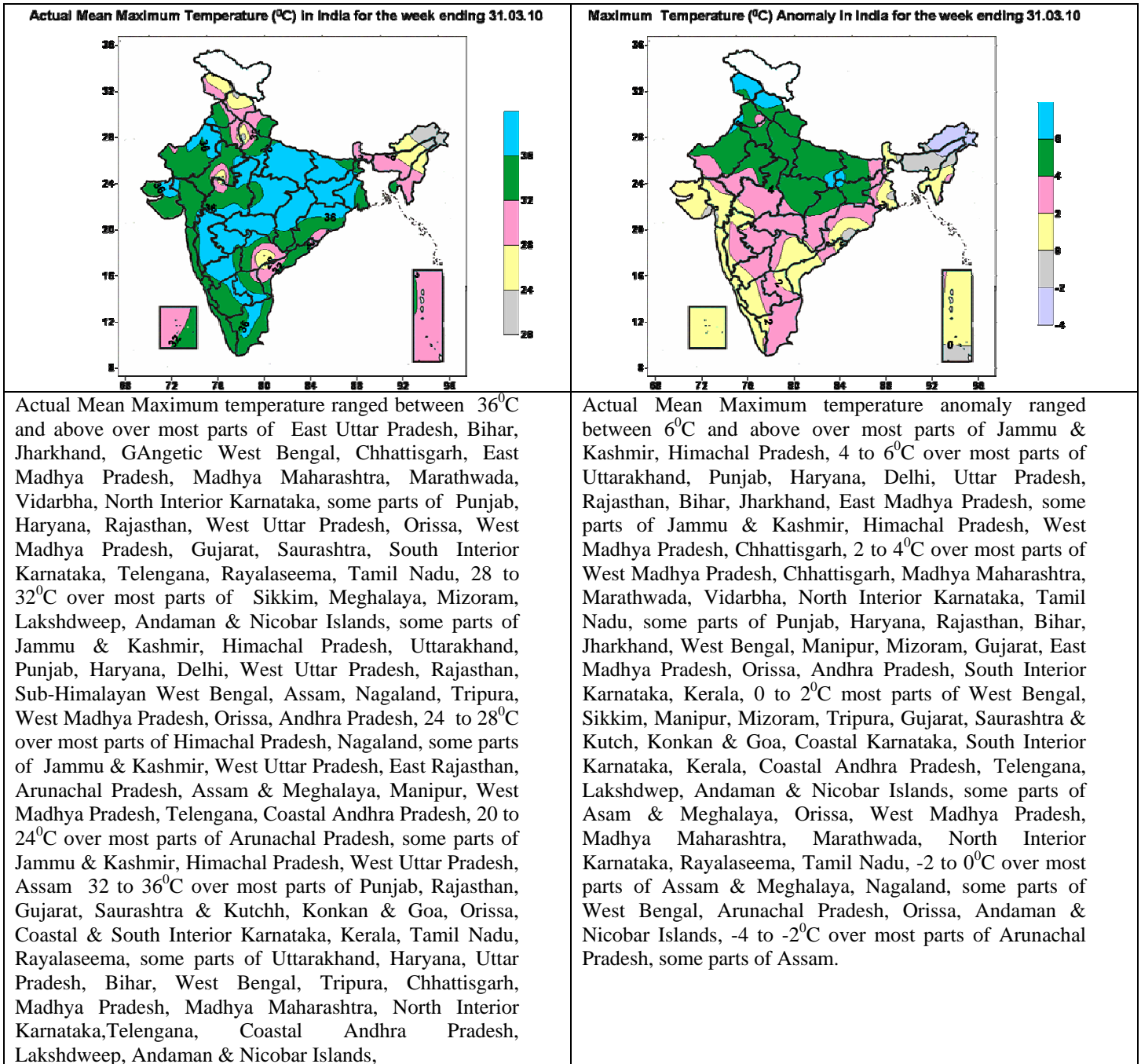
- Due to high temperature and humidity forecast during next week, there is possibility of infestation of sucking pests in vegetables in Gujarat; spray Monocrotophos 36 EC @ 0.1% to manage sucking pests.
- In view of high temperature during next week, keep animals under shade during noon hours and provide clean drinking water. Make arrangement of curtains for poultry house.
- The growth of fishes and water in the pond may be checked periodically in Maharashtra as there is no significant rain for last few weeks. Natural feed and supplementary feed like groundnut cake, rice or wheat bran be mixed in 1:1 proportion and mixed with water may be given twice a day.

