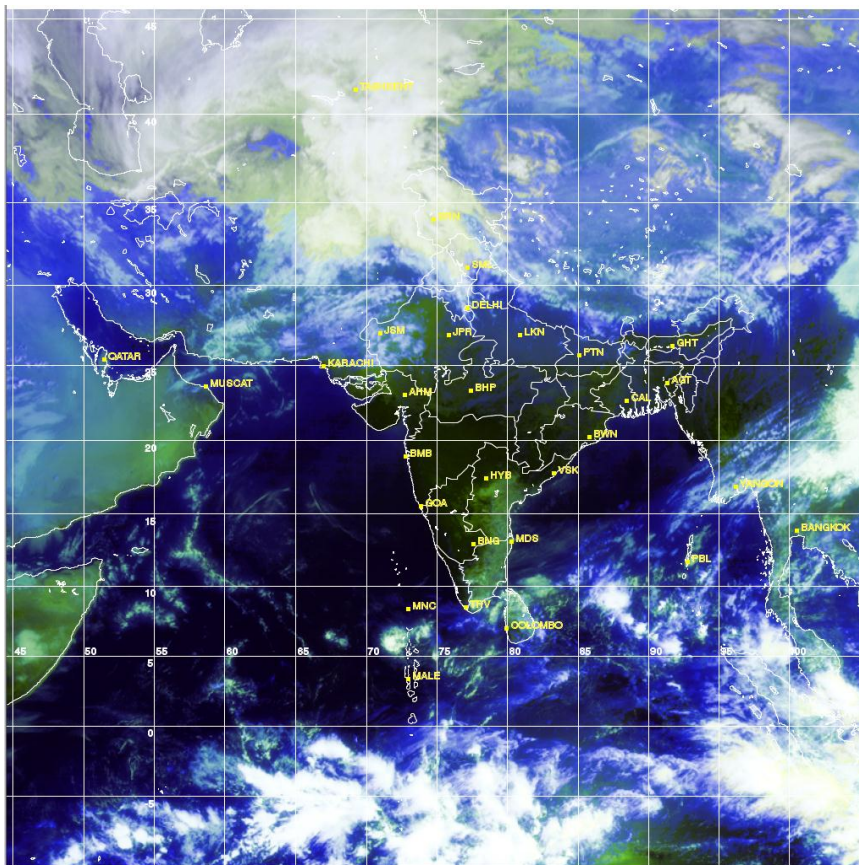




National Agromet Advisory Bulletin

Thursday, 2nd February, 2012

(For the period 02nd to 06th February, 2012)



Satellite image 0600 UTC dated 03rd February, 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 temperature were below normal by 2-3°C over many parts of central, east and northeast India. They are near normal over rest parts of the country. Ground frost conditions prevailed at many parts of Punjab, Haryana, at isolated pockets of north Rajasthan and west Uttar Pradesh during mid-period of last week. Rain/snow would occur at many/most places over Jammu & Kashmir and at a few places over Himachal Pradesh and Uttarakhand during next 24 hours and increase thereafter with heavy rain/snow at one or two places over Jammu & Kashmir and Himachal Pradesh during next 48 hours. Farmers in Jammu & Kashmir, Himachal Pradesh and Uttarakhand are advised to postpone irrigation to the standing *rabi* crops. Farmers in Jammu & Kashmir and Himachal Pradesh are advised to provide adequate drainage facilities to avoid waterlogging. Farmers in Punjab, Haryana, north Rajasthan and west Uttar Pradesh are advised to protect the standing crops as hail storm may occur at one or two places over these States on 4th February.

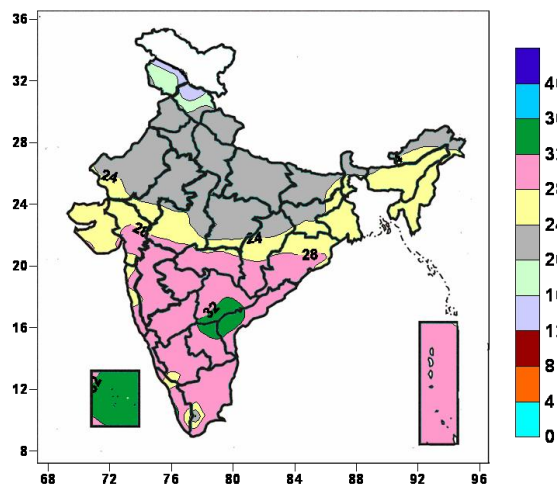
Rainfall occurred in some districts of East Madhya Pradesh (Anuppur, Balaghat, Dindori, Jabalpur, Mandla, Shahdol, Seoni) Chattisgarh (Bilaspur, Jashpurnagar, Korba, Koriya, Kowardha) and in Orissa (Gajapati, Ganjam, Jharsuguda, Kandhamal, Sambalpur, Sonapur), Vizianagaram in Coastal Andhra Pradesh & Ariyalur in Tamil Nadu during last week. No significant rain occurred or mainly dry weather prevailed over remaining parts of the country. Farmers are advised to postpone irrigation to the standing crops in above mentioned districts. Weather Forecast map is given below.

Farmers are advised to undertake sowing of okra and cucurbits in Assam, sowing of sesame in Orissa, land preparation and transplanting of *boro* rice in West Bengal and Tripura, nursery preparation for chilli, tomato, early cucurbitaceous and brinjal in Bihar, sowing of spinach, coriander, fenugreek and nursery preparation for cucurbits, chilli, tomato and brinjal in Delhi, sowing of okra and French beans in Himachal Pradesh, sowing of groundnut in Gujarat and planting of sugarcane in Maharashtra.

