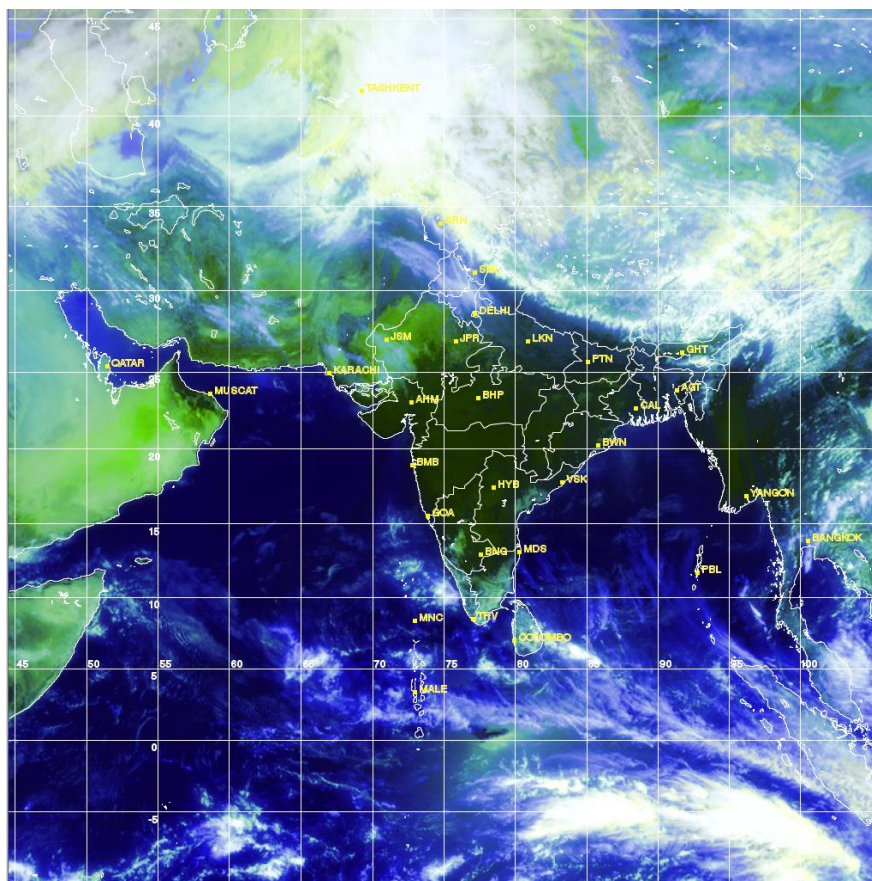




National Agromet Advisory Bulletin

Thursday, 15th March, 2012

(For the period 15th to 19th March, 2012)



Satellite image 0600 UTC dated 16th 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 2-4⁰C below normal over parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan, East Uttar Pradesh, Madhya Pradesh, Gujarat, Maharashtra, Coastal Karnataka, Chhattisgarh and Orissa. The prevailing weather conditions are conducive for growth of wheat and other crops which are at advanced stages of growth. Farmers are advised to undertake harvesting of matured *rabi* crops.

Significant rain / snowfall occurred over East Siang, Lower Dibang Valley and Upper Dibang Valley districts of Arunachal Pradesh, Ganderwal district of Jammu & Kashmir, Sant Kabir Nagar district in East Uttar Pradesh, Nainital district of Uttarakhand, Begusarai district in Bihar and Kollam district in Kerala during last week. Realised rainfall in these districts is beneficial for the standing crops. Farmers in these districts are advised to postpone irrigation to the standing *rabi* crops. As there was no significant rain over most of the remaining parts of the country and no significant rain is likely to occur, farmers are advised to provide irrigation to the standing *rabi* crops. Taking the advantage of prevailing dry weather in most parts of the country, farmers are advised to undertake harvesting of matured *rabi* crops.

Due to favourable weather conditions, incidences of head borer in sunflower in Karnataka, ear head bug in rice, mealy bug in sugarcane and fruit borer in chilli in Tamil Nadu and mites in jasmine in Andhra Pradesh 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 with assured irrigation. The crops in different States of the country are mentioned below:

Assam: sowing of *ahu* rice, jute, black gram, green gram, summer vegetables and planting of sugarcane.

Meghalaya: sowing of jute, summer vegetables like bottle gourd, ash gourd etc.

Tripura: sowing of cucurbits.

Manipur: transplanting of cauliflower and cabbage.

Mizoram: sowing of summer vegetables like okra, beans and cucurbits.

Orissa: sowing of maize, black gram and green gram.

Bihar: sowing of black gram and green gram.

West Bengal: sowing of sesame, summer vegetables and water melon.

Rajasthan: sowing of sugarcane and green gram.

Jammu and Kashmir: sowing of turnip, nursery raising of cruciferous crops such as cabbage, cauliflower, knolkhol, broccoli and solanaceous crops such as brinjal, tomato, capsicum, chilli, paprika, onion and cucurbits.

Himachal Pradesh: sowing of chari, bajra and maize.

Uttarakhand: sowing of moong, urad, okra, chaitee dhan, foxtail millet, capsicum and tomato.

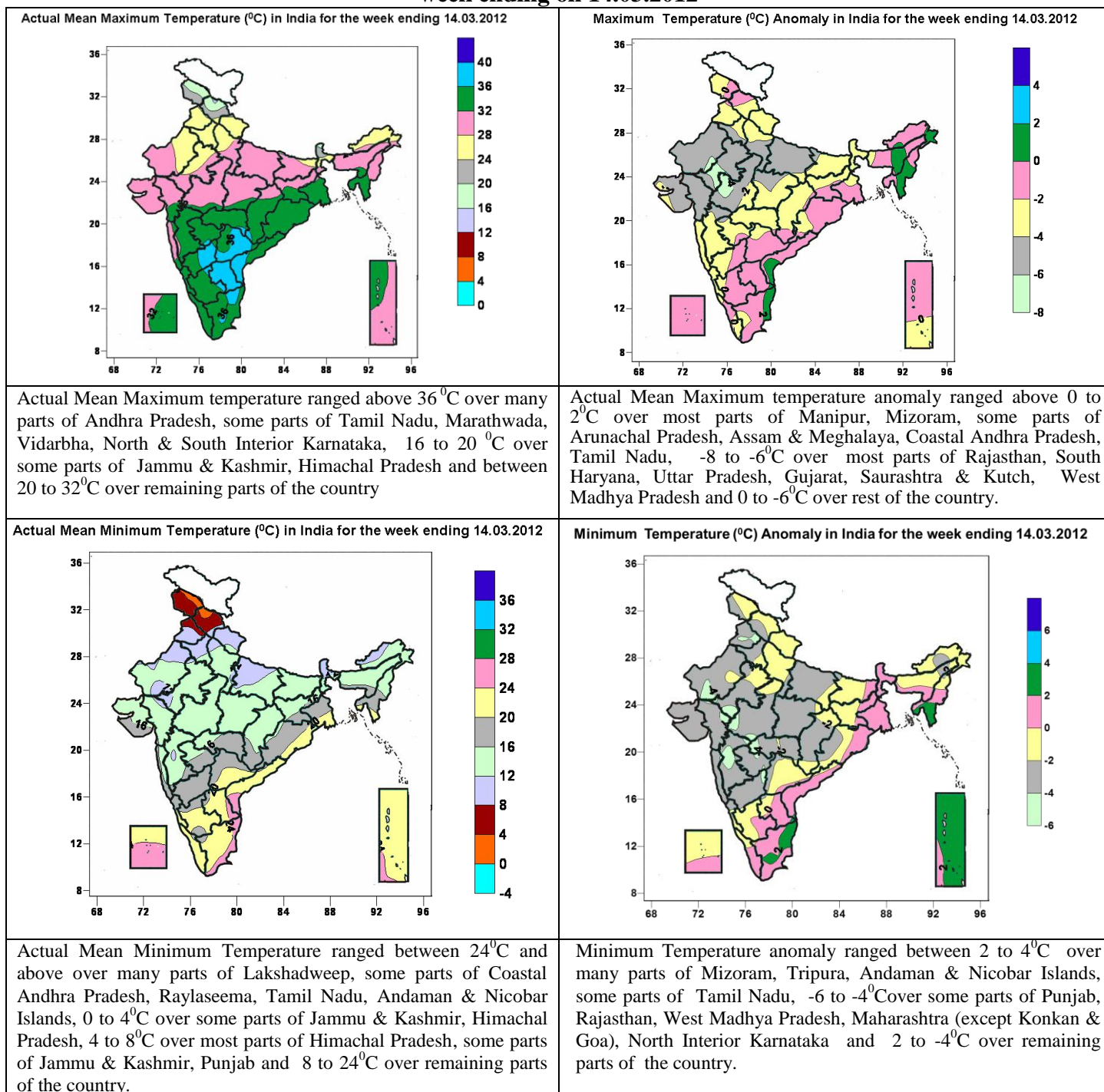
Uttar Pradesh: sowing of green gram, black gram and sugarcane.