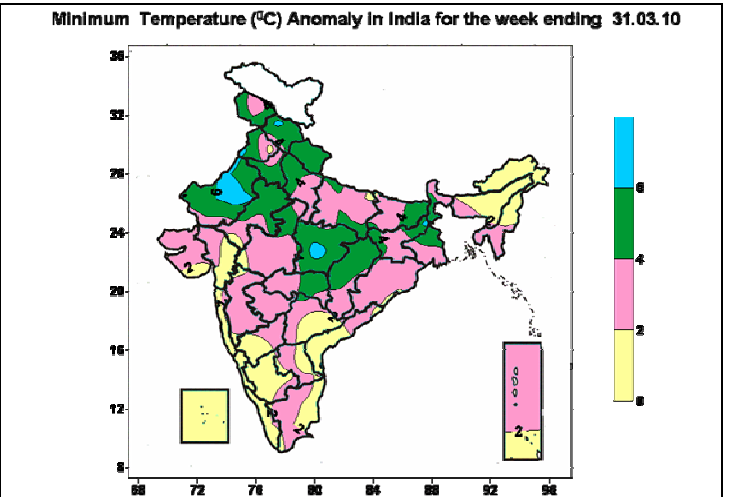
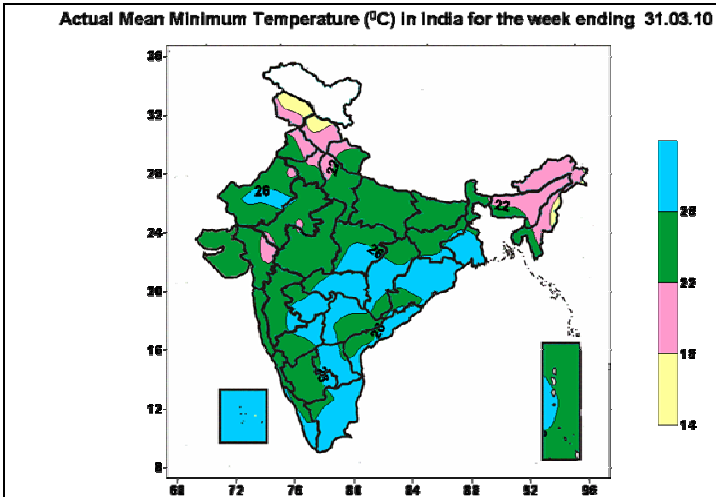
CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Dry or mainly dry weather is likely to prevail during the period over the region.
- **Major Rabi crops:**
 - Wheat (grain development / maturity), pulses and gram (grain development / maturity), sugarcane (cane development), cotton (boll development / maturity) and vegetable crops (flowering) in Madhya Pradesh.
 - Wheat (maturity / harvesting), boro rice (panicle initiation / flowering), gram (maturity / harvesting), mustard (maturity / harvesting) 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 and heat wave conditions over central India, farmers are advised to apply light and frequent irrigation to the standing crops to meet the excess evaporative demands.
 - Weather is conducive for the incidence of termites in wheat in Madhya Pradesh; apply chloropyriphos 20 E.C. with irrigation water.
 - 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.

