

National Agromet Advisory Service Bulletin

Tuesday 9th December 2014
(For the period 9th to 12th December 2014)



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



Realised Weather on 9th December 2014

- **Significant weather observations:** Dense to very dense fog has been observed at a few places over of Uttar Pradesh, Bihar, Assam & Tripura and at isolated places over Odisha during morning hours of today. The visibility of 50 m or less has been recorded at Pantnagar, Baharaich, Bareilly, Lucknow, Fursatganj, Sultanpur, Varanasi, Bhagalpur, Coochbehar, Jalpaiguri and Kailashahar.
- **Rainfall:**(From 0830 hours IST of yesterday to 0830 hours IST of today): Rain/thundershowers has occurred at isolated places over Kerala, Tamilnadu and Andaman & Nicobar Islands. Weather remained dry over rest of the country. The amounts of rainfall (in cm) recorded at 0830 hours IST of today are: Palakkad, Kottayam & Nedumbassery 2 each and Thiruvanthapuram, Palayankottai & Coonoor 1 each.
- **Temperature: Minimum temperatures** are above normal by 4-5°C at a few places over Arunachal Pradesh and Assam; by 2-3°C at many places over Andhra Pradesh and Tamilnadu; at a few places over Karnataka & Kerala; at isolated places over Uttarakhand, Rajasthan, northwest Madhya Pradesh, Maharashtra and Odisha. They are below normal by 2-3°C at isolated places over Himachal Pradesh, Uttar Pradesh, northeast Madhya Pradesh & Chhattisgarh and near normal over rest parts of the country. **The lowest minimum temperature of 4.2°C has recorded at Khajuraho (Madhya Pradesh)** in plains of the country.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 12th December, 2014)

- Rain/thundershowers would occur at a few places over Kerala, Tamil Nadu & Puducherry during next 24 hours and at many places thereafter.
- Rain/thundershowers would occur at isolated places over Lakshadweep during next 24 hours; over Coastal Karnataka and South Interior Karnataka during next 48 hours and at a few places thereafter.
- Rain/thundershowers would occur at isolated places over Jammu & Kashmir, Assam & Meghalaya during next 24 hours; over Arunachal Pradesh during next 48 hours and dry weather would prevail thereafter.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 48 hours and at isolated places thereafter.
- Dry weather would prevail over Coastal Andhra Pradesh during next 24 hours; over North Interior Karnataka during next 48 hours and rain/thundershowers would occur at isolated places thereafter.
- Dry weather would prevail over rest parts of the country.
- Slight fall in night temperatures over northwest & adjoining west India during next 48 hours and slight rise thereafter.
- Fog/shallow fog would occur at some places over Punjab, Haryana & Delhi, Uttar Pradesh, Bihar, West Bengal & Sikkim, Odisha, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.

Weather Warning during next 3 days

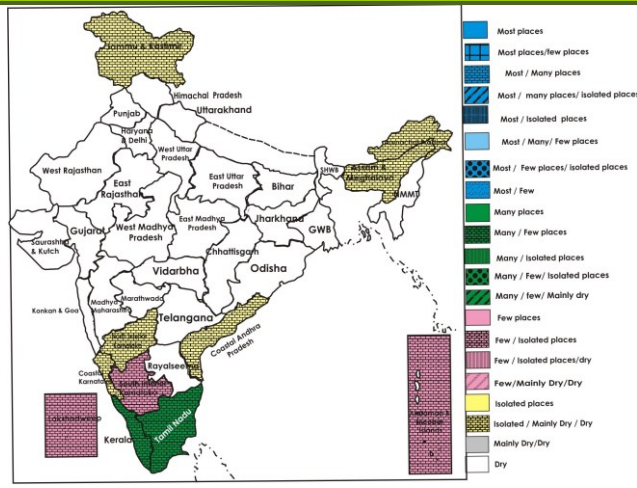
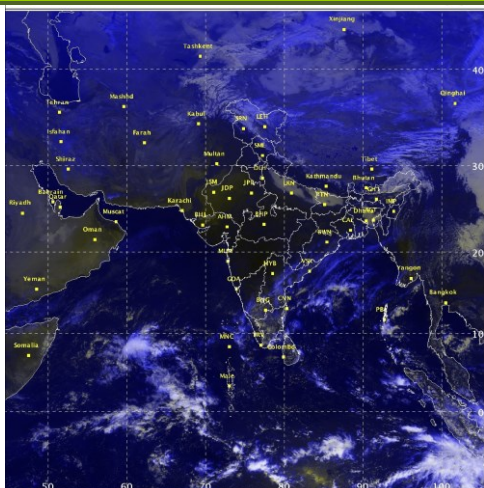
- **09 December (Day 1):** Very dense / dense fog (Visibility 200 m or less) would occur at many places over East Uttar Pradesh and over some parts of Bihar, Jharkhand, Odisha, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Tripura. Heavy rainfall would occur at isolated places over South Coastal Tamilnadu.
- **10 December (Day 2):** Very dense / dense fog (Visibility 200 m or less) would occur at many places over East Uttar Pradesh and over some parts of Bihar, Jharkhand, Odisha, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Tripura. Heavy rainfall would occur at isolated places over South Coastal Tamilnadu.
- **11 December (Day 3):** Dense fog (Visibility 200 m or less) would occur at some places over East Uttar Pradesh.

Weather Outlook for subsequent 4 days from 12th December 2014 to 16th December 2014.

- Rain/thundershowers would occur at a few places over peninsular India and at isolated places over Maharashtra, Madhya Pradesh, Vidarbha and northeastern states on 13th and 14th.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands on 12th & 13th and increase thereafter.
- A fresh western disturbance would affect western Himalayan region from 12th and plains of northwest India from 13th onwards.
- Weather would be dry over rest of the country.

