

National Agromet Advisory Service Bulletin

Tuesday 2nd December 2014
(For the period 2nd to 5th December 2014)



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



Realised Weather on 2nd December 2014

Significant weather observations: Dense fog has been observed at isolated places over Uttarakhand, East Uttar Pradesh & Bihar and fog / shallow fog at isolated places over Jammu & Kashmir, Manipur, Tripura, Arunachal Pradesh, Assam & Meghalaya and Gangetic West Bengal in the morning hours.

Rainfall:(From 0830 hours IST of yesterday to 0830 hours IST of today): Rain/thundershowers has occurred at many places over Tamilnadu and at a few places over Kerala & Lakshadweep. Weather remained dry over rest of the country. The amounts of rainfall (1cm or more) recorded at 0830 hours IST of today are: Atiramapattinam 5; Tondi & Minicoy 2 each and Kodaikanal, Nagapattinam, Tiruchchirapalli and Pamban 1 each.

Temperature: Minimum temperature is below normal by 2-3°C at isolated places over Sub-Himalayan West Bengal & Sikkim, south Gujarat Region, Konkan, Chhattisgarh and Andhra Pradesh. They are above normal by 2-4°C at many places over Punjab, Haryana & Delhi, West Uttar Pradesh, Rajasthan, Gujarat and northwest Madhya Pradesh; at isolated places over East Madhya Pradesh, Bihar, South Interior Karnataka and Arunachal Pradesh and near normal over rest parts of the country. The Lowest minimum temperature of 6.3°C has recorded at Amritsar (Punjab) in the plains of the country.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 5th December, 2014)

- Rain/thundershowers would occur at a few places over Kerala and Lakshadweep during next 24 hours and at isolated places thereafter.
- Rain/thundershowers would occur at a few places over Tamil Nadu & Puducherry on 2nd; at isolated places on 3rd and dry weather would prevail thereafter.
- Rain/thundershowers would occur at isolated places over Andaman & Nicobar Islands during the period.
- Rain/thundershowers would occur at isolated places over Jammu & Kashmir on 2nd; dry weather would prevail on 3rd and rain/thundershowers would occur at isolated places thereafter.
- Dry weather would prevail over rest parts of the country.
- No significant change in temperatures over northwest & adjoining central and west India during next 2-3 days.
- Shallow fog would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, Assam, Nagaland, Manipur, Mizoram & Tripura during next 2 days mainly in morning hours.

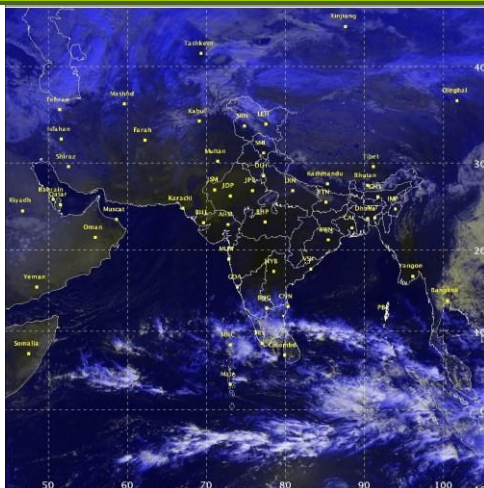
Weather Warning during next 3 days

- **02 December (Day 1):** Dense fog would occur at isolated places over East Uttar Pradesh and north Bihar.
- **03 December (Day 2):** Dense fog would occur at isolated places over East Uttar Pradesh and north Bihar.
- **04 December (Day 3):** No weather warning.

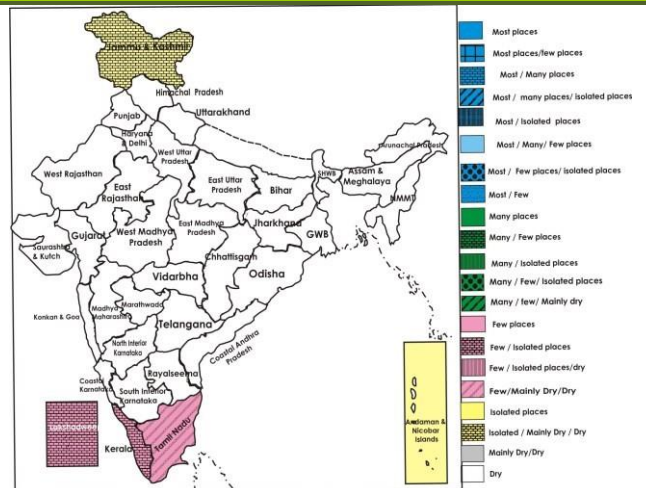
Weather Outlook for subsequent 4 days from 5th December 2014 to 09th December 2014

- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands and at isolated places over south peninsular India.
- The fresh feeble Western Disturbance would affect northern parts of Western Himalayan region from 5th December onwards.
- Weather would be dry over rest of the country.

