

National Agromet Advisory Service Bulletin

Tuesday 23rd December 2014
(For the period 23rd to 26th December 2014)



Issued by

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



Realised Weather on 23rd December 2014

- **Significant weather observations:** Cold day conditions prevailed at most places over Punjab, Haryana & Delhi and at many places over Uttar Pradesh. Dense/very dense fog has been observed at many places over Uttar Pradesh; at a few places over Punjab, Haryana & Delhi, north Rajasthan, north Madhya Pradesh and Bihar during morning hours of today. The visibility (200 m or less) has been observed at 0530 hours IST at Ganganagar, Bareilly, Satna, Varanasi, Ambala, Gwalior, Baharaich and Patna.
- **Rainfall:** (From 0830 hours IST of yesterday to 0830 hours IST of today): Light rain/thundershower occurred at isolated places over Jammu & Kashmir and south coastal Tamilnadu. Weather remained dry over rest of the country.
- **Temperature:** Minimum temperatures are below normal by 2-5°C at most places over West Bengal & Sikkim; at many places over East Madhya Pradesh, Jharkhand, Chhattisgarh, Bihar, Konkan & Goa, Madhya Maharashtra, Vidarbha and Odisha; at a few places over north Rajasthan, Haryana & Delhi, Uttar Pradesh, Saurashtra & Kutch, Telangana and Andaman & Nicobar Islands and at isolated places over Punjab, West Madhya Pradesh and Marathwada. They are above normal by 2-3°C at a few places over Kerala and Andaman & Nicobar Islands and near normal over rest parts of the country. **The lowest minimum temperature of 1.8°C recorded at Churk (Uttar Pradesh)** in plains of the country.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 26th December, 2014)

- Rain/thundershowers would occur at isolated places over Andaman & Nicobar Islands during next 24 hours; at a few places on 24th and at many places thereafter.
- Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry and Kerala during next 24 hours and at a few places thereafter.
- Rain/snow would occur at isolated places over Uttarakhand during next 48 hours and over Himachal Pradesh during next 24 hours and dry weather would prevail thereafter.
- Rain/snow would occur at a few places over Jammu & Kashmir during next 24 hours; at isolated places on 24th and dry weather would prevail thereafter.
- Dry weather would prevail over Lakshadweep during next 48 hours and rain/thundershowers would occur at isolated places thereafter.
- Dry weather would prevail over rest parts of the country during the period.
- Fog would occur at many places over Punjab, Haryana & Delhi, Rajasthan, Uttar Pradesh, north Madhya Pradesh, East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days.

Weather Warning during next 3 days

- **23 December (Day 1):** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over Punjab, Haryana & Delhi, Uttar Pradesh, at some places over north Madhya Pradesh, Bihar and Sub-Himalayan West Bengal & Sikkim. Cold day conditions would prevail at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh. Cold wave conditions would prevail at isolated places over east Madhya Pradesh, Vidarbha, south Chhattisgarh and Telangana.
- **24 December (Day 2):** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over Punjab, Haryana & Delhi, north Rajasthan, Uttar Pradesh, at some places over north Madhya Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Cold day conditions would prevail at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh. Ground frost would occur at isolated places over Punjab and West Rajasthan. Cold wave conditions would prevail at isolated places over east Madhya Pradesh, Vidarbha, south Chhattisgarh and Telangana. Heavy rain/thundershowers would occur at isolated places over south coastal Tamilnadu.
- **25 December (Day 3):** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over Punjab, Haryana & Delhi, north Rajasthan, Uttar Pradesh, at some places over north Madhya Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Cold day conditions would prevail at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh. Ground frost would occur at Punjab and West Rajasthan. Cold wave conditions would prevail at isolated places over Saurashtra & Kutch. Heavy rain/thundershowers would