Satellite image dated, 09.12.2014, 0600 UTC

Weather Forecast Map (Valid upto 0830 hours of 12th December 2014)



Detailed Zonewise Agromet Advisories

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



Land preparation

Sugarcane

Cotton

Rice Transplanting

- **Realised Weather:** Rain/thundershowers has occurred at isolated places over Kerala and Tamilnadu. Weather remained dry over rest of the region. Minimum temperatures are above normal by 2-3°C at many places over Andhra Pradesh and Tamilnadu; at a few places over Karnataka & Kerala and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Kerala, Tamil Nadu & Puducherry during next 24 hours and at many places thereafter. Rain/thundershowers would occur at isolated places over Coastal Karnataka and South Interior Karnataka during next 48 hours and at a few places thereafter. Dry weather would prevail over Coastal Andhra Pradesh during next 24 hours; over North Interior Karnataka during next 48 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over rest parts of the region.
- **Weather Warning:** Heavy rainfall would occur at isolated places over south coastal Tamilnadu on 9th and 10th December.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over peninsular India on 13th and 14th December. Weather would be dry over rest of the region.
- **Advisories:**
 - **Andhra Pradesh:**
 - Magnesium and boron deficiency was observed in cotton in few parts of Anantapur in the Scarce Rainfall Zone. Apply 10g/ litre of MgSo₄ to avoid the Magnesium deficiency and 1-1.5 g/litre of borax (dissolve in hot water) to avoid the Boron deficiency.
 - Continue sowing of *rabi* pulses and harvesting of *kharif* rice in the Krishna Godavari Zone.
 - Continue sowing of Bengal gram in High Altitude Tribal Zone with desi varieties like JG-11, NBeg-3 and kabuli varieties like KAK-2 and Vihar.
 - Continue sowing of *rabi* groundnut in the Southern Zone after treating the seed with Imidachloprid 2 ml/ kg seed followed by Tebuconazole @ 1g or Mancozeb @ 3g/kg seed.
 - Prevailing night temperatures may lead to spikelet sterility in rice in Anantapur district in the Scarce Rainfall Zone. To overcome this, avoid excess irrigation and provide alleyways to maintain temperature. Stem rot incidence was noticed in Bengal gram in Kurnool district. Spray Bavistin @ 1gram per litre of water to manage the incidence.

- Due to prevailing dry weather in the Southern Zone during last week, there is possibility of sucking pests in groundnut and thrips incidence in legumes vegetables. Spray Monocrotophos @ 1.6 ml or Imidacloprid @ 0.3 ml / litre of water to manage stem borer and Malathion @ 2 ml/litre or 5% neem decotion to manage thrips.
- **Telangana:**
- Prevailing dry weather conditions are congenial for the incidence of leaf hoppers and leaf webber on groundnut in the Southern Telangana Zone. Spray Dimethoate @ 2 ml per litre of water to manage leaf hopper and Quinolphos @ 2 ml per litre of water to manage leaf webber.
- **Karnataka:**
- As mainly dry weather is prevailing, apply irrigation in October sown wheat crop which is at late tillering stage to flowering stage in the North Transition Zone of Karnataka. Also there is chance of leaf reddening in cotton due to low temperature. Spray MgSo4 @ 1% or Urea/DAP @ 2% per litre of water to control leaf reddening.
- Continue harvesting of ragi in the Eastern Dry Zone of Karnataka.
- Undertake harvesting of chilli in the North Dry Zone of Karnataka.
- As mainly dry weather would prevail, continue harvesting of *kharif* rice and maize in the Southern Transition Zone of Karnataka.
- Continue sowing of wheat and planting of sugarcane; undertake cotton picking and harvesting of *kharif* rice in the North East Dry Zone of Karnataka.
- Continue harvesting of *kharif* rice and picking of cotton in the Hill Zone of Karnataka.
- Boll worm incidence and grey mildew disease is reported in desi and non Bt cotton in the North Transition Zone of Karnataka. Spray Monocrotophos @ 2.5 ml/lit of water and Carbendizim 50 WP @ 1 g/litre of water for effective control.
- Suitable varieties are given in Annexure I.
- **Kerala:**
- As rain/thundershowers would occur at many places over Kerala on 10th and 11th December, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers to the standing crops.
- Low temperature may trigger the spread of blast disease in rice in the Southern Zone. Spray Propiconazole (Tilt) / Hexaconazole(contaf) 1 ml/ 1 litre of water after current spells of rain. Maintain standing water in the field up to 2 cm and apply potash fertilizers to prevent spread of the disease.
- Intermittent wet and dry spell is congenial for fungus disease and downy mildew in cucurbits in the Northern Zone. Spray Potassium Phosphonate @3 ml along with Propiconazole @1 ml per litre of water, if noticed.
- **Tamil Nadu:**
- As rain/thundershowers would occur at many places over Tamil Nadu on 10th and 11th December, along with heavy rainfall at isolated places over south coastal Tamil Nadu on 9th & 10th, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields south coastal Tamil Nadu to remove excess water.
- Complete transplanting of *thaladi* rice in the Cauvery Delta Zone.
- Due to prevailing humid weather conditions, BPH incidence is noticed in samba / thaladi rice fields in the Cauvery Delta Zone. Spray Thiamethoxam 40 g/acre or Buprofezin 25 SC 320 ml/acre after current spells of rain.
- Prevailing low temperature and high humidity is congenial for incidence of bacterial leaf blight in rice crop in the Western Zone. To control spray, Streptomycin Sulphate + Tetracycline combination 300 g + Copper oxychloride 1250 g/ha after current spells of rain.
- Prevailing low temperature is congenial for powdery mildew incidence in grapes. Monitor the crop and spray Wettable Sulphur @ 0.3 % or dust Sulphur @ 6 to 12 kg/ ha in the morning hrs, if noticed.
- High cloud cover and humidity are congenial for the incidence of sigatoka leaf spot in banana in the South Zone. Remove and burn the affected leaves. If incidence is severe, spray Carbendazim @ 1 g/ litre of water or Mancozeb 2 g/ litre of water using hand sprayer and completely wet the bottom portion of the leaves after current spells of rain. Repeat the spray at monthly interval.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- Prevailing night temperatures is congenial for Pneumonia & Blue Tongue disease in sheep and goat in the Scarce Rainfall Zone of Andhra Pradesh. Vaccinate the animals to prevent the disease.
- Provide good ventilation, vaccinate to prevent seasonal diseases and provide light traps for heating as a preventive measure for low temperature in the Krishna Godavari Zone of Andhra Pradesh.



