

National Agromet Advisory Service Bulletin

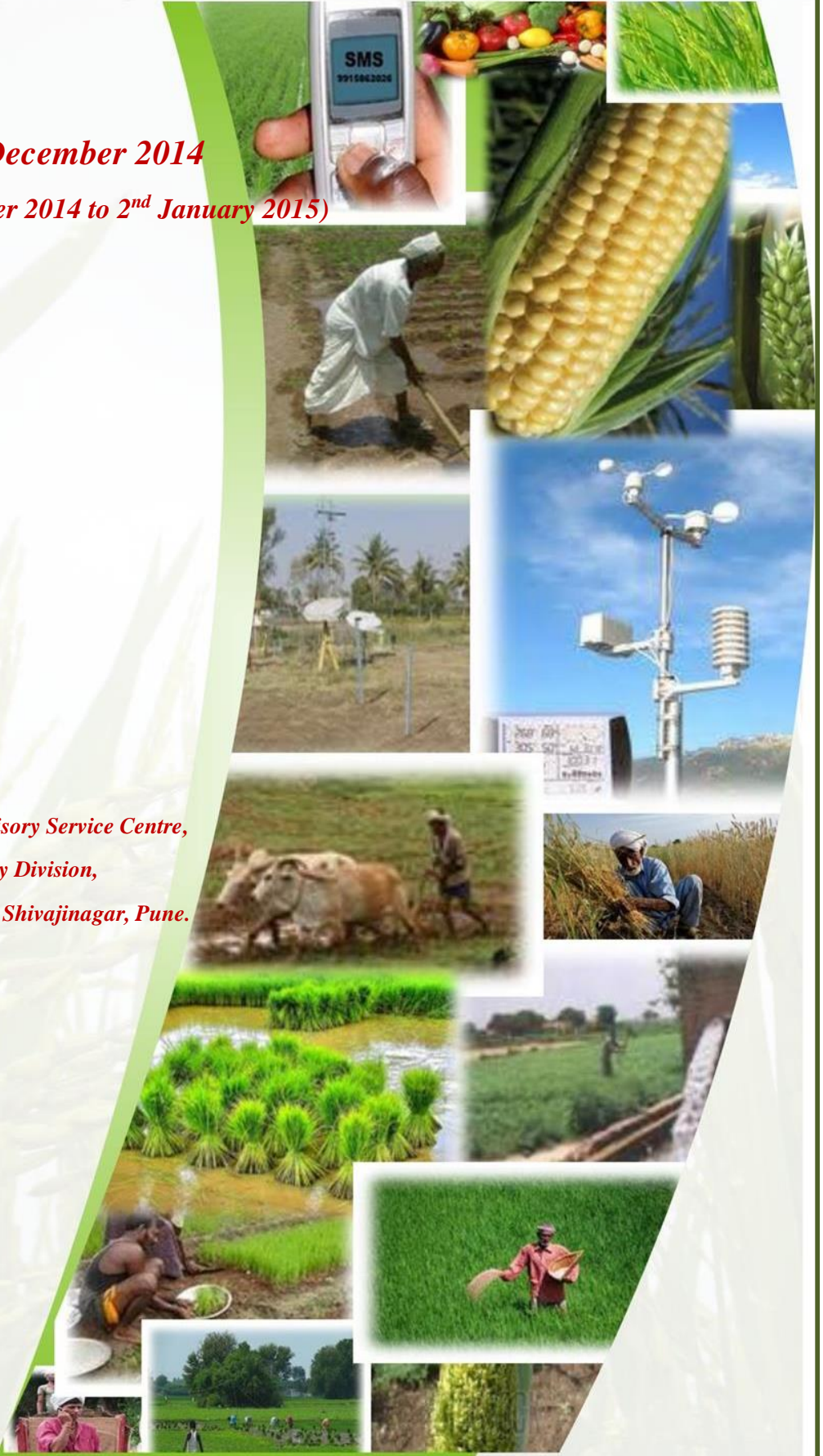
Tuesday 30th December 2014

(For the period 30th December 2014 to 2nd January 2015)



Issued by

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



Realised Weather on 30th December 2014

- **Significant weather observations:** Cold day conditions prevailed at most places over East Uttar Pradesh; at many places over Punjab and at isolated places over Bihar. Dense/very dense fog has been occurred at most places over Punjab, Haryana & Delhi and Uttar Pradesh; at a few places over Bihar and at isolated places over North Rajasthan, north Madhya Pradesh and Tripura in early morning hours of today. The visibility (50m or less) has been observed at 0530 hours IST of today at Amritsar, Ambala, Patiala, Delhi (Palam), Agra, Gwalior, Bareilly, Bahraich, Lucknow, Gorakhpur, Varanasi, Ganganagar, Churu, Patna, Bhagalpur and Kailashahar.
- **Rainfall:** (From 0830 hours IST of yesterday to 0830 hours IST of today): Rain / thundershowers has occurred at most places over Andaman & Nicobar Islands; at many places over Coastal Andhra Pradesh; at a few places over Tamilnadu & Kerala and at isolated places over Rayalaseema. Weather remained dry over rest of the country. Amount of rainfall recorded (in cm) at 0830 hours IST of today are: Chennai (Numgambakkam) 9; Chennai (Minambakkam) 8; Karaikal 2; Nagapattinam, Palayankottai, Kalingapatnam, Tuni and Long Islands 1 each.
- **Temperature:** Minimum temperatures are below normal by 4-5°C at a few places over East Madhya Pradesh, Jharkhand, Bihar, Vidarbha and at isolated places over East Rajasthan; by 2-3°C at many places over Jammu & Kashmir, Punjab, Haryana & Delhi; at a few places over East Uttar Pradesh, West Madhya Pradesh and Rajasthan. They are above normal by 2-3°C at many places over Rayalaseema and Kerala and at a few places over Odisha and Tamil Nadu and near normal over rest of the country. **The lowest minimum temperature of 0.1°C recorded at Churu (Rajasthan)** in plains of the country.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 02nd January, 2015)

- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and at isolated places thereafter.
- Rain/thundershowers would occur at many places over Coastal Andhra Pradesh and at isolated places over Kerala during the period.
- Rain/snow would occur at isolated places over Jammu & Kashmir during the period.
- Rain/thundershowers would occur at many places over Tamil Nadu & Puducherry during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at isolated places over Odisha during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at isolated places over Rayalaseema and South Interior Karnataka during next 48 hours and dry weather would prevail thereafter.
- Dry weather would prevail over Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, Jharkhand, West Madhya Pradesh, Madhya Maharashtra, Marathwada, Chhattisgarh and Telangana during next 48 hours and over Coastal Karnataka and Lakshadweep during next 24 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 most places over Punjab, Haryana & Delhi, north Rajasthan, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim during next 3 days and Assam &

Weather Warning during next 3 days

- **30 December (Day 1):** Dense (visibility 200 m or less) to very dense fog (visibility 50 m or less) would occur at a few places over north Madhya Pradesh, Bihar, Uttar Pradesh, Punjab, Haryana & Delhi. Dense fog (visibility 200 m or less) would occur at isolated places over Sub-Himalayan West Bengal & Sikkim. Cold day conditions would prevail at a few places over Punjab, Haryana & Delhi and Uttar Pradesh. Cold wave conditions would prevail at a few places over Madhya Pradesh, Vidarbha, Bihar and at isolated places over Chhattisgarh, Jharkhand, Madhya Maharashtra and Marathwada. Ground frost would occur at isolated places over Punjab, Haryana & Delhi and North Rajasthan. Heavy rainfall would occur at isolated places over south Coastal Andhra Pradesh, north coastal Tamil Nadu.
- **31 December (Day 2):** Dense (visibility 200 m or less) to very dense fog (visibility 50 m or less) would occur at a few places over north Madhya Pradesh, Bihar, Uttar Pradesh, Punjab, Haryana & Delhi. Cold day conditions would prevail at a few places over Punjab, Haryana & Delhi and Uttar Pradesh. Cold wave conditions would prevail at a few places over Madhya Pradesh, Vidarbha, Bihar and at isolated places over Madhya Maharashtra and Marathwada. Ground frost would occur at isolated places over Punjab, Haryana & Delhi and North Rajasthan. Heavy rainfall would occur at isolated places over north Coastal Andhra Pradesh.
- **01 January (Day 3):** Heavy rainfall would occur at isolated places over coastal Odisha, north coastal Andhra Pradesh.

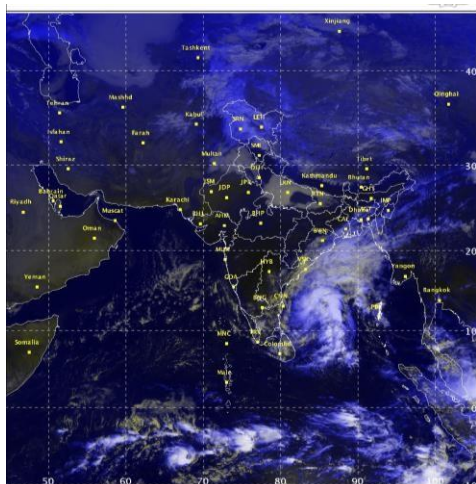
Weather Outlook for subsequent 4 days from 02nd January to 06th January 2015.

Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 2 days.

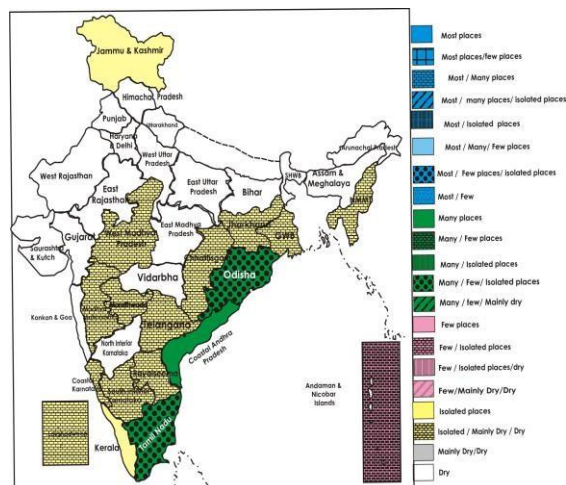
- Night temperatures would rise by 2-4°C over northwest, east and central India leading to abatement of cold wave conditions with effect from 31st December.
- Fishermen are advised to be cautious while going out into sea off Tamil Nadu coast.

- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands.
- Isolated rainfall/thundershower would occur over central India and adjoining parts of East & peninsular India with possibility of isolated hailstorm over Madhya Maharashtra, Marathwada and Madhya Pradesh.
- A fresh Western Disturbance as an Upper air system would affect Western Himalayan Region from 3rd Jan. onwards.

Satellite image dated, 30.12.2014, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 02nd January 2015)



Salient Advisories in view of Cold Wave and Cold Day

- As rain/thundershowers would occur at many places over **Coastal Andhra Pradesh** during the period, along with isolated heavy rainfall in north and south Coastal Andhra Pradesh, and at many places over **Tamil Nadu** on 30th December, along with isolated heavy rainfall in north Coastal Tamil Nadu, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in standing crops to remove excess water in north and south Coastal Andhra Pradesh and north Coast Tamil Nadu .Postpone harvesting of crops till the end of current spells of rain and store the harvested products at safe place.
- As cold wave conditions would prevail at a few places over **Bihar** on 30th and 31st, at isolated places over **Jharkhand** on 30th December and over **Madhya Maharashtra** and **Marathwada** on 30th and 31st December, apply light and frequent irrigation in standing crops & young fruit plants to protect from cold / frost injury. Also, arrange for smoking around the crop fields during night hours.
- In **Madhya Maharashtra** and **Marathwada**, as rain /thundershowers would occur accompanied with isolated hailstorms from 2nd January 2015; use hail nets in grapes and pomegranate orchards to avoid fruit damage from hail and also provide mechanical support to the fruit vegetables and orchard plants.
- As cold day conditions would prevail at a few places over **Punjab, Haryana & Delhi** and **Uttar Pradesh** and ground frost would occur at isolated places over **Punjab, Haryana & Delhi**, and **north Rajasthan** during the period, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during night hours to protect the crops from cold/frost injury.

Detailed Zonewise Agromet Advisories

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



Land preparation



Sugarcane



Cotton



Rice Transplanting

- **Realised Weather:** Rain/thundershowers occurred at many places over Coastal Karnataka; at a few places over Tamil Nadu and Kerala and at isolated places over Rayalaseema. Weather remained dry over rest of the region. Minimum temperatures are above normal by 2-3°C at many places over Rayalaseema and Kerala and at a few places over Tamil Nadu and near normal over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Coastal Andhra Pradesh and at isolated places over Kerala during the period. Rain/thundershowers would occur at many places over Tamil Nadu & Puducherry during next 24 hours and decrease thereafter. Rain/thundershowers would occur at isolated places over Rayalaseema and South Interior Karnataka during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over Telangana during next 48 hours and over Coastal Karnataka during next 24 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over rest of the region during the period. Fishermen are advised to be cautious while going out into sea off Tamil Nadu coast.
- **Weather Warning:** Heavy rainfall would occur at isolated places over south Coastal Andhra Pradesh and north coastal Tamil Nadu on 30th. Heavy rainfall would occur at isolated places over north Coastal Andhra Pradesh on 31st December and 1st January.
- **Weather Outlook:** Isolated rainfall/thundershower would occur over peninsular India adjoining to central India.
- **Advisories:**
 - **Andhra Pradesh:**
 - As rain/thundershowers would occur at many places over Coastal Andhra Pradesh during the period, along with isolated heavy rainfall in north and south Coastal Andhra Pradesh, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in standing crops to remove excess water in north and south Coastal Andhra Pradesh. . Postpone harvesting of crops till the end of current spells of rain and store the harvested products at safe place.
 - Due to prevailing cloudy weather there is a chance of incidence of pod borer on Red gram in North Coastal Zone. Spray Chlorophyriphos @ 2.5 ml or Quinolphos @ 2 ml per litre of water after current spells of rain.
 - Due to prevailing humid weather there is chance of incidence of sucking pest in groundnut in Southern zone. Spray Dimethoiate @ 2 ml or Monochrotophos @ 1.6 ml per litre of water after current spells of rain.
 - Due to thrips attack, fruit and flower drop incidence was observed in cotton few mandals of Anantapuramu district in Scarce Rainfall Zone. For control, spray Acetamiprid @0.2g/lit of water.
 - **Telangana:**
 - As low night temperatures may prevail in the Southern Telangana Zone, it may cause cold injury in rice nurseries. To overcome cold injury and for better nursery growth, cover the nursery beds with polythene sheet during night and remove in the morning, irrigate the nursery bed every day in the evening and let out the water in the morning and apply 2 kg urea for 200 m² nursery area at 10-15 days after sowing.
 - Complete sowing of *rabi* rice and maize in the Northern Telangana Zone.
 - Apply Carbofuran 3G @ 160 g in one cent of nursery at 10-12 days after sowing to prevent the incidence of rice stem borer in the Southern Telangana Zone.
 - **Karnataka:**
 - Continue harvesting of ragi and Redgram in the Eastern Dry Zone.
 - As dry weather is prevailing, protective irrigation may be given to wheat and sorghum in North East Transition Zone, North Transition Zone and North Dry Zone.
 - Continue harvesting of rice and ragi crops in Southern 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.
 - Present weather is congenial for incidence of pod borer in Chick pea in Central Dry Zone. Spray of Indaxicarb @ 0.3 ml or Carbaryl @4 g per litre of water.