Detailed Zonewise Agromet Advisories

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



Land preparation

Sugarcane

Cotton

Rice Transplanting

- **Realised Weather:** Light rain/thundershower occurred at isolated places over south coastal Tamilnadu. Weather remained dry over rest of the region. Minimum temperatures are below normal by 2-5°C at a few places over Telangana; above normal by 2-3°C at a few places over Kerala and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry and Kerala during next 24 hours and at a few places thereafter. Dry weather would prevail over rest parts of the region during the period.
- **Weather Warning:** Cold wave conditions would prevail at isolated places over Telangana on 23rd and 24th. Heavy rain/thundershowers would occur at isolated places over south coastal Tamilnadu on 24th and 25th.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over south peninsular India till 27th and increase thereafter. Weather would be dry over rest of the region.
- **Advisories:**
 - **Andhra Pradesh:**
 - Complete harvesting of *kharif* rice in the Krishna Godavari Zone.
 - Under limited water resource conditions, instead of rice, zero tillage maize, sunflower and castor is recommended in Kurnool district in the Scarce Rainfall Zone. Low temperature and high RH turns cotton leaves to reddish brown tinge. Spraying of Agrominmax (Micronutrient mix) 5gram/lit, 3 grams Blitox, 10 grams Urea, 10 grams Magnesium sulphate /lit of water is recommended.
 - Helicoverpa damage was noticed in sunflower and redgram in few parts of Kurnool district in the Scarce Rainfall Zone, to control undertake spraying of Chloropyriphos 2ml/lit of water. Also stem rot incidence was noticed in Bengal gram, to control undertake spraying of Bavistin 1g/litre of water.
 - **Telangana:**
 - As cold wave conditions would prevail at isolated places over Telangana on 23rd and 24th, apply light and frequent irrigation to crops. Arrange smoking during night hours around the crop fields to prevent from cold injury.
 - Complete sowing of *rabi* rice and black gram in the Northern Telangana Zone.
 - Prevailing dry weather conditions are congenial for incidence of leaf hopper and leaf webber on groundnut in the Southern Telangana Zone. To control, leaf Hopper undertake spraying of Dimethoate @ 2 ml per litre of water and to control leaf webber, spray Quinolphos @ 2 ml per litre of water.
 - **Karnataka:**
 - Undertake harvesting of ragi in the Eastern Dry Zone.
 - Undertake harvesting of rice, second picking of early sown cotton, first picking of late sown cotton and sowing of maize in the North East Dry Zone.
 - Continue sowing of short duration pulses immediately after harvest of rice and maize in the Southern Transition Zone.
 - In the Hill Zone, continue picking of cotton and sowing of pulses in areas where rice harvesting has been completed.
 - Since dry weather is going to prevail, undertake harvesting of chilli and cotton in the North Transition Zone and and picking of cotton and chilli in the North Dry Zone.
 - Present weather is congenial for the incidence of helicoverpa insect in bengal gram in the North East Transition Zone. Spray insecticides like Profenophos or Chlorpyriphos @ 2 ml/litre or Indoxacarb @ 0.3 ml/l or Spinosad @ 0.2ml per liter of water to manage the insects.
 - Leaf roller insects were noticed in banana plots in Mysore district in the Southern Dry Zone. To manage this pest, Spray Nimbecidin @ 5ml or Quialphos 25EC @ 2ml per litre of water.
 - Pod fly damage was noticed on long duration pigeon pea, to control undertake spraying of Rogor (Dimethoate) 2 ml per liter of water in the North East Dry Zone.
 - **Kerala:**
 - Due to light rain and high humidity neck blast disease may occur on rice, to control this apply Carbendazim

(Bavistin) 1g/litre or Iprobenphos (Kitazin EC) 1ml/ litre in the Southern Zone.

- BPH attack is found in late sown rice nurseries in the Northern Zone due to prevailing high humidity. Drain the field and spray Acephate®+wetting agent (Acephate® 75SP @ 3g+wetting agent 1ml per litre of water) on the rice stem to manage the attack.

▪ **Tamil Nadu:**

- As there are chances of heavy rainfall at isolated places over south coastal Tamil Nadu on 24th and 25th, arrange for drainage facilities to avoid water logging and crop damage.
- Bacterial Leaf Blight and Bacterial Leaf Streaks are noticed in the samba rice due to humid weather conditions, to control this spray fresh cowdung extract 20% twice (Starting from initial appearances of the disease and another at fortnightly interval) or copper hydroxide at 500 g/ac in 200 litre of water in the Cauvery Delta Zone Prevailing low temperature and high relative humidity is congenial for incidence of bacterial leaf blight in rice and wilt disease in bengal gram in the Western Zone. Spray Streptomycin Sulphate + Tetracycline combination 300 g + Copper oxychloride 1250 g/ha and repeat 15 days later to manage bacterial leaf blight and apply Pseudomonas Florescence @ 2.5 kg /ha or spray Carbendazim 1g /litre of water to manage wilt disease.
- Prevailing weather with high cloud cover and moderate humidity is congenial for incidences of green leaf hopper, jassids and stem weevil in cotton in the South Zone. Spray dimethoate 30 EC 500 ml/ ha or spray carbaryl 50 WP @ 2.5 kg/ ha or carbofuran 3 G @ 33.3 kg/ ha. to manage the insects after current spells of rain.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- Farmers are advised to keep vigil against the spread of avian flu in the Problem Area Zone due to prevailing humid weather. Disinfect the infected premises to avoid further spread.

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



Rice



Okra



Cole Crops (Nursery)