Satellite image dated, 02.12.2014, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 5th 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 many places over Tamilnadu and at a few places over Kerala & Lakshadweep. Weather remained dry over rest of the region. Minimum temperatures are below normal by 2-3°C at isolated places over Andhra Pradesh. They are above normal by 2-4°C at isolated places over South Interior Karnataka and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Kerala during next 24 hours and at isolated places thereafter. Rain/thundershowers would occur at a few places over Tamil Nadu & Puducherry on 2nd; at isolated places on 3rd and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over south peninsular India. Weather would be dry over rest of the region.
- **Advisories:**
 - **Andhra Pradesh:**
 - Complete sowing of *rabi* groundnut and Bengal gram in Scarce Rainfall Zone. Iron deficiency is observed in few parts of Anantapur under excessive irrigation. For control, spray Ferrous Sulphate @ 5g/litre of water.
 - Continue sowing of *rabi* pulses 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 Southern Zone after treating the seed with Imidachloprid 2 ml/ kg seed followed by Tebuconazole @ 1g or Mancozeb @ 3g/kg seed.
 - Present low temperature during morning hours causes Magnesium deficiency and high temperatures during day time is congenial for incidence of sucking pests in cotton in the Krishna Godavari Zone. For management of Mg deficiency, spray MgSo₄ @ 10 g per litre of water and for management of sucking complex undertake stem application of Monochrotophos based on the intensity of pests.
 - **Telangana:**
 - Complete sowing of maize and black gram in the Northern Telangana region.
 - Prevailing cool and dry weather conditions are congenial for incidence of sucking pests in vegetables in the Southern Telangana Zone. To control, spray Dimethoate @ 2 ml/litre or Acephate @ 1.5 g/litre of water.
 - **Karnataka:**
 - Complete sowing of chickpea in the North Dry Zone of Karnataka.
 - Continue harvesting of groundnut and chilly in North Transition Zone of Karnataka. 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 groundnut and ragi in the Eastern Dry Zone of Karnataka.
 - Continue planting of sugarcane in the North East Dry Zone of Karnataka.
 - As dry weather would prevail, undertake harvesting of rice, maize and groundnut in the Southern Transition Zone of Karnataka.
 - Continue sowing of wheat and planting of sugarcane; undertake cotton picking and harvesting of rice in the North East Dry Zone of Karnataka.
 - Continue harvesting of rice and picking of cotton in the Hill Zone of Karnataka.
 - **Kerala:**
 - Continue sowing of *puncha* rice in the Problem Area Zone.
 - Complete transplanting of rice crop in Northern Zone.
 - **Tamil Nadu:**
 - Complete transplanting of *thaladi* rice in the Cauvery Delta Zone.
 - Due to prevailing low temperatures, spray Zinc Sulphate @ 0.5% along with Urea @ 1% per litre of water at 15

- days interval twice in the Western Zone to prevent Zinc deficiency in rice.
- Continue sowing of green gram and black gram in the North Western Zone.
- Continuous cloudiness with high relative humidity is favourable for the multiplication of brown plant hopper in rice in the Western Zone. Monitor the crop and provide sufficient drainage and ventilation for more aeration. Spray any one of the following chemicals at the basal portion of the stem -Phasalone @ 1500 ml /ha or Chloropyriphos @ 1250ml/ha or Imidacloprid @ 100 to 125ml/ha or Dichlorvos @ 400ml/ha.
- Prevailing weather with high cloud cover and humidity is congenial for the incidence of thrips in onion the South Zone. The ETL is 1 maggot/ hill. Spray Dimethoate 30% EC 0.7 ml/ litre of water or Quinalphos 25% EC 1.2 ml/ litre of water.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- Prevailing weather conditions are 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.

