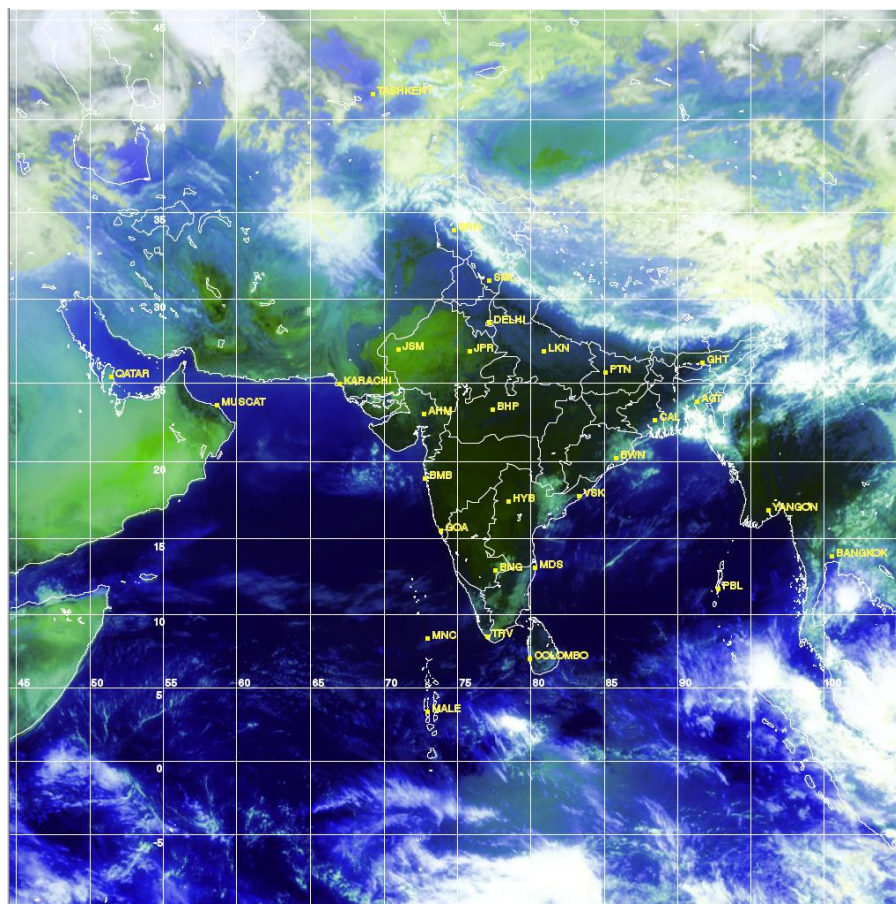




# National Agromet Advisory Bulletin

Thursday, 1<sup>st</sup> March, 2012

(For the period 1<sup>st</sup> to 5<sup>th</sup> March, 2012)



Satellite image 0600 UTC dated 2<sup>nd</sup> March, 2012



Issued by

National Agrometeorological Advisory Service Centre

Agricultural Meteorology Division

India Meteorological Department, Shivajinagar, Pune.

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

## Executive Summary

Minimum temperatures were 2 - 4<sup>0</sup>C above normal over many parts of Uttarakhand, Rajasthan, Uttar Pradesh, parts of Himachal Pradesh, Punjab, Haryana, Delhi, East & North East India, Central India, Marathwada, some parts of Gujarat, Kutch, Madhya Maharashtra, Telangana, Coastal and North Interior Karnataka country during last week. Major *rabi* crops are wheat in North West and Central India, mustard, sarson, toria, lentil and gram in East and North West India. The prevailing temperatures are conducive for growth of wheat which is at milk stage in North West India. Due to favourable weather, the condition of mustard, sorson, toria, gram and lentil which are at pod formation / maturity stage in East and North West India are good. Farmers are advised to apply irrigation at the critical stages of the standing crops due to dry weather is likely for next three days.

Significant rain / snowfall occurred over Ganderwal district in Jammu & Kashmir and Upper Siang and Upper Dibang Valley districts of Arunachal Pradesh during last week. As there was no significant rain over most of parts of the country and either isolated / scattered rainfall or dry / mainly dry weather is likely to prevail, farmers are advised to provide irrigation to the standing *rabi* crops.

Due to favourable weather conditions, incidences of tikka leaf spot disease, bud necrosis and leaf miner in groundnut in Orissa, early shoot borer in sugarcane in Andhra Pradesh and necrosis in sunflower in Karnataka, wilt and aphids in lentil in Assam, downey mildew in cole crops in Himachal Pradesh, aphids in mustard in Punjab, fruit borer in brinjal and tomato in Madhya Pradesh and blast in *boro* rice in West Bengal are noticed below economic threshold level (ETL). Farmers are advised to undertake appropriate plant protection measures to control the pests and diseases, if their population goes beyond ETL.

Due to favourable weather, farmers are advised to undertake sowing of summer crops under irrigated conditions. The crops in different States of the country are mentioned below.

**Assam:** Sowing of *Capsularis* jute, summer vegetables, summer pulses, direct seeded *ahu* rice, summer green gram and black gram

**Arunachal Pradesh:** Summer vegetables

**Nagaland:** sowing of turmeric, ginger and rajma

**Orissa:** sowing of maize

**West Bengal:** sowing of summer vegetables, green gram and planting of okra, pointed gourd

**Delhi:** sowing of green gram

**Rajasthan:** sowing of summer vegetables

**Punjab and Haryana:** sowing of sunflower, musk-melon, water melon, bottle gourd, pumpkin and okra, transplanting of chilli, capsicum, brinjal and citrus, guava and ber.

**Jammu and Kashmir:** transplanting of tomato, onion, brinjal, chilli crop and sowing of bhindi, beans and cucurbits

**Himachal Pradesh:** sowing of chari, bajra and maize

**Uttarakhand:** planting of sugarcane

**Andhra Pradesh:** sowing of sesame, planting of sugarcane

**Karnataka:** sowing of black gram and green gram

**Madhya Pradesh:** sowing of bhindi and spinach

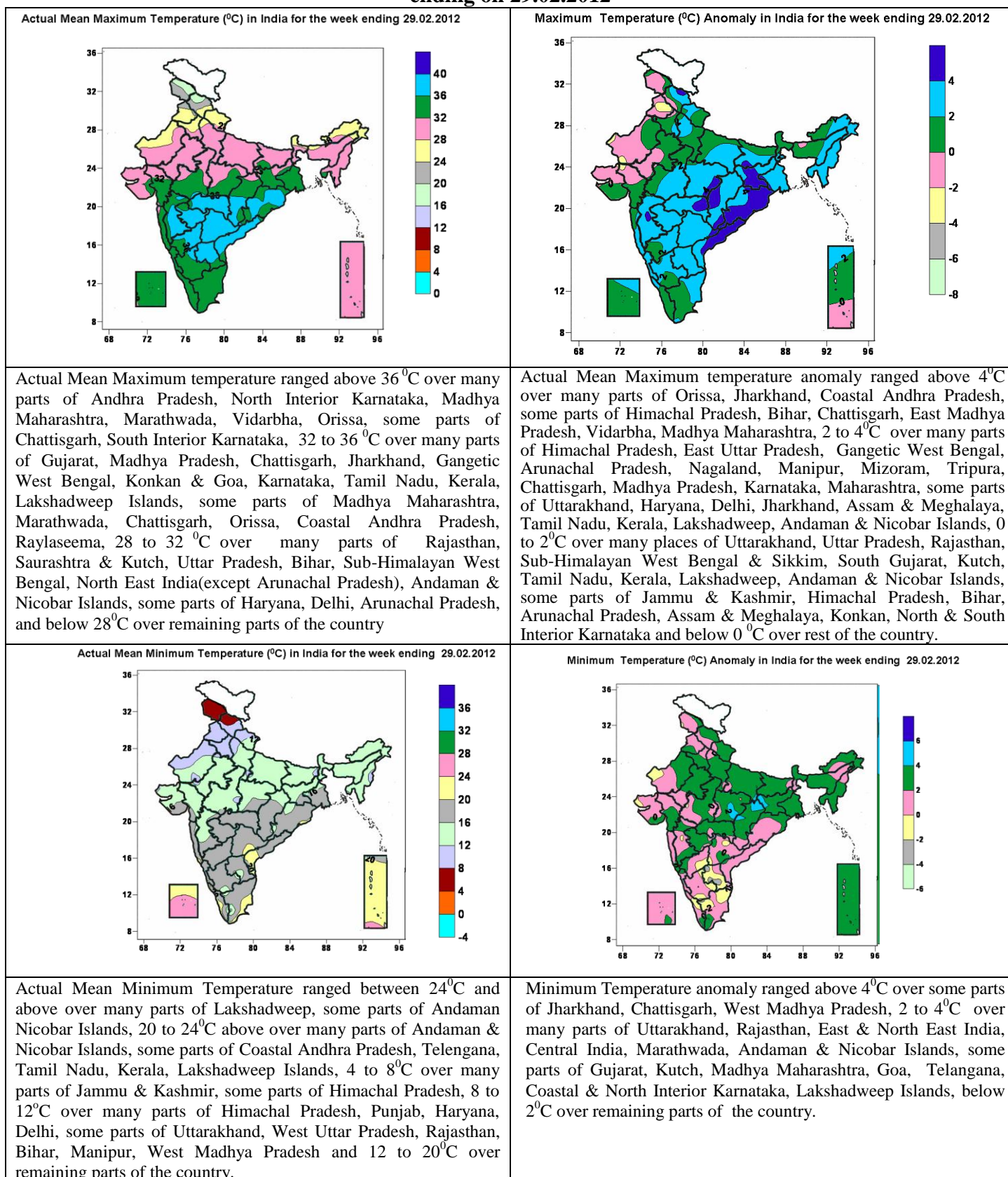
**Chhattisgarh:** sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc.