Madhya Pradesh: sowing of summer maize, green gram and groundnut.

Maharashtra: sowing of okra, water melon and bajra.

Gujarat: sowing of summer bajra, green gram and groundnut.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 14.03.2012

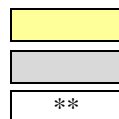


Distribution of rainfall of the country during week ending on 14.03.2012

State/Districts	Actual (mm)	% Dep.
Arunachal Pradesh		
East Kameng	0.0	-100
East Siang	30.3	54
Kurung Kumey	**	**
Lohit	11.1	-64
Lower Dibang Valley	28.0	-65
Lower Subansiri	8.0	-52
Papumpara	0.6	-98
Tawang	15.0	7
Tirap	0.0	-100
Upper Dibang Valley	98.0	21
Upper Siang	0.0	-100
West Kameng	7.0	-50
West Siang	8.0	-57
Jammu & Kashmir		
Anantnag	7.7	-76
Badgam	8.0	-59
Baramula	8.0	-84
Doda	10.0	-77
Ganderwal	45.4	89
Jammu	2.7	-81
Kargil	0.0	-100
Kathua	8.1	-61
Kistwar	**	**
Kulgam	9.0	-71
Kupwara	11.4	-75
Ladakh(Leh)	0.0	-100
Poonch	7.5	-85
Pulwama	2.7	-86
Rajouri	1.0	-89
Ramban	7.1	-83
Reasi	14.8	-51
Samba	1.0	-93
Srinagar	18.0	-25
Udhampur	2.5	-92
Uttarakhand		
Almora	18.9	78
Bageshwar	18.3	73
Chamoli	7.6	-52
Champawat	3.5	-43
Dehradun	6.3	-36
Garhwal Pauri	18.3	132
Garhwal Tehri	7.3	-43
Haridwar	3	-55
Nainital	22.4	274
Pithorgarh	15.9	0
Rudraprayag	2.2	-88
Udham Sing Nagar	1.4	-33
Uttarkashi	16	-10

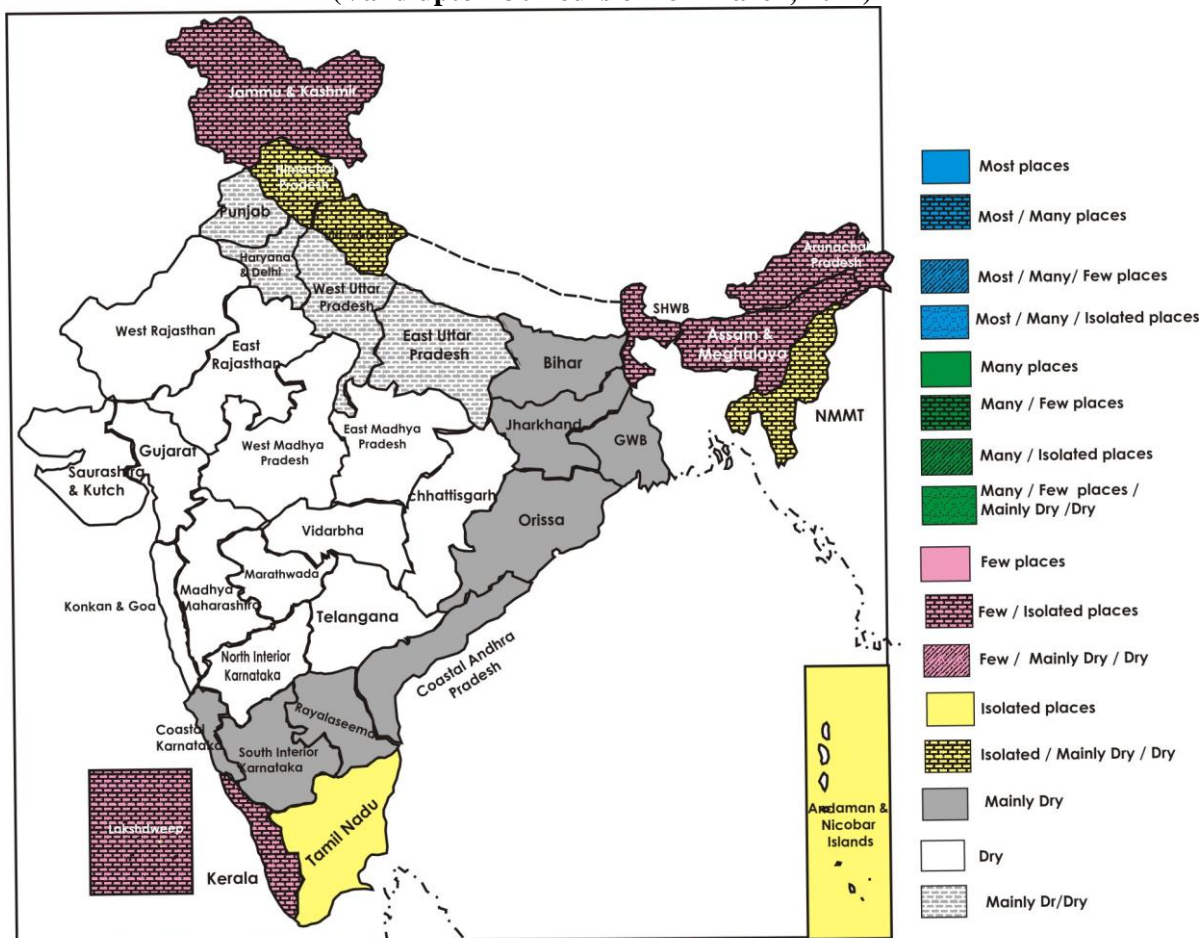


(20% or more) excess rainfall
 (-19 to +19%) normal rainfall
 (-20 to -59%) deficient rainfall



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

Weather Forecast (Valid upto 1430 hours of 18th March, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 18th March, 2012

- Rain/snowfall would occur at one or two places over Jammu & Kashmir during next 24 hours and at a few places thereafter.
- Rain/snowfall would occur at one or two places over Himachal Pradesh and Uttarakhand from tomorrow onwards.
- Rain/thundershowers would occur at a few places over Lakshadweep and Kerala during next 24 hours and decrease thereafter. Rain/thundershowers would also occur at one or two places over Tamilnadu and Andaman & Nicobar Islands during next 48 hours.
- Rain/thundershowers would occur at a few places over Sikkim, Arunachal Pradesh and Assam & Meghalaya and at one or two places over Nagaland, Manipur, Mizoram & Tripura during next 48 hours and decrease thereafter.
- Gradual rise in maximum & minimum temperatures over Indo Gangetic plains and adjoining central India during next 2-3 days.
- Weather would be mainly dry over remaining parts of the country.