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



Rice



Okra



Cole Crops (Nursery)



Green Gram

- **Realised Weather:** Fog / shallow fog occurred at isolated places over Manipur, Tripura, Arunachal Pradesh, Assam & Meghalaya in the morning hours. Weather remained dry over the region. Minimum temperatures are above normal by 2-4°C at isolated places over and Arunachal Pradesh and near normal over rest parts of the region.
- **Weather Forecast:** Dry weather would prevail over the region. Shallow fog would occur at isolated places over Assam, Nagaland, Manipur, Mizoram & Tripura during next 2 days mainly in morning hours.
- **Weather Warning:** Nil
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - 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 Upper Bramhaputra Valley Zone, North Bank Plain Zone, Barak Valley Zone, Lower Bramhaputra Valley Zone and Central Bramhaputra Valley Zone of Assam, continue harvesting of matured *sali* rice.
 - In Central Bramhaputra Valley 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. Undertake land preparation for Zero tillage pea, lentil & toria. Apply mulching in ginger/ turmeric and potato with locally available weed biomass, maize stalk, etc. for conservation of moisture.
 - 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.
 - Due to foggy weather condition in Meghalaya, there is chance of late & early blight disease in potato. 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.
 - Due to foggy weather conditions in Arunachal Pradesh, there are chances of occurrence of late blight disease in potato & tomato. Foliar spray of Dithane M-45@2.5g/litre of water for management of late blight.
 - **Nagaland, Manipur, Mizoram and Tripura:**
 - In Manipur, continue planting of potato, transplanting of onion and cauliflower, harvesting of ginger/turmeric. Complete sowing of rapeseed/ mustard. In fruit crops and perennial vegetables like sweet potato, apply organic mulches after earthing up and weeding to conserve residual soil moisture as well as to maintain the soil temperature.
 - In Mizoram, continue sowing of pea, mustard and toria, nursery sowing of tomato.

- In Nagaland, continue nursery sowing of winter vegetables. Continue sowing of toria, pea and harvesting of matured lowland rice.
- In Mild Tropical Plain Zone of Tripura, continue transplanting of toria, sesame, lentil etc. 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 @ 20 ml/10 litres water or Imidacloprid @ 20 ml/10 litres of water against stem borer. Spray 36 WSC @ 1.5 ml/litre of water against gundhi bug. Spray Triclozole (Beam) @ 0.5 g/litre against leaf blast.
- 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.

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



Sugarcane



Groundnut



Onion



Rice

- **Realised Weather:** Dense fog has been observed at isolated places over Bihar and fog / shallow fog at isolated places over Gangetic West Bengal in the morning hours. Weather remained dry over the region. Minimum temperatures are below normal by 2-3°C at isolated places over Sub-Himalayan West Bengal & Sikkim. They are above normal by 2-4°C at isolated places over Bihar and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Andaman & Nicobar Islands during the period. Dry weather would prevail over the region.
- **Weather Warning:** Dense fog would occur at isolated places over north Bihar on 2nd and 3rd December.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands. Weather would be dry over rest of the region.
- **Advisories:**
 - **West Bengal:**
 - Continue field preparation and sowing of wheat, 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, continue land preparation for sowing of wheat, planting of potato and harvesting of *aman* rice.
 - In Coastal Saline Zone, complete harvesting of *aman* rice at the earliest. Continue nursery bed preparation of *boro* rice, planting of potato and sowing of lentil, mustard.
 - In Old Alluvial Zone, continue land preparation and sowing of wheat, pea.
 - In Terai Zone, continue planting of potato and sowing of wheat.
 - Due to light foggy weather during early morning hours, there is chance of root rot in winter vegetables like cabbage, cauliflower, tomato etc. in Coastal Saline Zone. Spray Diethane M-45 @ 2.5 g/litre of water.
 - Spray Copper Oxychloride @4g/litre water and Mancozeb @2g/litre water to prevent late blight of potato due cold temperature in Old Alluvial Zone.
 - **Andaman and Nicobar:**
 - Continue sowing of vegetables, pulses and raised nursery beds for sowing of brinjal, chilli and tomato 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 to transplanted cabbage, cauliflower and tomato which are at two to three week stage.
 - In North Central Plateau Zone, undertake sowing of green pea, sunflower, mustard, groundnut, seasam and planting of potato.
 - In North Eastern Ghat Zone, go for banana planting 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 rainfed groundnut,

green pea and mustard. Also continue nursery raising of onion. Undertake planting of banana and cole crops. Undertake sowing of garlic in irrigated upland and medium land. Complete sowing of sunflower. 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, undertake 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 cloudy 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.
- In East and South Eastern Coastal Plain Zone of Odisha, the weather is optimum for growing sesame and for nursery raising of onion.