**Maharashtra:** sowing of okra and water melon and bajra.

**Gujarat:** sowing of bajra, groundnut and moong and transplanting of summer rice.

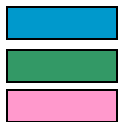
**Karnataka:** sowing of groundnut, sunflower and transplanting of onion.

## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 29.02.2012

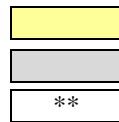


### Distribution of rainfall of the country during week ending on 29.02.2012

State/Districts	Actual (mm)	% Dep.
<b>Arunachal Pradesh</b>		
Anjaw	**	**
Changlang	0	-100
East Kameng	4	-74
East Siang	8.4	-54
Kurung Kumey	0	-100
Lohit	5	-76
Lower Dibang Valley	37	-24
Lower Subansiri	4	-81
Papumpara	4.5	-69
Tawang	6.5	-32
Tirap	0	-100
Upper Dibang Valley	70	44
Upper Siang	60.2	26
Upper Subansiri	**	**
West Kameng	0	-100
West Siang	**	**
<b>Jammu &amp; Kashmir</b>		
Anantnag	11	-58
Badgam	1.2	-94
Bandipore		
Baramula	2.7	-96
Doda	8.4	-82
Ganderwal	33	106
Jammu	0	-100
Kargil	0	-100
Kathua	0	-100
Kulgam	13.7	-48
Kupwara	8.8	-75
Ladakh(Leh)	0	-100
Poonch	0	-100
Pulwama	3	-80
Rajouri	1	-90
Ramban	6.2	-87
Reasi	12.7	-66
Samba	0	-100
Shopian	0	-100
Srinagar	2.4	-85
Udhampur	4	-89

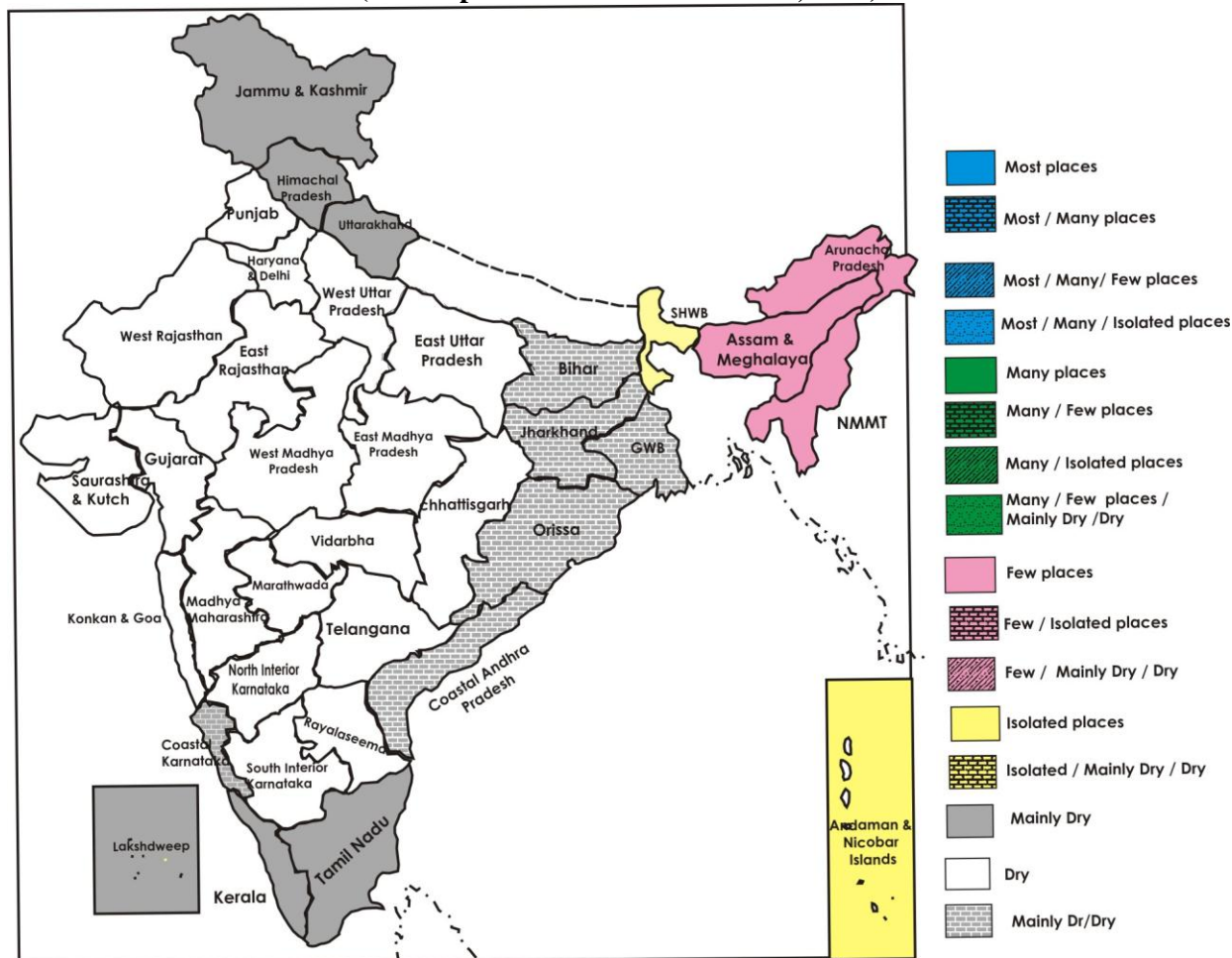


(20% or more) excess rainfall  
 (-19 to +19%) normal rainfall  
 (-20 to -59%) deficient rainfall



(-60 to -99 %) scanty rainfall  
 (-100%) no rainfall  
 \*\* Data not available

## Weather Forecast (Valid upto 1430 hours of 4<sup>th</sup> March, 2012)



### Major Feature of Weather Forecast up to 0830 hours IST of 04<sup>th</sup> March, 2012

- Rain/thundershowers would occur at a few places over northeastern states.
- Rain/thundershowers would occur at one or two places over Sub-Himalayan West Bengal & Sikkim and Nicobar Islands.
- Rise in minimum as well as in maximum temperatures by about 2°C over plains of northwest India during next 48 hours.
- Weather would be mainly dry over remaining parts of the country.

### Weather Warning

- No weather warning.

### Weather Outlook up to 0830 hours IST of 6<sup>th</sup> March, 2012

- Rain/thundershowers would occur at one or two places over northeastern states and Andaman & Nicobar Islands.
- Rain/snowfall would occur at a few places over western Himalayan region.
- Weather would be mainly dry over rest parts of the country.

## Zonewise Agromet Advisories

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

- **Realised Rainfall:** No significant rain occurred in most of the districts of the States of the region except Upper Siang and Upper Dibang Valley districts of Arunachal Pradesh during last week.
- **Rainfall Forecast:** Rainfall is likely at a few places over the States of the region during next three days.
- **Advisories**
  - As there was significant rain in Upper Siang and Upper Dibang Valley districts of Arunachal Pradesh during last week, farmers are advised to postpone irrigation to the crops in this districts. As there was no significant rain during last few weeks in most of the remaining districts of the States of the region and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.
  - Farmers in Assam are advised to complete transplanting of *boro* rice.
  - Farmers in the Hill Zone of Assam are advised to continue sowing of okra and cucurbits crops. To avoid damage of chili and tomato from wind, staking with bamboo sticks can be done.
  - Farmers Central Bramhaputra Valley Zone of Assam are advised to harvest timely sown matured toria and potato crops. Continue land preparation and sowing for *Capsularis* jute, summer vegetables, summer pulses. Undertake land preparation for early *ahu* rice.
  - Farmers of Upper Bramhaputra Valley Zone of Assam are advised to continue land preparation and planting of sugarcane.
  - Farmers of Lower Bramhaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice, pointed gourd, musk melon, water melon, pumpkin etc., planting of sugarcane, summer vegetable, black and green gram, *kharif* maize and jute.
  - Farmers of Barak Valley Zone of Assam are advised to harvest the matured potato, cabbage and knolkhol, rapeseed, mustard crop, onion and garlic. Farmers are also advised to raise nurseries for the cultivation of transplanted early *ahu* rice. Farmers are also advised to give mechanical support to the flowering plants of tomato to avoid fruit damage due to direct contact of with soil.
  - Farmers in North bank plain zone of Assam are advised to complete sowing of direct seeded *ahu* rice. Undertake land preparation and start sowing of summer green gram and black gram.
  - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to harvest the matured cole crops, potato, mustard, maize, pea, turmeric, ginger etc. and continue land preparation for new maize crop and summer vegetable.
  - Farmers in Mild Tropical Plain Zone of Tripura are advised to complete transplanting of *boro rice* in lowland. As dry weather prevailed during last few weeks, farmers in Mild Tropical Plain Zone of Tripura are advised to apply irrigation to *boro* rice at tillering / flowering stage. Undertake land preparation and sowing of summer vegetables.
  - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to complete transplanting of *boro* rice. Continue sowing of spring potato, ladies finger, pumpkin and French beans.
  - Farmers of Sub tropical Plain Zone of Manipur are advised to continue sowing of cucurbits like watermelon, cucumber and sponge gourd. Complete land preparation and transplanting of pre *kharif* rice and Undertake land preparation for raising main *kharif* rice, ginger, turmeric, French bean and bhindi.
  - As there was no significant rain during last few weeks in Mild Tropical Hill Zone of Mizoram, lack of moisture coupled with present weather conditions caused fruit cracking in tomato and banana; hence farmers are advised to ensure sufficient soil moisture. Farmers in Mild Tropical Hill Zone of Mizoram are advice to harvest the mature tomato crops and avoid spoil. And also suggested to stake the tomato plant with highly care to avoid limb break due to fruiting.
  - In Mild Tropical Hill Zone of Nagaland farmers are advised to harvest mustard crop in the morning hours to avoid shattering loss. Also, provide sufficient moisture during flowering, fruit setting of pea crop. Undertake land preparation and start sowing of turmeric, ginger and rajma. Apply irrigation immediately after transplanting of tomato.
  - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.

