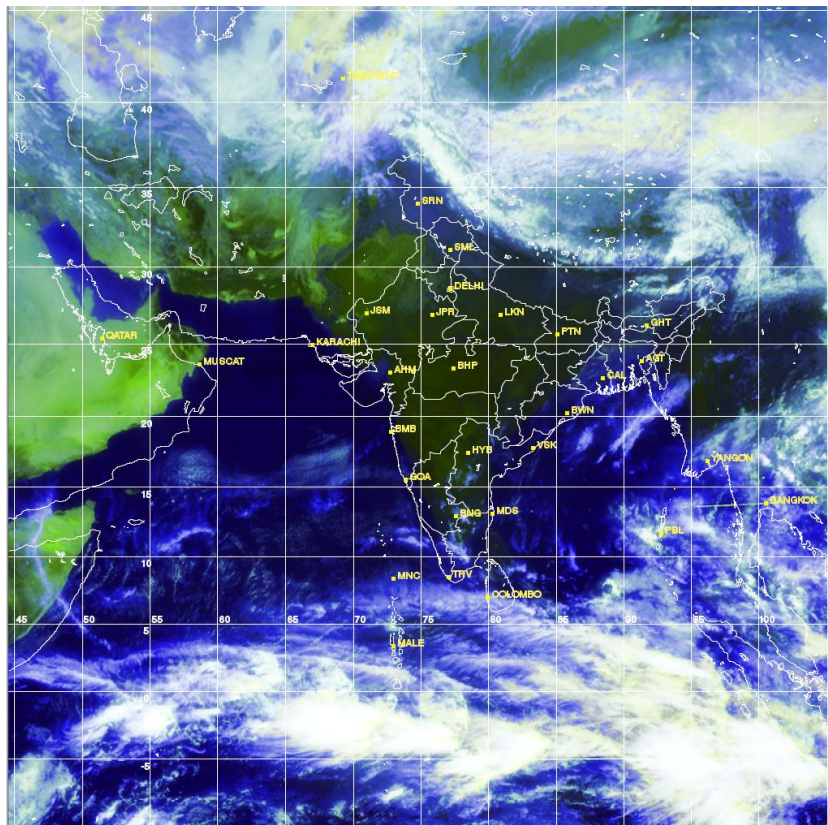




National Agromet Advisory Bulletin

Wednesday, 7th March, 2012

(For the period 7th to 11th March, 2012)



Satellite image 0700 UTC dated 9th 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 above normal over many parts of West Rajasthan, West Uttar Pradesh, parts of East Rajasthan, Himachal Pradesh, Punjab, Haryana, Uttarakhand, West Madhya Pradesh, Tamil Nadu, Coastal Andhra Pradesh, Coastal Orissa, Nagaland, Manipur, Mizoram and Tripura. Major *rabi* crops are wheat, mustard, toria, lentil and gram in North West, Central and East India. The prevailing weather conditions are conducive for growth of wheat and other crops which are at advanced stages of growth.

Significant rain / snowfall occurred over Cachar, Dhemaji and East Khasi Hills of Assam, Anjaw, Lohit, Lower Dibang Valley, Lower Subansiri, Papumpara, Upper Dibang Valley, Upper Siang and West Siang districts of Arunachal Pradesh, Kangra, Kinnaur, Kullu and Lahaul and Spiti districts of Himachal Pradesh, Anantnag, Badgam, Bandipore, Baramula, Doda, Ganderwal, Jammu, Kulgam, Kupwara, Ramban, Srinagar and Udhampur districts of Jammu & Kashmir, Chamoli and Uttarkashi districts of Uttarakhand and North Sikkim district in Sikkim 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 country and no significant rain is likely to occur, farmers are advised to provide irrigation to the standing *rabi* crops.

Due to favourable weather conditions, incidences of stem borer in *boro* rice in Assam, shoot and fruit borer in brinjal, shoot drying in cashew in Karnataka, brown plant hopper in rice in Tamil Nadu, aphids in maize, early shoot borer in sugarcane, thrips in chilli and hoppers and powdery mildew in mango in Andhra Pradesh and blast in rice in Kerala 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 *Capsularis* jute, summer vegetables, summer pulses, direct seeded *ahu* rice, summer green gram and black gram.

Arunachal Pradesh: sowing of summer vegetables.

Nagaland: sowing of turmeric, ginger and rajma.

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

Bihar: sowing of black gram and green gram.

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

Delhi: sowing of maize, hybrid cluster bean, hybrid cultivar of baby corn, French bean, amaranthus, vegetable lobia, lady's finger, bottle gourd, cucumber, ridge gourd, summer radish, green gram and black gram.

Rajasthan: sowing of summer vegetables.

Punjab and Haryana: planting of sugarcane.

Jammu and Kashmir: planting of fruit crops, transplanting of tomato, onion, brinjal, chilli and sowing of bhindi, beans and cucurbits.

Himachal Pradesh: sowing of chari, bajra and maize.

Uttarakhand: planting of sugarcane.

Andhra Pradesh: sowing of sesame and planting of sugarcane.

Karnataka: sowing of groundnut, sunflower water melon and cucurbits and transplanting of onion, sweet gourd and ridge gourd.