Green Gram

- **Realised Weather:** Weather remained dry over the region. Minimum temperatures are near normal over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would occur at many places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days.
- **Weather Warning:** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at some places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 24th and 25th.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Assam, continue nursery raising and sowing of *boro* rice.
 - In Lower Bramhaputra Valley Zone of Assam, continue sowing of maize.
 - In Central Bramhaputra Valley Zone, Hill Zone of Assam, continue transplanting of cole crop, sowing of *rabi* pulses like lentil, rajmah, pea, lathyrus and oilseeds, wheat and complete planting of potato.
 - In North Bank Plain Zone of Assam, complete sowing of wheat at the earliest. Undertake transplanting of early sown varieties like Boro1, Boro 2, Dinanath and Swarnabh of boro rice seedlings for low lying area.
 - Continue transplanting of *boro* rice of about 45 days old (5- 6 leave stage) seedlings in Lower Bramhaputra Valley Zone of Assam. Apply one irrigation of 6cm depth to early sowing wheat varieties at crown root initiation stage (30-35 days after sowing).
 - In Meghalaya, continue nursery preparation of *boro* rice in low lying areas and sowing of Zero tillage pea, lentil and toria. Apply irrigation to mustard/rapeseed at flowering stage.
 - In Lower Bramhaputra Valley Zone, Central Bramhaputra Valley Zone, North Bank Plain Zone, Barak Valley Zone and Upper Bramhaputra Valley Zone of Assam, due to foggy and cloudy conditions blight disease may become severe in potato. Spray Mancozeb 75 WP 2g/litre or Ridomil MZ-27 (64% Mancozeb + 8% Metalaxyl) 2g/litre followed by Dithane M-45 @ 2.5 g in 1litre of water for control. Also spray Dithane Z-78 @ 25 g in 10 litre of water against late blight in tomato.
 - Due to foggy weather there is chance of infestation of aphid/ saw fly in rapeseed/ mustard in Hill Zone, North Bank Plain Zone, Central Bramhaputra Valley Zone, Upper Bramhaputra Valley Zone, Lower Bramhaputra Valley Zone and Barak Valley Zone of Assam. Spray Malathion 50Ec @ 2 ml/ litre of water or Dimethoate 30EC or Chloropyrifos @ 0.5 l/ha for control.

- In Hill Zone of Assam, due to 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.
- 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. Also in foggy condition leaf spot disease may spread in ginger and turmeric. To prevent leaf Spot disease, apply Bordeaux mixture (5:5:50) or Captan @ 1.5 g/litre or Carbendazim @ 500 g/ha. Also spray/ drench 1% Bordeaux mixture or Dithane M-45 (2.5 g/l) to prevent rhizome rot in ginger.
- **Nagaland, Manipur, Mizoram and Tripura:**
 - In Manipur, continue land preparation for sowing of *rabi* maize and transplanting of tomato and 50-60 days old seedling of onion. Apply light irrigation in rapeseed / mustard, pea, lentil, potato.
 - In Mizoram, continue harvesting of rice. Apply irrigation to banana, brinjal, early cole crops, pea, tomato, mustard and toria.
 - In Nagaland, apply light irrigation in toria. Mulching should be done to conserve moisture.
 - In Mild Tropical Plain Zone of Tripura, apply light irrigation on every alternate day in cole crops and potato, tomato. Mulching must be done after irrigation to reduce evaporative losses.
 - In Tripura, due to the prevailing foggy condition there may be infestation of early blight in potato. Apply Carbendazim @ 1g per litre of water for control of early blight. Also due to decrease in night temperature, there is chance of infestation of Pseudo stem weevils on banana. Apply Dimethoate (Rogor) or Imidacloprid @ 0.8ml per litre of water.
 - In Mizoram, apply Imidachloprid 1.5 ml/litre of water against aphid infestation in pea due to foggy weather condition.
 - Suitable varieties are given in Annexure I.
- **Animal Husbandry**
 - Continue vaccination in poultry to control *ranikhet* disease in Upper Bramhaputra Valley Zone of Assam.
 - In Meghalaya, Manipur, Tripura and Arunachal Pradesh, provide artificial heating through lighting of electric bulb to protect poultry birds (day old to 25 days old) from low temperature. Cover poultry house with gunny bags/ polythene sheet to prevent the expose of animal to cool night.
- **Fishery**
 - During winter season, apply Potash @ 4-5 mg/litre of water /Sukrena WS @ 1 litre per bigha of water/ lime in required doses to protect the fish population against various bacterial diseases in Upper Bramhaputra Valley, North Bank Plain Zone and Lower Bramhaputra Valley Zone of Assam.

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



Sugarcane



Groundnut



Onion



Rice

- **Realised Weather:** Weather remained dry over the region. Minimum temperatures are below normal by 2-5°C at most places over West Bengal & Sikkim; at many places over Jharkhand, Bihar and Odisha; at a few places over Andaman & Nicobar Islands. They are above normal by 2-3°C at a few places over Andaman & Nicobar Islands and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Andaman & Nicobar Islands during next 24 hours; at a few places on 24th and at many places thereafter. Dry weather would prevail over rest of the region during the period. Fog would occur at many places over Bihar, Sub-Himalayan West Bengal & Sikkim during next 3 days.
- **Weather Warning:** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at some places over Bihar and Sub-Himalayan West Bengal & Sikkim during the period.
- **Weather Outlook:** Rain/thundershowers would occur at many places over Andaman & Nicobar Islands. Weather would be dry over rest of the region.
- **Advisories:**
 - **West Bengal:**
 - In Coastal Saline Zone, keep thin layer of water at evening hours and remove it during morning from *boro* rice field.