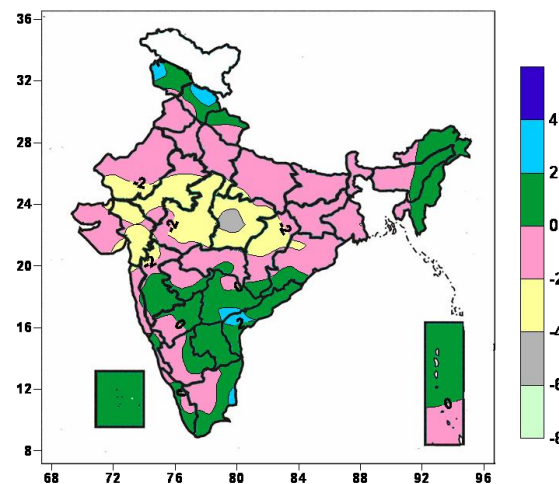
Due to favourable weather conditions, incidences of pod fly in pigeon pea in Gujarat, thrips in chilli in Orissa, saw fly, cut worm and aphids in toria in Assam, hoppers in mango in Karnataka, aphids in mustard in Madhya Pradesh and pod borer and *Heliothis* in gram in Chhattisgarh are noticed below 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.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 01.02.2012

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 01.02.2012



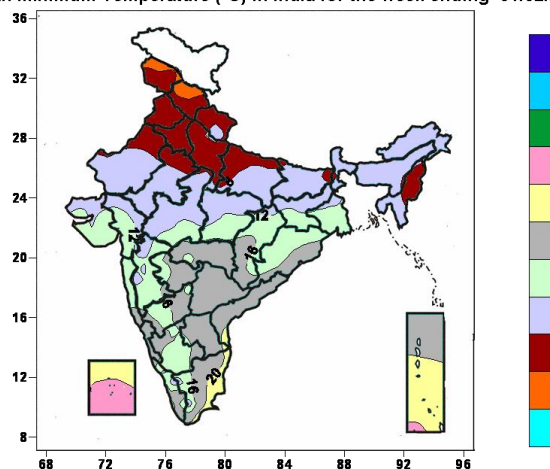
Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 01.02.2012



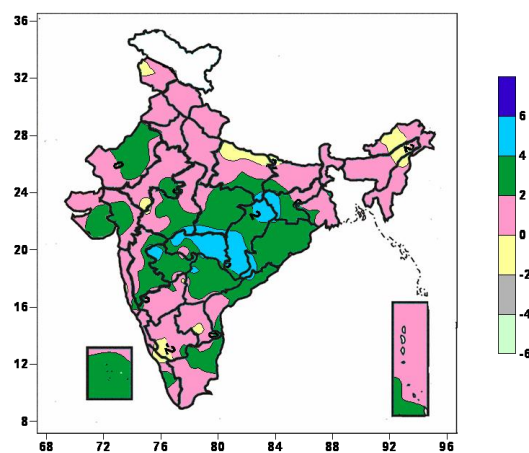
Actual Mean Maximum temperature ranged between 32 to 36 $^{\circ}\text{C}$ over most parts of Lakshadweep Islands, some parts of Andhra Pradesh, 28 to 32 $^{\circ}\text{C}$ over most parts of Maharashtra, South India (except Lakshadweep Islands), and Andaman & Nicobar Islands, some parts of Orissa, Chattisgarh, West Madhya Pradesh, Gujarat, 12 to 16 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir and Himachal Pradesh, 16 to 20 $^{\circ}\text{C}$ over remaining parts of Jammu & Kashmir and Himachal Pradesh, 20 and 28 $^{\circ}\text{C}$ over remaining parts of the country.

Actual Mean Maximum temperature anomaly ranged above 2 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Himachal Pradesh, Andhra Pradesh, Telanganas, 0 to 2 $^{\circ}\text{C}$ over most parts of Jammu & Kashmir, Himachal Pradesh, North East India, Andhra Pradesh, Madhya Pradesh, Lakshadweep and Andaman & Nicobar Islands, some parts of Uttarkhand, Marathwada, South India, Orissa, Chattisgarh, Konkan, Madhya Maharashtra and Vidarbha, -6 to -4 $^{\circ}\text{C}$ over some parts of East Mdhya Pradesh, -4 and 0 $^{\circ}\text{C}$ over remaining parts of the country.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 01.02.2012



Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 01.02.2012



Actual Mean Minimum Temperature ranged between 20 $^{\circ}\text{C}$ and above over most parts of Lakshadweep, Andaman & Nicobar Islands, 16 to 20 $^{\circ}\text{C}$ over most parts of Andhra Pradesh, Coastal Karnataka, Kerala, Tamil Nadu, Vidarbha, Marathwada, some parts of Konkan & Goa, Interior Karnataka, Madhya Maharashtra, coastal Orissa, Chattisgarh, Andaman & Nicobar Islands, 0 to 4 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Himachal Pradesh, 4 to 8 $^{\circ}\text{C}$ over most parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Delhi, Haryana, West Uttar Pradesh, Nagaland, Manipur, some parts of Rajasthan, East Uttar Pradesh, Bihar, 8 $^{\circ}\text{C}$ to 16 $^{\circ}\text{C}$ over remaining parts of the country.

Minimum Temperature anomaly ranged between 2 to 4 $^{\circ}\text{C}$ over most parts of West Rajasthan, Madhya Pradesh, Chattisgarh, Orissa, Coastal Andhra Pradesh, Telangana, Madhya Maharashtra, Marathwada, Gujarat, Saurashtra & Kutch, Lakshadweep Islands, some parts of East Rajasthan, East Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Vidarbha, Raylaseema, Tamil Nadu, Kerala, Andaman & Nicobar Islands, -2 to 0 $^{\circ}\text{C}$ over some parts Jammu & Kashmir, West Uttar Pradesh, Bihar, Arunachal Pradesh, Assam, Nagaland, East Rajasthan, Rayalaseema, North Interior Karnataka, Kerala. 0 to 2 $^{\circ}\text{C}$ over remaining parts of the Country.