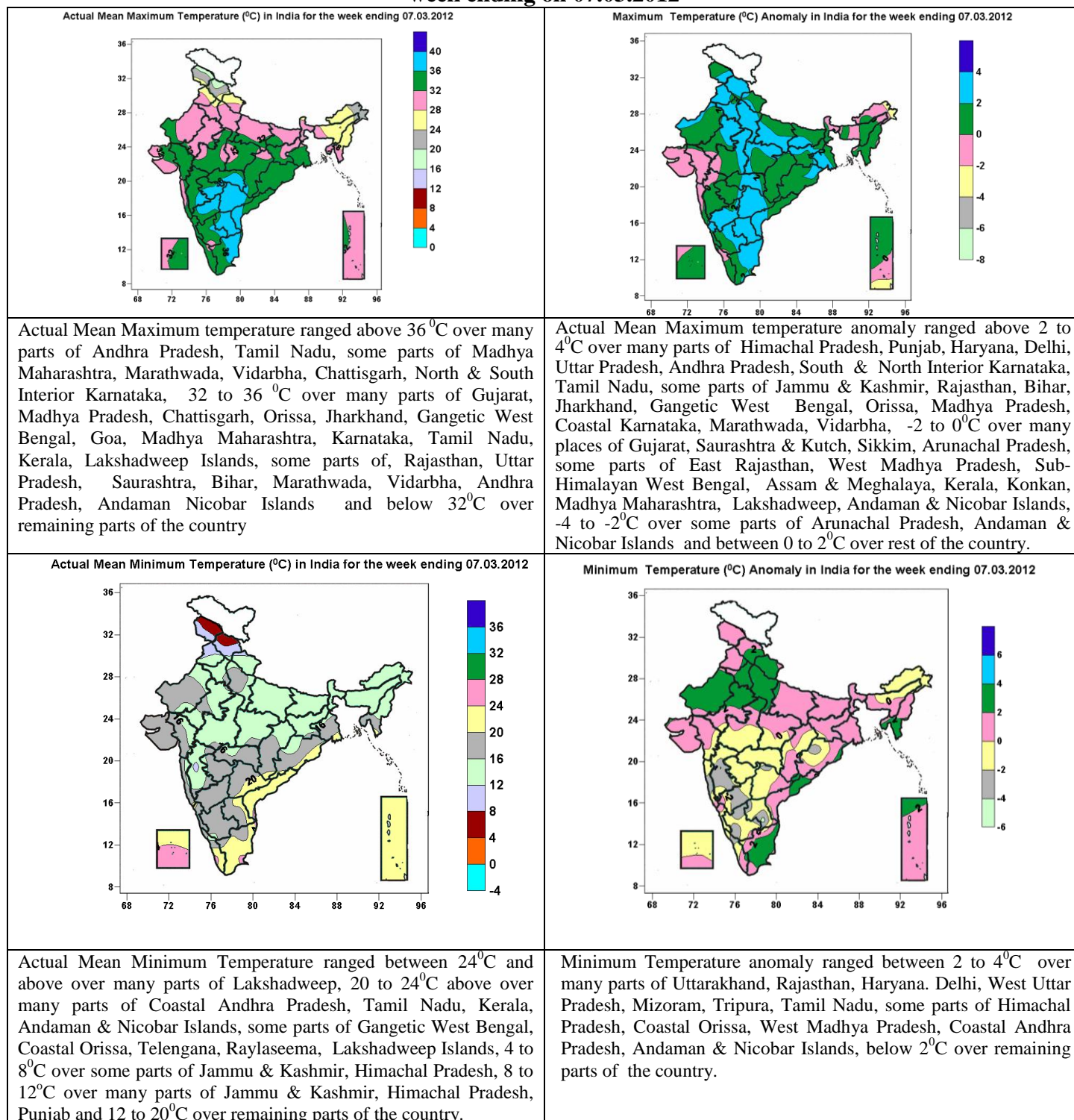
Madhya Pradesh: sowing of bhindi and spinach and transplanting of brinjal and chilli.

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

Maharashtra: sowing of okra, water melon and bajra.

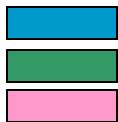
Gujarat: sowing of summer vegetables.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 07.03.2012