▪ **Bihar:**

- In North West Alluvial Plain Zone of Bihar, continue sowing of wheat. Complete sowing of gram and maize. Carry Out intercultural operations like thinning and weeding in timely sown mustard and potato. Apply light irrigation to mustard crop and early sown potato. Carry Out intercultural operations like weeding in early sown garlic and vegetables also apply light irrigation.
- In North East Alluvial Zone of Bihar, continue sowing of wheat, and mustard. Continue harvesting of matured sugarcane and continue planting of autumn sugarcane. Apply light irrigation in early sown vegetable crops such as brinjal, cauliflower, tomato, pea and cabbage. Complete sowing of maize.
- In South Bihar Alluvial Zone, continue sowing of maize. Complete sowing of mustard, lentil, peas and gram. Continue sowing of fodder crop berseem. Continue sowing of wheat.

▪ **Jharkhand:**

- In Western Plateau Zone of Jharkhand, continue sowing of gram, lentil, linseed, wheat, barley & planting of potato. As dry weather is prevailing apply irrigation to already sown wheat crop and apply urea @ 22 kg per acre after irrigation in 20 - 25 days old crops.
- In South Eastern Plateau Zone of Jharkhand, continue sowing of chick pea, wheat, linseed, lentil, nursery raising of onion and transplanting of cole crops.
- 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 sown potato crop; spray Krilaksil or Ridomil MZ chemical @ 1.5 g per litre of water to control the disease.
- Due to cloudy and humid weather in Central & North Eastern Plateau Zone of Jharkhand, there are chances of wilt disease in tomato and brinjal, spray 100 mg of Streptocycline and Bavistin @ 0.5 g per liter of water.
- Suitable varieties are given in Annexure I.

• **Animal Husbandry**

- In Central & North Eastern Plateau Zone of Jharkhand, to prevent from cold, dairy animal should be covered with blanket gunny sack/ sheet in the evening.
- In Terai Zone of West Bengal, newly hatched chicken must be provided with artificially arranged heating system upto 1.5 months old chicks.
- In Coastal Saline Zone of West Bengal there is chance of worm attack due to cold in cattle. Feed Albomer@1.5g bolus per 150kg weight and keep them under proper shade.

• **Fishery**

- In Terai Zone of West Bengal, due to prevailing weather conditions and 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 @ 60kg/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 below normal by 2-3°C at

isolated places over Chhattisgarh. They are above normal by 2-4°C at many places over northwest Madhya Pradesh; at isolated places over East Madhya Pradesh and near normal over rest parts of the region.

- **Weather Forecast:** Dry weather would prevail over the region during the period. No significant change in temperatures over central India adjoining to northwest India during next 2-3 days.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - Due to dry weather prevailing irrigate cotton, potato and vegetables in Satpura Plateau Zone.
 - Continue sowing of wheat in Bundelkhand Zone. Also continue transplanting of tomato, chilli, brinjal, cauliflower and cabbage on raised beds. Complete sowing of chickpea and linseed. As dry weather is prevailing, apply irrigation in mustard crop. Undertake transplanting of onion in the main fields.
 - Continue sowing of wheat and gram in Grid Zone and Nimar Valley Zone.
 - Continue sowing of wheat, green pea and nursery sowing of tomato, chilli, brinjal, cauliflower, cabbage, capsicum, onion, planting of potato and ginger in Vindhya Plateau Zone of Madhya Pradesh.
 - Continue sowing of pea, mustard, toria, carrot, garlic and radish and planting of potato, undertake transplanting of cabbage, cauliflower, onion in main field in Kymore Plateau and Satpura Hill Zone.
 - 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. Irrigate newly planted fruit plants.
 - Irrigate early winter vegetables i.e. tomato, chilli, brinjal, cauliflower, cabbage, capsicum etc. and early potato & early green pea crop in Jhabua Hill Zone. Undertake sowing of garlic and transplanting of onion.
 - Due to cloudy weather there are chances of attack of Pentid bug in mustard in Gird Zone, spray Dimethoate @ 1.4ml per litre of water.
 - Due to cloudy weather there are chances of attack of semi looper in cauliflower crop in Bundelkhand Zone, for control spray Malathion 50 E.C. @ 2ml/L of water.
 - **Chhattisgarh:**
 - In North Hill Zone and Plain Zone complete harvesting of matured rice. Continue transplanting of vegetables like cauliflower, tomato, brinjal, chilli etc. Continue planting of potato, garlic and onion. Continue sowing of wheat and vegetables like spinach and fenugreek.
 - Undertake sowing of sunflower and groundnut 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.
 - 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 fog has been observed at isolated places over Uttarakhand, East Uttar Pradesh and fog / shallow fog at isolated places over Jammu & Kashmir in the morning hours. Weather remained dry over rest of the region. Minimum temperatures are above normal by 2-4°C at many places over Punjab, Haryana & Delhi, West Uttar Pradesh, Rajasthan and near normal over rest parts of the region. The Lowest minimum temperature of 6.3°C has recorded at Amritsar (Punjab) in the plains of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Jammu & Kashmir on 2nd; dry weather would prevail on 3rd and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over rest parts of the region. No significant change in temperatures over northwest India during next 2-3 days. Shallow fog would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh during next 2 days mainly in morning hours.
- **Weather Warning:** Dense fog would occur at isolated places over East Uttar Pradesh on 2nd and 3rd December.
- **Weather Outlook:** A fresh feeble western disturbance would affect northern parts of western Himalayan region from 5th December onwards. Weather would be dry over rest of the region.
- **Advisories:**