- Incidence of wilt disease and aphid has been observed in lentil and khesari at vegetative stages. Farmers in the Central Brahmaputra Valley Zone of Assam are advised to drench the soil with Bavistin @ 1ml/lit of water or apply malathion 50EC @ 2 ml/lit of water to protect the crop from wilt.
- Due to prevailing weather conditions, there is chance of late blight and early blight diseases in potato in Mild Tropical Plain Zone of Tripura. To manage the attack of blight diseases, spray Indofil M-45 or Ridomil or Mancozeb @ 2 g per litre of water or Cut Zed @ 2.5 g per litre of water. There is also chance of attack of fruit borer in tomato. Spray Neem seed Kenel 5%. There is also chance of attack of stem borer in *boro* rice; spray Rogor or Monocrotophos @ 2 ml per liter of water or granular insecticide like Carbofuran 3 G @ 5 kg per kani.
- As there was no significant rain during last few weeks in Mild Tropical Hill Zone of Mizoram, lack of moisture coupled with present weather conditions caused blight in tomato and banana; hence farmers are advised to spray of Mencozeb @ 1 gm per litre of water. Due to prevailing weather as well stage of tomato crops, fruit borer are congenial in tomato, spray 5% neem seed kenel or spray NPV@250-500 LE/ha with teepol 100 ml.
- Due to congenial weather, there is chance of attack of late blight in potato in Mild Tropical Hill Zone of Nagaland; farmers are advised to monitor crops and apply appropriate plant protection measures.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to vaccinate cattle, goat and pigs against the Foot and mouth disease.
  - Poultry farmers in Upper Brahmaputra Valley Zone and North bank plain zone of Assam are advised to provide artificial heating through lighting of electric bulb at poultry house during night time. Vaccinate poultry against the ranikhet disease.
  - Farmers in Arunachal Pradesh are advised to provide dry bedding material to pig / piglets and deworm pig / piglets and goat.
  - The farmers in Mild Tropical Hill Zone of Mizoram are advised to deworm calves against round worms and fluke worms.
  - The poultry farmers in Nagaland are advised to vaccinate against bird flu and vaccinate pig / piglet against swine flu. Vaccinate cattle, buffalo, pig, sheep and goat against FMD.
  - The poultry farmers in Manipur are advised to vaccinate against Ranikhet, IBD / Gumboro disease and deworm and vaccinate pig / piglet. Vaccinate and deworm cattle and buffalo against B.Q. & H.S.
  - Farmers in Mild Tropical Plain Zone of Tripura are advised to deworm calves.

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

- **Realised Rainfall:** Mainly dry weather prevailed in the region during last week.
- **Rainfall Forecast:** Isolated rainfall is likely in Sub-Himalayan West Bengal and Sikkim and weather would be mainly dry over remaining States of the region.
- **Advisories:**
  - As there was no rain during last week over the States of the region and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to the standing crops.
  - Undertake sowing of oilseed crops like summer groundnut in Western Undulating Zone, East and South Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa.
  - Farmers in Western Undulating Zone of Orissa are advised for planting of sugarcane. Farmers are also advised to complete transplanting of summer rice and harvesting of cotton on sunny days. Apply irrigation to mustard wherever the crops are at seed formation stage.
  - In view of prevailing dry weather, farmers in North Eastern Plateau Zone of Orissa are advised to apply irrigation to mustard and sunflower.
  - Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to complete transplanting of summer rice. Farmers are also advised to undertake harvesting of sugarcane, sowing of summer sunflower and groundnut and transplanting of ragi crop. The farmers are also advised to apply irrigation to *rabi* sunflower at flowering stage.
  - It is optimum weather for sowing of sesame; farmers of East and South Eastern Coastal South Eastern Coastal Plain Zone of Orissa are advised to undertake sowing of sesame.

- Farmers in North Central Plateau Zone of Orissa are advised to complete transplanting of summer rice and apply irrigation to wheat crop. Taking the advantage of dry weather, farmers are also advised to undertake intercultural operation in groundnut and sunflower, apply irrigation to mustard crop and undertake sowing of early summer vegetables. Also complete sowing of summer maize.
- Farmers of East and South Eastern Coastal Plain zone of Orissa are advised to undertake sowing of papaya, marigold and cowpea and also to complete sowing of maize taking the advantage of favourable weather.
- In North Eastern Plateau Zone of Orissa, farmers are advised to undertake sowing of summer vegetables, cucurbitaceous crops like sponge gourd, bottle gourd, pumpkin, water melon, musk melon etc.
- Farmers of East and South Eastern Coastal Plain Zone in Cuttack districts of Orissa are advised to complete maize sowing by this week. Late sowing afterwards may reduce the yield due to high temperature during April and May.
- Due to normal temperatures, the evaporation rates has increased and thereby the water requirement of *rabi* crops has also increased. Therefore, the farmers of North Eastern Plateau Zone of Orissa are advised to reduce the interval between two irrigations. Maintain the water level in transplanted rice field and use/ broadcast Blue Green Algae @ 4 kg per acre.
- As temperature condition is now congenial for transplanting of *boro* rice, planting of autumn planted sugarcane, onion, sowing of summer vegetables and summer maize in North West Plain Zone of Bihar, farmers are advised to undertake these operations.
- As dry weather is prevailing, farmers in the districts of North Bihar are advised to apply irrigation to wheat, maize, potato, vegetable crops and harvest matured tobacco crop.
- Apply irrigation to wheat and undertake intercultural operation in maize, carrot, radish, turnip and sweet potato crops in South Bihar Alluvial Zone. Transplanting of onion crop should be done as soon as possible.
- Undertake nursery preparation for sowing of chilli, tomato, early cucurbitaceous crops and brinjal in poly house for summer season in South Bihar Alluvial Zone.
- Farmers in Western, Central and North Eastern Plateau Zone of Jharkhand are advised to prepare the field for sowing of vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon, musk melon and complete transplanting of rice.
- Farmers in New Alluvial Zone of West Bengal are advised to undertake land preparation and sowing of different summer vegetables such as lady's finger, spinach, various leafy vegetables etc and top dress the early boro rice at 24 days after transplanting or at the beginning of tillering stage @ 15 kg urea per bigha. Also sow seedling of brinjal and chilli.
- Farmers in Coastal Saline Zone of West Bengal are advised to complete the harvesting of Mustard and Lathyrus and complete the planting of okra, pointed gourd and sowing of green gram.
- Farmers in Old Alluvial Zone of West Bengal are advised to undertake the harvesting of potato and well matured mustard crop and Apply urea as first topdressing at tillering stage and after topdressing, apply irrigation to *boro* rice.
- Farmers in Laterite and red soil zone of West Bengal are advised to complete the transplanting and harvesting operation of *boro* rice and potato.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Infestation of early shoot borer in sugarcane in Western Undulating Zone in Orissa, spray chloropyriphous @2ml/lit of water. 1000ml Chloropyriphous should be sprayed in 500lt of water per hectare of sugarcane crop.
- In North Central Plateau Zone of Orissa, infestation of pod borer is observed, spray Endosulfan @ 2ml/litre of water.
- Occurrence of Tikka disease and white ant on *rabi* groundnut in Ganjam districts of Orissa, spray 500 g Blitox - 50 in 200 litre water per acre for Tikka and spray 2 ml, Chloropyriphos in 1 litre water for controlling white ant attack. Infestation of leaf minor and bud necrosis has also been occurred. Spray 2 ml Endosulphan or Ekalux or Hostathion in 1 litre water. Increased day temperature favours the infestation of cercospora leaf spot in groundnut. Spray 3 g Indophil-M-45/litre water.



- In Coastal Saline Zone of West Bengal, *boro* paddy seedlings are attacked by blast in the main field. Spray Ediphenphos50EC @1ml/liter of water or Trycycloazole75WP@0.6g/litre of water. Mustard is attacked by aphid. To control their spray Dimethoate@1.5ml per liter of water or Imidachlorpid @0.5ml per liter of water. Coconut may be attacked by black headed caterpillar, spray neem oil@2.5ml/liter at 15 days interval. Due to alternatively warm and cold weather in Coastal Saline Zone of West Bengal, rose may be attacked by red mite. Keep pH level at 6.7 to 7 and spray Propazite 50%EC @1ml/liter of water.
- Infestation of aphid in Hill Zone of West Bengal in mustard and potato, spray the Cropheither with Imidacloprid @ 1ml /litre of water or Acetamiprid @ 1g /litre of water.
- Due to low night temperature in Terai Zone of West Bengal there is a possibility of downy mildew in cucumber, bittergourd and spine gourd, spray Mancozeb @ 2gm/lit or Metalaxyl 8% and Mancozeb 64% @1-1.5 gm/lit of water. In this weather condition, mite attack may be a problem in wheat. If the leafs are curling due to mite attack then spray Dicofol 3 ml/lit of water. There is possibility of yellowing of the lower leaves. To protect the disease spray Propiconazole 1 ml/lit of water by wetting the whole plants.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - Due to low temperature, calves and kids are susceptible to respiratory infection, mostly pneumonia. Farmers in North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa are advised to provide warm and comfortable housing and good ventilation to animals and birds. Vaccination of FMD (Foot and Mouth Disease) to animals is also recommended. In case of disease outbreak, strict isolation of affected animals should be done.
  - Foot and mouth disease are noticed in North Eastern Plateau Zone of Orissa. Farmers are advised to apply potassium permanganate on lesions in the mouth and sulphur treatment is recommended for foot lesions.
- **Pisciculture**
  - Farmers in North Central Plateau Zone and North Eastern Coastal Plain Zone of Orissa are advised to prevent the EUS disease in fish during winter; apply Cifax @ 400 ml per pond of 1 acre area and 1 meter depth of water.
  - Now as the temperature is rising, it is favourable for the growth of fishes. The farmers in North Eastern Plateau Zone and North Central Plateau Zone of Orissa are advised to add cow dung and lime in the pond as a natural foods for them and alternative feeds may also be used like rice bran and mustard cake (each of 5 kg per day per acre area of pond).
  - In Coastal Saline Zone of West Bengal, due to cold weather, reddish wound may be formed at the base of tail of fishes. Apply lime and Potassium permanganate.