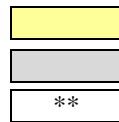


Distribution of rainfall of the country during week ending on 07.03.2012

State/Districts	Actual (mm)	% Dep.	State/Districts	Actual (mm)	% Dep.	State/Districts	Actual (mm)	% Dep.
Arunachal Pradesh			Kokrajhar	0	-100	Kupwara	53.9	19
Anjaw	70.6	149	Lakhimpur	3.1	-68	Ladakh(Leh)	1.2	-40
Changlang	**	**	Morigaon	0	-100	Poonch	57	59
East Kameng	1	-95	N.C.Hills	17.3	-21	Pulwama	13.6	-20
East Siang	11.7	-42	Nowgong	1.3	-73	Rajouri	8.1	-23
Kurung Kumey	**	**	Nalbari	0.2	-97	Ramban	57.5	12
Lohit	32.3	14	Ribhoi	0.3	-83	Reasi	16.6	-50
Lower Dibang Valley	55	-9	Sonitpur	1	-83	Samba	20.2	66
Lower Subansiri	20	138	Sibsagar	7.7	-32	Shopian	**	**
Papumpara	16.5	47	South Garo Hills	0	-100	Srinagar	39.5	109
Tawang	13	113	Tinsukia	9	-54	Udhampur	37.4	12
Tirap	15.5	-44	Udalgiri	8	13	Uttarakhand		
Upper Dibang Valley	139	129	West Garo Hills	0	-100	Almora	6.3	-48
Upper Siang	80.3	13	West Khasi Hills	0	-100	Bageshwar	10.4	-14
Upper Subansiri	**	**	Himachal Pradesh			Chamoli	30.2	91
West Kameng	0	-100	Bilaspur	14.9	16	Champawat	9.5	3
West Siang	24	15	Chamba	16.6	-57	Dehradun	21	106
Assam			Hamirpur	17.3	35	Garhwal Pauri	5.3	-25
Baksa	0	-100	Kangra	23	9	Garhwal Tehri	10	-27
Barpeta	0	-100	Kinnaur	53	179	Haridwar	0	-100
Bongaigaon	0	-100	Kullu	55.5	331	Nainital	15.9	48
Cachar	93.7	353	Lahaul and Spiti	54.7	55	Pithorgarh	9	-30
Chirang	0	-100	Mandi	25.2	66	Rudraprayag	14.9	-13
Darrang			Shimla	18.8	17	Udham Sing Nagar	0.4	-90
Dhemaji	19	98	Sirmaur	8.2	2	Uttarkashi	34.3	93
Dhubri	0	-100	Solan	11.6	-33	West Bengal		
Dibrugarh	8.6	-44	Una	6.9	-27	SHWB		
East Garo Hills	0	-100	Jammu & Kashmir			Cooch Behar	0	-100
East Khasi Hills	35.5	54	Anantnag	35.9	-2	Darjeeling	0.9	-90
Goalpara	0	-100	Badgam	32.9	81	East Sikkim	10.2	-17
Golghat	0.2	-97	Bandipore	**	**	Jalpaiguri	1.7	-56
Hailakandi	13.5	69	Baramula	30	2	Malda	0	-100
Jaintia Hills	2	-83	Doda	57.6	12	North Dinajpur	0	-100
Jorhat	1.5	-86	Ganderwal	43.4	130	North Sikkim	47.1	40
Kamrup(Metro)	0	-100	Jammu	20.6	69	South Dinajpur	0	-100
Kamrup	0	-100	Kargil	0	-100	South Sikkim	6.6	-47
Karbi Analog	0	-100	Kathua	16.6	50	West Sikkim	8	-76
Karimganj	17.5	-24	Kistwar	**	**			
			Kulgam	21.6	-41			

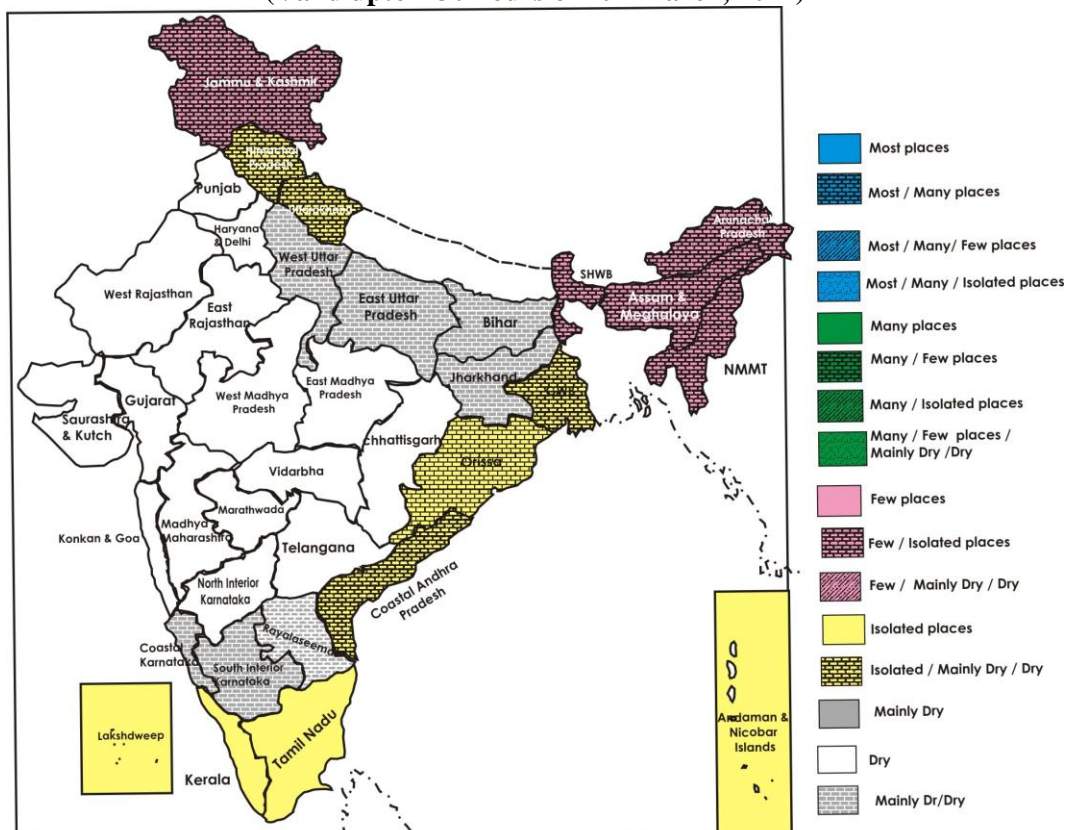


(20% or more) excess rainfall
 (-19 to +19%) normal rainfall
 (-20 to -59%) deficient rainfall