▪ **Jammu & Kashmir:**

- Continue sowing of barley, pulses (gram, lentil, pea) in Intermediate Zone of Jammu & Kashmir. Undertake weed control in mustard crops, apply Fluchloralin @ 0.70 kg a.i./ha as Pre plant incorporation (PPI) or Pendimethalin @ 1.0 kg./ha (pre-emergence) dissolved in 500-600 litre of water on non rainy day for effective control on annual grasses and broad leaved weeds.
- In Sub-Tropical Zone of Jammu & Kashmir, undertake top dressing with Nitrogen @ 30kg/ha or 1.5kg/kanal in potato & 500 g/kanal in root vegetables.
- Continue sowing of peas and planting of garlic in Valley Temperate Zone of Jammu & Kashmir.
- Due to decrease in temperature, there may be attack of sawfly in pea. To control spray Malathion @ 2ml/lit of water, in Sub-Tropical Zone.

▪ **Himachal Pradesh:**

- As temperatures are conducive, 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 of Himachal Pradesh. Seed treatment with Bavistin @ 2.5g per kg of seed before sowing for control of seed boom diseases of wheat. Continue direct sowing of radish, turnip, carrot and fenugreek in lower regions. Complete transplanting of cabbage, cauliflower and broccoli. Also undertake sowing of berseem, lucerne and oats as fodder crops. Continue sowing of barley in high altitude areas.
- Undertake intercultural operation in already sown wheat and ghubhi sarson by spraying Isoproturon 75 WP @ 70 g per 30 litres of water in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Undertake application of nitrogen fertilizer in cole crops after 20-25 days of sowing.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, continue transplanting of late season cauliflower (Pusa-snowball) and cabbage and planting of onion at a distance of 15X10cm. Complete sowing of pea.
- Continue harvesting of apple and sowing of Chinese cabbage, cabbage and coriander in High Hill Dry Temperate Zone of Himachal Pradesh.
- 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 of Himachal Pradesh. Chloropyriphos 20 EC @ 80ml mixed in 1kg of sand can be spread in the fields.
- Under prevailing dry weather condition, there are chances of aphids attack in vegetables in Mid Hills Sub-Humid Zone of Himachal Pradesh. Spray Methyl Demeton (Metasystox) @10ml 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 and planting of potato in Hill Zone.
- Under expected dry weather during this week, farmers having irrigation facilities are advised to give irrigation in wheat crop at CRI stage i.e. of 21 to 25 days duration crops and top dress Urea @ one kg per Nali. Do weeding by hand hoe for removing of weeds for better growth of wheat crops in Bhabar and Tarai Zone of Uttarakhand.
- As dry weather would prevail, apply a light irrigation in mustard, chickpea and pea. Continue planting of potato and planting of winter sugarcane in Sub Humid Sub Tropical Zone of Uttarakhand.
- Due to heavy dew, moderate fog and high relative humidity, there are chances of aphid incidence at flowering & pod formation stage of toria crops in Bhabar and Tarai Zone of Uttarakhand. To control spray Neem oil @2 ml/liter of water.