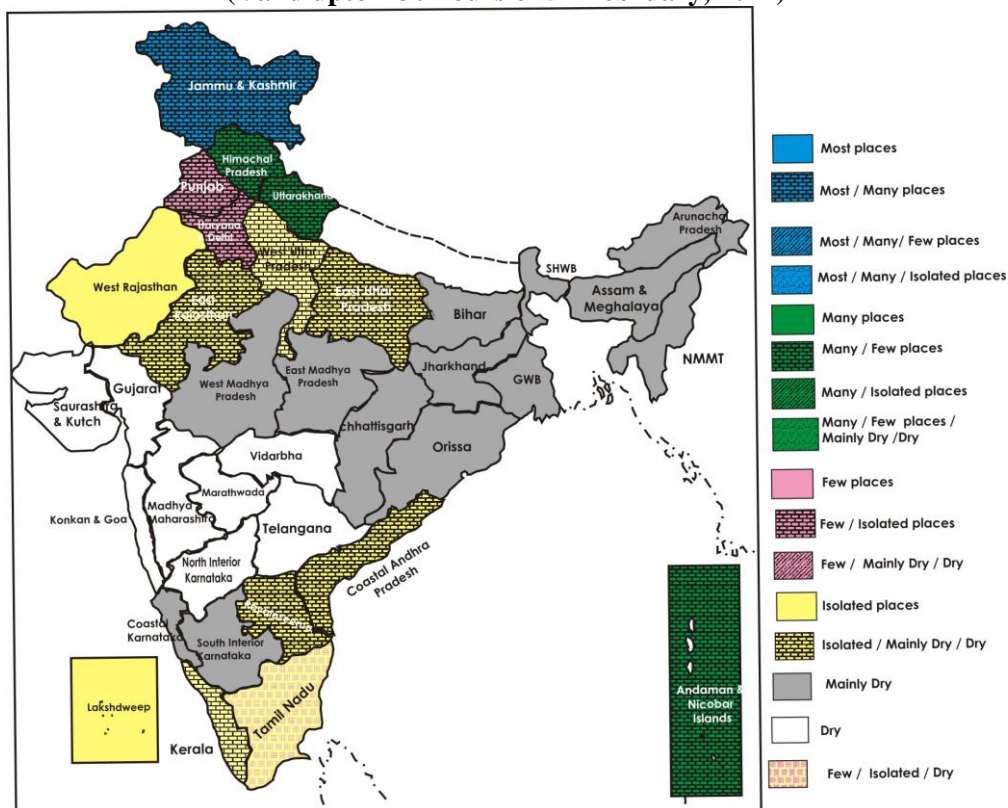
Distribution of rainfall of the country during week ending on 1.02.2012

Station name	Actual	% Dep.						
East Madhya Pradesh			Surguja	15.6	169	Kanchipuram	1.5	-2
Anuppur	33.6	354	Orissa			Kanyakumari	0.0	-100
Balaghat	12.9	188	Angul	3.8	134	Karikal	4.4	100
Chhatarpur	0.1	-99	Balasore	0.0	-100	Karur	0.8	63
Chindwara	8.7	143	Bargarh	2.5	4	Krishnagiri	0.0	-100
Damoh	0.6	-91	Bhadrak	0.2	-86	Madurai	0.0	-100
Dindori	68.1	1054	Bolangir	2.6	63	Nagapattinam	3.3	4
Jabalpur	14.7	277	Boudh	0.0	-100	Namakkal	0.0	-100
Katni	0.0	-100	Cuttack	0.2	-70	Nilgiris	0.1	-97
Mandla	46.7	618	Deogarh	0.0	-100	Perambalur	0.0	-100
Narsingpur	5.8	87	Dhenkanal	0.1	-83	Puducherry	1.0	-23
Panna	0.0	-100	Gajapati	16.2	1524	Pudukottai	0.0	-100
Rewa	0.0	-100	Ganjam	12.4	786	Ramanathapuram	1.0	-43
Sagar	0.4	-91	Jagatsingpur	0.0	-100	Salem	0.0	-100
Satna	0.1	-99	Jajpur	1.6	220	Sivaganga	0.3	-71
Seoni	32.2	530	Jharsuguda	17.5	280	Thanjavur	1.0	-35
Shahdol	12.0	253	Kalahandi	0.9	0	Theni	0.0	-100
Sidhi	0.0	-100	Kandhamal	16.0	967	Tirunelveli	0.9	-73
Singrauli	0.0	-100	Kendrapara	0.0	-100	Tirupur	0.0	-100
Tikamgarh	0.0	-100	Keonjhar	8.2	142	Tiruvallur	2.6	118
Umaria	2.5	-69	Khurda	0.3	-81	Tiruvannamalai	0.0	-100
Chattisgarh			Koraput	8.5	2025	Tiruvarur	0.1	-95
Bastar	0.0	-100	Malkangiri	0.0	-100	Toothukudi	0.0	-100
Bijapur	0.0	-100	Mayurbhanj	1.1	-71	Trichy	2.1	205
Bilaspur	41.7	542	Nawapara	0.0	-100	Vellore	0.0	-100
Dantewara	0.0	-100	Nawarangpur	2.3	483	Villupuram	0.0	-100
Dhantari	0.0	-100	Nayagarh	5.7	606	Virudhunagar	0.0	-100
Durg	0.0	-100	Puri	0.0	-100	Coastal Andhra Pradesh		
Janjgir	4.6	-10	Rayagada	9.9	888	East Godavari	1.0	25
Jashpurnagar	14.9	176	Sambalpur	17.0	638	Guntur	0.0	-100
Kanker	0.0	-100	Sonepur	15.8	556	Krishna	1.4	622
Korba	24.0	287	Sundargarh	3.4	-59	Nellore	0.0	-100
Koriya	12.7	119	Tamil Nadu			Prakasam	0.0	-100
Kawardha	13.0	271	Ariyalur	10.5	708	Sirkakulam	4.0	298
Mahasumund	0.0	-100	Chennai	5.9	147	Visakhapatnam	5.1	368
Narayanpur	0.0	-100	Coimbatore	0.6	-11	Vizianagram	11.2	835
Raigarh	0.0	-100	Cuddalore	4.5	137	West Godavari	0.1	-81
Raipur	2.9	53	Dharmapuri	0.0	-100			
Rajandgaon	0.0	-100	Dindigul	0.4	-58			
			Erode	0.0	-100			

(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 5th February, 2012)



Major Feature of Weather Forecast upto 1430 hours IST of 5th February, 2012

- Rain/snow would occur at a few places over Jammu & Kashmir and at one or two places over Himachal Pradesh and Uttarakhand during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at one or two places over Punjab and Haryana during next 24 hours and increase thereafter. Rain/thundershowers would also occur at one or two places over north Rajasthan and west Uttar Pradesh from tomorrow onwards.
- Rain/thundershowers would occur at many places over Andaman & Nicobar Islands during next 48 hours and decrease thereafter.
- Rain/thundershowers would occur at a few places over Tamilnadu, and at isolated places over coastal Andhra Pradesh, Kerala and Lakshadweep during next 48 hours.
- Moderate fog would occur mainly during morning hours of tomorrow over isolated pockets of Punjab, Haryana and Uttar Pradesh.
- Weather would be mainly dry over remaining parts of the country.

Weather Warning

- Heavy rain/snow would occur at one or two places over Jammu & Kashmir and Himachal Pradesh on 3rd & 4th February.
- Hail storm may occur at one or two places over Punjab, Haryana, north Rajasthan and west Uttar Pradesh on 4th February.