#### **NORTHWEST INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]**

- **Realised Rainfall:** Rainfall occurred in Ganderwal district in Jammu & Kashmir and mainly dry weather prevailed over remaining States in the region.
- **Rainfall Forecast:** Mainly dry / dry weather is likely to occur over the region.
- **Advisory:**
  - Significant rain / snowfall occurred over Ganderwal district Jammu & Kashmir during last were, farmers in the above district of are advised to postpone irrigation to the standing *rabi* crops. As there was no significant rain over most of the remaining parts of the region and dry / mainly dry weather is likely to prevail, farmers are advised to provide irrigation to the standing *rabi* crops.
  - Sowing of French bean, cluster bean, summer radish is advised in Delhi as present temperature is suitable for germination of seeds. Procurement of seeds should be done from a certified source for sowing of green gram. Also in the present weather conditions, continue transplanting of young seedlings of tomato, chilli and cole crops may be done in this week. Planting of young seedling of grape, peach & plum may be done in this week.
  - In Rajasthan farmers are advised to undertake sowing of summer cucurbits in Semi-Arid Eastern Plain Zone and summer vegetable, fodder in Arid Western Plain Zone.

- Farmers in Punjab and Haryana are advised to undertake sowing of sunflower and okra on ridges as it suffers less from pest, transplanting of chilli, capsicum and brinjal. Take regular cuttings of berseem and avoid delay. Transplant nurseries of musk-melon, water melon, bottle gourd, pumpkin etc. and plant evergreen fruits viz. citrus, guava and ber. As the risk of frost is over, remove “Sarkanda” from the crops sown in November-December and irrigate the crops.
- In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to continue transplanting of tomato, onion, brinjal, chilli crop and also advise for sowing of bhindi, beans and cucurbits.
- In Valley Temperate zone of Jammu & Kashmir, wheat, brown sarson, pea, lentil, oat are in dormant stage, no agronomic activities in the field during this period is recommended. Farmers are advised to provide adequate drainage to avoid water stagnation after rain/snowfall. In vegetable crops at vegetative stages, prepare hot beds.
- In Intermediate Zone of Jammu & Kashmir, farmers are advised to raise cucurbits under protection in polythene bags and also transplanting of tomato, brinjal, onion, knolkhol
- Farmers in Leh region of Jammu & Kashmir are advised to harvest Chinese cabbage, lettuce, beet leaf var. Mongol at 10 to 15 days interval. It is advised to clear the snow from the poly houses and trenches to avoid excessive weight on the UV film and cover the polythene of green houses with black polythene in the night for proper growth of crops. They are also advised to give one light irrigation to garlic crop germinated in the low tunnel during day time.
- In High Hill Temperate Dry Zone of Himachal Pradesh, pruning in orchards if not taken in December-January may be taken immediately without delay, undertake preparation of basins in snow cleared areas. In damaged plants use fungicides blitox or chobatia paste.
- Farmers in Mid Hills Sub-Humid Zone of Himachal Pradesh farmers are advised apply half dose of nitrogen in Pear (1.4kg/basin), Peach, Plum, Apricots, Almond and Cherry (1.0kg/basin) trees of above 10 years age in low hills. Do not apply in apple now. Remove snow from the branches of the trees. Complete the training pruning work particularly in Peach and Almond 20 days before flowering. Start grafting work in Apple, Pear and Cherry. Continue planting of apple and stone fruits plants. In high hills planting can be done after melting of snow.
- Farmers in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh are advised for sowing of potato after the tubers are treated with Dithane M-45 @ 0.5% for 20-25 minutes in mid hills and surgmukhi in lower plains area. Also prepare field for sowing of Chari, bajra and maize in low hills. In wheat crop remaining dose nitrogen may be applied. In case seed crop of berseem and oats one cut can be taken. Earthing up can be done in the potato crop if sown earlier.
- Farmers in Uttar Pradesh are advised to give light irrigation in normal wheat, *rabi* pulses, *rabi* oilseeds, potato, already transplanted vegetable crops. Start field preparation for planting of sugarcane, sowing of sunflower, sowing of guava seeds, sowing of vegetables viz. bitter gourd, bottle gourd, pumpkin, cucumber, taroi, lady's finger, tomato, brinjal, chilli, lobia, rajmah etc. For green fodder purpose, undertake sowing of fodder maize, lobia and jowar. Start digging of matured potato and field preparation for sowing of moong or urad in vacated field. Continue digging of matured raddish, carrot and turnip.
- In Bhabar and Tarai Zone of Uttarakhand, due to expected favourable temperature conditions, farmers are advised to continue sowing of sugarcane. As dry weather is expected during this week also advised to give irrigation and remove weeds in potato, brinjal and capsicum sown earlier and also transplant the brinjal nursery in main field. Continue picking of pods of vegetable pea. Stop irrigation in timely sown garlic crop.
- In Bhabar and Tarai Zone of Uttarakhand, due to temperature rise during this week, there are chances of gram pod borer in Chickpea crop. If the incidence is more than 5 %, then farmers are advised to spray 800 ml of Tophenophas dissolved in 200 to 250 liters of water per acre immediately and after 12 to 15 days again spray 200 ml of Dosis insecticide dissolved in 200 to 250 liters of water per acre.
- In Eastern Zone (Hissar) of Punjab, there is possibility of incidence of white rust and alternaria in late sown mustard crop and hence farmers are advised to monitor the crop and if the incidence in crop than spray as per recommendation of the University during clear and sunny weather.
- Stages of major crops are mentioned in Annexure I.

- **Animal Husbandry**

- In Western Zone (Bhatinda) of Punjab, cracks/sore/chapped/injured teats should be treated with teat tips (Glycerin : Providine Iodine 1:4). It should be used after every milking. Newly born calves need special care in cold weather, since they are susceptible to pneumonia and a large number of them die of this disease. Keep your animals under roof in night and in the sun during the day time. Do not feed green, sprouted, soiled or rotten potatoes to dairy animals. These can cause serious and fatal poisoning.
- Due to expected increase in temperature conditions in the night, farmers are advised to keep animals outside the shed from this week. Give them balanced feed including green fodder and clear water. Clean their place of sitting. As rise in temperature will cause increase in mosquitoes population in Bhabar and Tarai Zone of Uttarakhand.
- Farmers in Bundelkhand zone and in western plain zone in Uttar Pradesh are advised to tie young cattle in closed shelter and feed them with big cardamom, ajwain and jaggery, keep cattle shelter clean and take special care of young ones to protect from cold in this season.
- In sub-humid sub tropic zones of Uttarakhand, vaccinate the animals for various diseases as they are more prone to diseases in this weather. For the control of cough use piperazine citrate @50-30 ml/animal.

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

- **Realised Rainfall:** No significant rainfall occurred in most states of the region.
- **Rainfall Forecast:** Weather would be mainly dry over the region.
- **Advisories:**
  - Due to continuous dry weather prevailing in the region farmers are advised to apply irrigation and also take up appropriate plant protection measures on the standing crops
  - Farmers in the region are advised to spray Planofix @ 1ml per 4.5 litre of water to avoid flower / fruit droppings in Mango due to dry weather.
  - Farmers in the High Altitude Tribal Zone of Andhra Pradesh are advised to maintain 2-3 cm water in the field in the paddy field as it is in transplanting stage. Weeding should be done in the field at 35-40 days after sowing.
  - Farmers in the North Coastal Zone of Andhra Pradesh are advised to plant the new sugarcane crop.
  - Farmers in the Scarce Rainfall Zone of Andhra Pradesh are advised to harvest the November sown groundnut crop before the pods get germinated in the field, only after observing its maturity. Farmers are also advised to maintain alleys of 20 cm width for every 2 mts in the rice field which makes intercultural operations easy and helps to increase the yield since sufficient light is available to the crop.
  - Farmers in the Southern Telangana zone of Andhra Pradesh are advised to top dress the maize crop with 50-60 kg urea per acre which is at tasseling to silking stage and irrigate the crop.
  - Farmers in the Northern Telangana Zone are advised to start sowing of Sesum and also ratooning of sugarcane in the months of November and December coupled with closer irrigations in the formative phase of the crop. Apply frequent irrigation to the sugarcane crop.
  - Farmers in the Eastern Dry Zone of Karnataka are advised to dip banana seedlings in dung slurry and apply 40 g carbofuran or 5g phorate before planting.
  - Farmers in the North East Transition zone of Karnataka are advised to harvest wheat and Safflower.
  - Due to low temperature, high aeration is observed in cracks in arecanut field in the Southern Transition Zone of Karnataka. Farmers are advised to provide irrigation whenever irrigation facilities are available.
  - Farmers in the North Dry Zone of Karnataka are advised to complete harvesting of Chickpea, maize, wheat, sorghum can be completed as early as possible and continue transplanting of sweet gourd, ridge gourd under irrigated condition.
  - Farmers in the coastal zone of Karnataka can take up harvesting of pulse crops like green gram, black gram, cow pea etc. as the weather will be dry.