Rice

Okra

Cole Crops (Nursery)

Green Gram

- **Realised Weather:** Dense to very dense fog has been observed at a few places over of Assam & Tripura during morning hours of today. Weather remained dry over the region. Minimum temperatures are above normal by 4-5°C at a few places over Arunachal Pradesh and Assam and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Assam & Meghalaya during next 24 hours; over Arunachal Pradesh during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region.
Fog/shallow fog would occur at some places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- **Weather Warning:** Very dense / dense fog (Visibility 200 m or less) would occur over some parts of Assam & Meghalaya and Tripura on 9th and 10th December.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over northeastern states on 13th and 14th.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Assam, continue harvesting of matured *sali* rice.
 - In Upper Bramhaputra Valley Zone and Lower Bramhaputra Valley Zone of Assam, continue sowing of maize, wheat, rapeseed, mustard, planting of potato, nursery sowing of winter tomato and transplanting of cole crops to main field.
 - In Hill Zone, Central Bramhaputra Valley Zone, North Bank Plain Zone and Lower Bramhaputra Valley Zone of Assam, continue nursery raising and sowing of *boro* rice.
 - In Central Bramhaputra Valley Zone, Hill Zone and North Bank Plain Zone of Assam, continue transplanting of cole crop, sowing of *rabi* pulses like lentil, rajmah, pea, lathyrus and oilseeds, wheat and planting of potato.
 - In Meghalaya, complete harvesting of *Kharif* rice. Continue sowing of Zero tillage pea, lentil & toria. Apply mulching in ginger/ turmeric and potato with locally available weed biomass, maize stalk, etc. for conservation of moisture. Apply one irrigation to mustard/rapeseed at flowering stage.
 - In Barak Valley Zone of Assam, due to prevailing weather condition there is chance of attack of aphids and saw fly in rapeseed and mustard. Spray Dimethoate (Rogar) @ 1 ml/litre of water. Also spray Malathion 50 EC @ 1.5 ml /litre of water for caterpillar and other leaf eaters in cole crops like mid cauliflower/ early cabbage/khol khol.
 - In Hill Zone of Assam, due to humid and foggy weather, there is chance of late blight in tomato. Apply Ridomil MZ-72 (2g/ litre) and Indofil M-45 2.5 g / litre to prevent the disease.
 - In Lower Bramhaputra Valley Zone and North Bank Plain Zone of Assam, there is chance of infestation of aphid/ saw fly in rapeseed & mustard. Apply Chlorpyrifos 20 EC or Dimethoate 30 EC @ 2 ml/litre of water for control.
 - Due to foggy weather condition, there is chance of late & early blight disease in potato in Meghalaya. Spray Mancozeb 75% WP @ 1.5- 2.0 kg/ha or Copper Oxy Chloride 50% WP @ 2.5 kg/ha or Chlorothalonil 75% WP @ 1.25 kg/ha. In ginger and turmeric to prevent leaf Spot disease, apply Bordeaux mixture (5:5:50) or Captan @ 1.5 g/litre or Carbendazim @ 500g/ha. Also spray/ drench 1% Bordeaux mixture or Dithane M-45 (2.5g/l) to prevent rhizome rot in ginger.
 - **Nagaland, Manipur, Mizoram and Tripura:**
 - In Manipur, complete planting of potato, transplanting of onion and cauliflower, harvesting of ginger/turmeric. Undertake land preparation for sowing of *rabi* maize. Apply light irrigation to rapeseed/ mustard, pea, potato.
 - In Mizoram, continue sowing of pea, mustard and toria, nursery sowing of tomato.
 - In Nagaland, continue nursery sowing of winter vegetables and toria, pea.
 - In Mild Tropical Plain Zone of Tripura, complete sowing of mustard and lentil. Apply light irrigation on every alternate day in cole crops and tomato. Mulching must be done after irrigation to reduce evaporative losses.
 - In Mizoram, weather is congenial for attack of stem borer, gundhi bug and leaf blast in rice, spray Monocrotophos @ 20 ml/10 litres water or Imidacloprid @ 20 ml/10 litres of water against stem borer. Spray Monocrotophos 36 WSC @ 1.5 ml/litre of water against gundhi bug. Spray Triclozole (Beam) @ 0.5 g/litre against leaf blast.
 - In Tripura, due to decrease in night temperature there is chance of infestation of aphids on banana. Apply Dimethoate (Rogor) or Imidacloprid @ 0.8ml per litre of water.

- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- In Meghalaya, provide poultry birds (day old to 25 days old) artificial heating through lighting of electric bulb to protect from low temperature.
- In Tripura, cover poultry house with gunny bags/ polythene sheet to prevent the expose of animal to cool night. Heating during night may also be given to less than 21 days old chicks.