Weather Warning

- No weather warning.

Weather Outlook up to 0830 hours IST of 20th March, 2012

- Rain/snowfall would occur at a few places over Jammu & Kashmir and at one or two places over Himachal Pradesh and Uttarakhand.
- Weather would be mainly dry over rest parts of the country.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** There was no significant rainfall in the states of the region except East Siang, Lower Dibang Valley and Upper Dibang Valley districts of Arunachal Pradesh.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over Arunachal Pradesh and Assam & Meghalaya and at one or two places over Nagaland, Manipur, Mizoram & Tripura during next 48 hours and decrease thereafter.
- **Advisories**
 - As there was significant rain in East Siang, Lower Dibang Valley and Upper Dibang Valley districts of Arunachal Pradesh during last week, farmers are advised to postpone irrigation to the standing crops in these districts. As there was no significant rain during last few weeks in most of the remaining districts of the States of the region, farmers are advised to apply irrigation to standing crops.
 - Farmers in the Hill Zone of Assam are advised to continue sowing of okra and cucurbits crops. To avoid damage of chilli and tomato from wind, staking with bamboo sticks can be done.
 - Farmers in Central Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *Capsularis* jute, summer vegetables, summer pulses and early *ahu* rice.
 - Farmers of Lower Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice, musk melon, water melon, *kharif* maize and jute, summer pulses like black and green gram, summer vegetable like pointed gourd, pumpkin etc. and planting of sugarcane.
 - Farmers of Barak Valley Zone of Assam are advised to raise nurseries for the transplanted early *ahu* rice. Farmers are also advised to give mechanical support to the tomato plants at flowering stage to avoid fruit damage due to direct contact with soil.
 - Farmers in North bank plain zone of Assam are advised to complete sowing of direct seeded *ahu* rice. Continue land preparation and sowing of summer vegetable, summer green gram and black gram and planting of sugarcane.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to continue land preparation for maize crop and summer vegetable.
 - As dry weather prevailed during last few weeks, farmers in Mild Tropical Plain Zone of Tripura are advised to apply irrigation to maintain 5-7 cm water level in *boro* rice at tillering / flowering stage. Continue land preparation and sowing of summer vegetables and cucurbits.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue sowing of *kharif* maize, jute and vegetables like ladies finger, pumpkin, French beans, bottle gourd, ash gourd etc.
 - Farmers of Sub tropical Plain Zone of Manipur are advised to undertake harvesting of matured mustard-rapeseed crop and continue land preparation and planting of ginger and turmeric and sowing of French bean and bhindi.
 - In Mild Tropical Hill Zone of Mizoram, farmers are advised to undertake land preparation and sowing of summer vegetables like okra, beans, cucurbits etc.
 - In Mild Tropical Hill Zone of Nagaland, farmers are advised to harvest mustard and toria in the morning hours to avoid shattering loss. Continue land preparation and planting of turmeric and ginger and sowing of rajma.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Infestation of stem borer is observed at tillering stage of *boro* rice in the Central Brahmaputra Valley Zone of Assam. Farmers are advised to spray Chloropyriphos (20%) @ 2 ml / litre of water to control the attack.
 - 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 of Assam are advised to vaccinate poultry against the Ranikhet disease.
 - The farmers in Mild Tropical Hill Zone of Mizoram are advised to vaccinate cattle against FMD, Brucellosis, Haemorrhagic. The poultry farmers are advised to vaccinate against Ranikhet.

- The farmers in Nagaland are advised to vaccinate poultry against bird flu and pigs / piglets against swine flu.
- The farmers in Manipur are advised to vaccinate poultry against Ranikhet, IBD / Gumboro disease and also deworm and vaccinate pigs / piglets. Vaccinate and deworm cattle and buffalo against B.Q. & H.S. Vaccinate and deworm goat against Haemorrhagic Septicaemia.
- Farmers in Mild Tropical Plain Zone of Tripura are advised to deworm calves. Farmers are also advised to vaccinate poultry against Ranikhet disease and vaccinate the piglets against swine fever.

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

- **Realised Rainfall:** Light rain occurred in a few districts of Bihar and Jharkhand and mainly dry weather prevailed over the remaining States of the region during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over Sikkim during next 48 hours and decrease thereafter. Mainly dry weather would prevail over the remaining States of the region during the period.
- **Advisories:**
 - As there was no significant 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.
 - In view of prevailing dry weather, farmers in North Eastern Plateau Zone of Orissa are advised to apply irrigation to sunflower.
 - Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to undertake harvesting of sugarcane and sowing of summer sunflower.
 - It is optimum weather for sowing of sesame; farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to complete sowing of sesame.
 - Farmers in North Central Plateau Zone of Orissa are advised to apply irrigation to wheat, wherever the crops are at grain formation stage. Taking the advantage of dry weather, farmers are also advised to undertake intercultural operation in groundnut and sunflower and undertake sowing of summer vegetables. Also complete sowing of summer maize.
 - Due to increase in temperatures, the evaporation rates have increased and thereby the water requirement of 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.
 - The farmers of North Central Plateau Zone of Orissa are advised to complete the sowing of green gram and black gram.
 - As temperature condition is now congenial for 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, vegetable crops and harvest matured tobacco crop. Undertake sowing of summer moong and urad crops and ensure moisture in the field at the time of sowing for better germination and crop stand. Farmers are also advised to dig out the tubers from the fields.
 - Apply irrigation to wheat and undertake intercultural operation in maize, carrot, radish and turnip crops in South Bihar Alluvial Zone. Undertake land preparation and sowing of moong.
 - 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 and musk melon.
 - Farmers in New Alluvial Zone of West Bengal are advised to undertake sowing of sesame.
 - Farmers in Coastal Saline Zone of West Bengal are advised to prepare the field for sowing of Water melon. As no rainfall is likely during next few days, farmers are advised to apply irrigation to sunflower.
 - Farmers in Old Alluvial Zone of West Bengal are advised to undertake sowing of summer vegetables like pointed gourd, lady's finger, brinjal, chilli etc.
 - Farmers in Laterite and Red Soil zone are advised to apply last irrigation to wheat, wherever the crops are at grain formation stage and stop irrigation if the crops are at maturity stage.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.