- Farmers in the Southern Dry Zone of Karnataka are advised to complete paddy harvesting and take up the sowing of pulses like Black gram, Green gram and also the green manure crop sun hemp to utilize residue moisture after harvest of the paddy.
  - Farmers in the North East Dry Zone of Karnataka are advised to harvest the sorghum, Bengal gram and safflower.
  - Farmers in the Western Zone of Tamil Nadu are advised to first treat pulses and gingelly seeds with bio control agent and then sow the seeds.
  - Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to initiate land preparation for summer sowing. Apply dolomite in extremely acidic fields, apply farm yard manures prior to sowing season, undertake sowing during Feb- Mar for crops like carrot, potato, peas, radish, beetroot and turnip selecting high yielding and resistant varieties and raise nursery for crops like cabbage, cauliflower, knolkol and exotic vegetables.
  - Farmers in the North East Transition Zone of Tamil Nadu are advised to provide irrigation to fruit crops, as the fruits are in marble stage and this will help for the better development of fruits and provide irrigation to summer groundnut because of continuation of dry weather and no rains.
  - Farmers of the Cauvery delta zone are advised to use pheromone traps @5 nos./acre to attract prodenia moths in rice fallow blackgram crop. In addition to this spray NPV solution @ 100 ml/acre to control prodenia.
  - In the north western zone of Tamilnadu, maize crop is in the stage of grain-setting and is in need of good amount of water and for extended time too. To compensate the loss through evaporation in the early summer, it is advised to extend the water irrigation by 15 minutes in the case of drip irrigation system and every 7 days instead of 10 days in open irrigation method. This method of extended irrigation is to be continued for at-least 3 weeks' time.
  - Necrosis problem in sunflower is noticed in the North Transition zone of Karnataka. To protect the crop spray 0.25 ml Imidachloprid 17.8 S.L or 1.5 ml Oxidemeton methyl 25 EC per liter of water.
  - Farmers of the Cauvery delta zone are advised to use pheromone traps @5 nos./acre to attract prodenia moths in rice fallow blackgram crop. In addition to this spray NPV solution @ 100 ml/acre to control prodenia.
  - Present weather is also conducive for the incidence of ear head bug in rice and fruit borer and thrips in chillies in the South Zone of Tamil Nadu. Farmers are also advised to spray quinolphos 25 EC 2 ml/l to control ear head bug, dimethoate 30 EC 2 ml/l to control thrips and apply quinalphos 1.5 D 25 kg/ha twice at weekly intervals to control ear head bug.
  - Farmers of the western zone of Tamilnadu are to spray with Metalaxyl 1g/lit or Metalaxyl + Mancozeb @ 2.5 g/lit. to manage downey mildew in maize crop. For controlling mealy bug infection in sugarcane, detrash as per schedule and drain excess water (in severe case, spray malathion 50 EC 400ml/acre).
  - Incidence of early shoot borer is noticed in sugarcane in the southern Telangana zone of Andhra Pradesh. To control, adopt the appropriate IPM measures.
  - Incidence of mahali disease in arecanut, pseudostem weevil / rhizome weevil, bunchy top in banana and attack of red palm weevil, rhinoceros beetle, leaf eating caterpillar, stem bleeding in coconut is seen in the High Altitude Zone of Kerala. Farmers are advised to undertake plant protection measures.
  - Farmers of the southern zone of Kerala are advised to keep standing water in the field to reduce the ill effects of high temperature. Leaf roller, stem borer and bug are expected in rice. Trichoderma cards can be used to control leaf roller and stem borer. To control leaf roller use a thorny twig to remove caterpillars. In severe cases spray (Carbaryl) Sevin (50%) 4 ml/ litre of water.
- **Animal Husbandry**
    - Prevailing dry weather conditions in the state of Andhra Pradesh are congenial for occurrence of foot and mouth disease in cattle, sheep pox in sheep, Ranikhet in poultry. To prevent vaccinate the animals.
    - Farmers in North Dry zone of Karnataka are advised to maintain the Soil moisture in the vermin-compost pits at 40-50 %.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over the States during last week.
- **Rainfall Forecast:** Dry weather would prevail over the region during the period.
- **Advisories:**
  - As mainly dry weather prevailed during last week and dry weather is likely to prevail during next 2-3 days, farmers are advised to apply irrigation to standing crops. As the temperature is rising, farmers are advised to reduce duration between two irrigations.
  - Farmers in Madhya Maharashtra, Marathwada and Vidarbha, are advised to complete sowing of summer groundnut and sunflower.
  - Prevailing weather is favourable for sowing of okra and water melon in Central Vidarbha Zone, farmers are advised to undertake land preparation and sowing.
  - There may be occurrence of recurrent flowering in mango in Konkan region of Maharashtra. To avoid this, spray Gibberlic acid 50 ppm on the whole tree twice. In some places mango fruits are in pea stage. Taking into consideration the rise in temperature, apply 150- 200 litres of water per tree at 15 days interval as per the availability. Apply second dose of fertilizers @ 40 Kg N (87 kg Urea) for one month old crop of rice. Maintain the water level 2 to 3 cm for first 8 to 10 days and increase up to 5 cm. Irrigate the groundnut crop 10 to 12 days interval after sowing.
  - Farmers in Vidarbha are advised to harvest gram crop and give irrigation to wheat and groundnut crop.
  - As temperatures is rising, farmers of Marathwada are advised to apply irrigation to orange orchard and mulching may be done in orange orchards where ambe bahar taken. To avoid mango fruit dropping, spray 10 PPM NAA ( Planofix). Considering the present temperature cover the banana bunch with the leaves. Reduce the time between two irrigations.
  - Farmers in Middle Gujarat Zone are advised to carry out transplanting of summer paddy after root treatment @1 kg/ ha of azotobacter or azospirilam dissolved in 30 litre water for 15 min. Apply irrigation in wheat and potato. Do not irrigate in potato crop during high wind speed hours to avoid lodging. Harvesting of isabgol & cumin be done in early morning, if leaves are dried.
  - Farmers in Bhal and Coastal Zone are advised to irrigate mustard crop.
  - Farmers in South Saurashtra Zone of Gujarat are advised to undertake sowing of summer moong, groundnut and pearl millet. Apply 87 kg DAP and 10 kg Urea at the time of sowing of moong and 87 kg DAP and 55 kg of Urea in pearl millet. Apply irrigation in mango.
  - Farmers in South Gujarat Heavy Rainfall Zone are advised to undertake land preparation and sowing of summer crops like groundnut, moong and pearl millet. Taking advantage of dry weather, carry out hand weeding and other intercultural operations. Provide the second split of nitrogen of about 100 kg N/ha. Spray 2% potassium Nitrate in mango crop for effective control of fruits dropping and higher flowering setting.
  - Farmers in South Gujarat Heavy Rainfall Zone are advised to undertake harvesting of tomato.
  - Farmers in South Gujarat Zone are advised to apply irrigation to wheat crops with fertilizer and vegetable crops at an interval of 3 to 4 days as there is increase in temperature.
  - Farmers in South Gujarat Zone are advised to keep mulching in mango orchard and to maintain moisture and protect the fruit from spongy tissue. In ratoon banana crop first dose of nitrogen should applied at 45-50 days of sowing for higher benefits.
  - Taking advantage of dry weather, harvest the matured *rabi* crops at the earliest in North Gujarat Zone and carry out land preparation for sowing of summer crops. Sowing of early varieties of summer groundnut and bajra may be carried out after seed treatment. Pluck the matured guava and papaya fruits. Carry out weeding in citrus orchard and apply fertilizers.
  - In North Gujarat Zone farmers are advised to give irrigation to wheat, cumin and Isabgol crop.
  - Farmers in North Saurashtra Zone are advised to irrigate garlic, onion, pigeon pea, gram and mustard at critical stages. Carry out sowing of summer groundnut. Farmers are advised to spray wettable sulphur 80 % 30 gm or Dinocap 10ml or Tridemorph 5ml/10 lt of water at initiation of flowering in mango crop. Taking the advantage of dry weather, apply supplementary dose of Nitrogen @ 25 kg / ha in isabgol

and 37.5 kg Nitrogen / ha as top dressing in onion at 30 to 45 DAS ensuring optimum soil moisture level.