- In Laterite and Red Soil Zone, continue seed bed preparation for nursery sowing of *boro* rice. Undertake main field for transplanting of *boro* rice.
- In New Alluvial Zone, continue seed bed preparation for nursery sowing of *boro* rice and wheat. Undertake land preparation for sunflower and intercultural operation *viz.* thinning & weeding of mustard should be done.
- In Laterite and Red Soil Zone, early morning fog may cause late blight in potato. To control this apply 2.5 gm Mancozeb + Carbendazim per litre of water. Also due to prevailing weather, downy mildew may occur in mustard. Apply 0.02% Ridonil to control downy mildew.
- In Coastal Saline Zone, due to dense fog and cloudy morning, there is a chance of late blight attack in potato. Spray Diethane M-45 @ 2.5 g/litre of water or Copper Oxichloride @ 4 g/litre of water as preventive measure. There is also chance of blast and brown spot in *boro* rice due to dense fog and cloudy condition in the morning hours. Apply SAF @ 2 g/litre of water. Also due to dense fog, there is chance of attack of stem rot and head borer in cabbage and cauliflower. For stem rot, spray Diethane M-45@2.5g/litre of water or Bavistin@1g/litre of water and for head borer spray B.T.@2ml/litre of water.
- In Old Alluvial Zone, continue seed bed preparation for nursery sowing of *boro* rice. Also continue intercultural operation in wheat 21 days after sowing.
- In Terai Zone, complete planting of potato.
- In Old Alluvial Zone, due to foggy condition, there is chance of the attack of late blight in potato. Spraying of Mancozeb @ 2 g /litre of water and Blitox @ 4 g/litre of water alternately at 10-12 days interval by completely wetting the leaves is advised. Also due to prevailing weather conditions, aphid infestation and leaf curling may occur in tomato. To control, spray Imidachlorpid @1ml/7.5 litre of water followed by Trichoderma viridae @4g/litre of water or Blitox @ 4g/litre of water.
- In New Alluvial Zone, Due to foggy condition aphid attack may be seen in mustard. Apply Imidacloprid 17.8 SL @ 3 ml /10 litre or Quinalphos 25 EC @ 2 ml / litre of water.
- In Terai Zone, due to low temperature and foggy weather, there is chance of attack of late blight in potato. To prevent attack spraying of Mancozeb (2 gm /litre of water) and Blitox (4 gm/litre of water) alternately at 10-12 days interval by completely wetting the leaves are necessary.
- In Laterite and Red Soil Zone, early morning fog may cause late blight in potato. Apply Mancozeb @ 2.5 g + Carbendazim per litre of water to control late blight.
- **Andaman and Nicobar:**
- In North and Middle Andaman, in the prevailing weather, severe incidence of defoliating pests and borer pests are observed in pulse crops and fruit crops. Spray Malathion @ 2ml/litre for control.
- **Odisha:**
- In Western Undulating Zone, undertake land preparation for sowing of green gram, black gram and sunflower 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 East and South Eastern Coastal Plain Zone, complete nursery sowing of rice, sowing of wheat and rabi pulses. Undertake transplanting of onion. Undertake weeding and hoeing in groundnut and potato. Apply irrigation in wheat at CRI stage.
- 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. Continue transplanting of chilli.
- In North Eastern Coastal Plain Zone of Odisha, continue sowing of rapeseed and mustard.
- 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 Imidachlorpid @ 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 Western Undulating Zone of Odisha, present weather is congenial for occurrence of alternaria blight in mustard at vegetative stage. For controlling the disease, spray Indofil M 45@3g/lit of water.
- **Bihar:**
- In North West Alluvial Plain Zone of Bihar, complete sowing of late varieties of wheat up to 25th December. Apply light irrigation to early sown wheat crop which is in CRI stage, chilli and vegetables. Undertake earthing up in early sown maize and thereafter give light irrigation.
- In North East Alluvial Zone of Bihar, continue sowing of late sown irrigated wheat varieties. 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. Complete preparation of nursery for sowing of *boro* rice. As low temperature is prevailing, apply light irrigation at evening time in tomato, chilli and other vegetable crops.
- In North West Alluvial Plain Zone of Bihar, low temperature and foggy weather is favourable for the attack of early and late blight in potato crop; spray Indofil M-45, for better result mix sticker 1ml/liter of water.
- **Jharkhand:**
- In South Eastern Plateau Zone of Jharkhand, complete sowing of wheat upto end of December, continue planting of potato. Timely sown wheat crop is at crown root initiation stage apply irrigation at this stage.
- In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of wheat. As dry weather is prevailing apply irrigation to already sown wheat crop at CRI stage, mustard and gram. Prepare nursery bed for onion and land preparation for sowing of vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber,

water melon and musk melon.