- Different cucurbitaceous vegetables are attacked by red mites in Western Plateau Zone of Jharkhand. To control the mites, spray neem based insecticides like Achook, Neemerin, Neemetinor, Neemesidin @ 5 ml per litre of water.
- In Coastal Saline Zone of West Bengal, betel vine may be attacked by chital disease. Spray Blitox @ 50 g / litre of water or Kalaxin @ 3 g / litre of water. Seedlings of *boro* rice are attacked by stem borer in the main field. Spray Cartap @ 1 g / litre of water or Endosulfun @ 1.5 ml / liter of water. Chilli may be attacked by die back and fruit rot. Spray Copper Oxychloride @ 4 g / litre of water or Carbendazin @ 1 g / litre of water at 7 days interval.
- Due to low night temperature in Terai Zone of West Bengal there is a possibility of downy mildew in cucumber, bitter gourd and spine gourd; spray Mancozeb @ 2 g / litre or Metalaxyl 8% and Mancozeb 64% @ 1-1.5 g / litre of water. In this weather condition, mite attack may be a problem in wheat. If the leaves are curling due to mite attack, spray Dicofol 3 ml / litre of water. There is possibility of yellowing of the lower leaves. To protect the disease spray Propiconazole 1 ml / litre of water by wetting the whole plants.
- Due to increase in temperature in New Alluvial Zone of west Bengal there is a chance of the attack of mites in mango. To control the pest, apply 1-2 g wettable Sulphur per litre of water.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Farmers in North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa are advised to undertake vaccination of animals against FMD (Foot and Mouth Disease). In case of disease outbreak, strict isolation of affected animals should be done.
- **Pisciculture**
 - The weather is conducive for the diseases in Fish. To prevent it apply lime @ 50 kg / Acre in three ft water and Cifax @ 400 ml in one acre.

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

- **Realised Rainfall:** Rainfall occurred in Ganderwal district of Jammu & Kashmir, Sant Kabirnagar district in East Uttar Pradesh and Nainital district of Uttarakhand during last week and mainly dry weather prevailed over remaining States in the region.
- **Rainfall Forecast:** Rain / thundershowers would occur at isolated places in Jammu & Kashmir during next 24 hours and at a few places thereafter. Mainly dry weather is likely in Himachal Pradesh and Uttarakhand during next 24 hours, isolated rainfall thereafter and dry / mainly dry weather during next three days in remaining States of the region during next three days.
- **Advisory:**
 - Significant rain occurred over Ganderwal district of Jammu & Kashmir, Sant Kabirnagar district in East Uttar Pradesh and Nainital district of Uttarakhand during last week. Farmers in these districts 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 no significant rain is likely to occur, farmers are advised to provide irrigation to the standing *rabi* crops.
 - In view of the present weather farmers in Delhi are advised to sow maize, hybrid cluster bean, baby corn, green gram and black gram. Also farmers can go for direct sowing of French bean, amaranthus, vegetable lobia, lady's finger, bottle gourd, cucumber, ridge gourd and summer radish as present temperature is suitable for germination of seeds. Undertake transplanting of young seedlings of tomato, chilli and cucurbits crop during this week. Harvest matured mustard crop as clear sky is forecasted for the next five days.
 - In Rajasthan, farmers are advised to undertake harvesting of mustard when 75% pods turn yellow and seed moisture content about 35% seed weight, sowing of sugarcane, summer groundnut, summer cucurbits like melon, bottlegourd, bittergourd, ridged gourd, round gourd, pumpkin and smoothgourd, etc., raising nursery of brinjal, summer chilli, okra, transplanting of seedlings of tomato, land preparation for summer guar, summer green fodder, *zaid* pearl millet fodder, *zaid* sorghum fodder, *zaid* green gram may be undertaken.

- Farmers in Punjab and Haryana are advised to give need based irrigation to wheat crop. Irrigation must be given to wheat crop at grain filling stage. Undertake planting of sugarcane of recommended varieties. The sets selected for planting should be free from diseases like red rot, wilt, ratoon-stunting and grassy shoot. Apply second dose of nitrogen to tomato in the first fortnight of this month. Give irrigation at maximum fruit setting. Irrigate the vegetable crops as per their requirement. As no rain is expected, farmers can go for sowing of arbi and turmeric.
- In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to continue transplanting of tomato, onion, brinjal, chilli crop and sowing of bhindi, beans and cucurbits. They are also advised to go for plantation of new evergreen fruit plant as well as deciduous plant like mango, guava, logout, litchi, citrus, peach, plum, grapevine etc., harvesting of citrus and ber fruits.
- 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. Sow seeds of tomato, brinjal, chillies, capsicum, knol, khol, kale in hot beds, poly tunnels and on raised beds in open condition may be done. Sow seeds of bottle gourd, cucumber, squash in poly bags under adequate protection. Plant potato, transplant seedlings of cauliflower, cabbage, knoll-khol. Prepare beds, irrigation channels for planting of gladiolus.
- In Intermediate Zone of Jammu & Kashmir, farmers are advised carry out nursery sowing for tomato, brinjal, chillies and capsicum.
- Farmers in Leh region of Jammu & Kashmir are advised to undertake sowing of turnip in the lower belts, nursery raising of cruciferous crops such as cabbage, cauliflower, knolkhol, kale, broccoli & solanaceous crops such as brinjal, tomato, capsicum, chilli and paprika and also onion should be done in green houses & trenches, cucurbits in polybags and polybags should be put in trenches or greenhouses for proper germination and growth.
- 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. Preparation of nursery beds for raising the nursery of tomato, capsicum, brinjal and chilli may also be carried out.
- 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 case seed crop of berseem and oats one cut can be taken. Earthing up can be done in the potato crop if sown earlier. Prepare the fields for sowing of Chari and bajra and maize in low hills.
- Farmers in Uttar Pradesh are advised to give light irrigation in late sown wheat, *rabi* pulses, *rabi* oilseeds, potato, already transplanted vegetable crops. Complete planting of sugarcane, continue sowing of sunflower, guava seeds, vegetables viz. bitter gourd, bottle gourd, pumpkin, cucumber, taroi, lady's finger, tomato, brinjal, chilli, lobia, rajmah etc. and continue sowing of moong or urad in vacated field.
- In Bhabar and Tarai Zone & Hill zone of Uttarakhand, temperature is expected to rise and weather will remain dry, hence under these expected weather conditions, farmers are advised to go for light irrigation in late sown wheat crop in the evening when wind speed is low. Other wise avoid irrigation so as to avoid lodging of crop and damage of wheat grain by rodents. Complete planting of sugarcane, continue sowing of moong, urad, okra, chiatee Dhan, foxtail millets, fodder crops in vacated field.
- In Central plain zone of Uttar Pradesh complete sowing of moong and urd.
- In Hill zone of Uttarakhand, farmers are advised to start sowing of capsicum, tamoto in non-irrigated land and also give light irrigation in already transplanted vegetable crops.
- In western Plain Zone of Uttar Pradesh, farmers are advised to start sowing of summer sugarcane in vacated field.