- Present weather is congenial for the incidence of helioverpa insect in Bengal gram in the North East Transition Zone. Spray insecticides like Profenophos or Chlorpyrifos @ 2 ml/litre or Indoxacarb @ 0.3 ml/l or Spinosad @ 0.2ml per liter of water to manage the insects.
- **Kerala:**
 - Continue crown cleaning, phytosanitation, provision of proper drainage, regulation of shade and adopt a comprehensive management package against the mid-whorl yellowing in coconut fields in the Southern Zone.
 - There are chances of sheath blight occurrence in the rice fields where the plant population is high in problem area Zone. The farmers are advised to remove the severely affected plants in order to provide air circulation into the crop canopy and drain the water completely from the field for reducing the spread of the disease to the nearby plants.
- **Tamil Nadu:**
 - As rain/thundershowers would occur at many places over Tamil Nadu on 30th December, along with isolated heavy rainfall in north Coastal Tamil Nadu, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in standing crops to remove excess water in north Coastal Tamil Nadu.
 - Undertake cultivation of hybrid, short duration and disease resistant black gram varieties such as Co-6, Vamban - 6,7 and green gram varieties such as Co- 7, 8, Vamban- 2, 3 in the North Western Zone.
 - Due to prevailing low night temperatures in the High Altitude Hilly Zone , precautionary measures like mulching may be adopted to prevent frost damage in standing crops like garlic, cabbage etc.
 - Prevailing weather condition is favourable for false smut attack and blast in rice in Western Zone. To control spray Propiconazole @ 1ml or Hexaconazole @1ml or Copper Oxychloride @ 2.5 g/lit or copper hydroxide @ 2.5 g/ lit for false smut and Tricyclozole @ 1g / litre followed by second spray with Carbendazim @1g /litre of water for blast after current spells of rain.
 - Prevailing weather with high cloud cover and humidity is congenial for incidences blast disease in rice crop at all growth stages in the South Zone. For controlling this disease, spray Tricyclozole 75 WP @ 500g/ ha after current spells of rain.
 - Stem borer & Leaf folder incidence are being noticed in the samba paddy fields due to prevailing weather condition in Cauvery Delta Zone. To manage spray Profenophos 400 ml/acre after current spells of rain.
 - Suitable varieties are given in Annexure I.
- **Animal Husbandry**
 - In North Western Zone of Tamil Nadu, due to reduced day light increase, vitamin D3 in chicken feed. Maintain adequate brooding temperature for chicks. Keep the curtains fully raised in the poultry shed.

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 Nagaland, Manipur, Mizoram & Tripura during next 48 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over rest parts of the region during the period. Fog would occur at most places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 2 days.
- **Weather Warning:** Nil.
- **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. Apply one irrigation of 6cm depth to early sowing wheat varieties at crown root initiation stage (30-35days after sowing).
 - In North Bank Plain Zone of Assam, continue transplanting of early sown varieties of boro rice like Boro1, Boro 2, Dinanath and Swarnabh seedlings in low lying areas.
 - Continue transplanting of *boro* rice of about 45 days old (5- 6 leave stage) seedlings in Lower Bramhaputra Valley Zone of Assam. Apply 1st irrigation early sown wheat varieties at crown root initiation stage (30-35 days after sowing).
 - In Meghalaya, continue nursery raising of *boro* rice in low lying areas and sowing of Zero tillage pea, lentil and

toria. Apply irrigation to mustard/rapeseed at flowering stage and cole crops. Undertake main field preparation for transplanting of *boro* rice.

- In Lower Brahmaputra Valley Zone, North Bank Plain Zone, Barak Valley Zone and Upper Brahmaputra 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 Upper Brahmaputra Valley Zone, North Bank Plain Zone, Central Brahmaputra Valley Zone, Lower Brahmaputra 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.

▪ **Nagaland, Manipur, Mizoram and Tripura:**

- In Manipur, continue sowing of *rabi* maize, transplanting of tomato and sowing of cucurbits. 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, pea, vegetables, cole crops.
- In Mild Tropical Plain Zone of Tripura, apply light irrigation on every alternate day in cole crops, mustard and lentil. Mulching is essential after irrigation to conserve moisture.
- In Tripura, due to the prevailing foggy condition there may be infestation of early blight in potato. Apply Cymoxanil+ Mancozeb or Metalaxyl+ Mancozeb @ 1.5gm 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 Lower and Upper Brahmaputra Valley Zone of Assam.
- In Assam, Arunachal Pradesh, Meghalaya, Manipur, Nagaland and Tripura provide artificial heating through lighting of electric bulb to protect poultry birds (day old to 25 days old) from low temperature. Cover poultry and pig 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 Central and Upper Brahmaputra Valley Zone, North Bank Plain Zone and Lower Brahmaputra Valley Zone of Assam.

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



Sugarcane



Groundnut



Onion



Rice

- **Realised Weather:** Rain / thundershowers has occurred at most places over Andaman & Nicobar Islands. Weather remained dry over rest of the region. Minimum temperatures are below normal by 4-5°C at a few places over Jharkhand and Bihar. They are above normal by 2-3°C at a few places over Odisha and near normal over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Odisha during next 24 hours and increase thereafter. Dry weather would prevail over Gangetic West Bengal and Jharkhand during

next 48 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over rest parts of the region during the period. Fog would occur at most places over Bihar and Sub-Himalayan West Bengal & Sikkim during next 3 days. Night temperatures would rise by 2-4°C over east India leading to abatement of cold wave conditions with effect from 31st December.