Weather Outlook up to 1430 hours IST of 7th February, 2012

- Rain/snowfall would occur at a few places with heavy falls at one or two places over western Himalayan region and rain/thundershowers at a few places over adjoining plains.
- Rain/thundershowers would occur at a few places over Tamilnadu, Kerala and Lakshadweep.
- Weather would be mainly dry over rest parts of the country

Zonewise Agromet Advisories

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

- **Realised Rainfall:** No significant rain occurred in most of the districts of the States of the region during last week.
- **Rainfall Forecast:** Mainly dry weather will prevail over the region during the period.
- **Advisories**
 - As there was no significant rain during last few weeks in most of the districts of the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing crops.
 - Farmers in Assam are advised to continue preparation of nursery bed and transplanting of *boro* rice.
 - Farmers in the Hill Zone of Assam are advised to harvest matured bolls of cotton, preferably in morning hours to get good quality cotton.
 - Farmers in the Hill Zone of Assam are advised to undertake sowing of okra and cucurbits crops.
 - Farmers of Upper Brahmaputra Valley Zone of Assam are advised to continue land preparation and planting of sugarcane.
 - Farmers of Lower Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice, sugarcane, pointed gourd, musk melon, water melon, pumpkin etc.
 - Farmers in Mild Tropical Plain Zone of Tripura are advised to complete sowing of *boro rice* in low land. As dry weather prevailed during last few weeks and there is no possibility of rainfall, farmers are advised to apply light irrigation to pulse crops and also to sugarcane.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to complete preparation of nursery bed and transplanting of *boro* rice. Prepare land for sowing of spring potato, ladies finger, pumpkin and French bean.
 - Farmers of Sub tropical Plain Zone of Manipur are advised to undertake sowing of cucurbits like water-melon, cucumber and sponge gourd. Continue land preparation for sowing of rice and complete land preparation for transplanting of French bean, tomato, brinjal and chilli.
 - 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; hence farmers in Mild Tropical Hill Zone of Mizoram are advised to ensure sufficient moisture.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure III.
 - Due to prevailing weather, there is chance of late blight in tomato at vegetative and fruiting stage in Hill zone of Assam; farmers are advised to apply Ridomil MZ-72 @ 2g/ litre of water and Indofil M-45 @ 2.5g / litre of water at 15 days interval.
 - Farmers in North Bank Plain Zone and Upper Brahmaputra Valley Zone of Assam are advised to monitor potato crop as there is chance of attack of late blight due to congenial weather, for controlling the late blight of potato, spray Mancozeb 75% a.i. @ 2.5g/litre of water at an interval of 12 days.
 - Farmers in North Bank Plain Zone of Assam are advised to monitor *boro* rice crop as there is chance of attack of blast/sheath blight due to congenial weather; for controlling the blast/sheath blight at tillering stage, spray @ 5gm bevestin per lit. of water. Weather is also favorable for Blister blight disease in tea. Therefore, farmers are advised to spray Copper Oxochloride @ 500gm per 100 lit of water.
 - Attack of saw fly, cut worm and aphids in toria at vegetative and flowering stages are observed in different places of Central and Lower Brahmaputra Valley Zone of Assam. Farmers are advised to apply Dimethoate 30EC or Chloropyrifos 20EC @ 1ml per litre of water in toria field.
 - There is attack of wilt disease and aphids on lentil and khesari crops at vegetative stages in Central Brahmaputra Valley Zone of Assam; farmers are advised to drench the soil with Bavistin @ 1 ml / litre of water to protect the crop from wilt and apply Malathion 50 EC @ 2 ml / litre of water.
 - Prevailing weather is favourable for the incidence of leaf curl and late blight disease in tomato and brinjal crops in Mild Tropical Plain Zone of Tripura; spray Rogor @ 2ml per liter of water or Monocrotophos @ 3ml per liter of water or Imidacaloprid @ 2g per liter of water to manage the attack at an interval of 15 days. Due to prevailing weather conditions, there is chance of late blight and early blight diseases in potato. To manage the attack of blight diseases, spray Indofil M-45 or Ridomil or Mancozeb @ 2g per litre of water or Cut Zed @ 2.5g per litre of water.

- In Mild Tropical Hill Zone of Mizoram, due to prevailing weather conditions, there is chance of infestation of aphids in khasi mandarin; spray Monocrotophos (0.05%) against aphid attack. Also infestation of fruit borer may occur in tomato. Spray 5% neem seed extract to kill larvae or spray NPV @ 250-500 LE/ha with teepol @ 100 ml. Also, there is chance of incidence of blight in tomato and chili crops. Advised to spray Mencozeb @ 1 gm per litre of water.
- Due to congenial weather, there is chance of attack of late blight in potato and powdery mildew in pea in Mild Tropical Hill Zone of Nagaland; farmers are advised to monitor crops and apply appropriate plant protection measures.
- Farmers of Sub tropical Plain Zone of Manipur are advised to monitor pea, rapeseed/ mustard crop, as there is chance of attack of aphid, spray Chloropyrifos 20EC or Quinalphos 25EC @ 2 ml/ litre water.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Fishery farmers in North Bank Plain Zone, Lower and Central Bramhaputra Valley Zone of Assam are advised to apply Potash @ 4-5 mg/litre of water, Sukrena WS @ 1 litre of water per bigha against various bacterial diseases. Poultry farmers are advised to vaccinate poultry against ranikhet disease.
 - Wet bedding and cold weather are prerequisite for pneumonia; farmers in Arunachal Pradesh are advised to provide dry bedding material to pig / piglets and deworm pig / piglets and goat.
 - Prevailing cold weather is favourable for chances of pneumonia in newly born calves in Mild Tropical Plain Zone of Tripura; farmers are advised to take special care to avoid cold weather. Provide warm shed to poultry birds and pigs against cold.
 - The farmers in Mild Tropical Hill Zone of Mizoram are advised to deworm calves against Ascariasis/ Malap with piperazine liquid 4 ml/ 10 kg body weight.
 - The farmers in Mild Tropical Hill Zone of Mizoram and Mild Tropical Plain Zone of Tripura are advised to avoid occurrence of coccidiosis in poultry by providing coccidiostat in their ration.
 - The poultry farmers in Nagaland are advised to vaccinate against bird flu and vaccinate pig/piglet against swine flu. Vaccinate cattle, buffalo, pig, sheep and goat against FMD.
 - The poultry farmers in Manipur are advised to vaccinate against, Ranikhet, IBD / Gumboro disease and deworm pig/piglet.