- In western Plain Zone of Uttar Pradesh, farmers are advised to start sowing of urad, moong, maize and sunflower.
- Prevailing weather condition are favourable for yellow rust in normal and late sown wheat (rust susceptible varieties like PBW343) in Sub-Tropical Zone (Chata) of Jammu & Kashmir, under such condition farmers are advised to spray the crop with propiconazole (Tilt) @ 0.1 or mancozeb @ 0.2% at disease appearance during clear weather. There are also chances of infestation of aphid attack in late sown mustard crop due to the increase in max. & min. temperature, under such situation farmers are advised to spray the mustard crop with chloropyriphos 20EC @0.05% or phosphamidon@ 0.03% or metasystox@ 0.03%, if 50-60 aphids per 10cm terminal shoot are infested. The weather condition is also favorable for white rust & downey mildew in late sown mustard crop under such situations farmers are advised to go for spray the crop with macozeb@0.2% or copper oxychloride 50@0.3%.
- Present weather in Delhi is favourable for infestation of rust disease on wheat crop, aphid on vegetable crops, red pumpkin beetle in cucurbits crop and thrips on onion, farmers are advised to monitor the crops and take proper plant protection measures.
- As temperature is increasing farmers in Punjab and Haryana are advised to monitor the vegetable crops for development of aphid and apply recommended spray of pesticide.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Farmers in Punjab and Haryana are advised to vaccinate all the animals against FMD, if still not, then get them vaccinated immediately, keep their record and repeat after six months.
 - 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 over most states of the region except in Kollam district in Kerala which received significant rainfall during last week.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over Lakshadweep and Kerala during next 24 hours and decrease thereafter and at one or two places over Tamil Nadu and Andaman & Nicobar Islands during next 48 hours. Weather would be mainly dry over remaining parts of the region.
- **Advisories:**
 - Since no significant rainfall occurred over most states of the region, farmers are advised to apply irrigation to the standing crops and also take up appropriate plant protection measures. Postpone irrigation to the crops in Kollam district in Kerala which received sufficient rainfall during last week.
 - Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to provide irrigation to groundnut, rabi maize, rice fallow maize, rice fallow jowar, rice fallow pulses and chilli, since the crops suffer due to moisture stress due to present weather. They are also advised to provide irrigation to fruit crops and keep mulching the fields for effective utilization of moisture and avoid the evaporation loss.
 - Farmers in the North East Transition Zone of Karnataka are advised to provide irrigation to summer groundnut and mango and undertake deep ploughing to expose the pupae and eggs of insect pests and weed seeds.
 - Farmers in the North Dry Zone of Karnataka are advised to complete harvesting of chickpea, safflower and sorghum.
 - Farmers in the Coastal Zone of Karnataka are advised to provide irrigation to arecanut, as and when irrigation facilities are available and sundry harvested arecanut.
 - Farmers in the North Transition Zone of Karnataka are advised to undertake harvesting and threshing of chickpea, maize, sorghum, chilli, and wheat as early as possible, plough the land and keep it exposed to sun for destroying weeds and pest eggs in rainfed areas and irrigate the crops at least once in a week.

- Farmers in the Southern Dry Zone of Karnataka are advised to take up deep ploughing in paddy fields, so that the soil pathogens will die and in turn it will help to reduce pest incidence for the next paddy crop.
- Farmers in the South Zone of Tamil Nadu are advised to postpone operations like spraying, irrigation etc. on irrigated chilli, cotton, sunflower, pearl millet and pulses, as light rainfall is expected in the forthcoming days and harvest rainfed crops like sorghum, pearl millet, sunflower, pulses and cotton.
- Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to monitor for pest and disease for the crops sown during the season, undertake land preparation and sowing of crops like carrot, potato, peas, radish, beetroot and turnip, select high yielding and disease resistant varieties and raise nursery for crops like cabbage, cauliflower, knolkol and exotic vegetables.
- Farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake summer ploughing.
- Farmers in the High Altitude Zone of Kerala are advised to irrigate the paddy fields at least once in 4 days, since the evaporation rates are very high.
- Farmers in the Southern Zone of Kerala are advised to complete harvesting of paddy and cool season crops and undertake earthing up of tapioca.
- Incidences of head borer in sunflower and shoot and fruit borer in brinjal was observed in the North East Transition Zone of Karnataka. Farmers are advised to spray phosolone 2 ml per liter of water to control head borer and carbaryl 4g per liter of water to control shoot and fruit borer.
- Farmers in the Coastal Zone of Karnataka are advised to go for pheromone trap -100 ml insecticides (1 ml Methyl Eugenol+ 4 g Carbaryl+ 10 gram Jaggary), since present conditions are conducive for attacking of fruit fly in mango orchard.
- Farmers in the Southern Transition Zone of Karnataka are advised to undertake plant protection measures to prevent attack of sucker in banana, wilt disease in pepper, hoppers and powdery mildew in mango and mealy bug infestation in papaya.
- Farmers in the North East Dry Zone of Karnataka are advised to protect onion/brinjal/ bhendi from thrips and water melon and cucurbits from leaf miner by undertaking plant protection measures.
- Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to use pheromone traps @5 nos/acre to attract prodenia moths in rice fallow black gram crop and spray NPV solution @ 100 ml/acre to control prodenia, spray carbendazim 250 g/ha or wettable sulphur 2.5 kg/ha for the management of powdery mildew disease, since powdery mildew disease is more pronounced due to dew, in the morning.
- Incidences of ear head bug attack in paddy, mealy bug infection in sugarcane and fruit borer attack in chillies is noticed in the Southern Zone of Tamil Nadu. High cloud cover coupled with moderate RH and very light rainfall also triggers fruit borer incidence in brinjal or tomato. Farmers are advised to apply carbaryl 10 D 25 kg / ha to control ear head bug, spray chlorpyrifos (20EC) 3ml/litre of water to control fruit borer, spray malathion 50 EC 1000ml/ha to control mealy bug and after reaching the ETL (1 larva/m row length or 2% fruits damaged) , dust Quinalphos (1.5 D) @ 25kg/ha for brinjal to control fruit borer incidence in brinjal and in case of tomato ,set up light traps to attract and kill the adult moths, pheromone traps at 12 /hectare, collecting and destroying the damaged fruits and make arrangements to release of egg parasitoid Trichogramma chilonis at 5cc/hectare/week for three weeks and the first release coinciding with the flowering time.
- In the anticipated weather having high cloud cover and moderate humidity there is incidence of stem weevil in cotton in the South Zone of Tamil Nadu. Farmers are advised to do earthing up on 45th day after sowing and apply neem cake at 250 kg/ha as basal helps in reducing stem weevil.
- Mites severity over jasmine plantations in the Scarce Rainfall Zone of Andhra Pradesh are observed. Farmers are advised to apply sulphur dust @ 8-10 kg per acre to reduce the severity.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over the States of the region during last week.
- **Rainfall Forecast:** Dry weather would prevail over the region during the period.
- **Advisories:**
 - As dry weather prevailed during last few weeks and dry weather is also likely to prevail during the period, farmers are advised to apply irrigation to standing crops. Continue harvesting of already matured summer crops in morning hours.