- In 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.
- In Western Plateau Zone and South Eastern Plateau Zone of Jharkhand, high humidity and low temperature is favourable for the attack of powdery mildew disease on pea, spray Karathen @ 1 ml per litre of water or Sulfex @ 3 g per litre of water.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- In Coastal Saline Zone and Terai Zone of West Bengal, provide artificial heating through lighting of electric bulb to protect poultry birds (day old to 25 days old) from low temperature.
- In Nicobar, provide artificial light in the form of electric bulb at night to egg laying birds to compensate for cloudy weather.
- North East Alluvial Zone of Bihar, protect the milch animals from cold by keeping under covered shelter and provide warm water for drinking for better milk yield.
- To protect from cold, dairy animal should be covered with gunny sack/ sheet in the evening in Central & North Eastern Plateau Zone of Jharkhand and also provide calcium and jaggery time to time. To prevent from Swine fever disease in pigs, farmers are advised to vaccinate against swine fever.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Land preparation

Okra

Onion

- **Realised Weather:** Weather remained dry over the region. Minimum temperatures are below normal by 2-5°C at many places over East Madhya Pradesh and Chhattisgarh; at isolated places over West Madhya Pradesh and near normal over rest parts of the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would occur at many places over north Madhya Pradesh during next 3 days.
- **Weather Warning:** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at some places over north Madhya Pradesh during the period. Cold wave conditions would prevail at isolated places over east Madhya Pradesh and south Chhattisgarh on 23rd and 24th.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - As cold wave conditions would prevail at isolated places over east Madhya Pradesh and south Chhattisgarh on 23rd and 24th December, apply light and frequent irrigation to crops and arrange smoking around the crop fields to protect the crops from cold injury.
 - **Madhya Pradesh:**
 - As mainly dry weather is prevailing, apply irrigation in early sown potato, wheat and vegetables in Satpura Plateau Zone. Apply 1st irrigation in wheat, gram and vegetables in Jhabua Hill Zone. Undertake picking of matured bolls of cotton.
 - Continue sowing of late varieties of wheat in Bundelkhand Zone. As mainly dry weather is prevailing, apply irrigation in early sown wheat and mustard crops. Undertake weeding and hoeing in onion and garlic crops.
 - Continue sowing of late varieties of wheat in Nimar Valley Zone. As dry weather is prevailing, apply 1st irrigation in wheat at CRI stage and in gram.
 - Continue transplanting of onion and planting of sugarcane in Vindhya Plateau Zone
 - Apply irrigation in wheat and vegetables like tomato, brinjal and chillies and pick up matured fruits in Kymore Plateau and Satpura Hill Zone. Continue intercultural operations in chickpea, mustard, lentil and early planted wheat crops.
 - Continue transplanting of onion, tomato, brinjal, chilli, cabbage and cauliflower on the prepared beds Malwa Plateau Zone. As dry weather is prevailing apply irrigation in wheat, newly planted fruit plants and chickpea.
 - Due to partly cloudy weather, there are chances of attack of stem borer and fruit borer in tomato, brinjal and okra in Vindhya Plateau Zone and Grid Zone; for control spray Trizophos @ 800ml per ha.
 - Due to partly foggy cloudy sky and increased humidity potato crop may be affected by early blight in Bundelkhand Zone, spray Mencozeb @ 2.5 ml per litre of water.
 - Due to cloudy weather, there are chances of attack of caterpillars in gram in Madhya Pradesh. Spray Quinalphos

@ 25 EC per 500-600 litre of water.

▪ **Chhattisgarh:**

- In North Hill Zone complete sowing of wheat, if sowing has been delayed, undertake sowing of varieties like GW-173, Lok-1 or Arpa. Continue sowing of Autumn sugarcane. Undertake earthing up in potato crop, apply Urea @ 50kg per acre.
- Complete sowing of wheat under irrigated condition in Plain Zone of Chhattisgarh, Apply irrigation in wheat (at CRI stage) and vegetables.
- Undertake sowing of late varieties of wheat and sugarcane in Bastar Plateau Zone. As mainly dry weather is prevailing, apply irrigation in wheat (after 20-25 days of sowing), gram and potato.
- Due to cloudy weather, there are chances of incidence of aphids in mustard, raddish and beans in North Hill Zone and Plain Zone, spray Carbaryl @ 2 kg/ha.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- As there is decrease in temperature, protect animals from cold in Madhya Pradesh. Increase light duration in poultry farms.