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

- **Realised Rainfall:** Isolated rain occurred over Orissa and mainly dry weather prevailed over rest of the States of the region during last week.
- **Rainfall Forecast:** Mainly dry/ dry weather will prevail over the 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 rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.
 - Undertake sowing of oilseed crops like summer groundnut in Western Undulating Zone, East and South Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa.
 - Farmers in Western Undulating Zone of Orissa are advised to undertake land preparation for planting of sugarcane. Farmers are also advised to undertake transplanting of summer rice and harvesting of cotton on sunny days. Apply irrigation to mustard wherever the crops are at seed formation stage.
 - In view of prevailing dry weather, farmers in North Eastern Plateau Zone of Orissa are advised to apply irrigation to mustard and sunflower.
 - Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to transplant summer rice. Farmers are also advised to undertake harvesting of sugarcane, sowing of the crops like summer sunflower and groundnut and transplanting of ragi crop. The farmers are also advised to give irrigation to *rabi* sunflower as it is at flowering stage.
 - Due to optimum weather for sowing of sesame, farmers of East and south eastern coastal plain zone of Orissa are advised to complete the sowing of sesame.
 - Farmers in North central Plateau Zone of Orissa are advised to undertake transplanting of summer rice and apply irrigation to wheat crop. Taking the advantage of dry weather, farmers are also advised to

undertake inter cultural operation in groundnut and sunflower, apply irrigation to mustard crop and undertake sowing of early summer vegetables.

- As temperature condition is now congenial for transplanting of *boro* rice, planting of autumn planted sugarcane, onion and sowing of summer vegetables 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 in wheat, maize and harvest matured tobacco crop.
- Apply second irrigation and urea as nutrients in timely sown wheat crop, first irrigation in late sown wheat crops and undertake intercultural operation to maize, carrot, radish, turnip and sweet potato crops. Nursery preparation may be done for sowing of chilli, tomato, early cucurbitaceous and brinjal crops in poly house for summer season in South Bihar Alluvial Zone.
- Farmers in Western, Central and North Eastern Plateau Zone of Jharkhand are also advised to plant/sow onion, African marigold or French marigold and prepare the field for vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon, musk melon and apply light irrigation to early sown crops.
- As dry weather is prevailing, farmers in Western, Central and North Eastern Plateau Zone of Jharkhand are advised to prepare the nursery for summer rice and undertake intercultural operations in timely sown wheat, gram, green pea and pigeon pea.
- Farmers in Old Alluvial Zone of West Bengal are advised to undertake land preparation and transplanting of seedlings of *boro* rice. Ensure 5 cm standing water in the field during transplanting. If the soil is zinc deficient, apply 2 kg zinc sulphate per bigha of land.
- Farmers in Laterite and Red soil zone of West Bengal are advised to transplant *boro* rice of 4-5 weeks age seedling and maintain 2-3 cm of standing water.
- Farmers in New Alluvial Zone of West Bengal are advised to transplant of *boro* rice and maintain 5 cm standing water. Apply irrigation to wheat crop.
- Farmers in coastal Saline Zone of West Bengal are advised to undertake land preparation for sowing of green gram. Farmers are also advised to complete transplanting operation of *boro* rice and chilli.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Due to high relative humidity and low temperature in South Bihar Alluvial Zone, infestation of late blight may occur in potato and tomato; spray Indofil M-45 @ 2 ml / litre of water and monitor the crop constantly.
- Decreased sunshine hours with variant humidity in South Eastern Plateau Zone of Jharkhand is congenial for attack of Diamond back moth, aphids and thrips in cole crops and tomato; hence, spray Dimethoate (30%) @ 1 ml per litre of water to control the attack. Due to cool and humid weather during morning time, infestation of late blight is seen in potato; spray Krilaksil or Ridomil MZ @ 1.5 g per litre of water and Farmers are advised to monitor pea crop against pod borer and tomato crop against fruit borer.
- In North Eastern Coastal Plain Zone of Orissa, due to attack of thrips on chilli crop, there is curling of leaves and stunting of plant growth. To control the pest, spray Imidacloprid @0.5 ml/l or Methyl demeton @2ml/lof water.
- Infestation of pod borer has occurred in gram and pea in East and South Eastern Coastal Plain Zone of Orissa; spray 50 ml Imidacloprid or 400 ml Dimethoate or Metasystox in 200 litres water per acre. Leaf eating caterpillar and leaf miner have been found in *rabi* sunflower; spray 400 ml Endosulphan / acre.
- Current weather is favourable for infestation of leaf eating caterpillar in groundnut in East and South Eastern Coastal Plain Zone of Orissa. Apply 10 Kg of 2% Methyl Parathion dust around the bund. Thrips infestation may be found due to current weather. Spray 400 ml Dimethoate or 50 ml Imidachloprid in 200 litrewater per acre. The current temperature may also aggravate the infestation of downy mildew in mustard. Spray 2 g Redomil-MZ / litre water.
- In cauliflower, diamond backed moth infestation has occurred in North Eastern Plateau Zone of Orissa; spray Cartaf Hydrochloride @ 2 ml / litre water.
- Current weather favours the infestation of aphids and leaf eating caterpillars in pulses in North Eastern Coastal Plain Zone of Orissa; Spray Methyl demeton @ 400 ml per acre to control these insects. Foggy

weather has aggravated the attack of aphids in rapeseed and mustard. Farmers are advised to spray Imidacloprid @ 0.5 ml / litre or Methyl demeton @ 2 ml / litre of water.

- There is infestation of aphids in mustard in Old Alluvial Zone and Hill Zone of West Bengal. To control, spray Imidachlorpid @ 1 ml / 5 litres of water or Dimethoate @ 2 ml / litre of water at 10-15 days interval. There is also possibility of downy mildew in cucumber in Terai Zone of West Bengal. To control the disease, spray Mancozeb @ 2 g / litre or Metalaxyl 8% and Mancozeb 64% @ 1-1.5 g / litre of water.
- Current weather is favourable for the attack of late blight in potato in New Alluvial zone of West Bengal; spray Blitox or Mancozeb @ 2.5 g / litre of water at an interval of 5-7 days.
- Due to lower temperature and foggy weather in Terai Zone and Old Alluvial Zone of West Bengal, potato may be attacked by late blight. To prevent the attack of late blight, spraying of Mancozeb (2 g / litre of water) and Blitox (4 g / litre of water) alternately at 10-12 days interval by completely wetting the leaves is recommended. If attacked by late blight, spray the mixture of Metalaxyl 8% and Mancozeb 64% @ 1 to 1 ½ g per litre of water alternately at 12-15 days interval by completely wetting the leaves.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Due to low temperature, calves and kids are susceptible to respiratory infection mostly pneumonia. Farmers in North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa are advised to provide warm and comfortable housing and good ventilation to animals and birds. Vaccination of FMD (Foot and Mouth Disease) to animals is also recommended. In case of disease outbreak, strict isolation of affected animals should be done.
- **Pisciculture**
 - Weather conditions are favourable for growth of fishes in North Eastern Plateau Zone of Orissa and Western Plateau Zone of Jharkhand; farmers are advised to add cow dung and lime in the pond as 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).
 - Farmers in North Central Plateau Zone and North Eastern Coastal Plain Zone of Orissa are advised to prevent the EUS disease in fish during winter; apply Cifax @ 400 ml per pond of 1 acre area and 1 meter depth of water.