- As rising temperature will increase the evaporation rate, farmers are advised to reduce the duration between two irrigations. To preserve the moisture in the orchards and in sugarcane field, farmers are advised for mulching with the help of trash or wheat straw or hay. If the water stress increases, apply irrigation to sugarcane by alternate furrow method.
- Farmers of South Konkan are advised to maintain 10 cm water level in the rice field during ear head emergence and flowering stage. In some places mango fruits are in pea stage; in view of prevailing dry weather, farmers are advised to apply 150- 200 litres of water per tree at 15 days interval in the canopy of mango trees.
- Farmers of Madhya Maharashtra are advised to remove damaged banana leaves due to cold and spray Mancozeb @ 2.5 g per litres of water on plant to avoid infestation of pests / diseases and better production. Taking the advantage of dry weather, farmers in Madhya Maharashtra and Marathwada are advised to apply 100 kg Nitrogen per hectare to *suru* sugarcane after 6 to 8 weeks of planting followed by light irrigation. Ratoon of the sugarcane harvested after 15th February may not be taken for next season crop.
- Grape bunches may get loosened due to rise in temperature; farmers in Madhya Maharashtra are advised to apply irrigation to maintain orchard temperature.
- Prevailing weather in East Vidarbha Zone is favourable for sowing of summer moong.
- Taking advantage of dry weather, farmers in Middle Gujarat Zone are advised to harvest matured *rabi* crops. Complete sowing of summer pearl millet. Carry out sowing of summer green gram. Use wheat straw and banana straw as a mulch material (12.5 kg / plant) in banana orchards.
- Farmers in Bhal and Coastal Zone are advised to undertake picking of capsules in castor during early morning hours.
- Farmers in South Saurashtra Zone of Gujarat are advised to complete sowing of summer moong. As there is no possibility of rain, farmers are advised to apply first dose of top dressing fertilizer in the form of urea @ 25 kg / ha after 21 DAS in pearl millet. Apply irrigation in mango and sapota.
- Farmers in South Gujarat Heavy Rainfall Zone are advised to undertake land preparation and sowing of summer crops like groundnut, moong and pearl millet.
- As there is increase in temperature, farmers in South Gujarat Zone are advised to apply irrigation to wheat and vegetable crops at an interval of 3 to 4 days.
- In North Gujarat Zone farmers are advised to apply irrigation to wheat. Farmers are also advised to carry out sowing of summer green gram, cluster bean and to complete the sowing of summer bajra, vegetable crops.
- Farmers in North Saurashtra Zone are advised to apply irrigation to wheat, groundnut, onion and garlic.
- Farmers in North West Zone of Gujarat are advised to apply supplementary irrigation in wheat.
- Suitable varieties of the crops for sowing are mentioned in Annexure II.
- Due to favourable weather condition in South Konkan of Maharashtra, there may be incidence of thrips on mango fruits; spray Spinosad @ 2.5 ml per 10 litres of water. Also there may be chance of occurrence of anthracnose on mango inflorescence; spray Carbendazim @ 10 g or Thiophenate methyl @ 10 g or Propineb @ 20 g per 10 litres of water.
- Prevailing weather is favourable for attack of sap sucking pests in floriculture in Marathwada; spray Thimethoxam @ 4 g or Trizophos @ 20 ml in 10 litres of water. There may also be attack of sap sucking pests in summer groundnut; spray Dimethoate @ 10 ml or Methyl Demeton @ 8 ml in 10 litres of water.
- Prevailing weather will increase the infestation of thrips in onion in Western Maharashtra Scarcity Zone; spray Cypermethrin @ 5 ml or Deltamethrin @ 5 ml in 10 litres of water.
- Stages of major crops are mentioned in Annexure-I.
- **Animal Husbandry:**
 - Give Anthrax vaccination and tablet for controlling karamia in cattle in North Saurashtra Zone and South Gujarat Heavy Rainfall Zone.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Dry weather prevailed over the region.
- **Rainfall Forecast:** Mainly dry weather would prevail over 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.
- Forecast of clear and partial cloud with no rainfall, and constant temperature in the coming days hence 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 sow summer maize, green gram and groundnut soon after harvesting of rabi crops. They are also advised to irrigate summer vegetables i.e. cucurbits family, water melon, musk melon, okra, chilli, tomato, brinjal etc at proper interval. Harvest the garlic, onion crop and after proper drying store in proper store room.
- In Nimar Valley region of Madhya Pradesh farmers are advised to irrigate wheat and gram crops; also start planting of sugarcane and prepare nursery and sow seeds of chilli, brinjal, okra and tomato.
- In view of dry weather conditions farmers in Central Narmada Zone of Madhya Pradesh are advised to harvest gram and lentil crop at maturity stage. They are also advised to irrigate maize crop at the time of grain filling. Farmers are also advised to harvest the potato and store in the shade followed by grading after one week to store in cold storage. Farmers are also advised to sow the lady finger.
- Farmers in Bundelkhand region of Madhya Pradesh are advised for sowing of Lobia, and maize as mixed crop for green fodder during summer season.
- 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. Intercropping of summer moong, early maturing crops or leafy vegetables can also be done for additional income.
- The summer rice crop is at tillering stage in Chattisgarh Plain Zone, at this stage stem borer is commonly observed in summer rice, hence it is advised to keep watch over the crop and if the damage is above ETL apply granular insecticides Cartep or Fipronil @ 25 kg/ha in the fields. About 5 cm standing water should be maintained in the fields while applying the granular insecticides and do not allow the water to out of the field at least for 24 hours. Topdressing of N is also advised at this stage.
- At present mango crop is at flowering/ fruit setting stage in Chattisgarh Plain Zone, at this stage infestation of mango hopper are commonly observed. Therefore farmers are advised to keep the mango orchards clean and if necessary spray recommended insecticides like Methyl Dematon @ 2 ml/litre water.
- 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.
- At present the maize crop is at knee height stage, at this stage infestation of stem borer is generally observed. Therefore, farmers are advised to apply granular insecticides like phorate or carbofuran @ 5-10 granules at the centre of the leaves during the morning hours.
- Farmers in Central Narmada region of Madhya Pradesh are 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 7 days of spray.

- **Animal Husbandry & Poultry**

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

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

- Sugarcane (vegetative), lobia for green fodder (vegetative), mishrikand (vegetative), cauliflower, cabbage (head maturity / harvesting), fruit trees (transplanting), wheat (grain formation), vegetables (flowering / fruiting / harvesting), maize (cob formation), sugarcane, onion (planting), *boro* rice (tillering), summer maize (sowing) in Bihar.
- Turmeric and ginger (rhizome formation), elephant foot yam (tuber elongation), green pea (pod maturity / harvesting), cauliflower, cabbage (head maturity / harvesting), chilli, tomato (flowering / fruiting / harvesting), wheat (milk / dough), papaya (transplanting), summer moong (sowing), summer vegetables (transplanting), okra, summer maize (sowing), onion (transplanting) in Jharkhand.
- Summer rice (tillering), summer groundnut (vegetative), sunflower (sowing), sugarcane (maturity / harvesting), sugarcane (new) (planting), wheat (grain formation), banana (vegetative), tomato (flowering / fruiting / maturity), cauliflower, cabbage, knol-khol (maturity / harvesting) in Orissa.
- *Boro* rice (tillering), winter vegetables (flowering / fruiting / harvesting), wheat (grain formation), groundnut (early vegetative / vegetative), sesame (sowing), chilli (flowering / fruiting) Mango (flowering) in West Bengal.
- *Rabi* vegetables (harvesting), orange (harvesting), Large cardamom (vegetative), wheat (milk / dough), mustard (seed maturity / harvesting), *rabi* potato (tuber formation / maturity), vegetables (sowing / nursery sowing) in Sikkim.

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

- Wheat (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 (grain formation), 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), bushy 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.
- Early/normal sown wheat (anthesis (flowering) / grain formation), late sown wheat (ear head formation / flowering), 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. gobi sarson(pod formation), mustard (maturity stage), late sown mustard (reproduction/pod formation), brown sarson (rosette stage), *rabi* pulses i.e. lentil, gram, (pod formation)], pea(pod formation), fodder crops like oats (vegetative (2nd cut)), berseem (vegetative), turnip, cruciferous crop (viz. cabbage, cauliflower, knolkhol, kale, broccoli, solanaceous crops (tomato, brinjal and chilli, capsicum), paprika, onion, cucurbits in polybags (Leh region) (nursery sowing/transplanting), Horticultural crops (various stages) viz. [peach, plum & mango (flowering), ber, 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), barley, sarson (germination/ vegetative),onion, garlic (transplanting/germination), wheat (grain maturity/), lentil, brinjal, potato (sowing/germination), sunflower(Sowing) in Uttarakhand.
- Wheat (grain formation), winter sugarcane (vegetative growth), sunflower, summer moong, urad (sowing/germination), 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/harvesting), new planting of vegetables [tomato, brinjal, lady's finger, cucurbits like bottle gourd, bitter gourd, cucumber] (sowing/germination), coriander (vegetative/ flowering), onion (transplanting / vegetative growth), mustard/ sarson (siliqua formation/ grain formation), barley (vegetative / tillering), arhar, jai, gram, alsin, 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 (grain filling),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 (grain filling) in Haryana.
- Wheat (grain filling), very late sown wheat (tillering), sweet potato, chilli and cluster bean (vegetative/pod formation), mustard (pod maturity/harvesting), gram (pod formation / 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), summer tomato (germination/vegetative), cauliflower, cabbage, *rabi* onion

(transplanting/germination), summer cucurbits, summer green fodder (sowing/germination), okra, *zaid* pearl millet fodder, *said* sorghum fodder, *zaid* green gram (sowing), sugarcane (new planting) in Rajasthan.