- **Weather Warning:** Dense (visibility 200 m or less) to very dense fog (visibility 50 m or less) would occur at a few places over Bihar on 30th and 31st and at isolated places over Sub-Himalayan West Bengal & Sikkim on 30th. Cold wave conditions would prevail at a few places over Bihar on 30th and 31st and at isolated places over Jharkhand on 30th. Heavy rainfall would occur at isolated places over coastal Odisha on 1st.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands. Isolated rainfall/thundershower would occur over east India adjoining to central India.
- **Advisories:**
 - As cold wave conditions would prevail at a few places over Bihar on 30th and 31st and at isolated places over Jharkhand on 30th December, apply light and frequent irrigation in standing crops & young fruit plants to protect from cold / frost injury. Also, arrange for smoking around the crop fields during night hours.
 - **West Bengal:**
 - In New Alluvial Zone, complete seed bed preparation for nursery sowing of *boro* rice. To protect the rice seedlings from cold, cover the nursery bed with polythene or keep stagnant water in the nursery bed especially during the night-time. Keep 2 to 3 cm stagnant water. Undertake land preparation for sowing of sunflower.
 - In Coastal Saline Zone, remove morning fog from the seedlings of *boro* rice by stirring by rope.
 - In Laterite and Red Soil Zone, continue seed bed preparation, nursery sowing and transplanting of *boro* rice.
 - In Old Alluvial and Terai Zone, continue seed bed preparation for nursery sowing of *boro* rice. Cover the nursery bed with polythene or apply water in the nursery bed at night and draining the water at morning to protect the seedlings from cold.
 - In Laterite and Red Soil Zone, early morning fog may cause attack of saw fly and aphids in mustard. For controlling of mustard saw fly dusting with 2% Methyl Parathion @20-25 kg /ha and for aphids, spraying Malathion 50 EC @ 0.005% is advised.
 - In Coastal Saline Zone, due to dense fog during morning hours, there is chance of late blight attack in potato. Spray Metalaxyl+Mancozeb or Thimoxyl+Mancozeb@2.5g/litre of water as preventive measure. There is also chance of yellowing of seedlings, seedling death and root rot in *boro* rice due to low temperature. Apply SAF @ 2 g/litre of water.
 - In New Alluvial Zone, Old Alluvial Zone and 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 Old Alluvial Zone and 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. 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.
 - **Andaman and Nicobar:**
 - In North and Middle Andaman, undertake nursery raising of vegetable crops.
 - In North and Middle Andaman, in the prevailing weather, severe incidence of defoliating pests and borer pests are observed in pulse and fruit crops. Spray Malathion @ 2ml/litre on a non rainy day.
 - **Odisha:**
 - As rain/thundershowers would occur at many places over Odisha on 1st January, along with isolated heavy rainfall over Coastal Odisha, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in standing crops to remove excess water in Coastal Odisha.
 - In Western Undulating Zone, continue land preparation and sowing of green gram, black gram and sunflower in residual moisture immediately after harvesting of rice.
 - In East and South Eastern Coastal Plain Zone, complete nursery sowing of rice, sowing of wheat and *rabi* pulses. Continue transplanting of onion.
 - In North Eastern Plateau Zone, continue sowing of wheat, groundnut, gram, peas and onion. 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 aphids 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 after current spells of rain.
 - 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 after current spells of rain.

▪ **Bihar:**

- 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. Continue nursery sowing of *boro* rice. As low temperature is prevailing, apply light irrigation at evening time in tomato, chilli and other vegetable crops.
- In South Bihar Alluvial Zone, complete sowing of late varieties of wheat, apply irrigation in timely sown wheat crop at CRI stage.
- In North West Alluvial Plain Zone of Bihar, apply light irrigation in wheat crop at (CRI) stage, maize, potato and vegetables.
- 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 crops; spray Indofil M-45, for better result mix sticker 1ml/liter of water.

▪ **Jharkhand:**

- In South Eastern Plateau Zone of Jharkhand, apply irrigation in wheat at CRI stage and potato.
- In Central & North Eastern Plateau Zone of Jharkhand, 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 Western Plateau Zone, undertake intercultural operations in pulses and oilseeds to conserve soil moisture and control weeds.
- 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 South Eastern Plateau Zone and Western Plateau Zone, pigeon pea is at pod formation/pod filling stage which is vulnerable for attack of Pod borer insects. Monitor the crops and spray Indoxacarb @ 0.5 ml per litre of water.
- Suitable varieties are given in Annexure I.

• **Animal Husbandry**

- In Hill 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. Cover poultry house with gunny bags/ polythene sheets to protect them from cold.
- 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 4-5°C at a few places over East Madhya Pradesh; by 2-3°C at a few places over West Madhya Pradesh and near normal over rest of the region.
- **Weather Forecast:** Dry weather would prevail over West Madhya Pradesh and Chhattisgarh during next 48 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over rest parts of the region during the period. Night temperatures would rise by 2-4°C over central India leading to abatement of cold wave conditions with effect from 31st December.
- **Weather Warning:** Dense (visibility 200 m or less) to very dense fog (visibility 50 m or less) would occur at a few places over north Madhya Pradesh on 30th and 31st. Cold wave conditions would prevail at a few places over Madhya Pradesh on 30th and 31st and at isolated places over Chhattisgarh on 30th.
- **Weather Outlook:** Isolated rainfall/thundershower would occur over central India with possibility of isolated hailstorm over Madhya Pradesh.
- **Advisories:**
 - As cold wave conditions would prevail at a few places over Madhya Pradesh on 30th & 31st December and at

isolated places over Chhattisgarh on 30th, apply light and frequent irrigation to gram, wheat, mustard, lentil, chickpea, sugarcane and vegetables. Arrange smoking during night hours around the crop fields to prevent cold injury.