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



Sugarcane

Groundnut

Onion

Rice

- **Realised Weather:** Dense to very dense fog has been observed at a few places over of Bihar and at isolated places over Odisha during morning hours of today. Rain/thundershowers has occurred at isolated places over Andaman & Nicobar Islands. Weather remained dry over rest of the region. Minimum temperatures are above normal by 2-3°C at isolated places over Odisha and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 48 hours and at isolated places thereafter. Dry weather would prevail over rest of the region. Fog/shallow fog would occur at some places over Bihar, Odisha, Jharkhand, West Bengal & Sikkim.
- **Weather Warning:** Very dense / dense fog (Visibility 200 m or less) would occur over some parts of Bihar, Jharkhand, Odisha, Sub-Himalayan West Bengal & Sikkim on 9th and 10th December.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands on 12th & 13th and increase thereafter. Weather would be dry over rest of the region.
- **Advisories:**
 - **West Bengal:**
 - In Laterite and Red Soil Zone, complete planting of potato and sowing mustard. Also continue seed bed preparation for nursery sowing of *boro* rice.
 - In New Alluvial Zone, present temperatures are conducive for sowing of wheat, planting of potato.
 - In Coastal Saline Zone, complete harvesting of *aman* rice at the earliest. Continue nursery bed preparation of *boro* rice and planting of potato.
 - In Old Alluvial Zone, complete sowing of wheat and pea. Undertake seed bed preparation for nursery sowing of *boro* rice.
 - In Terai Zone, continue planting of potato.
 - Spray Copper Oxychloride @ 4g/litre water and Mancozeb @ 2g/litre water to prevent late blight of potato due to foggy conditions in Old Alluvial Zone.
 - In New Alluvial Zone, weather is congenial for black rot disease in cabbage. To control the black rot disease, apply Streptomycin @ 100 mg per litre of water.
 - In Terai Zone, due to low temperature there is chance of aphid in mustard. Spray Thiamethoxam @1 g/3 litre of water.
 - **Andaman and Nicobar:**
 - Continue sowing of vegetables, pulses and raised nursery beds for sowing of brinjal, chilli and tomato in North and Middle Andaman. Undertake land preparation for sowing of maize and groundnut.
 - Spray Monocrotophos @ 2 ml/litre of water in late sown rice to protect the crop from gundhi bug in North and Middle Andaman.
 - **Odisha:**
 - In Western Undulating Zone, continue sowing of groundnut. Prepare the land for sowing of mustard in residual moisture immediately after harvesting of rice. Apply irrigation in transplanted cabbage, cauliflower and tomato which are at two to three week stage.
 - In North Central Plateau Zone, continue sowing of green pea, sunflower, mustard, groundnut, sesam and planting of potato.
 - In North Eastern Ghat Zone, undertake planting of banana as dry weather and prevailing temperatures are favourable for Banana planting.
 - In East and South Eastern Coastal Plain Zone, present weather is optimum for sowing of groundnut, green pea

and mustard. Also continue nursery raising of onion. Continue planting of banana and transplanting of cole crops. Undertake sowing of garlic in irrigated upland and medium land. Undertake sowing of sesame.

- In North Eastern Plateau Zone, continue sowing of wheat, groundnut, gram, peas and onion. Continue harvesting of rice. As dry weather is prevailing, apply irrigation to potato. Undertake transplanting of chilli.
- In North Eastern Coastal Plain Zone of Odisha, continue sowing of rapeseed and mustard.
- In Mid Central Table Land Zone of Odisha, undertake harvesting of rice.
- In East and South Eastern Coastal Plain Zone of Odisha, the prevailing weather may aggravate the infestation of aphid in pulses and powdery mildew in pulses and cole crops. Spray. Imidachloprid @ 5 ml or Metacystox @20 ml per 10 litre water to control aphid and spray Sulfex @ 50 g per 10 litre water to control powdery mildew.
- **Bihar:**
 - In North West Alluvial Plain Zone of Bihar, complete sowing of wheat. Carry out intercultural operations like weeding and earthing in potato. Apply light irrigation to mustard crop and early sown potato, early sown wheat crop which is in CRI stage and vegetables. Prepare nursery for sowing of *boro* rice. Prepare land for sowing of late varieties of wheat up to 25 December.
 - In North East Alluvial Zone of Bihar, complete sowing of timely sown irrigated wheat. Apply light irrigation in brinjal, cauliflower, tomato, pea and cabbage. Apply light irrigation in wheat crop which is about 20-25 days old and also apply urea @ 30 kg/acre after two days of irrigation. Prepare land for the sowing of late sown irrigated wheat varieties.
 - In South Bihar Alluvial Zone, complete sowing of wheat, gram and late sown varieties of mustard. Carry out intercultural operations like weeding in gram, lentil and pea crops after 25-30 days of sowing.
- **Jharkhand:**
 - In South Eastern Plateau Zone of Jharkhand, continue nursery raising of onion and transplanting of cole crops. Complete sowing of chick pea, wheat, linseed and lentil.
 - In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of mustard, wheat and lentil. Continue harvesting of rice. Prepare nursery bed for onion.
 - In South Eastern Plateau Zone of Jharkhand, low temperature and foggy weather is favourable for the attack of early and late blight disease in early planted potato crop; spray Krilaksil or Ridomil MZ @ 1.5 g per litre of water to control the disease.
 - Suitable varieties are given in Annexure I.
- **Animal Husbandry**
 - In Coastal Saline Zone and Old Alluvial Zone West Bengal there is chance of worm attack in cattle due to cold weather. Feed Albomer@ 1.5 g bolus per 150 kg weight and keep them in proper shed.
- **Fishery**
 - In Terai Zone of West Bengal, as temperature is decreasing do not apply cow dung or any other organic manure and lesser quantity application of supplementary feed should be done in pond. Apply lime @ 60 kg/bigha with 2.5 m water level.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Land preparation

Okra

Onion

- **Realised Weather:** Weather remained dry over the region. Minimum temperatures are above normal by 2-3°C at isolated places northwest Madhya Pradesh. They are below normal by 2-3°C at isolated places over northeast Madhya Pradesh & Chhattisgarh and near normal over rest parts of the region. The lowest minimum temperature of 4.2°C has recorded at Khajuraho (Madhya Pradesh) in plains of the country.
- **Weather Forecast:** Dry weather would prevail over the region during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over Madhya Pradesh on 13th and 14th. Weather would be dry over rest of the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - As dry weather is prevailing, irrigate early sown potato and vegetables in Satpura Plateau Zone. Continue

sowing of gram, wheat, planting of garlic, and transplanting of onion.