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

- Sugarcane (vegetative), summer groundnut (flowering/pegging), jowar (harvest), safflower (maturity/harvest), maize (harvesting), sunflower (heading/harvesting), Bengal gram (harvest), late planted paddy (harvest), wheat (harvest), black gram /green gram (maturity/harvest), mango (flowering/fruitletting), cotton (picking), vegetables (fruiting) and horticultural crops (fruit development) in Karnataka
- Rabi groundnut (pod development/maturity/harvesting), rabi paddy (grand growth), rabi maize (flowering), rice fallow maize (milking/grain filling), rice fallow jowar (milking/grain filling), rice fallow pulses (pod formation), sunflower (heading), sugarcane (planting/tillering/ ratooning), jowar (panicle formation / grain setting), Bengal gram (pod development / maturity), vegetables (flowering/fruitletting), chilli (fruiting), green gram & black gram (pod development/maturity), tomato (fruiting) and bhendi (various stages), mango (flowering), fruit crops (flowering to fruit initiation), water-melon (sowing), and sesamum (sowing) in Andhra Pradesh.
- Pepper & ginger (land preparation / preparation of planting materials), rubber (tapping), irrigated banana (vegetative), cardamom (nursery), nutmeg (maturity), sugarcane (harvesting/ planting), vegetables (flowering/harvest), *puncha* paddy (land preparation), *virippu* paddy (nursery sowing), coconut (seed nut collection) in Kerala.
- Rice - Samba (harvest), Thaladi (harvest), rice fallow pulses (flowering), sugarcane (various stages), gingelly (vegetative/flowering), tomato (flowering/maturity), {irrigated chilli, cotton, sunflower, pearl millet, pulses (vegetative/ reproductive stage)}, pulses (vegetative/flowering/harvesting), cotton (vegetative/flowering to boll bursting), vegetables (harvest), maize (various stages), sunflower (harvesting), pearl millet (grain filling), sunflower & sorghum (harvest), irrigated groundnut (harvest), chilli (fruiting), ginger and turmeric (pod development / harvest) in Tamil Nadu.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane (old *adsali*, old pre-seasonal and *suru*) (cane maturity / harvesting), sugarcane (new *adsali*) (early vegetative / vegetative), sugarcane (new pre-seasonal) (early tillering), sugarcane (new *suru*) (sprouting in Madhya Maharashtra and Marathwada), *rabi* jowar, safflower, irrigated wheat (maturity / harvesting), summer rice (ear head emergence / flowering in South Konkan & tillering in North Konkan and East Vidarbha), summer groundnut (pegging / pod development in South Konkan and vegetative / flowering in Madhya Maharashtra, Marathwada and West Vidarbha), bajra (vegetative / flag leaf initiation in Pune and Nashik division) in Maharashtra.
- Summer groundnut (germination / vegetative), summer rice (early tillering / tillering), summer bajra (sowing), summer moong (sowing), wheat (milk / dough), *rabi* maize (cob formation), sugarcane (early vegetative), jowar (grain maturity / harvesting), castor (maturity / harvesting), vegetables (vegetative / flowering / fruiting / harvesting), cluster bean (sowing) and cauliflower, cabbage (maturity / harvesting) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Sugarcane (knee height stage), vegetables (fruiting), mustard (siliqua formation/pod formation), wheat (maturity), 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 (tillering), 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, Gobind, IR-36, IR 50.

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, Panchasira.

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), ML-55.

Capsularis jute: JRC 321 (Sonali), UPC 94 (Reshma), JRC 212, JRC 7447.

Olitorius Jute: JRO 524 (Navin), JRO 785 (Basudev), JRO 632 (Baisakhtissa), Set-2 (Bahagi).

Meghalaya

Kharif maize : Vijay, RCM-76, Local white and yellow, DA-61-A and QPM.

Okra : Arka Anamika, Pusa Sawani, Parbhani Kranti.

Brinjal : Umroi, Mutakesh, Narrow.

Bottle gourd : Pusa Summer, Prolific Long, Prolific Round, Pusa Meghdoot.

Capsularis jute: JRE-21, JRC-321, D-154, JRC-7447.

Olitorious jute: JRO-632, JRO-514, JRO-7835, JRO-878.

Mizoram

Okra: Pusa Sawani, Pusa Makhmali, Punjab Padmini, Arka Anamika, Arka Abh

Orissa

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

Sesame: Uma, Kalika, Nirmala, Prachi, Usha, Kanak, Amrit.

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.

Green gram: PDM -11, SML-668, PDM-54, Pusa Baisakhi, HUM 2, Durga and Samrat.

Black gram: Sarala, T-9, B-3-8-8, Pant-U-19, Pant-U-30.

Bihar

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

Moong: Pusa Baishakhi, T-9.

West Bengal

Green gram: TM-99-50, PDM-11, TARM-12, Sonali (B-1), Panna (B- 105), Pusa Baishakhi.

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

Banana: Gaint Governor, Robusta, Kabuli.

Water melon: Sugar baby, Ashi yeamoto.

Jharkhand

Summer maize: Birsa Makka-1, Birsa Makka-2, Suwan-1 (Hybrid), HQPM (Hybrid).

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

Okra: Pusa A - 4, Prabhani Kranti, Arka Anamika, Versha Uphar and Hybrid varieties –Sonal and Sarika.

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

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), CoJ-88, CoS-8436 for mid season and CoJ-89 and Co-1148 (late maturing variety).

Haryana

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), CoJ-88, CoS-8436 for mid season and CoJ-89 and Co-1148 (late maturing variety).

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.
Maize: African Tall
Cluster bean: Pusa Komal, Pusa Sukomal.
Baby corn : HM-4

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.
Urd : PU-19, PU-30, Pant Urd-31, Pant Urd-35, Pant Urd-40, Narendra Urd-1 etc.
Cucurbits: Pant Kheera-1 of cucumber, Pant Kakari-1 of Long melon, Pant Karela-1 of Bitter Gourd, Pant Summer Lokee-1,2 of Bottle Gourd and of Water Melon and Musk Melo
Chiatee Dhan : VL-Dhan-207, VL-Dhan 208 & VL - Dhan 209
Chiatee Dhan.
Tomato :with improved variety like VL-Tomato – 3
French bean :with improved varieties like VL **Boni Bean**-1, VL Bean-2, Kantender, Pant Anupama etc.
Pea : VL Ageti Matar-7 or Vivek Matar-10

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, PDM-11, MUM-2, Malviya Jagruti, Samrat, Pusa Vaishakhi K. , K-851, JM-721 etc.
Urad : Azad Urd-1,2, Bhokhar-1,2, Type-9, Uttara etc. JT-9, pant u-19, Narendra ;, pant U-35
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, Japoni, 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.

Rajasthan

Summer Groundnut : improved varieties : TAG-24, SB-11, DH-86 and GG-2

Zaid green gram : improved varieties K-851 (60-70 days), PDM-11 (60-65 DAYS), Pusa Baisakhi (60-80 days), RMG-268 (65-70 days)

Sugarcane : C.O. 6617, C.O. 7717, C.O.S. 95255, C.O.S. 767

Cucurbits : **Bottle guard** : Pusa Naveen, Arka Bahar, **Pumpkin** : Pusa Vishwas, Arka Chandan, Pusa Alankar, Arka Suryamukhi, **Bitter guard** : Arka Harit Pusa Vishesh, Priya, **Round gourd** : Arka tinda, Bikaneri green, Punjab-48.