▪ **Madhya Pradesh:**

- As mainly dry weather is prevailing, apply irrigation in early sown wheat and mustard crops in Bundelkhand Zone. Continue weeding and hoeing in onion and garlic crops.
- Apply 1st irrigation in wheat at CRI stage and vegetables like tomato, brinjal and chilli and pick up matured fruits in Kymore Plateau and Satpura Hill Zone. Continue intercultural operations in chickpea, mustard, lentil and early sown wheat and vegetables.
- Continue transplanting of onion, tomato, brinjal, chilli, cabbage and cauliflower in 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 and cloudy sky, potato crop may be affected by early blight in Bundelkhand Zone, spray Mancozeb @ 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:**

- Complete sowing of wheat under irrigated condition in Plain Zone of Chhattisgarh, Apply irrigation in wheat (at CRI stage) and vegetables.
- Complete 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.
- Suitable varieties are given in Annexure I.

• **Animal Husbandry**

- As there is decrease in temperature, protect animals from cold in Madhya Pradesh and Chhattisgarh. 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:** Weather remained dry over the region. Minimum temperatures are below normal by 4-5°C at isolated places over East Rajasthan; by 2-3°C at many places over Jammu & Kashmir, Punjab, Haryana & Delhi; at a few places over East Uttar Pradesh and Rajasthan; near normal over rest of the region. **The lowest minimum temperature of 0.1°C recorded at Churu (Rajasthan)** in plains of the country.
- **Weather Forecast:** Rain/snow would occur at isolated places over Jammu & Kashmir during the period. Dry weather would prevail over rest parts of the region during the period. Fog would occur at most places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh during next 3 days. Night temperatures would rise by 2-4°C over northwest India leading to abatement of cold wave conditions with effect from 31st December.
- **Weather Warning:** Dense (visibility 200 m or less) to very dense fog (visibility 50 m or less) would occur at a few places over Uttar Pradesh, Punjab, Haryana & Delhi on 30th and 31st. Cold day conditions would prevail at a few places over Punjab, Haryana & Delhi and Uttar Pradesh on 30th and 31st. Ground frost would occur at isolated places over Punjab, Haryana & Delhi and North Rajasthan on 30th and 31st.
- **Weather Outlook:** A fresh Western Disturbance as an Upper air system would affect Western Himalayan Region from 3rd Jan. onwards.
- **Advisories:**
 - As cold day conditions would prevail at a few places over Punjab, Haryana & Delhi and Uttar Pradesh and ground frost would occur at isolated places over Punjab Haryana & Delhi, Uttar Pradesh and north Rajasthan on 30th & 31st December, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during nights to protect the crops from cold/frost injury.
 - **Jammu & Kashmir:**
 - Undertake hoeing cum intercultural operations in mustard, *rabi* pulses like lentil, pea and gram to control weeds and conserve moisture in Intermediate Zone of Jammu & Kashmir.