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

Weather Forecast (Valid upto 1430 hours of 10th March, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 10th March, 2012

- Rain/snowfall would occur at a few places over Jammu & Kashmir during next 24 hours and at one or two places thereafter.
- Rain/snowfall would occur at one or two places over Himachal Pradesh and Uttarakhand during next 48 hours.
- Rain/thundershowers would occur at a few places over Sub-Himalayan West Bengal & Sikkim and northeastern states during next 48 hours and at one or two places thereafter.
- Rain/thundershowers would occur at one or two places over Kerala, Tamilnadu, Lakshadweep and Andaman & Nicobar Islands.
- Slight fall in minimum and maximum temperatures over northwest and adjoining central India during next 2 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 12th March, 2012

- Rain/thundershowers would occur at one or two places over northeastern states and Andaman & Nicobar Islands.
- A fresh western disturbance may affect western Himalayan region and adjoining plains of northwest India.
- An easterly wave would also approach extreme south peninsular India.
- Weather would be mainly dry over rest parts of the country.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in Anjaw, Lohit, Lower Dibang Valley, Upper Dibang Valley and Upper Siang districts of Arunachal Pradesh, Cacher and East Khasi Hills districts in Assam.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over the States of the region during next 48 hours and at one or two places thereafter.
- **Advisories**
 - As there was significant rain in Anjaw, Lohit, Lower Dibang Valley, Upper Dibang Valley and Upper Siang districts of Arunachal Pradesh, Cacher and East Khasi Hills districts in Assam 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.
 - 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 Bramhaputra Valley Zone of Assam are advised to complete harvesting of toria and potato crops. Continue land preparation and sowing of *Capsularis* jute, summer vegetables, summer pulses and 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 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 with soil.
 - Farmers in North bank plain zone of Assam are advised to complete sowing of direct seeded *ahu* rice. Undertake land preparation and continue 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.
 - 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. Continue land preparation and sowing of summer vegetables.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue sowing of 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. Continue land preparation and planting of ginger and turmeric and sowing of 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. Harvest the mature tomato crops and avoid spoil. Also arrange for staking of the tomato plants with high care to avoid limb break due to fruiting.
 - In Mild Tropical Hill Zone of Nagaland, farmers are advised to harvest mustard and toria in the morning hours to avoid shattering loss. Also, provide sufficient moisture during flowering and fruit setting of pea crop. Undertake land preparation and start of 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 Bramhaputra Valley Zone of Assam. Farmers are advised to spray Chloropyriphos (20%) @ 2 ml / litre of water to control the attack.

- Due to prevailing weather conditions, there is chance of attack of fruit borer in tomato in Mild Tropical Plain Zone of Tripura. 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.
- Due to prevailing weather condition in Mild Tropical Hill Zone of Mizoram, fruit borer infestation may occur in tomato; spray 5% neem seed kenel or spray NPV @ 250-500 LE / ha with teepol 100 ml.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Farmers in Lower Bramhaputra Valley Zone of Assam are advised to vaccinate cattle, goat and pigs against the Foot and mouth disease.
 - Poultry farmers in Upper Bramhaputra Valley Zone and North Bank Plain 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.
 - 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 over the States of the region during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over Sub-Himalayan West Bengal & Sikkim during next 48 hours and at one or two places thereafter. Weather would be mainly dry over remaining States of the region.
- **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.
 - Farmers in Western Undulating Zone of Orissa are advised for planting of sugarcane.
 - 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 undertake sowing of sesame.
 - Farmers in North Central Plateau Zone of Orissa are advised to apply irrigation to wheat crop. 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.
 - Farmers of East and South Eastern Coastal Plain zone of Orissa are advised to undertake 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.
 - Due to increase in temperatures, the evaporation rates have 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.
 - 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. Start sowing of summer moong and

urad crops and ensure moisture in the field at the time of sowing for better germination and crop stand.

- 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.
 - Undertake nursery preparation for sowing of chilli, tomato, cucurbitaceous crops and brinjal 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 and musk melon.
 - Farmers in New Alluvial Zone of West Bengal are advised to undertake land preparation and sowing of moong and second top dressing for the timely sown *boro* rice @ 25 Kg N per ha of land; keep 5 to 7 cm stagnant water in the field.
 - Farmers in Coastal Saline Zone of West Bengal are advised to complete the harvesting of lathyrus and green gram.
 - Farmers in Old Alluvial Zone of West Bengal are advised to undertake the harvesting of potato and mustard crop and apply urea as first top dressing at tillering stage of *boro* rice and also advised to undertake sowing of different summer vegetables such as pointed gourd, lady's finger, brinjal, chilli etc.
 - In view of prevailing weather farmers in Laterite and Red Soil zone are advised to apply irrigation in wheat and *boro* rice maintaining 5 cm standing water in the field.
 - 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 mite, spray neem based insecticides like Achook, Neemerin, Neemetinor, Neemesidin @ 5 ml per litre of water.
 - In Coastal Saline Zone of West Bengal, coconut may be attacked by black headed caterpillar; spray neem oil @ 2.5 ml / 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 @ 1 ml / liter of water.
 - 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.
 - 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**
 - 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).