- Farmers in North West Zone of Gujarat are advised to apply supplementary irrigation and top dressing dose of Nitrogen in wheat. Apply 2<sup>nd</sup> irrigation in mustard at flowering stage.
- Suitable varieties of the crops for sowing are mentioned in Annexure II.
- Due to rise in temperature there may be infestation of sap sucking pests in okra, cucumber, chilli and tomato in Pune region, spray Imidachloprid @ 4ml or Dimethoate @10ml or Methyl dimeton@10 ml in 10 litres of water.
- Prevailing weather is congenial for incidence of tikka disease in groundnut crop in Konkan; spray Mancozeb @ 25 g or Carbandazim @ 10 g or Benlet @ 10 g per 10 litres of water.
- Due to change in weather, there may be attack of thrips on mango fruit in South Konkan, spray 45% Spinosad@ 2.5 ml in 10 litres of water on whole tree. There may be incidence of jassids in late mango blossom in Marathwada, spray Imidachloprid 17.8% @4 ml or Thiomethoxam @4 ml in 10 litres water.
- Under prevailing weather there may be attack of aphids and leaf miner on vegetable, pulse crops like cowpea, wal and kulthi and leaf miner, leaf eating beetles on watermelon in south Konkan, Spray Dimethoate @10 ml or Malathion 50% @ 20ml/10litres of water at 15 to 20 days interval.
- Weather conditions are favorable for infestation of late blight disease in tomato crop in South Gujarat Heavy Rainfall Zone. Farmers are advised to spray 0.25% Mancozeb @ 30 g in 10 litres of water with 10 g desi soap solution to manage the disease.
- Weather condition is favourable for outbreak of aphids in mustard in North Gujarat Zone. For effective control farmers are advised to spray Phosphamidon @ 3ml or Dimethoate @10ml or Monocrotophos @ 10ml adding in 10 liters of water.
- Stages of major crops are mentioned in Annexure-I.

#### CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Mainly dry weather prevailed over the region.
- **Rainfall Forecast:** Weather would be mainly dry over the States of the region during the period.
- **Advisories:**
  - As dry weather prevailed during last week and dry weather is likely to continue, farmers in this region are advised to provide irrigation to the standing crops.
  - Due to forecast of clear weather and no rainfall, farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to irrigate wheat crop at critical stages as per requirement. Carry out intercultural operations in sugarcane sown in the month of November. The average temperature is now suitable for proper germination of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. Hence the sowing of these vegetables should be completed at the earliest.
  - Farmers in Jhabua Hills region of Madhya Pradesh are advised to give fifth irrigation in fully irrigated wheat and maize crops at 85-90 DAS. For control of rats stand thick wooden in the field for standing owl at night and eat rats. For seed production roging should be done.They are also advised to arrange seed of summer vegetables i.e. water melon, musk melon, okra, chilli, tomato, brinjal etc. and sown these crops soon due to proper time.
  - In Nimar Valley region of Madhya Pradesh farmers are advised to irrigate wheat and gram crops; also start planting of sugarcane and prepare nursery of chilli, brinjal, okra and tomato.
  - In view of dry weather conditions farmers in Central Narmada Zone of Madhya Pradesh are advised to irrigate the standing crops. Harvest the matured pigeon pea. Prepare nursery for chilli and brinjal for planting.
  - Farmers in Central Narmada Zone of Madhya Pradesh are advised to undertake sowing of ladies finger and spinach. Give light irrigation to guava plant and carry out intercultural operation in winter sugarcane.
  - Farmers in Vindhyan Plateau region of Madhya Pradesh are advised give light irrigation in wheat crop. Undertake sowing of summer okra and prepare nursery for brinjal, chilli and tomato.

- Farmers in Bundelkhand Zone of Madhya Pradesh are advised to irrigate all crops also harvest the mature mustard and lentil crops. Present weather is favorable for direct sowing of vegetables like-pumpkin, bitter guard, etc. hence, Farmers are advised to sowing the crops.
- Farmers in Bundelkhand Zone of Madhya Pradesh are advised to give irrigation to wheat crop as it is at grain filling stage.
- Farmers in Grid Zone of Madhya Pradesh are advised to give irrigation and recommended dose of fertilizer to wheat crop. They are also advised to prepare nursery for summer vegetables, moong and urad.
- Farmers in Grid Zone of Madhya Pradesh are advised to undertake sowing of summer okra.
- In Chattisgarh Plain Zone, inter-culture, fertilizer application, earthing followed by irrigation is advised in sugarcane crop wherever the crop is at knee height stage. Farmers are also advised for sowing of cucurbitaceous crop in the poly houses, sowing of leafy vegetables, complete the transplanting of summer rice and summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. should be completed at the earliest.
- Farmers in Bastar Plateau Zone of Chhatisgarh are advised to complete sugarcane planting at the earliest and earlier planted sugarcane should be irrigated. Summer crop seeds like moong, urad and maize crops of high yielding varieties should be selected and sowing should be done. Wheat crop should be irrigated and second dose of nitrogen should be applied. Arrange for irrigation in linseed and mustard crop at an interval of 15 days.
- Present weather condition is suitable for infestation of insects like aphids in leafy vegetables and shoot and fruit borer in brinjal and okra in Chattisgarh Plain Zone, spray Methyl Dematon or Dimethoate @ 1.5 ml/litre water for control of aphids and Carbaryl WP 1 kg/ha or Endoxacard @ 500 ml/ha for the control of shoot and fruit borer.
- Farmers in Bundelkhand region of Madhya Pradesh are advised that fruit borer insect is being observed in brinjal and tomato crops. Therefore, to monitor the crop spray the crop with melathion 50 E.C. @ 1.0 ml. per liter of water for their control also leaf curl disease is being observed in chilly crop. Therefore, farmers are advised to monitor the crop and if observed then spray Methyl dematon 25 E.C. @ 2.0 ml. / litre or imadacloprid 5.0 ml. / litre of water for their control.
- Chickpea crop is being damaged by the caterpillar in Central Narmada region of Madhya Pradesh so farmers are advised to monitor the chickpea crop and when pest reaches at ETL level, then spray quinalphos 20E.C @ 2.0 ml. per liter of water. Farmers are also advised that there is attack of semi looper in cauliflower and cabbage crop for controlling measures spray Malathion 50 E.C @ 2ml/litre of water and do not pick up curds within 7days of spray.
- **Animal Husbandry & Poultry**
  - As there are chances of clear sky conditions during next 5 days in Bundelkhand region of Madhya Pradesh, Farmers are advised hence sheep raiser are advised to do medicine bath in sunny condition to control parasites.
  - Farmers in Bundelkhand region of Madhya Pradesh are advised to give vaccine against P.P.R to Goats.
  - Farmers in Kymore Plateau and Satpura Hills region, Central Narmada region and Satpura Plateau of Madhya Pradesh are advised to keep cattle in dry and clean place to protect from mosquitoes and other deleterious insects. Burn neem leaves to create smoke in night to protect from mosquitoes and bees.
  - Farmers in Vindhya Plateau Zone of Madhya Pradesh are advised to vaccinate cattle.

## Annexure I Major Crops

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

- Sugarcane (old) (harvesting), sugarcane (new) (land preparation / planting), *boro* rice (tillering/vegetative/panicle initiation), *ahu* rice (sowing/seedling/transplanting), wheat (ear initiation / flowering), tomato, brinjal (vegetative / flowering / fruiting / harvesting), cauliflower, cabbage, knoll khol (head formation / harvesting), *rabi* pulses like pea, lentil (pod formation), onion (maturity/harvesting), potato (tuber development / maturity / harvesting), rapeseed and mustard (seed formation / maturity/harvesting), pumpkin, bottle gourd (flowering / fruiting), okra, pointed gourd, musk melon, water melon, ridge gourd, sponge gourd (sowing), black gram, green gram (sowing), *rabi* maize (vegetative), *kharif* maize (sowing), summer pulses, *Capsularis* jute, summer vegetables (sowing) in Assam.
- Cabbage, cauliflower, knolkhol etc. (head formation / maturity / harvesting), maize (cob formation / maturity / harvesting), mustard (seed formation / maturity/harvesting), potato (tuber formation / maturity / harvesting), pea (pod formation / maturity / harvesting), okra, beans (sowing) in Arunachal Pradesh.
- Pre-*kharif* rice (vegetative), *kharif* rice (sowing), cucurbits (sowing / transplanting / vegetative), rapeseed and mustard (maturity/ harvesting), tomato, brinjal, chilli (transplanting / vegetative), potato (tuber formation), cauliflower and cabbage (head formation / maturity), pea (pod formation / maturity / harvesting), onion (vegetative / bulb formation) in Manipur.
- *Boro* rice (early varieties) (tillering / panicle initiation / flowering), *boro* rice (late varieties) (flowering / grain formation / milk), wheat (flowering / grain formation), mustard, rapeseed (siliqua formation / seed formation / maturity), spring potato (sowing / vegetative), potato (tuber formation / maturity), lentil, pea (pod formation / maturity), *rabi* onion (bulb formation), Bengal gram (pod formation), cabbage and knol-khol (head formation / maturity), okra (sowing / vegetative), pumpkin, French bean (vegetative / flowering / fruiting/ maturity) in Meghalaya.
- *Khasi* mandarin (vegetative), banana (vegetative / fruiting / maturity / harvesting), cole crops (head formation / maturity / harvesting), tomato (fruiting / harvesting), pea, bean (pod formation / maturity / harvesting), maize (cob formation / maturity), okra, cucurbits (sowing) in Mizoram.
- Cabbage (maturity/ harvesting), pea (pod formation / maturity / harvesting), rapeseed, mustard (siliqua formation / seed formation / harvesting), French bean (flowering / pod formation), potato (tuber formation), brinjal (flowering / fruiting / maturity), broccoli (flowering) and maize (tasseling/ cob formation/harvesting), tomato (transplanting/ flowering), ginger/turmeric, rajma(sowing) in Nagaland.
- *Boro* rice (tillering), pulse crop, pea, beans (pod formation / maturity / harvesting), mustard (siliqua formation / seed formation), cole crop and tomato (flowering / fruiting / maturity / harvesting), potato (tuber formation / maturity/harvesting), summer vegetables (sowing) in Tripura.