- Continue planting of garlic and transplanting of onion in Valley Temperate Zone of Jammu & Kashmir. Apply top dose of urea @ 3.6 kg/kanal. Continue hand weeding /hoeing in saffron to reduce infestation by weeds.
- In Sub-tropical Zone of Jammu & Kashmir, as there is chance of attack of aphids and sawfly in mustard crops, control aphids population by installing yellow sticky trap @ 1/kanal. Also, spray of Imidacloprid @ 0.5 ml/litre of water to control aphids and Carbaryl @ 50% WP, to control sawfly.
- **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 cauliflower and garlic in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Spray Redomil M-Z @ 25 g per litre of water at 15 days interval in cauliflower. For control of downy mildew in garlic, spray Diathane M 45 @ 2.5 g or Bavistine 1 g per litre of water.
- Under prevailing low temperature condition, there are chances of attack of woolly apple aphid in apple orchards in Mid Hills Sub-Humid Zone. To control, apply Thiamethoxam (Ektara 100gms) or Carbosulfan (Marshal 100ml) or Chlorpyrifos (Durmet 200ml) in 100litres of water
- **Uttarakhand:**
- In Hill Zone and Sub Humid Sub Tropical Zone of Uttarakhand, continue top dressing of urea in mustard, vegetables like radish, spinach and coriander. Also apply irrigation in wheat crop at crown root initiation stage and then apply urea 1 to 1.5 kg per kanal.
- Undertake harvesting of potato in Bhabar and Tarai Zone of Uttarakhand. Continue removing of weeds from onion nursery and put straw as mulch in between rows for moisture conservation. Also continue plucking of matured pods of vegetable pea.
- **Punjab, Haryana and Delhi:**
- In Western Zone and Western Plain Zone of Punjab provide polythene sheet/Sarkanda/Kahi/ rice straw to save the plants from frost. Dwarf vegetable varieties can be protected from frost injury by covering with 100 gauge thick white plastic bags of 35 x 25 cm size.
- In Undulating Plain Zone of Punjab, apply light irrigation and cover the newly planted plants with thatches for protection from cold and apply light irrigation in mustard in the evening to protect from cold/frost injury.
- In Western Semi-arid Zone of Delhi, continue sowing of late varieties of wheat at seed rate of 125 kg seed /ha. 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 foggy weather conditions, there is chance of incidence of late blight disease on 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.
- Due to foggy weather, white rust may be noticed in mustard in Western Semi-arid Zone of Delhi, spray Dithane-M-45 @ 2 gram/ litre of water or Chlorothalonil 75 WP @1 gram/ litre of water. Keeping in view of high relative humidity, monitor for late blight in potato (kufri bahar), spray of Dithane-M-45 @ 2 g/ litre of water or Carbandazim @1 gram/ litre of water along with tepol (sticky material).
- **Uttar Pradesh:**
- Undertake weeding and hoeing in mustard, sarson, wheat, gram, pea, rajma, masoor crops after irrigation in Bundelkhand Zone and Eastern Plain Zone. Undertake harvesting of matured leafy vegetables, cauliflower, cabbage, tomato, carrot, chilli, brinjal.
- Apply first dose of urea as top dressing in wheat, lentil and sarson crops in Central Plain Zone of Uttar Pradesh. Undertake nursery raising of onion. Nipping of gram may be undertaken for better growth.
- 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:**
- As ground frost would occur during the period, apply dilute sulphuric acid @ 0.1% (1 litre H₂SO₄ in 1000 litres of water) or Thiourea @ 500 ppm (500 gm thiourea in 1000 litres of water) or light irrigation in standing crops to protect the crops from frost attack in Semi-Arid Eastern Plain Zone of Rajasthan.
- Apply irrigation in wheat crop at CRI (21-25 days) and Booting stage (45-50days). Spray a solution of Metasulfuron methyl @20g/ha in 500 litre water to control broad leaved weeds in Flood Prone Eastern Plain Zone of Rajasthan. Also undertake nipping to enhance branching in gram.
- Undertake Weeding and hoeing, irrigation in wheat, barley, mustard and vegetables.in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.
- Due to fall in temperature, there are chance of aphids infestation in mustard crop in Semi Arid Eastern Plain Zone of Rajasthan. To control spray Malathion 50 EC @ 1200 ml/ha. or Dimithoate 30 EC @1200 ml/ha along with water in Arid Western Plain Zone of Rajasthan.
- Suitable varieties are given in Annexure I.
- **Floriculture**
- Under prevailing dry weather condition, continue 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 low night temperature, keep cattle in cowsheds to protect them from cold in Jammu & Kashmir, Himachal Pradesh and Central Plain Zone of Uttar Pradesh. Also give 40-50g mineral mixture with the daily feed. Also make arrangements in poultry houses for protection of birds from cold 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 4-5°C at a few places over Vidarbha and near normal over rest of the region.
- **Weather Forecast:** Dry weather would prevail over Madhya Maharashtra and Marathwada during next 48 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over rest parts of the region during the period.
- **Weather Warning:** Cold wave conditions would prevail at a few places over Vidarbha and at isolated places over Madhya Maharashtra and Marathwada on 30th and 31st.
- **Weather Outlook:** Possibility of isolated hailstorm over Madhya Maharashtra and Marathwada.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, dry weather prevailed during last week and is likely to continue during the period, apply irrigation, fertilizers and undertake intercultural operations in vegetable crops and mango and cashew orchards. Also apply irrigation in already sown groundnut. Complete sowing of *rabi* groundnut. Select among varieties TG-26, TAG-24, TPG-41, Konkan Gaurav and Konkan Tapora. 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, as rain /thundershowers would occur accompanied with isolated hailstorms from 2nd January 2015; use hail nets in grapes and pomegranate orchards to avoid fruit damage from hail and also provide

mechanical support to the fruit vegetables and orchard plants. As cold wave conditions would prevail over Madhya Maharashtra during next 48 hours; protect grapes from cold injury (fruit cracking especially in black grapes), by applying drip irrigation for half an hour during morning hours / apply mulch with crop residue. Arrange for smoking (smudging) in grapes, banana 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 sheet to protect rice seedlings from cold in Western Ghat Region. Apply light irrigation to vegetables, sugarcane, safflower, rabi jowar, gram and pomegranate orchards to protect from cold. Continue intercultural operations like weeding and apply fertilizer in sugarcane, vegetables, gram and wheat. Complete picking of fully opened cotton bolls during morning hours. Harvesting already matured red gram may be done at earliest and keep harvested produce in safer place.