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

- **Realised Rainfall:** Rainfall occurred in Kangra, Kinnaur, Kullu and Lahaul and Spiti districts of Himachal Pradesh, Anantnag, Badgam, Bandipore, Baramula, Doda, Ganderwal, Jammu, Kulgam, Kupwara, Ramban, Srinagar and Udhampur districts of Jammu & Kashmir, Chamoli and Uttarkashi districts of Uttarakhand and mainly dry weather prevailed over remaining States in the region.
- **Rainfall Forecast:** Rain/snowfall would occur at a few places over Jammu & Kashmir during next 24 hours and at one or two places thereafter. Rain/snowfall would occur at one or two places over Himachal Pradesh and Uttarakhand during next 48 hours. Mainly dry / dry weather is likely to occur over the region.
- **Advisory:**
 - Significant rain / snowfall occurred over Kangra, Kinnaur, Kullu and Lahaul and Spiti districts of Himachal Pradesh, Anantnag, Badgam, Bandipore, Baramula, Doda, Ganderwal, Jammu, Kulgam, Kupwara, Ramban, Srinagar and Udhampur districts of Jammu & Kashmir, Chamoli and Uttarkashi districts of Uttarakhand and during last week. Farmers in these regions 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.
 - In Jammu (Chatha), due to rainfall during last week and chances of light rainfall/thundershowers, farmers are advised not to irrigate the early sown wheat crop in order to avoid lodging during these days.
 - Farmers in Delhi are advised to undertake harvesting of matured mustard crop. Undertake sowing of maize, hybrid cluster bean, hybrid cultivar of baby corn, french bean, amaranthus, vegetable lobia, lady's finger, bottle gourd, cucumber, ridge gourd, summer radish, green gram and black gram. In the present weather conditions, transplanting of young seedlings of tomato, chilli and cucurbits crop may be done.
 - 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 summer groundnut, summer cucurbits like melon, bottlegourd, bittergourd, ridged gourd, round gourd, pumpkin and smoothgourd, etc., raising nursery of monsoon season brinjal, summer chilli, okra, transplanting of seedlings of tomato, land preparation for summer guar, summer green fodder may be undertaken.
 - Farmers in Punjab and Haryana are advised to give irrigation to wheat crop under light wind condition as per requirement of the crop. Don't miss the irrigation at grain filling stage. Undertake planting of sugarcane with recommended varieties. Apply second dose of nitrogen to tomato in the first fortnight of this month. Give irrigation at maximum fruit setting. Farmers are advised to start the harvest of ripened mustard crop. Irrigate the vegetable crops as per their requirement.
 - 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 harvest chinese cabbage, lettuce, beet leaf var. Mongol, spinach, coriander and mint at 10 to 15 days interval. It is advised to cover the polythene of green houses with black polythene in the night for proper growth of crops. They are also advised to raise nursery of early vegetables in areas below Khaltsi.

- 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. Continue 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 continue sowing of moong or urad in vacated field. Complete digging of matured raddish, carrot and turnip.
 - In Bhabar and Tarai Zone & Hill zone of Uttarakhand, due to favourable temperature and dry weather conditions, farmers are advised to give light irrigation in wheat crop at milking to grain filling stage in the evening when expected westerly wind is blowing with low speed. Due to increase in temperature and dry weather, rodents can damage the wheat crop. Hence, farmers are advised to follow combined approach to control them. For this purpose put Aluminum phosphides tablets each of 2 g and close the burrows with the soil. Farmers who have done sowing of sugarcane during last week are advised to do sowing of two lines of moong or urd in between 2 lines of sugarcane. Also start sowing of cucurbits, pumpkins etc., continue sowing of tomato & french bean, pea for vegetables.
 - 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 conditions in Delhi are favourable for attack of aphid on vegetable crop, rust on wheat crop, thrips on onion crop and pod borer on gram crop. Farmers are advised to monitor the crops for above pest/diseases and take proper plant protection measures.
 - There is possibility of incidence of late blight disease on tomato in Punjab and Haryana. Spray Indofil M 45 @ 600 g/acre to control this disease. In case of severe infestation, spray Ridomil MZ @ 500 g/acre followed by Indofil M-45 at 7 days interval. Monitor development of aphid on vegetables as temperature is increasing and apply recommended spray.
 - 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.

- 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:** Mainly dry weather prevailed over the States of the region during last week.
- **Rainfall Forecast:** Either isolated rain or dry / mainly dry weather is likely to prevail over the region.
- **Advisories:**
 - Due to continuous dry weather prevailing in the region and no significant rainfall is likely to occur during next three days, farmers are advised to apply irrigation and also take up appropriate plant protection measures on the standing crops
 - Farmers in the High Altitude Tribal Zone of Andhra Pradesh are advised to maintain 2-3 cm water in the paddy field as it is at transplanting stage. Weeding should be done in the field at 35-40 days after sowing.
 - 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. Since maize crop is facing drought conditions, farmers are advised to provide supplementary irrigation to sustain the crop.
 - 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 they are moisture stressed due to present weather.
 - Farmers in the North East Transition zone of Karnataka are advised to harvest wheat and safflower as dry weather conditions prevail.
 - 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 maize, wheat, sorghum as early as possible, take up sowing of sweet gourd, ridge gourd under irrigated condition, continue picking up of cotton KAPAS and take up raisin making in grapes
 - Farmers in the North East Dry Zone of Karnataka are advised to harvest the sorghum, Bengal gram and safflower, undertake deep ploughing in deep black soils after cotton stubble removal, sow water melon and cucurbits and give proper irrigation and shading for vegetable crops .
 - Farmers in the North Eastern Zone of Tamil Nadu are advised to undertake field preparations for planting of horticultural crops in the irrigated land.
 - 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 monitor for pest and disease for the crops sown during the season, undertake land preparation and sowing for 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 North East Transition Zone of Karnataka 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.
 - Incidences of shoot drying are noticed in cashew orchards in the Coastal Zone of Karnataka. Farmers are advised to remove affected dry part and take-up spraying of copper oxychloride @3g/lit of water to prevent it.
 - Farmers in the High Altitude Zone of Kerala are advised to irrigate the paddy fields at least once in 4 days, since the pan evaporation rates are very high.