- Continue sowing of wheat in Bundelkhand Zone. Also continue transplanting of tomato, chilli, brinjal, cauliflower and cabbage on raised beds. As dry weather is prevailing, apply irrigation in early sown wheat and mustard crop. Undertake weeding and hoeing in onion and garlic crops. Due to cold weather condition, undertake mulching in orchard crops.
- Continue sowing of wheat and gram in Nimar Valley Zone. Undertake sowing of vegetables like coriander, onion, garlic and planting of potato.
- Continue sowing of wheat, green pea and nursery sowing of tomato, chilli, brinjal, cauliflower, cabbage, capsicum, onion, planting of potato, turmeric and ginger in Vindhya Plateau Zone. Undertake planting of sugarcane.
- Continue sowing of carrot, garlic, spinach, fenugreek and radish and planting of potato, in Kymore Plateau and Satpura Hill Zone. Undertake weeding and intercultural operations in chickpea, mustard, lentil and early sown wheat. Irrigate vegetables like tomato, brinjal and chillies and pick up matured fruits.
- Continue sowing of wheat, pea and planting of potato in Malwa Plateau Zone. Also continue transplanting of onion, tomato, brinjal, chilli, cabbage and cauliflower on the prepared beds. As dry weather is prevailing irrigate newly planted fruit plants and chickpea.
- As dry weather is prevailing, apply irrigation in early winter vegetables like tomato, chilli, brinjal, cauliflower, cabbage, capsicum etc. and early sown potato, early green pea wheat and gram in Jhabua Hill Zone. Continue sowing of garlic and transplanting of onion.
- Due to dry and partial cloudy weather there are chances of attack of semi looper in cauliflower and cabbage crop in Bundelkhand Zone, for control spray Malathion 50 E.C. @ 2 ml/L of water.
 - **Chhattisgarh:**
 - In North Hill Zone and Plain Zone continue transplanting of vegetables like cauliflower, tomato, brinjal, chilli etc. Continue planting of potato, garlic, onion and sowing of wheat and vegetables like spinach and fenugreek.
 - Continue sowing of autumn sugarcane, sunflower, groundnut and *rabi* moong in Plain Zone of Chhattisgarh.
 - Continue sowing of toria, green pea, linseed, gram, wheat and nursery sowing of vegetables like, chilli, cauliflower, tomato etc. in Bastar Plateau Zone.
 - Due to partly cloudy weather, there are chances of attack of powdery mildew disease in green peas. Spray Karathen @ 1 ml per litre of water or Sulfex @ 3 g per litre of water.
 - Suitable varieties are given in Annexure I.

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



Land preparation

Sugarcane

Bottle Gourd

Onion

- **Realised Weather:** Dense to very dense fog has been observed at a few places over of Uttar Pradesh during morning hours of today. Weather remained dry over the region. Minimum temperatures are above normal by 2-3°C at isolated places over Uttarakhand and Rajasthan. They are below normal by 2-3°C at isolated places over Himachal Pradesh and Uttar Pradesh and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Jammu & Kashmir during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest of the region during the period. Slight fall in night temperatures over northwest India during next 48 hours and slight rise thereafter. Fog/ shallow fog would occur at some places over Uttar Pradesh, Punjab, Haryana & Delhi.
- **Weather Warning:** Very dense / dense fog (Visibility 200 m or less) would occur at many places on 9th and 10th December and dense fog (Visibility 200 m or less) at some places on 11th December over East Uttar Pradesh.
- **Weather Outlook:** A fresh western disturbance would affect western Himalayan region from 12th and plains of northwest India from 13th onwards. Weather would be dry over the region.
- **Advisories:**
 - **Jammu & Kashmir:**
 - As temperatures are conducive, continue sowing of wheat, barley and lentil and harvest the matured pods of toria in Intermediate Zone of Jammu & Kashmir. Undertake hoeing cum intercultural operations in mustard within 30 days of sowing to control weeds and conserve moisture.
 - Continue sowing of peas and planting of garlic in Valley Temperate Zone of Jammu & Kashmir. Apply top dose

of urea @ 3.6 kg/kanal. Undertake hand weeding /hoeing to reduce infestation by weeds.

- Undertake intercultural operation in already sown wheat crops in Sub-tropical Zone of Jammu & Kashmir. For the management of weeds spraying Isoproturon @ 0.75kg a.i + 2, 4-D ethyl ester @ 500 ml per hectare (30-35 DAS) after sowing is advised. Also apply first dose of (25%) urea as top dressing at CRI stage after irrigation.

▪ **Himachal Pradesh:**

- Continue sowing of wheat, planting of potato, early varieties of pea and onion in Lower and Mid Hills regions of Sub-Montane and Low Hills Sub-Humid Tropical Zone, as temperatures are conducive. Continue direct sowing of radish, turnip, carrot and fenugreek in lower regions. Complete transplanting of cabbage, cauliflower and broccoli. Continue sowing of barley in high altitude areas.
- Undertake intercultural operation in already sown wheat and ghobhi sarson by spraying Isoproturon 75 WP @ 70 g per 30 litres of water in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Undertake application of nitrogen fertilizer in cole crops after 20-25 days of sowing.
- In Mid Hills Sub-Humid Zone, continue transplanting of late season cauliflower (Pusa-snowball) and cabbage and planting of onion at a distance of 15X10cm. Complete sowing of pea, radish, turnip, methi and spinach.
- Continue sowing of Chinese cabbage, cabbage and coriander in High Hill Dry Temperate Zone.
- Under prevailing low temperature condition, there are chances of attack of cut worm in cauliflower in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Chloropyriphos 20 EC @ 80 ml mixed in 1kg of sand can be spread in the fields.
- Under prevailing low temperature condition, there are chances of incidence of canker disease in apple in Mild Hills Sub-Humid Zone. Spray Bordeaux mixture [copper sulphate (2 Kg)+quick lime (2 kg)] in 200 litres of water.
- Under prevailing dry weather condition, there are chances of aphids attack in vegetables in Mid Hills Sub-Humid Zone. Spray Methyl Demeton (Metasystox) @ 10 ml per 10 litres of water. For control of attack of woolly apple aphid in apple orchards, apply Thiamethoxam (Ektara) @ 100g or Carbosulfan (Marshal) @ 100 ml or Chlorpyriphos (Durmet) @ 200 ml in 100 litres of water.