- In Marathwada, as rain /thundershowers would occur accompanied with isolated hailstorms from 2nd January 2015; orange and sweet lime growers are advised to use hail nets. Provide mechanical support to the fruit vegetables and orchard plants. Prevailing cold wave conditions 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 hours. Cover new banana bunch with skating bag. Make arrangement for artificial wind breaks around orchards. Apply mulch with organic material or plastic (black) sheet in mango orchard. Continue intercultural operation like hoeing, weeding in sugarcane, gram and vegetables. Complete picking of fully opened cotton bolls during morning hours. Harvesting already matured red gram may be done at earliest and keep harvested produce in safer place.
- As cold wave conditions would prevail at a few places over Vidarbha on 30th and 31st December, apply light irrigation to wheat and vegetables. Protect orange, sweet lime orchards from cold wave by applying light and frequent irrigation (apply well irrigation if possible) and making smoke in the orchards during night. Apply mulch with crop residue and other plant waste products. Apply fertilizers and continue intercultural operations in gram, vegetables and orchards.
- Due to expected rain and high humid weather in Marathwada there may be infestation of rust in wheat; spray Mancozeb@ 20 g per 10 litres of water followed by second spray after 15 days.
- Due to prevailing low temperature along with expected rain from 1st January 2015 in Pune region there may be incidence of powdery mildew in grapes; for effective control spray Hexaconazol 5 EC @ 1 ml + Potassium bicarbonate @5 g per 1 litre of water.

▪ **Gujarat:**

- Apply irrigation in wheat at booting stage in Dangs district and in sugarcane in South Gujarat Heavy Rainfall Zone. Carry out hand weeding and intercultural operations in castor crop in Navsari district.
- Under prevailing dry weather and low temperatures in North Gujarat Zone, apply irrigation in mustard, cotton and fennel at regular intervals. Undertake harvesting of matured fruits of vegetables. Carry out weeding in isabgol, amaranth and fennel and earthing up operation in fennel. Spray 20 ml 2-4-D Ethyle ester or Metasulfuron 0.8 gm/10 liters of water to control broad leafy weeds in wheat crop.
- Apply irrigation in cotton crop and carryout weeding in garlic crop in South and North Saurashtra Zone.
- Apply irrigation in potato crop at 8-10 days interval in Middle Gujarat Zone.
- Under cold and dry weather condition, apply light irrigation in fennel, cotton and fruit crops in Bhal and Coastal Zone of Gujarat.
- Apply irrigation in wheat, cotton and mustard in North West Zone. Carryout weeding in cumin and isabgol crop.
- There is chance of early blight disease in potato crop due to low temperature in North Gujarat Zone; spray Mencozeb 0.2% @ 30 gram plus 25 ml of concentrated desi soap solution in 10 litre of water for control. Spray next three doses at the interval of 10 days.
- Due to partly cloudy weather condition there is a chance of heliothis infestation in gram and aphids in mustard in South Gujarat Heavy Rainfall Zone; spray Quinalphos 25 EC 20 ml or D.D.V.P 85 EC 5 ml in 10 liter of water for control of heliothis and spray Methyl-o-Dematone @ 10 ml or Dimethoate @ 10 ml in 10 litres of water solution for control of aphids.
- There is a chance of outbreak of blight rust in mustard and in cumin crop due to low temperature in Bhal and Coastal Zone of Gujarat; spray Mencozeb 0.2% @ 30 g plus 25 ml of concentrated desi soap solution in 10 liters of water for control.
- 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.
- **Poultry**
- As cold wave condition prevails over Madhya Maharashtra, Marathwada and Vidarbha, protect poultry birds from cold winds by hanging 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

Boro paddy : Mahsuri, IR-50, Dinanath, Bishnuprasad, Jyotiprasad, Kanaklata and Dinanat, Boro-1, -2, -3, Kalinga-3, Joymati, Dinanath, Swarnav.

Rabi maize : Hybrids varieties like Ganga 101, Ganga 5, Deccan Hybrid and Composites varieties like Kishan, Vijay, Pratap, Diara, Hunlus.

Lentil : B-77, L-9-12.

Wheat : Sonalika, UP 262, K 7410, WH 291, and HDR-77 (suitable particularly for LBVZ of Assam.)

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

Onion : Pusa Red, Pusa Ratnar, Pusa white (Round), Pusa white (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketan.

Potato : Kufri Chandramukhi, Kufri joyti, Kufri Sinduri, Kufri Mega.

Rapeseed/ mustard : TS-29, TS-36 M-27, TS-38(for Toria) and TM-2, TM-4, Varuna (for Mustard).

Tomato : Punjab Chhuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux, Pusa Ruby, VC- 48-1, Arka Abha (BWR-1), Arka Alok (BWR-5), BT-1, Bilahi-1, Bilahi-2.

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

Sunflower: SunGold, Sunbred-275, Sunbred-212, PAC-36

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

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

Jharkhand:

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

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

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

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

Madhya Pradesh

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

Wheat: Sujata, HW-2004, HI-1500

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

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

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

Chhattisgarh

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

Linseed: RLC-92, Indira-32

Wheat: GW-273, Lok-1

Mustard: Pusa Bold

Jammu & Kashmir

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

Uttarakhand

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

Potato: Kufri- Jyoti, Ashok, Anand

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

Himachal Pradesh

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

Late variety of Cauliflower: broccoli

East Uttar Pradesh

Cabbage: Imprabad Japani, Pusa chipali and Pusa kartiki

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

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

Potato: Kuferi - Chandramukhi, Bahar

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

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

West Uttar Pradesh:

Toria: Sangam, TL-17, 67

Ageti matar: Azad P-3, Arkel

Maharashtra

Madhya Maharashtra

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

Safflower: Bhima or Phule Kusuma

Marathwada

Jowar: Parbhani Moti or Parbhani Jyoti.