- Farmers in the Problem Area Zone of Kerala are advised to cover the paddy fields with plastic sheets, since light rainfall is forecasted on 7th and 11th.
- Farmers in the Northern Zone of Kerala are advised to take necessary measures to adapt to the ill effects of coming summer season, mulch the soil to prevent evaporation loss of water, cultivate pulses/leguminous cover crops also as intercrops in places where irrigation facilities are available, plant vegetables as intercrops in coconut gardens with irrigation facilities, undertake spray only when the air is calm and protect the pepper vines from drought by thoroughly mulching the basins and giving life saving basin irrigations at fortnightly intervals.
- 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.
- Incidences of BPH are being noticed in the samba paddy fields in the Cauvery Delta Zone of Tamil Nadu. Farmers are advised to spray imidacloprid at 40 ml/acre to control BPH. They are also 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.
- In the anticipated weather having moderate cloud cover and moderate humidity, there is chances of incidence of rust in pearl-millet and brown spot in rice in the South Zone of Tamil Nadu. Farmers are advised to spray wettable sulphur 2500 g / ha (5 g / l) to control rust and edifenphos 50 EC 500 ml/ha to control brown spot. Present weather is also conducive for the incidence of ear head bug in rice and fruit borer in tomato. Farmers are advised to undertake plant protection measures.
- High incidence of shoot and fruit borer is observed in brinjal in the North East Transition Zone of Karnataka. Farmers are advised to spray carbaryl 4g per liter of water to control it.
- Aphid damage is observed in maize in the Scarce Rainfall Zone of Andhra Pradesh. Farmers are advised to spray dimethoate @ 2 ml per liter of water to control it.
- Incidence of early shoot borer in sugarcane, thrips and in chillies, aphids in cabbage and cauliflower, hoppers and powdery mildew in mango, mealy bugs and powdery mildew in grapes is noticed in the Southern Telangana Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures to control them.
- 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.
- Severe Rice blast is observed in some areas in the Problem Area Zone of Kerala. Farmers are advised to take precautions and if infestation is noticed, spray kitazine @ 1ml/L or fuji one @ 1.5ml/l.
- 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.

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 mainly 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. As the temperature is rising, farmers are advised to reduce duration between two irrigations.

- As dry weather is prevailing, farmers in Maharashtra state are advised to continue harvesting of already matured summer crops in morning hours.
- As the temperature is increasing, farmers in Marathwada region are advised to apply irrigation at 10-12 days interval to the summer groundnut crop. Preserve the moisture in the orchards and sugarcane field by mulching with the help of trash or wheat straw or hay. In case of water stress, apply irrigation to sugarcane crop by alternate furrow method.
- Farmers of South Konkan region of Maharashtra 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 and as temperature is increasing, apply 150-200 litres of water per tree at 15 days interval to canopy of mango trees.
- Farmers in Central Vidarbha Zone are advised to undertake planting of water melon.
- Farmers in the state are advised to cover banana bunch with the help of banana leaves and make arrangement of wind obstacle in South and West direction to protect orchards from hot winds.
- Farmers in Middle Gujarat Zone are advised to apply irrigation in wheat.
- 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 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 Saurashtra Zone of Gujarat are advised to apply irrigation to castor. Apply first dose of top dressing of N to summer pearl millet in the form of urea @ 25 kg / ha at 21 DAS.
- 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. Spray 2% potassium Nitrate in mango crop for effective control of fruit dropping and higher flower setting. Farmers are also advised to undertake harvesting of tomato. Picking of capsules in castor should be done during early morning hours.
- Farmers in South Gujarat Zone are advised to apply irrigation to wheat 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 tissues.
- Farmers in South Gujarat Zone are advised to develop new graft of mango and give irrigation at 7 to 8 days interval. Give 50% higher dose of fertilizer in tissue culture banana crop.
- 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 summer groundnut and bajra may be carried out. 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. Farmers are also advised to complete the sowing of summer vegetable crops *viz.*, ladies finger, cluster bean, cow pea, bitter gourd, bottle gourd, small gourd etc. Undertake harvesting of amaranth and mustard crop.
- Farmers in North Saurashtra Zone are advised to carry out sowing of summer groundnut. Farmers are advised to spray wettable Sulphur 80% @ 30 g or Dinocap 10 ml or Tridemorph 5 ml / 10 litres of water at initiation of flowering in mango crop. Farmers are also advised to give irrigation to wheat crop.
- 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.
- Present weather is favourable for increase in the infestation of thrips on onion in Western Maharashtra Scarcity Zone; spray Cypermethrin @ 5 ml or Deltamethrin @ 5 ml in 10 litres of water.
- Due to rise in temperature there may be attack of sap sucking pests in okra, cucumber, chilli and tomato in Pune region; spray Imidachloprid @ 4 ml or Dimethoate @ 10 ml or Methyl dimeton @ 10 ml in 10 litres of water.
- There may be infestation of jassids on mango blossom in Madhya Maharashtra; spray Cypermethrin 25 EC @ 3 ml or Fenvalerate 20 EC @ 5 ml in 10 litres of water.
- There may be incidence of jassids and sap sucking pests on mango fruit in Marathwada; spray Acitameprid 20 % @ 4 g or Thiomithoxam 25 % @ 4 g or Methyl Demeton @ 8 ml in 10 litres of water.