▪ **Punjab, Haryana and Delhi:**

- In Western Undulating Zone of Punjab, continue nursery sowing of mid-season cauliflower, desi varieties of radish, carrot under irrigation and turnip and planting of mango, litchi and apply irrigation in rice, cotton and maize.
- Temperatures are favourable for sowing of wheat, raya and transplanting of seedling of capsicum and brinjal in low tunnels of Central Plain Zone of Punjab. Also undertake sowing of African sarson, raya, gobhi sarson, nursery of chilli, capsicum, brinjal, tomato and onion.
- In Western Zone of Punjab, continue sowing of wheat, raya, gobhi sarson, rabi onion, carrot, tomato.
- In Undulating Plain Zone of Punjab, as temperatures are conducive, continue sowing of wheat, lentil, mustard and complete sowing of gram.
- In Western Plain Zone of Punjab, continue nursery sowing of tomato and onion. Apply light irrigation to early sown wheat and complete late sowing of wheat by end of this week. Complete sowing of pea. Also apply irrigation to sugarcane at monthly interval.
- Present foggy weather is favourable for incidence of late blight in potato in Western Zone of Punjab, spray Indofil-M-45/Kavach/Antracol @ 500-700g/acre or Blitox @ 750-1000g/ 250-350 litre of water/acre at weekly interval.
- In Western Zone of Haryana, continue sowing of mustard and gram. As dry weather would prevail, harvest rice crop and continue the picking of matured cotton bolls of early sown cotton. In Eastern Zone of Haryana undertake sowing of wheat.
- Present weather is favourable for attack of top borer in sugarcane in Western Zone of Haryana, apply Carbofuran 3G @13 kg or Phorate 10G @ 8 kg in furrows and apply light irrigation.

➤ In Delhi, complete transplanting of onion seedlings and planting of early potato, winter sugarcane. Complete land preparation for sowing of early mustard, pea and early toria and sowing of radish, spinach, sarson, rabi onion, carrot and coriander. Undertake sowing of wheat in the prepared fields having optimum moisture and apply irrigation to wheat crop which is in CRI stage.

▪ **Uttar Pradesh:**

➤ Undertake sowing of late varieties of gram in Bundelkhand Zone of Uttar Pradesh. Continue sowing of gram, rajma, vegetables like spinach, coriander, fenugreek and carrot; transplanting of cauliflower, cabbage, tomato, chilli and brinjal. Complete sowing of pea, lentil, mustard and rapeseed.

➤ Continue sowing of wheat, rapeseed, gram, peas, matar, flax seed spinach, fenugreek, radish, carrot, garlic, maize and planting of potato in Central Plain Zone of Uttar Pradesh with available soil moisture. Complete transplanting of cauliflower, cabbage, chilli, brinjal and tomato and continue sowing of.

➤ Under prevailing dry weather condition, apply 1st irrigation after 20-25 days after sowing at crown root stage and after 40-45 days at tillering stage in wheat crop, 30-35 days after sowing of barely at tillering stage and regular irrigation to sugarcane in Central Plain Zone of Uttar Pradesh. Also apply 1st irrigation at the time of onset of flowering in frenchbean and second irrigation at the time of pod development. Undertake harvesting of Anola.

➤ Complete sowing of normal wheat and undertake sowing of late varieties of wheat, gram and lentil in Eastern Plain Zone of Uttar Pradesh. Apply irrigation in sugarcane.

➤ Apply irrigation to sugarcane crops at 20 days interval in Western Plain Zone of Uttar Pradesh. Undertake application of Nitrogen in sarson, toria and taramira after irrigation.

➤ Weather is conducive for the attack of milli bug in mango in Eastern Plain Zone of Uttar Pradesh. Spray 2% Methyl Parathion @ 200 g for one tree. For control of leaf curl in pulses, spray Indosulphan 35 E.C. or Quinolphos 25 E.C. @ 1.25 litre or Mono Chrotophos 36 E.C. 800 ml per hectare.

▪ **Rajasthan:**

➤ In Southern Humid Plain Zone continue sowing of wheat, gram and *rabi* maize.

➤ In Flood Prone Eastern Plain Zone of Rajasthan, undertake weeding and thinning in gram and lentil crops. Also continue sowing of cluster bean, wheat, gram, carrot, lucerne and irrigate potato crop within 15 days interval.

➤ Continue sowing of wheat and barley in Semi Arid Eastern Plain Zone.

➤ Continue field preparation for the sowing of wheat, barley in (Bikaner) and wheat, cumin in (Jodhpur) Arid Western Plain Zone of Rajasthan.