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

- **Realised Rainfall:** Either no significant rainfall or dry weather prevailed over most states of the region during last week.
- **Rainfall Forecast:** Rain/snow would occur at many places over Jammu & Kashmir during next 48 hours and at most places thereafter. Rain/snow is likely to occur at a few places during next 24 hours and at many places later on over Uttarakhand and Himachal Pradesh. Rain/thundershowers would occur at one or two places over Punjab and Haryana during next 24 hours and increase thereafter. Rain/thundershowers would occur at one or two places over north Rajasthan and west Uttar Pradesh from tomorrow onwards. Mainly dry / dry or isolated rainfall is likely to occur over remaining parts of the region.
- **Advisory:**
 - Rain/snow would occur at many places over Jammu & Kashmir during next 48 hours and at most places thereafter and at a few places over Himachal Pradesh and Uttarakhand during next 24 hours and increase thereafter with heavy rain/snow at one or two places over Jammu & Kashmir and Himachal Pradesh during next 48 hours. Farmers in Jammu & Kashmir, Himachal Pradesh and Uttarakhand are advised to postpone irrigation to the standing *rabi* crops. Farmers in Jammu & Kashmir and Himachal Pradesh are advised to provide adequate drainage facilities to avoid waterlogging. Farmers in Punjab, Haryana, north Rajasthan and west Uttar Pradesh are advised to protect the standing crops as hail storm may occur at one or two places over these States on 4th February.
 - Farmers in Delhi are advised to give irrigation to late sown wheat crop of 25 days old. Give final dose of nitrogen after 3-4 days of irrigation. Also light irrigation is advised in pea and gram crop which are in flowering and 30-40 % pod formation stage. Sowing of spinach, coriander and fenugreek may be done in

present weather conditions. Farmers are advised for preparation of nursery for cucurbitaceous, chilli, tomato and brinjal crops.

- Farmers in Punjab and Haryana are advised to harvest the mid season and late maturing variety of sugarcane. Irrigate the harvested field, plough in between the cane rows to control weeds. Complete transplanting of seedlings of tomato and onion in the first fortnight of this month. Start the planting of new nursery plants of peach, plum and pear.
- In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to undertake nursery sowing of tomato, brinjal, chilli crop, harvesting of citrus fruits and raise cucurbits under protection in polythene bags. Farmers can plan for plantation of new orchards during these days. Due to chances of rainfall, farmers are advised to not allow stagnating water in wheat, barley, mustard and gobhi sarson field under low laying area areas.
- In Valley Temperate zone of Srinagar, wheat, brown sarson, pea, lentil, oat are in dormant stage, farmers are advised to stop all agronomic activities in the field. Farmers are also advised to maintain orchard sanitation and drainage channels should be dug so as to avoid water stagnation. Farmers are advised to complete transplanting of onion, planting of garlic, sowing of leafy vegetables (orach, spinach and methi) in poly house. Also advised to mulch seed crops of Knol Khol, cabbage and root crops, stop pruning activities in fruit crops and not to go for new planting.
- In Intermediate Zone of Jammu & Kashmir, farmers are advised to raise cucurbits under protection in polythene bags, nursery sowing of tomato and brinjal, transplanting of onion, knolkhol.
- Farmers in Leh region are advised to harvest Chinese cabbage, lettuce, beet leaf var. Mongol at weekly interval. It is advised to clear the snow from the poly houses and trenches to avoid excessive weight on the UV film and cover the polythene of green houses with black polythene in the night for proper growth of crops. They are also advised to give one light irrigation to garlic crop germinated in the low tunnel during day time.
- In High Hill Temperate Dry Zone of Himachal Pradesh, treat the apple plants damaged by snow with chowbatia paste / fungicides and remove heavy snow from branches particularly in orchards where pruning is yet to be done. Farmers are also advised to prepare pits for planting new plants.
- In the Mid hill sub-humid zone of Himachal Pradesh, planting of new plants can be done up to March. Irrigation to newly planted trees is necessary for getting high survival rate.
- Farmers of the Low Hill sub-tropical zone of Himachal Pradesh are advised to skip irrigation in late planted wheat crop and continue sowing of vegetables like okra and French beans.
- Farmers in Uttar Pradesh are advised to give light irrigation in normal wheat, *rabi* pulses, *rabi* oilseeds, sugarcane, potato, already transplanted vegetable crops.
- In Bhabar and Tarai, sub-humid sub tropic zones of Uttarakhand, remove weeds form early sown nursery of tomato, capsicum, onion, lentil, chickpea & other vegetable crops like coriander, spinach, radish, menthe. Farmers having their land at 5000 ft along with irrigation facilities are advised to go for sowing of potato and also it is favourable period for sowing of sugarcane crop after the harvest of toria, potato etc.
- Prevailing weather condition are favourable for yellow rust in wheat (rust susceptible varieties) in Sub Tropical Zone 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 and repeat after 30-35 days intervals. Also due to increase in day temperature the aphid population may increase in early & normal sown mustard crop spray Chloropyriphos @ 0.05% or Metasystox @ 0.03% when 40-45% plants are infested with aphid during clear weather.
- In the Undulating Plain Zone of Punjab, farmers are advised to monitor the wheat crop as weather is favourable for incidence of yellow rust, if symptoms observed spray Propiponazole(Tilt) @200ml per/acre to control it. Also there may be attack of aphid on Rape/Mustard crop, to control use melathion 250-500 ml 50 EC in 100 litres of water.
- In present weather condition constant monitoring of mustard crop against attack of white rust and aphid is advised in Delhi. If symptoms found spray indofil-M 45@ 2 ml per litre of water to control white rust and if aphid population exceeds above ETL then spray Rogor 2 ml per litre or Quinalphos @ 2 ml per litre in water. Also there may be attack of yellow rust on wheat crop. If symptom appears, spray Propiconazole 25 EC (Tilt 25 EC) @ 0.1 % to control yellow rust.