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



Land preparation

Sugarcane

Bottle Gourd

Onion

- **Realised Weather:** Light rain/thundershower occurred at isolated places over Jammu & Kashmir. Weather remained dry over rest of the region. Minimum temperatures are below normal by 2-5°C at a few places over north Rajasthan, Haryana & Delhi, Uttar Pradesh and at isolated places over Punjab. They are near normal over rest parts of the region. **The lowest minimum temperature of 1.8°C recorded at Churk (Uttar Pradesh)** in plains of the country.
- **Weather Forecast:** Rain/snow would occur at a few places over Jammu & Kashmir during next 24 hours; at isolated places on 24th and dry weather would prevail thereafter. Rain/snow would occur at isolated places over Uttarakhand during next 48 hours and over Himachal Pradesh during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period. Fog would occur at many places over Punjab, Haryana & Delhi, Rajasthan and Uttar Pradesh during next 3 days.
- **Weather Warning:** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over Punjab, Haryana & Delhi and Uttar Pradesh during the period and over north Rajasthan on 24th and 25th. Cold day conditions would prevail at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh during the period. Ground frost would occur at isolated places over Punjab and West Rajasthan on 24th and 25th.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - As cold day conditions would prevail at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh during the period and ground frost would occur at isolated places over Punjab and west Rajasthan on 24th and 25th, apply light and frequent irrigation and arrange smoking around the crop fields to prevent the crops from cold injury.
 - **Jammu & Kashmir:**
 - Undertake sowing of radish (Japanese White & Minowase) in Intermediate Zone of Jammu & Kashmir. Undertake hoeing cum intercultural operations in mustard, *rabi* pulses like lentil, pea and gram 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 in saffron to reduce infestation by weeds.
 - Apply irrigation in wheat at crown root initiation (20-30 days after sowing), oilseed, mustard and pulses in Sub-tropical Zone of Jammu & Kashmir and then apply first dose of (25%) urea as top dressing.
 - Under prevailing low temperature and cloudy weather, there are chances of occurrence of cabbage butterfly in cabbage/ cauliflower. To control apply Malathion @ 0.2 ml/lit of water.
 - **Himachal Pradesh:**
 - Continue sowing of oilseeds and pulses as mixed/intercrops with wheat in Sub-Montane and Low Hills Sub-

Humid Tropical Zone with available soil moisture. Undertake intercultural operation in already sown wheat by spraying Isoproturon 75 WP @ 70 g per 30 litres of water.

- 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 with available soil moisture.
- Continue sowing of Chinese cabbage, cabbage and coriander in High Hill Dry Temperate Zone with available soil moisture.
- Under prevailing low temperature and cloudy weather there are chances of occurrence of downy mildew in cruciferous vegetables in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Spray redomil M-Z @ 25 g per litres of water at 15 days interval on a non-rainy day. For control of powdery mildew in peas, spray Celfex @ 25 g per 10 litres of water or karathane @ 5 ml per 10 litres of water.
- 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 humid 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.

▪ **Uttarakhand:**

- Continue sowing of late varieties of wheat in Hill Zone and Sub Humid Sub Tropical Zone of Uttarakhand. Continue land preparation for sowing of peas. Undertake top dressing of urea in mustard, vegetables like radish, spinach and coriander.
- Undertake harvesting of potato in clear weather in Bhabar and Tarai Zone of Uttarakhand. Taking advantage of last week rain/snow, apply first dose of urea @ 2.5 kg as top dressing in wheat crop at Crown Root Initiation stage. Apply 2nd irrigation in wheat crop of 40 to 45 days after sowing. Undertake weeding & thinning operations in pea, chickpea, rajmash and garlic.
- Taking advantage of last week rain/snow apply first dose of urea @ 2.5 kg as top dressing in wheat crop at Crown Root Initiation stage in Sub Humid Sub Tropical Zone of Uttarakhand.

▪ **Punjab, Haryana and Delhi:**

- In Western Zone of Punjab, continue sowing of wheat of late varieties, raya, gobhi sarson, onion, carrot, tomato. Apply light irrigation to early sown wheat and to sugarcane at monthly interval.
- In Western Semi-arid Zone of Delhi, undertake sowing of late varieties of wheat at seed rate of 125 kg seed per hectare. Also undertake transplanting of mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli crop in the raised bed.
- Under prevailing dry weather condition, continue harvesting of rice in Western Zone of Haryana. As temperatures are conducive, complete late sowing of wheat. Apply irrigation in already sown wheat at CRI stage. Undertake transplanting of onion, mature seedlings of tomato, cauliflower and cabbage.
- Due to high humidity in Western Zone of Haryana, infection of early blight may occur in potato and tomato, monitor the crop.
- In Western Plain Zone of Punjab provide polythene sheet/Sarkanda/Kahi/ rice straw to save the plants from frost. Dwarf vegetable varieties can be saved from frost injury with 100 gauge thick white plastic bags of 35 x 25 cm size.
- In Undulating Plain Zone of Punjab, apply irrigation and cover the newly planted plants with thatches for protection from cold and apply light irrigation to mustard.
- Due to foggy weather white rust may be noticed in mustard, spray Dithane-M-45 @ 2 gram/ litre of water or Chlorothalonil 75 WP @ 1 gram/ litre of water.
- 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 using 80-100 litres of water and repeat at 7 day interval.
- Due to foggy weather conditions, there is chance of incidence of late blight disease in potato in Western Zone of Punjab. To control, spray Indofil-M-45/Kavach/Antracol @500-700g/acre at weekly interval.
- 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.
- Present weather condition is favourable for attack of painted bug in mustard crops in Western Semi-arid Zone in Delhi; if attack is severe, spray Carbaryl (Sevin) @ 2 g/litre of water.