Annexure I

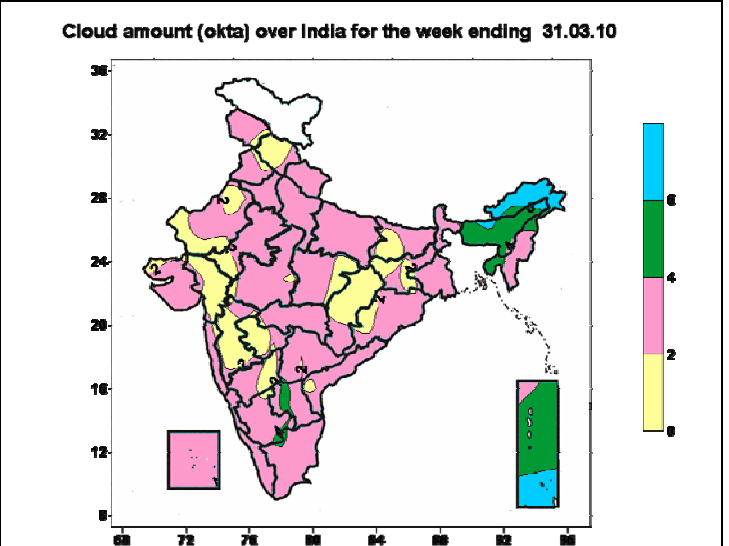
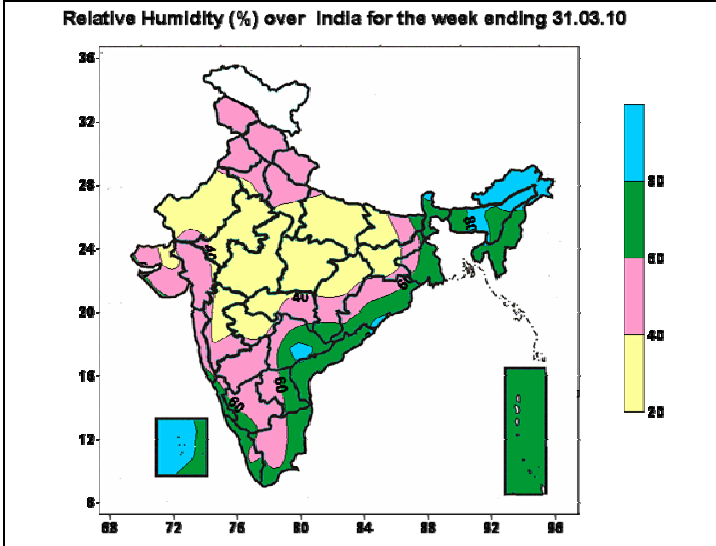
Contour maps o for the week ending 31.03.10





Actual Mean Minimum Temperature ranged between 26°C and above over most parts of Gangetic West Bengal, Orissa, Chhattisgarh, East Madhya Pradesh, Marathwada, Vidarbha, Andhra Pradesh, Tamil Nadu, Lakshdweep Islands, some parts of West Rajasthan, Jharkhand, Madhya Maharashtra, North & South Interior Karnataka, Kerala, Andaman & Nicobar Islands, 18 to 22°C over most parts of Himachal Pradesh, North East India, some parts of Jammu & Kashmir, Uttarakhand, Punjab, Haryana, Rajasthan, West Uttar Pradesh, Gujarat, 14 to 18°C over some parts of Jammu & Kashmir, Himachal Pradesh, Nagaland, Manipur, 22 to 26°C over most parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Bihar, Jharkhand, Sub-Himalayan West Bengal, Sikkim, Tripura, Madhya Pradesh, Gujarat, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Karnataka, Andaman & Nicobar Islands, some parts of Assam & Meghalaya, Mizoram, Gangetic West Bengal, Orissa, Chhattisgarh, Marathwada, Vidarbha, Andhra Pradesh, Tamil Nadu, Kerala.