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

- Sugarcane (vegetative), lobia for green fodder (vegetative), mishrikand (vegetative), cauliflower, cabbage (head formation / maturity), fruit trees (transplanting), potato, sweet potato (tuber formation / maturity), rapeseed, mustard (pod formation / seed formation / early maturity), wheat (booting), pigeon pea (pod formation / seed formation), vegetables (flowering / fruiting / harvesting), maize (tasseling / silking / cob formation, pulses (pod formation / grain formation), sugarcane, onion (planting), *boro* rice (transplanting / tillering), summer maize (sowing) in Bihar.
- Pigeon pea (pod formation / seed formation), turmeric and ginger (vegetative / rhizome formation), elephant foot yam (tuber elongation), potato (tuber formation / maturity), sweet potato (stem elongation / tuber elongation / maturity / harvesting), mustard (seed formation / pod formation / early maturity), linseed (pod formation / seed formation), toria (maturity), green pea (pod formation / maturity / harvesting), cauliflower, cabbage (head formation / maturity), chilli, tomato (flowering / fruiting / maturity), wheat (tillering / jointing/ milking), papaya (transplanting), gram (pod formation / grain formation), summer mung (sowing), onion, summer vegetables (transplanting), summer maize(sowing) in Jharkhand.



- Summer rice (transplanting / tillering), summer groundnut, sunflower (land preparation / sowing), arhar (pod formation / seed formation), mustard (pod formation / seed formation), sugarcane (maturity / harvesting), sugarcane (new) (planting), Bengal gram, lentil, linseed, green pea (pod formation / grain / seed formation), wheat (tillering), banana and marigold (vegetative), potato (maturity / harvesting), tomato (flowering / fruiting / maturity), cauliflower, cabbage, knol-khol (head formation / maturity), onion (vegetative) in Orissa.
- *Boro* rice (transplanting / tillering), winter vegetables (flowering / fruiting / harvesting), mustard (pod filling stage), wheat (ear head initiation stage), lentil, gram, sunflower (pod formation / grain / seed formation), potato (maturity / harvesting), groundnut (land preparation / sowing), chilli (flowering / fruiting) in West Bengal.
- *Rabi* vegetables (flowering / fruiting / harvesting), orange (harvesting), Large cardamom (vegetative), wheat (flowering / milk), mustard (pod formation / pod maturity), *rabi* potato (tuber formation) in Sikkim.

#### **NORTHWEST INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]**

- Wheat (flowering/grain filling), mustard (pod maturity/harvesting), sugarcane (planting), *rabi* onion (vegetative), cauliflower, cabbage, broccoli, knolkhol (vegetative / fruiting/harvesting), carrot, turnip, early sown tomato radish, spinach and coriander (vegetative/fruiting/harvesting), pea, gram (flowering / pod formation/pod maturity), Chilli, tomato, brinjal, cucurbits (nursery preparation in polyhouse / transplanting), ladies finger(sowing), *Rabi* onion (transplanting / vegetative), french bean, cluster bean, summer radish (early sowing) in Delhi.
- Wheat (vegetative), vegetables (bhindi, cucurbits), potato (sowing/germination), mirch, brinjal (nursery sowing in polyhouses), cucurbits viz. cucumber, summer squash, bitter gourd, bottle gourd (nursery sowing in polutubes inside polyhouse), bush type French bean (Contender), bhindi, surajmukhi (field preparation / nursery sowing), tur, brinjal, Shimla mirch, and tomato (transplanting/seedling), Apple and other temperate fruits (dormant stage in High Hill Temperate Dry Zone), arbi, amaranthus, turmeric, rice, maize, barley, radish, onion, pea, garlic, coriander, cabbage, knolkhol, parsley, lettuce, fennel, cauliflower, broccoli (sowing / planting), in Himachal Pradesh.
- Very late sown Wheat (jointing), early/normal sown wheat (ear head emergence/flag leaf initiation), early/normal sown barley (jointing / tillering), late sown barley (jointing), onion (transplanting), cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative/flowering), *rabi* oilseeds i.e. gobisarson (pod formation), mustard (pod formation/ reproductive stage), late sown mustard (flowering/reproduction), brown sarson (rosette stage), *rabi* pulses i.e. lentil, gram, (vegetative/flowering), pea (pod formation), fodder crops like oats (vegetative (2nd cut)), berseem (vegetative), tomato, brinjal and chilli (sowing/transplanting), Horticultural crops viz. [Apricot, Apple (nursery sowing), orange & guava (fruiting), citrus fruits (harvesting)] in Jammu & Kashmir. Wheat, Brown Sarson, pea, lentil and Oat are in dormant stage in Srinagar.
- Chilli, capsicum, cauliflower, broccolli (seedling/germination), sugarcane (planting), litchi, loquat, peach, citrus (flowering / fruiting), mango (early varieties) (flowering), foxtail millet, okra, bottle gourd, bitter gourd, ginger, turmeric (germination / vegetative), mustard (Siliqua formation), papaya (planting), sorghum, pigeon pea (vegetative/pod formation/pod maturity), urd and pearl millets (early vegetative/vegetative), potato (maturity / digging), barley, sarson (germination/ vegetative), onion, garlic (transplanting/germination), wheat (flowering/milking), lentil, brinjal, potato (sowing/germination), sunflower (Sowing) in Uttarakhand.
- Wheat (flowering), winter sugarcane (vegetative growth), sunflower, summer moong, urad (field preparation/ sowing), early cucurbits like bottle gourd, bitter gourd, cucumber, etc. and other early planted vegetables like lady's finger, tomato, brinjal, chilli, lobia, rajmah etc. (vegetative / flowering / fruiting), new planting of vegetables [tomato, brinjal, lady's finger, cucurbits like bottle gourd, bitter gourd, cucumber] (sowing), coriander (vegetative/ flowering), onion (transplanting / vegetative growth), potato (tuber formation / maturity/digging), raddish, carrot, turnip (maturity / digging), mustard/ sarson (flowering / siliqua formation/ grain formation), barley (vegetative / tillering), arhar, jai, gram, alsii, maize, masoor, pea, pigeon pea, chick pea (flower initiation / pod formation / grain formation), berseem (vegetative growth), fodder maize, lobia, jowar (sowing), sugarcane (planting) in Uttar Pradesh.

- Spring sugarcane (sprouting/tillering), berseem (vegetative), gram, lentil (flowering), mustard, rape seed (pod formation/maturity), barley (heading) radish, carrot, turnip, onion, cauliflower (transplanting/vegetative), wheat (flowering / Pre-Heading/ - timely sown / flag leaf - booting), tomato, cucurbits, okra, sunflower (sowing) in Punjab.
- Sugarcane (spring season) (early vegetative), barseem (vegetative), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), barley (heading/pre heading), mustard, sarson, raya (vegetative/flowering), radish, turnip (sowing), wheat (booting / flowering ) in Haryana.
- Wheat (milking), very late sown wheat (tillering), sweet potato, chilli and cluster bean (vegetative/pod formation), mustard (pod maturity/harvesting), gram (pod maturity/harvesting), coriander (vegetative/maturity/harvesting), barley, oats, lentil, lucerne, taramira, linseed, opium poppy, vegetables (potato, fenugreek, brinjal, radish, chilli, carrot, palak, berseem, cumin, isabgol, ajwain, garlic (vegetative growth/flowering), green pea (pod maturity/harvesting), summer tomato (germination/vegetative), cauliflower, cabbage, rabi onion (transplanting/germination), summer cucurbits, fodder (sowing/germination) in Rajasthan.

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

- Sugarcane (early vegetative), summer groundnut (vegetative), maize (harvesting), sunflower (heading/maturity), bengal gram (maturity), , late planted paddy (maturity/ harvest), wheat (maturity), black/green gram (vegetative), mango (fruiting), cotton (boll bursting/ picking), vegetable (at various stages) and horticultural crops (fruit development) in Karnataka
- *Rabi* groundnut (pod development/pegging/harvesting), *rabi* paddy (tillering/ panicle initiation), maize (cob setting), sunflower (heading), sugarcane (planting/tillering/ ratooning), jowar (panicle formation / grain setting), bengal gram (pod formation), , vegetables (fruiting), chilli (fruiting), green gram & black gram (pod development), tomato (fruiting stages) and bhendi (various stages), mango (flowering/fruiting), water-melon (sowing), Sugarcane (Planting/ rationing) and Sesasum (Sowing) in Andhra Pradesh.
- Arecanut (harvesting), pepper (harvesting/post-harvesting), rubber (tapping), ginger (land preparation), cardamom (harvesting), nutmeg (maturity), sugarcane (harvesting/ planting), vegetables (flowering/harvest), mundakan paddy (heading/harvesting), puncha paddy (land preparation), virippu paddy (nursery sowing), coconut (harvesting) in Kerala.
- Rice - Samba (flowering/maturity), Thaladi (maturity), rice fallow pulses (flowering), gingelly (sowing), pulses (sowing/harvesting), cotton (flowering to boll bursting /maturity), vegetables (vegetative/ harvest), sorghum (harvesting), maize (various stages), sunflower (harvesting), pearl millet, sunflower & sorghum (maturity), groundnut (pod filling/maturity), chilli (fruiting), ginger and turmeric (pod development /harvest) in Tamil Nadu.