Gujarat:

Summer bajra: GHB-526 , GHB-558, MH-169, GHB-538.

Green gram: Gujarat Mung-3, 4, K-851, Pusa Baisakhi.

Cluster bean: Gujarat Guar-2.

Maharashtra:

Summer moong: Pusa Baishakhi and PKV Moong 8802.

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

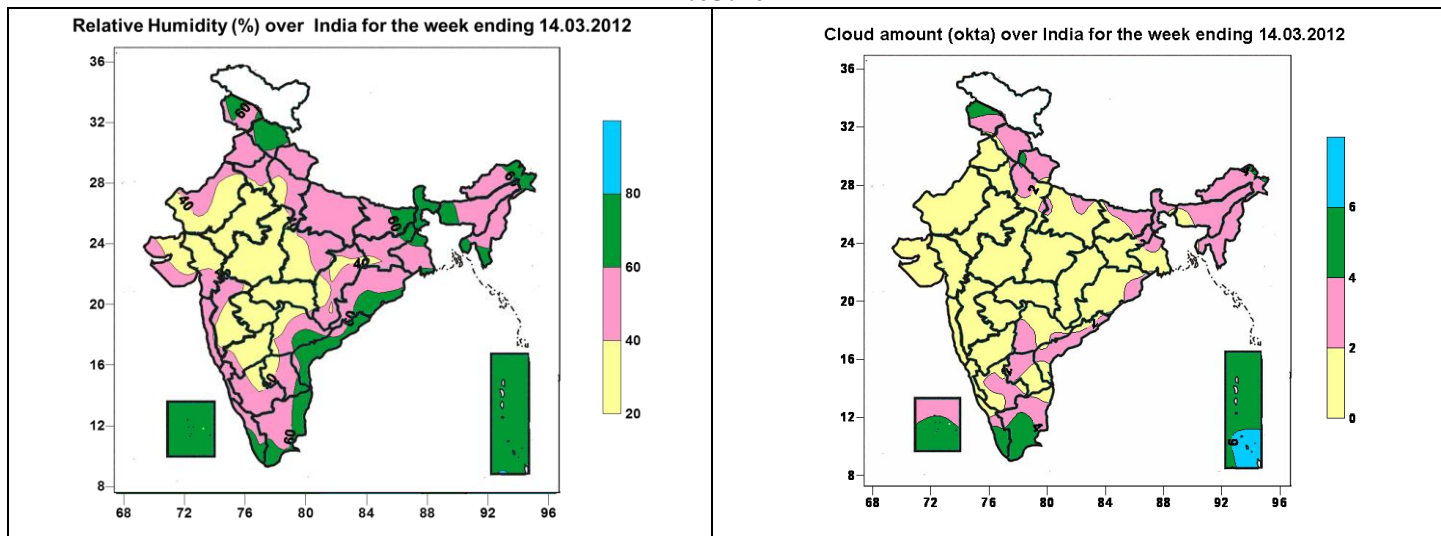
Ladies Finger- Pusa Makhamali, PusaSawani, A-4 or Parbhanikranti

Chattisgarh

Sugarcane- Co 86032, Co 86141

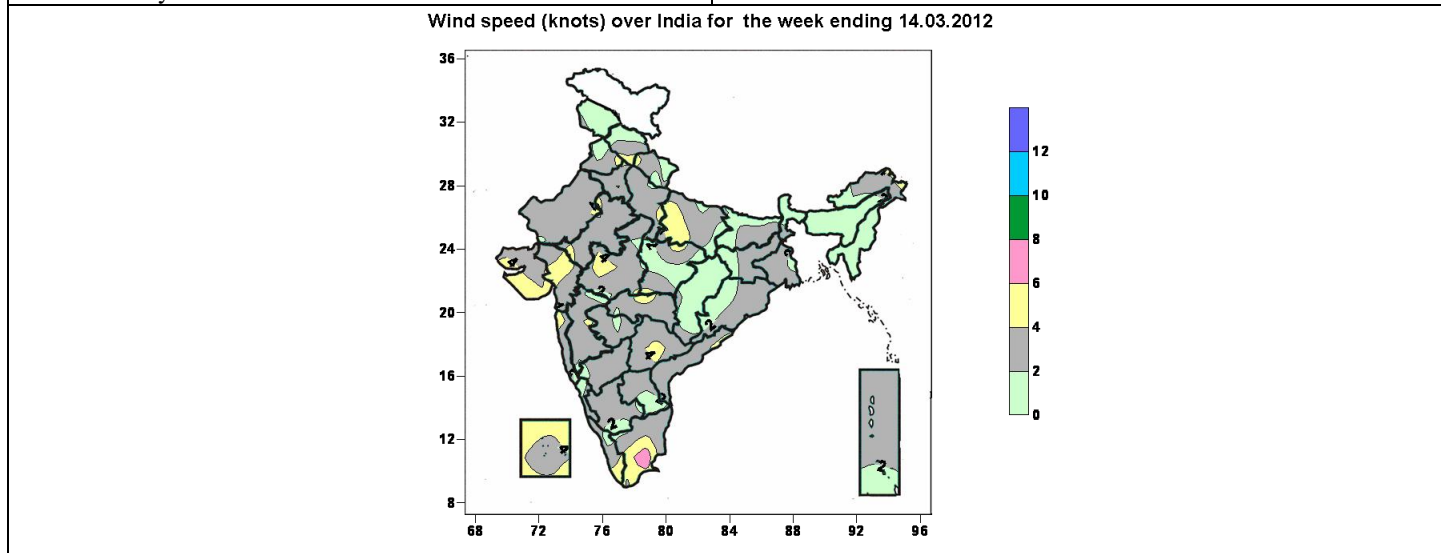
Annexure III

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 14.03.2012



Relative humidity ranged between 60 to 80% over many parts of Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Bihar, Jharkhand, Assam & Meghalaya, coastal Orissa, Telangana, Raylaseema, Coastal Tamil Nadu, Coastal Kerala, 20 to 40% over many parts of Rajasthan, Central India, West India(except Konkan & Goa), North Interior Karnataka, some parts of Haryana, West Uttar Pradesh, Jharkhand, South Interior Karnataka, Telangana, Rayalaseema and 40 to 60 % over remaining parts of the country.

Cloud amount 6 okta over some parts of Andaman & Nicobar Islands, 4 to 6 okta over many parts of Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Uttarakhand, Arunachal Pradesh, 2 to 4 okta over many parts Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sub-Himalayan West Bengal & Sikkim, North East India, Andhra Pradesh, some parts of Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Coastal Orissa, South Interior Karnataka, Tamil Nadu, Kerala, Lakshdweep Islands, 0 to 2 okta over remaining parts of the country.



Wind speed ranged between 4 to 6 knots over most parts of Kutch, Tamil Nadu, Lakshdweep, some parts of Himachal Pradesh, Uttarakhand, Punjab, Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat, Saurashtra, Maharashtra (except Marathwada, Goa), Telangana, Kerala, 0 to 2 knots over most parts of Jammu & Kashmir, Sub-Himalayan West Bengal & Sikkim, North East India(some places over Arunachal Pradesh), Chhattisgarh, some parts of Himachal Pradesh, Uttarakhand, Punjab, Rajasthan, Gangetic West Bengal, Bihar, Jharkhand, Maharashtra, Madhya Pradesh, Raylaseema, Karnataka, Tamil Nadu, Kerala, Andaman & Nicobar Islands, 2 to 4 knots over remaining parts of country.