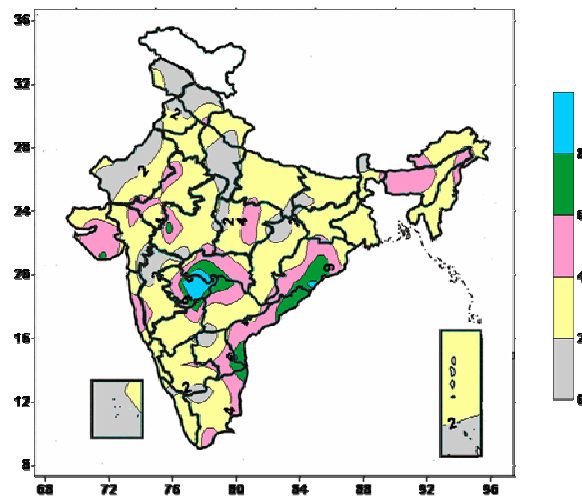
Minimum Temperature anomaly ranged 6°C and above over some parts of Himachal Pradesh, Punjab, West Rajasthan, Jharkhand, East Madhya Pradesh, 4 to 6°C over most parts of Himachal Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, Sub-Himalayan West Bengal, East Madhya Pradesh, Chhattisgarh, some parts of Jammu & Kashmir, Punjab, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, West Madhya Pradesh, Vidarbha, Telengana, 2 to 4°C over most parts of Uttar Pradesh, Bihar, Jharkhand, Sikkim, Mizoram, Tripura, Gujarat, Saurashtra & Kutch, West Madhya Pradesh, Orissa, Madhya Maharashtra, Marathwada, Vidarbha, Tamil Nadu, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan, West Bengal, Assam & Meghalaya, Manipur, East Madhya Pradesh, Chhattisgarh, Konkan, Interior Karnataka, Andhra Pradesh, Kerala, 0 to 2°C over most parts of Arunachal Pradesh, Addam & Meghalaya, Nagaland, Manipur, Gujarat, Konkan & Goa, Karnataka, Kerala, Coastal Andhra Pradesh, Telengana, some parts of Punjab, East Uttar Pradesh, Bihar, East Rajasthan, Kutch, West Madhya Pradesh, Orissa, Madhya Maharashtra, Rayalaseema, Tamil Nadu, Andaman & Nicobar Islands.



Relative humidity between 80% and above over most parts of Arunachal Pradesh, Lakshadweep Island, some parts of Sikkim, Assam & Meghalaya, Orissa, Coastal Andhra Pradesh, Telangana, 60 to 80% over most parts of West Bengal, Nagaland, Manipur, Mizoram, Tripura, Coastal Orissa, Andhra Pradesh, Coastal Tamil Nadu, Kerala, Coastal Karnataka, Andaman & Nicobar Island, some parts of Bihar, Jharkhand, Assam & Meghalaya, South Interior Karnataka, Konkan & Goa, Lakshadweep Island, 20 to 40% over most parts of Rajasthan, Madhya Pradesh, East Uttar Pradesh, Bihar, Jharkhand, Chattisgarh, Madhya Maharashtra, Marathwada, Vidarbha, some parts of Haryana, West Uttar Pradesh, Gujarat, Saurashtra & Kutch, 40 to 60% over remaining parts of the country.

Cloud amount 6 okta and above over most parts of Arunachal Pradesh, some parts of Assam & Meghalaya, Andaman & Nicobar Islands, 4 to 6 okta over most parts of Assam & Meghalaya, Tripura, some parts of Arunachal Pradesh, Nagaland, Rayalaseema, Tamil Nadu, South Interior Karnataka, 0 to 2 okta over most parts of Himachal Pradesh, Chattisgarh, Gujarat, Madhya Maharashtra, Marathwada, some parts of Jammu & Kashmir, Punjab, Bihar, Jharkhand, Orissa, Madhya Pradesh, Rajasthan, Saurashtra, Coastal Andhra Pradesh, Telangana, North & South Interior Karnataka, , 2 to 4 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 31.03.10



Wind speed ranged between 8 knots and above over some parts of Marathwada, Vidarbha, Coastal Orissa, 6 to 8 knots over some parts of Kutch, West Madhya Pradesh, Coastal Orissa, Coastal Andhra Pradesh, Rayalaseema, Tamil Nadu, 4 to 6 knots over most parts of Saurashtra & Kutch, Assam & Meghalaya, some parts of Rajasthan, Madhya Pradesh, East Uttar Pradesh, Arunachal Pradesh, Nagaland, Coastal Orissa, Andhra Pradesh, Tamil Nadu, North & south Interior Karnataka, Maharashtra, Gujarat, 0 to 2 knots over most parts of Jammu & Kashmir, Himachal Pradesh, West Uttar Pradesh, Sikkim, Lakshadweep Island, some parts of Uttarakhand, Punjab, East Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, Chattisgarh, Telangana, Rayalaseema, Tamil Nadu, Kerala, North Interior Karnataka, Konkan & Goa, Madhya Maharashtra, Andaman Nicobar Islands, 2 to 4 knots over remaining parts of the Country.