- Due to cloudy weather in past week, mustard crop may be affected with aphid insect attack in Flood Prone Eastern Plain Zone, Transitional Plain Zone of Inland Drainage zone of Rajasthan. Farmers are advised to dust methyl parathion 2% @ 25 kg per hectare or spray Methyl Demeton 25 EC per litre water where facility of water exists. Also in Semi-Arid Eastern Plain Zone Gram and late pea is likely to be attacked by Gram pod borer (*Heliothis* spp). Spray Malathion 50 EC or Quinalphos 25 EC @ 1.00 litre or N.P.V. 250 L.E. @ 125 ml on per hectare. Repeat spray after an interval of 15 days.
- In Central & Western plain zone of Uttar Pradesh, farmers are advised to protect the gram crop from leaf eating caterpillars, spray 400ml Endosulphan 35EC in 100 liters of water and against attack of aphids in wheat crop, spray methyl parathion dust 20 – 25 kg/hectare.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - In Himachal Pradesh, in view of falling night temperature, it is advised to protect newly born calves from the cold as weather is conducive for white scour, naval ill and pneumonia. Ensure cleanliness in cows having advanced pregnancy to avoid mastitis and Feed pregnant and lactating cows and buffalos with balance feed including mineral mixture.
 - In Semi-Arid Eastern Plain Zone of Rajasthan, it is advised to protect milch and infant animals from cold, cover the door of animal house and wrap jute bag around the animals back and keep litter dry every day.
 - Newly born calves need special care during cold weather as they are susceptible to attack of pneumonia. Keep them warm by providing clean & dry bedding in Punjab and Haryana.
 - 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.

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

- **Realised Rainfall:** No significant rainfall occurred in most states of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over Tamilnadu, and at isolated places over coastal Andhra Pradesh, Kerala and Lakshadweep during next 48 hours.

Advisories:

- As no significant rainfall occurred in most of the districts of the region, apply irrigation to the standing crops.
- Farmers in the North Dry Zone of Karnataka are advised to continue sowing of groundnut and transplanting of onion under irrigated conditions and complete harvesting of chickpea, sorghum and safflower and take up picking of byadagi chilli and cotton, since clear sky with bright sunshine is forecasted during the next five days.
- Farmers in the Hill Zone of Karnataka are advised to take up plant protection measures, since there is no possibility of rainfall in the district during the coming five days.
- Farmers in the Southern Transition zone of Karnataka are advised to take up nursery sowing of rice based on the availability of water.
- Farmers in the Central Dry Zone of Karnataka are advised to complete harvesting and threshing of rice crop and if completed take up sowing of pulses like black gram, green gram and also the green manure crop sun hemp to utilize residual moisture. In rice fields where there is no residual moisture, farmers can take up deep ploughing, 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 Problem Area Zone of Kerala are advised to drain out the standing water, apply irrigation with fresh water once in a week in standing paddy crop, also apply foliar application of fertilizers 2-3 times (300 g Fresh Urea+100 g K₂O/30 litres of water). They are also advised to increase frequency of irrigation since temperature and wind speed is likely to increase.
- Farmers in the High Altitude Zone of Kerala are advised to irrigate the crops as dry weather is expected in the coming week and also select short-medium duration varieties for summer paddy crop and avoid further delay in transplanting.