▪ **Uttarakhand:**

- Continue land preparation for sowing of wheat, turmeric and planting of potato in Hill Zone.
- Complete sowing of lentil and farmers having irrigation facilities are advised to give irrigation in early sown wheat, mustard crops of 30 to 35 days old, also apply sprinkler irrigation in earlier sown chickpea & pea crops, in Bhabar and Tarai Zone.
- Due to dry weather condition, apply a light irrigation in mustard, chickpea, potato, & pea etc. Continue land preparation for planting of winter sugarcane in Sub Humid Sub Tropical Zone.

▪ **Punjab, Haryana and Delhi:**

- In Western Zone of Punjab, continue sowing of wheat, raya, gobhi sarson, onion, carrot, tomato.
- Due to foggy weather conditions, there is chance of incidence of late blight disease in potato. To control, spray Indofil-M-45/Kavach/Antracol @500-700g/acre at weekly interval.
- In Undulating Plain Zone of Punjab, due to decreases in temperatures, attack of pink stem borer in early sown wheat is noticed. To control spray Quinalphos 25 EC @ 800 ml per acre.
- In Western Plain Zone of Punjab, apply light irrigation to early sown wheat, also to sugarcane at monthly interval and continue late sowing of wheat upto 25th December.
- Present foggy weather is favourable for incidence of diamond back moth or tobacco caterpillar on cauliflower and cabbage in Western Zone of Punjab. To control spray Dipel 8L @ 300 ml/acre or Halt WP7 @ 300 g or Success 2.5 SC @ 250 ml/acre or Proclaim @ 70g or Avant @ 130 ml/acre or Ekalux @ 200-400 ml or Fenvalerate @ 100 ml using 80-100 L of water at 7 day interval in the evening.
- In Western Zone of Haryana, as dry weather would prevail continue harvesting of rice. As temperatures are conducive, continue sowing of wheat. Apply irrigation in already sown wheat at CRI stage.
- Under prevailing dry weather conditions, apply first irrigation in timely sown wheat crops at 21-25 DAS and in vegetables in Eastern Zone of Haryana. Also advised to undertake thinning and weeding in timely sown mustard crops.
- Present weather is favourable for attack of top borer in sugarcane in Eastern Zone of Haryana, apply Carbofuran 3G @13 kg or Phorate 10G @ 8 kg in furrows and apply light irrigation. Propping up and rogue out canes affected by red rot and wilt.
- In Western Semi-arid Zone of Delhi, temperatures are conducive for sowing of wheat in the prepared fields having optimum moisture and apply irrigation to already sown wheat crop which is in CRI stage. Thinning and weeding is recommended in timely sown mustard crops. Also irrigate 35 days old mustard crops.
- Present weather condition is favourable for attack of painted bug in mustard crops in Western Semi-arid Zone in Delhi, if attack is severe than, spray Carbaryl (Sevin) @ 2 g/litre of water.

▪ **Uttar Pradesh:**

- Under prevailing dry weather condition, apply light irrigation in gram, peas, rajma, lentil and fruit crops in Bundelkhand Zone. Continue sowing of late varieties of gram. Undertake harvesting of matured cauliflower, cabbage, tomato, chilli and brinjal.
- Continue sowing of late varieties of wheat with seed rate @ 125 kg/ha and nursery sowing of tomato in Central Plain Zone of Uttar Pradesh. Apply 1st irrigation in wheat 25-30 days after sowing, and in pea after 35-40 days

of sowing.

- Undertake sowing of late varieties of gram in Central Plain Zone of Uttar Pradesh. Complete planting of papaya.
- Complete sowing of normal varieties wheat and undertake sowing of late varieties of wheat in Eastern Plain Zone of Uttar Pradesh.
- Continue sowing of late varieties of wheat in Western Plain Zone of Uttar Pradesh. Also undertake mixed cropping of mustard, lentil and gram along with wheat. Apply irrigation to early sown wheat after 21 days after sowing, to sugarcane crops at 20 days interval and in early planted potato.
- Foggy weather is conducive for the incidence of blight disease in potato in Central Plain Zone of Uttar Pradesh. For control, spray Macozeb or Blitox 0.2 % @ 2 g per litre of water.
- Under prevailing dry weather condition, there are chances of attack of fruit fly and fruit borer in pigeon pea in Ambedkarnagar, Sant Kabir Nagar, Gorakhpur, Raibareilly, Barabanki and Basti districts of Eastern Plain Zone of Uttar Pradesh. Spray Imidochlorprid @ 1ml per litre of water per hectare. For control of stem borer in pea, spray Imidochlorprid 17.8 % @ ½ ml per litre of water at 10 days interval.
- Under prevailing dry weather condition, there are chances of attack of aphids in toria in Amethi, Raibareilly, Faizabad and Deoria districts of Eastern Plain Zone of Uttar Pradesh. Spray Malathion 50 EC @ 2 litre or Monocrotophos 36 SL 600-800 ml in 600-800 litres of water per hectare. For control of attack of saw fly in mustard, spray Fenbelrate 0.4% or Quinolphos 1.5 % @ 20-25 kg per hectare.