➤ Continue land preparation for sowing of wheat, barley, fenugreek, lucerne in Transitional Plain Zone of Inland Drainage of Rajasthan.

➤ In Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, continue sowing of wheat gram and mustard. Continue seed bed preparation for nursery sowing of chilli, brinjal and tomato.

➤ Due to low temperature condition, there is chance of attack of leaf minor in mustard in Flood Prone Eastern Plain Zone of Rajasthan. To control spray Dimethoate 30 EC or @ 1 litre in 600- 800 ml of water. Also apply @ 0.1% solution of Malathion 50EC to manage fruit fly in guava.

➤ Humidity in atmosphere may increase the attack of saw fly and painted bug in mustard and Arid Western Plain Zone of Rajasthan. To control, dusting the crop with Methyl Parathion dust @ 25 kg/ha.

➤ To control attack of mustard saw fly, leaf eaters, and cabbage butter fly in cauliflower and cabbage, in Semi Arid Eastern Plain Zone of Rajasthan., spray Melathion 5% or Carboryl 5% dust @ 20-25 kg per hectare or spray Melathion 50 EC @ 1 ml per litre water. To control pink root rot in onion nursery spray Diethane M-45 @ 2 gm per litre water.

➤ Suitable varieties are given in Annexure I.

• **Floriculture**

➤ Temperature continue is favourable condition 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 minerals mixture with the daily. 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.

➤ Due to fall in temperature, keep cows in their cowshed to protect them from cold in Jammu & Kashmir.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Onion



Sugarcane



Cotton



Mango

- **Realised Weather:** Weather remained dry over the region. Minimum temperatures are below normal by 2-3°C at isolated places over south Gujarat Region, Konkan. They are above normal by 2-4°C at many places over Gujarat and near normal over rest parts of the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. No significant change in temperatures over West India during next 2-3 days.
- **Weather Warning:** Nil
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, apply irrigation, fertilizers and intercultural operations 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.
 - In Madhya Maharashtra, continue intercultural operations like weeding and fertilizer application in sugarcane, vegetables, *rabi* jowar, wheat and safflower. Complete sowing of irrigated wheat and gram. Continue picking of fully opened cotton bolls during morning hours. Apply irrigation to vegetables, sugarcane, safflower, *rabi* jowar, gram, wheat and grapes, banana and pomegranate orchards. Start the harvesting of already matured sugarcane.
 - In Marathwada, as dry weather would prevail, apply irrigation to sugarcane, red gram, safflower, *rabi* jowar, early sown wheat and vegetables. Considering the water stress condition, apply micro irrigation like drip and sprinkler 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, early sown wheat, gram and vegetables to preserve the soil moisture in the fields. Complete sowing of irrigated gram and wheat. Continue picking of fully opened cotton bolls during morning hours. Start the 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. Complete sowing of irrigated wheat. Prepare raised bed for nursery sowing of *rabi* rice. Complete sowing of linseed and late sowing of irrigated gram in east Vidarbha.
 - Due to cloudy weather in 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.
 - Powdery mildew develops rapidly if the day temperature is 20-25 °C for 3-4 hours. Prevailing temperature in Pune district is favourable for the incidence of powdery mildew in grapes; spray water soluble sulphur 80 % @ 20 g per 10 litres of water.
 - **Gujarat:**
 - In North Gujarat Zone, undertake sowing of wheat and cumin. Complete sowing of gram and planting of potato. As dry weather is prevailing undertake harvesting of matured sorghum. Apply irrigation to castor.
 - Continue sowing of wheat, green gram, in Bhal and Coastal Zone. As dry weather is prevailing apply irrigation to castor. Undertake sowing of cumin.
 - Undertake land preparation and sowing of wheat and chickpea in South Saurashtra Zone. Complete picking of matured bolls of cotton.
 - In South Gujarat Zone, undertake sowing of gram, wheat, pigeon pea.
 - Continue sowing of peas and carrot in North Saurashtra Zone. Complete picking of matured bolls of cotton. Undertake harvesting of matured Onion.
 - Continue sowing of wheat and cumin in North West Zone.
 - Continue sowing of maize in South Gujarat Heavy Rainfall Zone.
 - Suitable varieties are given in Annexure I.
- **Animal Husbandry**
 - In Gujarat, increase the green fodder quantity for feeding. 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, FP1 and 3

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.