- There may be incidence of mango hoppers and powdery mildew in South Konkan; spray 25 % Thiomethoxam @ 1 g + Carbendazim @ 10 g or Hexaconazole @ 5 ml or Sulphur 80% WP @ 20 g per 10 litres of water to control the pest.
- 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:** Mainly dry weather 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.
 - 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 harvest matured wheat, gram and maize crops. They are also advised to arrange seed of summer vegetables i.e. water melon, musk melon, okra, chilli, tomato, brinjal etc. and sow these crops soon. 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. In winter sugarcane intercultural and top dressings of fertilizer is recommended and irrigate the sugarcane after 18 to 20 days of interval. Farmers are also advised for sowing of lady finger and spinach and for the planting of brinjal and chili seedlings in field.
 - Farmers in Vindhyan Plateau region of Madhya Pradesh are advised to 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 crops and vegetables, also harvest the matured crops. Present weather is favorable for direct sowing of vegetables like-pumpkin, bitter guard, etc. hence, Farmers are advised for sowing the crops. It is expected that wind speed will be with an average speed of 10 km/hr, hence farmers are advised to do the staking to the tomato plants, otherwise there is possibility of breaking of plants due to high wind speed.
 - Farmers in Grid Zone of Madhya Pradesh are advised to for sowing of summer vegetables, moong and urad. Carry out sowing of maize, jowar and baara for green fodder purpose.
 - Farmers in Malwa Plateau region of Madhya Pradesh are advised to irrigate wheat crop and sowing of summer crops such as moong, urad, groundnut and fodder crops may be done. Sowing of summer vegetable crops such as lady finger and cucurbits should be done.
 - 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.

- 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 there is possibility of gram caterpillar in late sown chickpea crop. Farmers are advised to monitor crop and spray quinalphos 25E.C @ 2.0 ml. per liter of water
- 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 7days of spray.
- **Animal Husbandry & Poultry**
 - Farmers in Bundelkhand region of Madhya Pradesh, are advised that present maximum day temperature is above 2-3⁰C more than average. Looking to this, cover the window and doors of poultry farms with gunny bags.
 - 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 / panicle initiation), *ahu* rice (sowing / seedling / transplanting), wheat (grain formation), tomato, brinjal (flowering / fruiting / harvesting), cauliflower, cabbage, knoll khol (harvesting), *rabi* pulses like pea, lentil (maturity / harvesting), onion (maturity / harvesting), potato (maturity / harvesting), rapeseed and mustard (maturity / harvesting), pumpkin, bottle gourd (flowering / fruiting), okra, pointed gourd, musk melon, water melon, ridge gourd, sponge gourd (sowing), black gram, green gram (sowing), *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 (maturity/harvesting), potato (tuber maturity / harvesting), pea (pod formation / maturity / harvesting), okra, beans (sowing) in Arunachal Pradesh.
- Pre-*kharif* rice (tillering), *kharif* rice (sowing), cucurbits (sowing / transplanting / vegetative), rapeseed and mustard (maturity/ harvesting), tomato, brinjal, chilli (transplanting / vegetative / flowering), potato (tuber maturity), cauliflower and cabbage (head formation / maturity), pea (pod formation / maturity / harvesting), onion (bulb formation), okra, French bean, ginger, turmeric (sowing) in Manipur.
- *Boro* rice (tillering / panicle initiation / flowering, flowering / grain formation), wheat (grain formation), mustard, rapeseed (maturity), spring potato (vegetative), potato (tuber maturity), lentil (pod maturity), pea (pod formation / maturity), *rabi* onion (bulb formation), Bengal gram (pod maturity), 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), maize (cob formation / maturity), bean, okra, cucurbits (sowing) in Mizoram.
- Cabbage (maturity / harvesting), pea (pod formation / maturity / harvesting), rapeseed, mustard (seed maturity / harvesting), French bean (pod formation), potato (tuber maturity / harvesting), brinjal (flowering / fruiting / maturity), maize (tasseling / cob formation / harvesting), toria (harvesting), tomato (transplanting / flowering / fruiting / harvesting), ginger, turmeric, rajma (planting / sowing) in Nagaland.
- *Boro* rice (tillering / panicle initiation), pulse crop (pod maturity / harvesting), pea, beans (pod formation / maturity / harvesting), mustard (seed maturity / harvesting), cole crop (maturity / harvesting) and tomato (flowering / fruiting / maturity / harvesting), potato (tuber 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 maturity / harvesting), rapeseed, mustard (seed maturity / harvesting), wheat (grain formation), vegetables (flowering / fruiting / harvesting), maize (cob formation), pulses (pod maturity / harvesting), sugarcane, onion (planting), *boro* rice (tillering), summer maize (sowing) in Bihar.
- Turmeric and ginger (rhizome formation), elephant foot yam (tuber elongation), potato (tuber maturity / harvesting), sweet potato (maturity / harvesting), mustard (seed maturity / harvesting), linseed (seed maturity / harvesting), green pea (pod maturity / harvesting), cauliflower, cabbage (head formation / maturity / harvesting), chilli, tomato (flowering / fruiting / harvesting), wheat (milk / dough), papaya (transplanting), gram (maturity / harvesting), summer moong (sowing), summer vegetables (transplanting), summer maize (sowing) in Jharkhand.
- Summer rice (tillering), summer groundnut (early vegetative / vegetative), sunflower (land preparation / sowing), mustard (seed maturity / harvesting), sugarcane (maturity / harvesting), sugarcane (new) (planting), Bengal gram, lentil, linseed, green pea (seed maturity / harvesting), wheat (grain formation), banana (vegetative), potato (maturity / harvesting), tomato (flowering / fruiting / maturity), cauliflower, cabbage, knol-khol (maturity / harvesting) in Orissa.
- *Boro* rice (tillering), winter vegetables (flowering / fruiting / harvesting), mustard (seed maturity / harvesting), wheat (grain formation), lentil, gram, sunflower (seed maturity / harvesting), potato (maturity / harvesting), groundnut (early vegetative / vegetative), chilli (flowering / fruiting) in West Bengal.