▪ **Rajasthan:**

- In Flood Prone Eastern Plain Zone of Rajasthan, undertake nipping in gram crops to enhance branching. Earthing up is recommended at 30-35 days after planting after irrigation and nitrogen application in potato crops.
- In Semi Arid Eastern Plain Zone, Apply 1st top dressing of urea in wheat and barley and remaining dose of nitrogen in mustard along with irrigation water. After sowing cumin crops provide light irrigation every 3rd - 4th day for better germination.
- Continue sowing of wheat (late variety), cumin in Semi Arid Eastern Plain Zone.
- Continue sowing of wheat, barley, fenugreek, lucerne in Transitional Plain Zone of Inland Drainage.
- Weather condition is favourable for attack of sawfly in mustard in Flood Prone Eastern Plain Zone of Rajasthan. To control, spray Malathion 50 E.C. @ 500 ml dissolve in 500 litre water.
- Suitable varieties are given in Annexure I.

• **Floriculture**

- Current temperature is favourable for nursery raising of winter flowers in poly houses in Sub Montane and Low Hills Sub-Tropical; Zone of Himachal Pradesh. For the control of blue beetle in roses and balsam, spray Cypermythrin @0.05%. Present weather is conducive for attack of mites in carnation. For control, spray Cypermythrin @0.05% at 15 days interval.

• **Animal Husbandry:**

- Due to fall in night temperature, keep cows in their cowshed to protect them from cold in High Hill Temperate Dry Zone of Himachal Pradesh. Also give 40-50g mineral mixture with the daily feed. Due to fall in temperature, make the arrangements for protection of cold in the poultry houses in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Undertake vaccination for IBD and Ranikhet disease as there are chances of spread of these diseases.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Onion



Sugarcane



Cotton



Mango

- **Realised Weather:** Weather remained dry over the region. Minimum temperatures are above normal by 2-3°C at isolated places over Maharashtra and near normal over rest parts of the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Slight fall in night temperatures over west India adjoining to northwest India during next 48 hours and slight rise thereafter.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over Maharashtra and Vidarbha on 13th and 14th. Weather would be dry over the region.
- **Advisories:**

▪ **Maharashtra:**

- In Konkan, apply irrigation and fertilizers in vegetable crops and mango and cashew orchards. Prepare the field for the sowing of *rabi* groundnut. Prepare raised bed for nursery sowing of *rabi* rice. Undertake planting of watermelon variety 'Sugar Baby' on one side of ridges with a spacing of 4 x 1 m.
- In Madhya Maharashtra, as night temperature prevails around 9°C in some parts of North Madhya Maharashtra, to protect grapes from cold (fruit cracking especially in black grapes), apply drip irrigation for half an hour during morning hours / apply mulch of crop residue. For protection of banana, apply mulch of organic material at base of trunk, apply light irrigation during evening and cover the trunk with dried leaves. Wind breaks/shelter belts may be planted around orchards. Continue intercultural operations like weeding and fertilizer application in sugarcane, vegetables, *rabi* jowar, wheat and safflower. Continue picking fully opened cotton bolls during morning hours. Apply irrigation to vegetables, sugarcane, safflower, *rabi* jowar, gram, wheat and grapes, banana and pomegranate orchards. Continue the harvesting of matured sugarcane.
- In Marathwada, as dry weather would prevail, apply irrigation to sugarcane, red gram, *rabi* jowar, safflower, vegetables and early sown wheat. Considering the water stress condition, apply micro irrigation like drip and sprinkle irrigation in sugarcane and orchards like banana, pomegranate, sweet lime and orange. Also apply mulch of crop residue. Continue intercultural operation like hoeing, weeding and fertilizer application to sugarcane, *rabi* jowar, wheat, gram and vegetables. Continue picking fully opened cotton bolls during morning hours. Avoid irrigation during boll bursting. Prevailing low temperature (around 10°C) may affect growth of banana, farmers are advised to apply irrigation in the evening and arrange smoking in the orchards at night. Cover new banana bunch with skating bag. Wind breaks/shelter belts may be planted around orchards. Continue harvesting of already matured sugarcane.
- In Vidarbha, as dry weather is prevailing, apply irrigation to vegetables and orange, sweet lime orchards. Apply fertilizers and continue intercultural operations in vegetables and orchards. Continue picking fully opened cotton bolls. Prepare raised bed for nursery sowing of *rabi* rice. Undertake sowing of linseed and mustard in East Vidarbha.
- As cloudy weather is expected on 12th and 13th in Pune region, there may be more infestation of powdery mildew in cucumber, ridge gourd, pumpkin, chilli, guar, tomato; spray water soluble sulphur 80% @ 20 g per 10 litres of water. In cucumber instead of Sulphur spray Carathane @ 5 ml per 10 litres of water.
- Due to cloudy weather in South Konkan, there may be attack of mango hoppers in new flush and inflorescence. For control, spray 25 % Cypermethrin @ 4 ml per 10 litres of water.

▪ **Gujarat**

- In North Gujarat Zone, undertake sowing of wheat. Carry out transplanting of onion seedling. Complete picking of matured bolls of cotton. Carry out weeding and intercultural operations to conserve soil moisture.
- Continue sowing of cumin, wheat, green gram, chick pea, castor and planting of sugarcane in Bhal and Coastal Zone
- Continue land preparation and sowing of wheat and chickpea in South Saurashtra Zone. Complete picking of matured bolls of cotton.
- In South Gujarat Zone, continue sowing of gram.
- Complete picking of matured bolls of cotton. Continue harvesting of matured onion in North Saurashtra Zone.
- Continue sowing of cumin and Isabgol in North West Zone.
- Continue sowing of wheat in South Gujarat Heavy Rainfall Zone. Complete picking of matured bolls of cotton. Irrigate brinjal, tomato, okra and other vegetable crops in morning hours.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- In Gujarat, increase the green fodder quantity in the cattle feed. Arrange adequate amount of fresh drinking water for cattle.