▪ **Uttar Pradesh:**

- Taking advantage of last week rain, apply first dose of urea as top dressing in wheat. Complete sowing of late varieties of wheat upto end of December in Bundelkhand Zone. Undertake harvesting of matured cauliflower, cabbage, tomato, chilli, brinjal in clear weather.
- Taking advantage of last week rain, apply first dose of urea as top dressing in wheat, lentil and sarson crops in Central Plain Zone of Uttar Pradesh. Continue sowing of lentil with seed rate of 55-75 kg/ha and harvesting of cauliflower, gourd, brinjal and tomato in clear weather. Raise the nursery of onion.
- Continue sowing of late varieties of wheat and harvesting of medium duration cabbage in Eastern Plain Zone of Uttar Pradesh.

- Continue sowing of sunflower and continue sowing of late varieties of wheat in Western Plain Zone of Uttar Pradesh. Apply irrigation to early sown wheat after 21 days after sowing and to sugarcane crop at 20 days interval.
- Under prevailing humid weather condition, there are chances of incidence of powdery mildew in wheat in Central Plain Zone. Spray 75% Isoproturan @ 1.5kg per hectare or Sulfofuran 75WG @ 33g dissolved in 500-600 litre water before first irrigation on 30 days after sowing. For control of blight disease in gram, spray Zinc manganese Carbamate @ 2 kg per 1000 litres of water at the interval of 10 days.
- 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 foggy weather condition, there are chances of attack of aphids in toria in Central Plain Zone of Uttar Pradesh. Spray Methyl-O-Demeton 25% EC or Chloropyriphos 20% EC @ 1 litre per 600-700 litres of water per ha.
- Under prevailing dry weather condition, there are chances of attack of aphids in toria in Ballia and Deoria districts of Eastern Plain Zone of Uttar Pradesh. Spray Malathion 50 EC @ 2 litres or Monocrotophos 36 SL 600-800 ml in 600-800 litres of water per ha.
- **Rajasthan:**
 - Undertake weeding and intercultural operations after irrigation in early sown wheat crop in Flood Prone Eastern Plain Zone of Rajasthan by spraying a solution of Metasulfuron Methyl @ 20g/ha in 500 litre water.
 - Continue sowing of late varieties of wheat after seed treatment and transplanting of onion in Semi-Arid Eastern Plain Zone of Rajasthan.
 - Complete sowing of gram and apply irrigation after 45 days of sowing in South Eastern Humid Plain Zone of Rajasthan. Apply first irrigation in mustard after 35-40 days of sowing and then undertake application of nitrogen.
 - Continue sowing of wheat, barley, fenugreek, lucerne in Transitional Plain Zone of Inland Drainage.
 - Weather condition is favourable for attack of sclerotinia stem rot in mustard in Flood Prone Eastern Plain Zone of Rajasthan, destroy infested plants. Notice the leaves for white rust appearance in mustard crop, spray Mancozeb or Ridomil MZ 72 WP @ 2.0 Kg in 800 litre water/ha.
 - In Arid Western Plain Zone of Rajasthan, there are chances of occurrence of powdery mildew in mustard. To control spray Metalexyl 8% or Mancozeb 64% @ 2 g per litre of water. For control of attack of painted bug or saw fly, spray Methyl Parathion 2% @ 20 kg per hectare.
 - Suitable varieties are given in Annexure I.
- **Floriculture**
 - Under prevailing dry weather condition, undertake harvesting of tuberose in Central Plain Zone of Uttar Pradesh.
 - 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. Present weather is conducive for attack of mites in carnation. For control, spray Cypermythrin @0.05% at 15 days interval.
 - Complete transplanting of winter season annuals in Valley Temperate Zone of Jammu & Kashmir.
- **Animal Husbandry:**
 - Due to fall in night temperature, keep cows in their cowshed to protect them from cold in Himachal Pradesh and Central Plain Zone of Uttar 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 below normal by 2-5°C at many places over Konkan & Goa, Madhya Maharashtra and Vidarbha; at a few places over Saurashtra & Kutch. They are near normal over rest parts of the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period.
- **Weather Warning:** Cold wave conditions would prevail at isolated places over Vidarbha on 23rd and 24th and over Saurashtra & Kutch on 25th.

- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Maharashtra:**
 - As cold wave conditions would prevail at isolated over Vidarbha on 23rd and 24th, apply light and frequent irrigation to wheat, gram and vegetables; orange and sweet lime orchards in Vidarbha. Arrange smoking at night. Apply mulch of crop residue and other plant waste product. Apply fertilizers and continue intercultural operations in wheat, gram, vegetables and orchards. Complete picking fully opened cotton bolls during morning hours. Avoid irrigation during boll bursting. Complete nursery sowing of rabi rice. For better germination of seed cover nursery bed with plastic or dried fodder for 2-3 days or apply irrigation in furrow between two nursery beds during night.
 - In Konkan, apply irrigation, fertilizers and undertake intercultural operations in vegetable crops and mango and cashew orchards. As minimum temperatures prevailing above 14°C, continue sowing of *rabi* groundnut. Select among varieties TG-26, TAG-24, TPG-41, Konkan Gaurav and Konkan Tapura. Complete nursery sowing of *rabi* rice and finger millet by selecting improved variety. Continue sowing of watermelon variety 'Sugar Baby' on one side of ridges with a spacing of 4 x 1 m.
 - In Madhya Maharashtra to protect grapes from cold injury (fruit cracking especially in black grapes), apply drip irrigation for half an hour during morning hours / apply mulch of crop residue. Make smoke (smudging) in grapes, banana the orchards in the region and fig orchards in Pune during night. For protection of banana, apply mulch of organic material at base of trunk, apply light and frequent irrigation during evening and cover the trunk with dried leaves. Make arrangement for artificial wind breaks using gunny bags or any cloths around orchards. Cover rice nursery with polythene to protect rice seedlings from cold in Western Ghat Region. Apply light irrigation to vegetables, sugarcane, safflower, rabi jowar, gram, wheat and pomegranate orchards to protect from cold. Continue intercultural operations like weeding and apply fertilizer application in sugarcane, vegetables, gram and wheat. Complete picking fully opened cotton bolls during morning hours. Start harvesting of already matured red gram.
 - In Marathwada, prevailing low temperature (below 10°C) may affect fruit growth of banana, orange and sweet lime. Farmers are advised to apply light and frequent irrigation in the evening and arrange smoking in the orchards at night. Cover new banana bunch with skating bag. Make arrangement for artificial wind breaks around orchards. Apply organic material or plastic (black) mulch in mango orchard. As dry weather is prevailing and is likely to continue, apply irrigation to sugarcane, *rabi* jowar, safflower, gram, vegetables and wheat. Continue intercultural operation like hoeing, weeding to sugarcane, wheat, gram and vegetables. Complete picking fully opened cotton bolls during morning hours. Start harvesting of already matured red gram.
 - Prevailing low minimum temperature (below 10°C) in Pune region is favourable for the incidence of powdery mildew in cucumber, ridge gourd, bottle gourd, chilli and gaur; spray water soluble Sulphur 80 % @ 20 g per 10 litres of water. In cucumber spray Carathane @5 ml per 10 litres water instead of Sulphur.
 - Cloudy weather prevailed during last week in Marathwada region is favourable for more attack of pod borer in gram; spray Profenophos 50% @ 20 ml per 10 litres water.
 - Due to cloudy weather in Konkan there may be attack of hoppers on mango flowering; spray Imidachloprid 17.8 % @ 3 ml + Carbendazim @10 g per 10 litres of water.
 - **Gujarat:**
 - As cold wave conditions would prevail at isolated places over Saurashtra & Kutch on 25th, arrange for smoking around the fields during night, apply light and frequent irrigation /sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/ gunny bags.
 - Apply irrigation in sugarcane at 6-7 days interval, in wheat at 20 days interval and in newly planted mango orchard at regular intervals in South Gujarat Heavy Rainfall Zone. Carry out intercultural operations in jowar crop and provide mulching with available organic residues. Spray 1 to 2 % urea solution at the time of flowering stage of papaya.
 - Apply light irrigation in wheat and mustard in North West Zone and arrange for smoking around the field during night. Harvest the matured fruits of vegetables regularly. Carryout weeding in cumin and isabgol crop.
 - Apply irrigation in potato crop at 8-10 days interval and in wheat at CRI stage in Middle Gujarat Zone.
 - In North Saurashtra Zone, apply light irrigation to cotton crop and carryout weeding in cumin.
 - As there is chance of cold wave condition in South Gujarat Zone, irrigate the standing crops frequently and arrange for smoking in crop fields.
 - Under prevailing dry weather and forecast of low temperature in North Gujarat Zone, apply irrigation in cotton and fennel. Carry out weeding and intercultural operations in cumin, isabgol and fennel. Spray 20 ml 2-4-D Ethyle easter or Metasulfuron 0.8 gm/10 liters of water to control broad leafy weeds in wheat crop.
 - In South Saurashtra Zone, apply light irrigation in cotton. Carryout weeding in garlic crop.
 - Suitable varieties are given in Annexure I.

- **Animal Husbandry**

- In Gujarat, provide warm water to lactating animals. Keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from cold. To avoid skin diseases in animals during winter season, wash the animals weekly and apply the neem or pongamia oil on skin of animals.

- **Poultry**

- In some parts of Maharashtra, as minimum temperature is likely to fall by 2-4 °C, protect poultry birds from cold winds by providing curtain/clothing from outside the poultry shed. Provide proper heat to small chicks of poultry with the help of electric bulbs.

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 Mukht (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

Gujarat:

Wheat: GW-173 or Lok-1 GW172, 11 (for late sowing).

Isabgol: Gujarat Isabgol 2 or Gujarat Isabgol 3.

Sugarcane: Co-740, Co-1219, Co-1145, Co-5714, Co-86032 (for summer season growing).

Marathwada

Jowar: Parbhani Moti or Parbhani Jyoti.