- *Rabi* vegetables (flowering / fruiting / harvesting), orange (harvesting), Large cardamom (vegetative), wheat (milk / dough), mustard (seed maturity / harvesting), *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), bushtype 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 (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 (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), tomato, brinjal and chilli (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), potato (maturity / digging), barley, sarson (germination/ vegetative),onion, garlic (transplanting/germination), wheat (milking/grain filling), lentil, brinjal, potato (sowing/germination), sunflower(Sowing) in Uttarakhand.
- Wheat (flowering/milking), 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, alsi, 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), 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, fodder(sowing/germination) in Rajasthan.

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

- Sugarcane (early vegetative), summer groundnut (vegetative/flowering), jowar (harvest), safflower (maturity), maize (harvesting), sunflower (maturity), Bengal gram (harvest), late planted paddy (harvest), wheat (maturity/harvest), black gram /green gram (maturity), mango (fruiting), cotton (picking), vegetables (fruiting) and horticultural crops (fruit development) in Karnataka
- Rabi groundnut (pod development /harvesting), rabi paddy (tillering/ grain filling), maize (vegetative/tasseling), rice fallow maize (grain filling), rice fallow jowar (grain filling), rice fallow pulses (pod formation), 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), water-melon(sowing), and sesasum (sowing) in Andhra Pradesh.
- Arecanut (harvesting), pepper (harvesting/post-harvesting), rubber (tapping), ginger (land preparation), cardamom (nursery), nutmeg (maturity), sugarcane (harvesting/ planting), vegetables (flowering/harvest), *mundakan* paddy (heading/harvesting), pancha paddy (land preparation), virippu paddy (nursery sowing), coconut (seed nut collection) in Kerala.
- Rice - Samba (maturity/harvest), Thaladi (maturity/harvest),rice fallow pulses (flowering), sugarcane (land preparation), gingelly (sowing), tomato(fruiting) ,pulses (harvesting), cotton (flowering to boll bursting / maturity), vegetables (vegetative/ harvest), maize (various stages), sunflower (harvesting), pearl millet (grain filling), sunflower & sorghum (maturity/harvest), groundnut (pod filling/maturity/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, sunflower and maize (maturity / harvesting), irrigated wheat (dough / maturity / harvesting), summer rice (tillering in South Konkan and early tillering in East Vidarbha), summer groundnut (flowering / pegging in South Konkan and early vegetative / vegetative in Madhya Maharashtra, Marathwada and West Vidarbha) in Maharashtra.
- Summer groundnut (sowing), summer rice (early tillering / tillering), summer bajra (sowing), summer moong (sowing), wheat (milk / dough), gram (maturity / harvesting), *rabi* maize (cob formation), sugarcane (early vegetative), jowar (grain maturity / harvesting), castor (maturity / harvesting), mustard (maturity / harvesting), vegetables (vegetative / flowering / fruiting / maturity / 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), wheat (ear head emergence and milking), 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

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), ML-55.

Capsularis jute: JRC 321 (Sonali), UPC 94 (Reshma), JRC212, JRC 7447.

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

Meghalaya

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.

Moong: Pusa Baishakhi, T-9.

West Bengal

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

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

Moong: Sonali (B-1), Panna (B- 105), Pusa Baishakhi.

Banana: Gaint Governor, Robusta, Kabuli.

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.

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.

Himachal Pradesh

Lettuce: Iceberg,

Brinjal: ArkaNidhi, PPC

Agetibhindi: P-8, Prabhnikranti, Arkaanamika,

Frenchbean: Contender

Pepper :Surjmukhi,

Broccoli: PalamSamridhi,

Rajmash: Triloki, Jwala, baspa Kailash
Raddish: japani white and early mino white,
Turnip: PTWG-1.
Cabbage: Snow ball K-1 Palamuphar, golden acre.
Knolkhol : White Bina,
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).

Harvana

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: Pant Haritma.

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, 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, Japanese, 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

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 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.

Cluster bean: Gujarat Guar-2.

Maharashtra:

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

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
07.03.2012