Annexure I
List of varieties

Tamil Nadu

Late Samba/ Thaladi rice: ADT 38, ADT 46, ADT 49, Improved white Ponni, IR 20, ASD 19, Paiyur1, TRY 1, TRY 3, CO 48, CO 49, BPT 5204 and CO 50

Direct seeded rice: (White Ponni or ADT 39)

Assam

Green gram: T-44, Kopergaon, K-851, ML-56, ML-131 etc.

Black gram : T-9, T-27, Pant U-19, T-122.

Radish : Pusa Deshi, Pusa Chetki, Pusa Himani

Cauliflower : Improved Japanese, Pusa Synthetic, Pusa Snowhall and Main Crop Patna.

Early maturity Cabbage varieties : Golden Acre, Pride of India, Pusa Mukta (Sel – 8).

Early maturity Knol Khol : White Vienna.

Winter brinjal : Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Samrat

Meghalaya

Pigeon pea: short duration : UPAS-120, ICPL 87. long duration WB 20, Pusa 9 & Sarita.

Cabbage: H-139, Pride of India

Cauliflower: Meghalaya Local

Carrot: New Karoda, Nantesh

Radish: Local genotype

Broccoli: Puspa, Aiswarya

French bean: Naga Local

Pea: Arkel (for vegetables), TRC P8, TRC P9, Prakash, Rachna.

Potato: Kufri Joyti, Kufri Megha, Kufri Giriraj, Kufri Girdhari, Kufri Himsona, Kufri Himalini.

Pea: Arkel (for vegetables), TRC P8, TRC P9, Prakash, Rachna.

Tripura

Tomato: Trishul, Allrounder, T- 1408, T- 1458, Anup.

Cauliflower: CFL- 4048, Pusa early synthetic, Kamaya, Suhasihi.

Cabbage: BC- 76, Pusa Drum Head, Pusa Synthetic.

Broccoli: Everest, Ayeshwaria.

Odisha

Sesame: Kanak, Kalika, Uma, Usha, Tilotama, Nilima, Prachi

Greengram: K-851, PDM-11, PDM-54, OUM-11-5

Blackgram: T-9, Pant U-11, Pant U-19, Pant U-30

Cowpea: SEB-2, Pusa Barsati Niger: Deomali, Niger-1 and for Okra: Utkal Gourav.

West Bengal

Banana: Mortoman, Chapa, Kathali, Singapuri.

Tomato: Avinash-2, 448.

Cabbage: Pride of India, Pusa early, Kranti.

Cauliflower: Jawhar moti, Bharat Jyoti, Early banaras

Bihar

Shakarkand: Rajendra Shakarkand- 5, Rajendra Shakarkand-35, Rajendra Shakarkand-43, Rajendra Shakarkand-47, Kalmegh and Rajendra Shakarkand-92.

Pigeon Pea: arhar: Bahar, Pusa 9, Narendra Arhar 1

Urd: T-9, Pant U-19, Pant Urd 31, PDU-1

Radish: Pusa Chetki, Pusa Himani, Pusa Rashmi, Japani Saphed

Pointed gourd: Rajendra Parwal-1, Rajendra parwal-2, FPI and 3

Boro rice: Gutum, Prabhat, Richaria, Dhanlaxmi, Saroj Rajendra Bhagvati, and R.A.U.

Jharkhand:

Urd: T 9, Pant U 19, 30, 35 and Birsa urd 1

Moong: Pusa Vishal, S M L 668, K 885, P S 16, Pant Moong 2 and P D M 11.

Arhar: Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days),

Maize: short duration variety: Birsa Vikas Maize-2 and medium duration variety: Birsa Maize-1.

Madhya Pradesh

Gram: JG-130, JG-11, JG-315, JG-16

Wheat: Sujata, HW-2004, HI-1500

Winter Sugarcane: KJN 86-572, KJN 86-141

Green Pea: Arkel, PSM-3, Jawahar Pea 1, Jawahar Pea 2

Chickpea: J.G-11, J.G-74

Chhattisgarh

Gram: JG-16, JG-11, JG-74, Vaibhav

Linseed: RLC-92, Indira-32

Wheat: GW-273, Lok-1

Mustard: Pusa Bold

Jammu & Kashmir

Berseem: Mescavi, Pusa Giant, BL-1 and Vardan

Uttarakhand

Pea: VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel

Potato: Kufri- Jyoti, Ashok, Anand

Toria : Pant Toria-30, 303, 507 or local varieties.

Himachal Pradesh

Peas: Palam Triloki, Arkel, VL-7 and Matar Ageta

Late variety of Cauliflower: broccoli

East Uttar Pradesh

Cabbage: Imprabad Japani, Pusa chipali and Pusa kartiki

Radish: Japani white, Pusa chetakij, Hisar Muli No.1 and kalyanpur-1

Toria: T-9, T-36, Pant -30,303, B-9

Potato: Kuferi - Chandramukhi, Bahar

Mustard: Basati, Maya, Kanti, Urvashi, Narendra, Swarna-8, Narendra Ageti-4

Ageti Matar: Kashi - Nandini,Uday, Mukti, Arkel, Azad-3

West Uttar Pradesh:

Toria: Sangam, TL-17, 67

Ageti matar: Azad P-3, Arkel

Maharashtra

Madhya Maharashtra

rabi jowar: Selection-3, Phule Mauli, Phule Anuradha in light soil, Phule Chitra, Maldandi-35-1 in medium soil and Phule Vasudha, Phule Yashodha in black soil

Safflower: Bhima or Phule Kusuma

Marathwada

Jowar: Parbhani Moti or Parbhani Jyoti.

Gujarat:

Pea: Pusa Pragati.

Carrot: Pusa Rudhira and Pusa Kesar.