#### **WEST INDIA [GOA, MAHARASHTRA, GUJARAT]**

- Sugarcane (old adsali and old pre-seasonal) (cane maturity / harvesting), sugarcane (old suru) (cane maturity/ harvesting), sugarcane (new adsali) (vegetative), sugarcane (new pre-seasonal) (early vegetative), sugarcane (new suru) (sprouting in Madhya Maharashtra and Marathwada), rabi jowar (grain maturity/ harvesting), safflower (seed maturity/harvesting), irrigated wheat (dough formation / dough maturity), sunflower (seed maturity/harvesting), maize (cob maturity/harvesting), summer rice (tillering in South Konkan and early tillering in East Vidarbha), summer groundnut (flowering in South Konkan and germination / early vegetative in Madhya Maharashtra, Marathwada and West Vidarbha) in Maharashtra.
- Summer groundnut (sowing), summer rice (transplanting), summer bajra (sowing), summer moong (sowing), wheat (booting / flowering / milking), gram (pod development / maturity), *rabi* maize (tasseling / siliking / cob formation), isabgol (branching / flowering), sugarcane (planting / early vegetative), jowar (grain formation), cotton (picking), castor (maturity / harvesting), mustard (pod development stage), vegetables (vegetative / flowering / fruiting / maturity / harvesting), cluster bean (pod formation), cauliflower, cabbage (head formation / maturity) and potato (tuber development) in Gujarat.

**CENTRAL INDIA [M.P., CHHATTISGARH]**

- Sugarcane (knee height stage), vegetables (fruiting), mustard (siliqua formation), wheat (jointing and ear head emergence), maize (tillering), onion, garlic, tomato, brinjal, chilli (sowing/transplanting), gram (pod maturity/harvesting) in Madhya Pradesh.
- Sugarcane (planting), groundnut, arhar, green gram and sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative) cauliflower, pigeon pea (pod filling), potato (planting), linseed (flowering stage) tomato, brinjal, chilli, niger, horsegram, ramtil, toria, cauliflower, cabbage, niger, kulthi (sowing), wheat (crown root initiation / tillering), onion (planting), summer rice(nursery),summer vegetables (land preparation), moong, urad and maize(sowing)in Chhattisgarh.

## Annexure II List of Varieties

### Assam

**Ridge gourd:** Pusa Nasdar, AAUJ-1, AAUJ-2, AAUC-3.

**Sponge gourd:** Pusa Chikni.

**Musk melon:** Pusa Sharbati, Hara Madhu, Punjab Sunehri, Durgapur Madhu, Arka Rajhans and Arka Jeet.

**Water melon:** Asahi, Pusa Bedana, Sugar Baby, Faizabadi.

**Sugarcane:** Kolong, Luhit, Dhansiri, Doris, Co 1148.

**Ahu rice:** Luit, Kopilee, Rasi, Cauvery, Culture-1, Chilarai, Gopinath, Krishne, Kushal, Puthichapali, Nilajee, Hasakumra

**Tall varieties:** Banglami, Dubaichenga, Rangadaria (115-120 days), Ahujoha (110-120 days).

**Short duration variety:** Dogaranga (85-95days).

**Okra:** Pusa Sawani, Arka Anamika, Parbhani Kranti.

**Black gram:** T 9, Pant U 19, UG 157 and JU 78.

**Green gram:** T 44, Kopergaon, K 851, ML 56, PIMS 1, AAU 34, AAU 39, Pratap (SG-1).

**Capsularis jute :** JRC 321(Sonali), UPC 94 (Reshma).

**Kharif maize:** Ganga 5, NLD, Dhawal, Naviot, Diara

**Jute:** JRC 321 and UPC 94

### Meghalaya

**Spring potato :** Kufro Jyoti, Kufri Megha, Kufri Giriraj.

**Okra :** Arka Anamika, Pusa Sawani.

### Mizoram

**Okra :** Pusa Sawani, Pusa Makhmali, Punjab Padmini, Arka Anamika, Arka Abhay

### Bihar

**Summer maize:** Suwan, Deoki, Ganga 11, Shaktiman 1 and 2.

### West Bengal

**Boro Rice:** Supriya, Jamini, Bhupen, IET-2233.

**Green gram:** TM-99-50, PDM-11, TARM-12.

**Ladies fingers:** Parbani Kranti, Kalyani Prava, Punjabi Padmini.

**Groundnut-** JL-24, J-11, AKG-12.

### Jharkhand

**Papaya:** Pusa Giant, Pusa Dwarf, Honey Dew, Pusa Majesty.

**Summer Rice:** MTU 1010, IR 36, 64, Naveen, Lallat.

**Summer Maize:** Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid),HQPM (Hybrid)

**Summer Mung:** Pusa vishal, Pant mung-2, Samrat, S.M.L.-668

### Orissa

**Sugarcane:** CO 740, CO 6304, CO7219, COT 8201, Neelamadhaba and Sabita.

**Summer Sunflower:** High Yielding Varieties like Modern and Hybrid Varieties like PAC 36, KBSH, MSFH-1, MSFH-8 and MSFH-17.

**Summer Groundnut:** Smruti (OG 52-1), Phule Pragati, ICGS-44, TAG-24, TG-3, TMV-2 and TG 38.

**Sesame:** Uma, Kalika, Nirmala, Prachi, Usha.

**Summer Maize:** Dhabal, Navjot, and Hybrids like Decca, Ganga, Deccan 105, Kargil 900-M, PRO 345, Kargil 633.

**Papaya:** Honey Dew, Kurg Honey Dew, Coombatore-1, Coombatore-2, Pusa Delicious, Pusa Majestic, Pusa Dwarf and Pusa Giant.

**Cowpea:** Bush type - Pusa Phalguni, Pusa Komal; Runner type - American Long, and Banarasi Long, other improved varieties like Russian Giant, EC-4316, NP-3, C-152, UPC- 286, UPC- 5286 and IGFI- 450.

**Moong:** PDM 11, PDM-54, Pusa Baisakhi.

### Himachal Pradesh

**Lettuce:** Iceberg,

**Brinjal:** ArkaNidhi, PPC

**Agetibhindi:** P-8, Prabhnikranti, Arkaanamika,

**Frenchbean:** Contender

**Pepper :**Surjmukhi,

**Broccoli:** PalamSamridhi,  
**Rajmash:** Triloki,Jwala,baspaKailash  
**Raddish:** japani white and early mino white,  
**Turnip:** PTWG-1.  
**Cabbage:** Snow ball K-1 Palamuphar, golden acre.  
**Knolkhol :** WhiteBina,  
**Cauliflower:** Pride of India

### Jammu & Kashmir

**Vegetable crop** like **radish** (var. Pusachetki, Japanese white &Pusareshmi), **carrot** (var.Pusakesar), **turnip** (var PTWG), **garlic** (var. local, large segmented), **spinach** (prickly seeded) and **methi**(P.E.B.K methi), **Cauliflower** (var. PusaDipali), **knoll khol** (White Vienna), **Broccoli** (Early green).

### Punjab & Haryana

**Sugarcane:** CoJ85.CoJ64, CoJ83

### Delhi

**Spinach:**Jyoti

**Coriander:**PantHaritma.

Green gram – Pusa-9531, Pusa Visal, Pusa Vaisakhi, PDM-11, SML-32 and Black gram – Pant Urd 19, Pant Urd 30, Pant Urd 35, PDU1.

### Uttarakhand

**Sunflower:** KBSH-44, PAC-36, PAC-1091, PAC-3776, PAC-6457, DRSH-1.

**Okra:** Pusa Savani, Punjab Padmini, Selection -1, Hissar Unnat, Vaishali, Madhu, Parbhani Kranti etc.

**Brinjal:** Pusa Savani, Punjab Padmini, Selection -1, Hissar Unnat, Vaishali, Madhu, Parbhani Kranti etc.

**Potato:** Kufri Jyoti, Kufri Ashok & Kufri Anand etc.

**Sugarcane :**Co Pant 84211, Co-238, Co-241, Co Pant 3220, COS-8436, COS-88230 etc. and medium to late sown varieties like Co Pant 90223, Co Pant-96219, COS-97222, COS-767, COS-1148 etc.

### Uttar Pradesh

**Sugarcane :** KS-8436, KS-88230, KS-95255

**Sunflower :** K.P.S.H. 1, Divyamukhi, Jwalamukhi

**Moong :** Type-44, Pant Moong-1,2, Narendra Moong-1, Malviya Jagruti, Samrat, Pusa Vaishakhi K. , K-851, JM-721 etc.

**Urad :** Azad Urd-1,2, Bhokhar-1,2, Type-9, Uttara etc.

**Vegetables :** Bitter gourd: Kalyan Sona, Arka, Harit, **Bottle gourd:** Kalyanpuri Hari, Lambi Azad, Nootan, Pusa, Navin, Narendra, Narendra Dharidar, Narendra Bhankar, Lowki-4, **Pumpkin:** Pusa Vishwas, Coimbatore-1,2, Kalyanpur Pumpkin-1, Narendra Agrim, Narendra Amrut, **Cucumber:** Fine set, China, Japani, Langreen, **Taroi:** Pusachikani, Pusa Nasdar, Satputiya, Punjab, Sadabahar, **Lady's Finger:** Azad Bhindi-1,2, Parmani Kranti, P-7, Varsha, Uphar, Hissar, Unnat, P-Kanti.

### Gujarat:

**Summer bajra:** GHB-526 and GHB-558.

**Summer Groundnut:** GG-2, GG-4, GG-5, GG-20, TG-37A, TGP-41, TG-26.

**Green gram :** Guj. Mung-3, 4

### Maharashtra:

**Water melon :** Sugar Baby, Arka Jyoti, Arka Manik

**Summer okra :** Arka Anamika, Parbhani Kranti, Akola Bahar and Phule Utkarsha.

### Madhya Pradesh

**Garlic-G-283, G-1, G-41 or G-323**

**Linseed-PKDL-21, JL-1, JL-3, Mallika, JLS-1, IPL-81**

**Lentil-JLS-03**

**Sugarcane- CoJN 86032, CoJN 86582**

**Ladies Finger- PusaMakhamali, PusaSawani, A-4 or Parbhanikranti**

### Chattisgarh

**Sugarcane- Co 86032, Co 86141**

**Annexure III**  
**Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on**  
**29.02.2012**