- Farmers in the South Zone of Tamil Nadu are advised to harvest the rice crop at maturity, avoid threshing rice on stone blocks and use mechanical thresher, dry rice seeds to 9% moisture content and mix captan at 4 g/kg of seeds for long term storage and planting of sugarcane may be under taken.
- Farmers in the North Eastern Zone of Tamil Nadu are advised to undertake propping of three or four mature hills of rice to avoid germination in the field itself, drain out excess water from paddy crop which is at vegetative stage and apply top dressing with nitrogen and potassium fertilizers to facilitate the recovery of crops and undertake weeding operation in groundnut crops. They are also advised to provide adequate drainage facilities in sugarcane crop, prop the lodged sugarcane crops in order to avoid damage caused by water logging and provide support to partially fallen banana trees.
- Incidences of leaf folder and stem borer (white ear) are being noticed in thaladi rice in the Cauvery Delta Zone of Tamil Nadu. Farmers are advised to apply cartop hydrochloride 4 G @ 6 kg with sand or choloriphyriphos 400 ml/ac to control them.
- Farmers in the Western Zone of Tamil Nadu are advised to take proper plant protection measures for managing leaf folder incidence and false smut disease and blast disease in paddy.
- Farmers in the South Zone of Tamil Nadu are advised to monitor leaf hopper in cotton and spray imdachloprid 100 ml / ha and neem oil 3 % thrice at 15 days interval if incidence is severe.
- Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to monitor mites infestation in tea and adopt suitable mulching measures to avoid frost damage.
- Farmers in the Southern Telangana Zone of Andhra Pradesh are advised to monitor leaf folder in paddy, thrips and leaf miner in groundnut, stem borer in maize, powdery mildew in coriander, gourds and bhendi, aphids in beans, powdery mildew and gemini virus in chillies, leaf miner and canker in sweet orange, hoppers, powdery mildew and anthracnose in mango and powdery mildew and downy mildew in grapes and undertake plant protection measures. To control damping off in summer nurseries of vegetable crops, drench nurseries with Copper-Oxy-Chloride @ 3 g per litre of water and apply Carbofuran granules one week before pulling nursery @ 100 g per nursery required for one acre of crop.
- Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to undertake plant protection measures, since present weather conditions are conducive for seedling rot, bacteria leaf spot and canophora blight in chilli, powdery mildew, cercospora and leaf spot in *rabi* pulses, smut disease in paddy, sucking pest, kamma rogam, rust and blight in rice fallow maize.
- Farmers in the Scares Rainfall Zone of Andhra Pradesh are advised to reduce irrigation in the *rabi* groundnut as it is in pod development stage and arrange pheromone traps for monitoring pest and diseases. Farmers are further advised to monitor *ergot* in jowar, helicoverpa in Bengal gram, *Spodoptera exigua* and rust in sunflower and take appropriate plant protection measures.
- Due to low temperature hoppers were noticed in mango crop in the North East Transition zone of Karnataka. For effective control take up spraying of 4 gm Carbaryl 50WP or 2 ml Malathion 50EC or 1.5 ml Monocrotophos 36SL or 0.5 ml Phosphamidon 40EC in one litre of water.
- Thrips activity is increased in vegetables like onion/brinjal/bhendi in the North Dry Zone of Karnataka, due to continuous dry weather. Farmers are advised to spray oxydemeton methyl (1.5 ml) or dimethoate (1.7 ml) with one liter of water and use sufficient quantity of spray mixture, so that whole the canopy can be covered to control them.
- **Animal Husbandry:**
 - Farmers in the North East Dry Zone of Karnataka are advised to vaccinate the animals against Foot and Mouth disease, as there are reports of incidences of the disease.
 - Farmers in the Southern Telangana Zone of Andhra Pradesh are requested to vaccinate the animals against Foot and mouth disease in cattle, Sheep pox in sheep, Ranikhet disease in poultry
 - Farmers in the southern Transition zone of Karnataka are advised to provide sufficient light (heat) in the poultry sheds to maintain body temperature of the birds and the dairy cows should be maintained clean and neat to protect the udder from mastitis.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Isolated rain occurred over Vidarbha in Maharashtra and mainly dry weather prevailed over rest of the State during last week. Dry weather prevailed over Gujarat during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the States of the region during the period.
- **Advisories:**
 - As there was no significant rainfall over the States of the region during last few weeks and dry weather is also likely to prevail during the period, farmers are advised to apply irrigation to the standing crops.
 - Taking the advantage of dry weather, farmers are advised to continue harvesting of already matured tur in Madhya Maharashtra, Marathwada and Vidarbha and sugarcane in Madhya Maharashtra and Marathwada.
 - Under prevailing weather farmers of Madhya Maharashtra and Marathwada are advised undertake planting of sugarcane (*Suru*).
 - Prevailing weather is favourable for planting of water melon in Pune division.
 - In view of prevailing dry weather, farmers of South Konkan are advised to apply irrigation to maintain 2 to 3 cm water level for first 8 to 10 days and accordingly increase up to 5 cm in transplanted rice field.
 - Under prevailing weather farmers are advised to complete preparatory tillage and undertake sowing of summer groundnut in Madhya Maharashtra, Marathwada and west Vidarbha. Sowing of erect variety may be done at 30 x 10 cm distance, semi-spreading variety at 30 x15 cm and spreading variety at 45 x15 cm spacing.
 - Farmers in Middle Gujarat Zone are advised to carry out sowing of groundnut after seed treatment. Apply irrigation to wheat and gram.
 - Farmers in South Saurashtra Zone of Gujarat State are advised to prepare land for summer crops like groundnut, moong and pearl millet. Apply irrigation to wheat, chickpea / gram, castor and garlic.
 - Farmers in Bhal and Coastal Zone are advised to carry out picking of capsules in castor during early morning hours. Apply irrigation in mustard(pod development stage), pigeon pea, isabgul, wheat, mustard (pod development stage) and vegetable crops.
 - Farmers in South Gujarat Heavy Rainfall Zone are advised to apply irrigation in orchards, wheat, castor and gram. Taking advantage of dry weather, carry out hand weeding and other intercultural operations in crops. Farmers are advised to carryout picking of capsules in castor during early morning hours.
 - Farmers in North Gujarat Zone are advised to apply light irrigation in gram, wheat, castor, mustard and vegetables. Apply supplementary dose of Nitrogen @ 15 kg N / ha to isabgol at 30 DAS. Harvest fully matured panicles in castor. Carry out the hand weeding and intercultural operations in vegetable crops. Cut inflorescences of young mango plants (less than 3 years) for better vegetative growth. Pluck fully matured fruits of papaya, ber, guava, pomegranate and citrus fruits. Harvest the maize crop at tasseling stage for fodder purpose. Carry out weeding and intercultural operations in vegetable crops.
 - Farmers in North Saurashtra Zone are advised to irrigate garlic and onion at critical stage of bulb development stage and pigeon pea, gram at pod development stage. Carry out sowing of summer groundnut. Farmers are advised to spray wettable Sulphur 80 % 30 gm or Dinocap 10ml or Tridemorph 5ml/10 lt of water at initiation of flowering in mango crop. Apply supplementary dose of Nitrogen @ 25 kg/ha at optimum moisture level in isabgol field and at 37.5 kg /ha as top dressing in onion 30 to 45 DAS when moisture is enough in soil.
 - Farmers in North West Zone of Gujarat are advised to apply light irrigation to cumin crop.
 - Suitable varieties of the crops for sowing are mentioned in Annexure II.
 - Prevailing cold and dry weather is favourable for the infestation of powdery mildew in pea, chilli and tomato in Madhya Maharashtra, spray Sulphur 80% WS @ 25 g in 10 litres of water.
 - Weather conditions are congenial for attack of aphids in late sown rabi jowar in Marathwada, spray Dimethoate @ 20 ml or Imidachloprid @ 4 ml in 10 litres of water.
 - There may be increase in attack of aphids in pea, wal, brinjal, cabbage, cauliflower and potato in Western Maharashtra Scarcity Zone, spray Oxydimeton Methyl @ 10 ml or Imidacloprid @4 ml in 10 litres of water.
 - Infestation of pod fly in pigeon pea crossed ETL in North Saurashtra Zone of Gujarat State. Farmers are advised to spray Endosulphan 35 EC @ 20 ml/10 liter of water solution.

- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry:**
 - Give dry fodder to poultry birds in Middle Gujarat Zone and in South Gujarat Heavy Rainfall Zone to maintain body heat during cold period. Put curtains to protect poultry from chill injury.
 - In North West Zone of Gujarat udder of milking animals must be properly cleaned with insecticide or Zinc Oxide. The beaks of birds in the poultry under the age of 15 Weeks should be cut. Rats in the poultry should be destroyed. Provide warm water to lactating animals in North Gujarat Zone.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** No significant rain occurred in most of the districts of the States of the region except in Dindori district of East Madhya Pradesh during last week. Isolated rain occurred over Chhattisgarh and mainly dry weather prevailed over rest of the States of the region during last week.
- **Rainfall Forecast:** Generally possibility of dry weather and clear sky condition over the region.
- **Advisories:**
 - As significant rain occurred in Dindori district of East Madhya Pradesh, farmers in this district are advised to postpone irrigation to the standing crops. As there was no significant rain during last few weeks in most of the remaining districts of the States of the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing crops.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to undertake hand weeding and intercultural operations at 20-25 days after sowing in wheat, chickpea, lentil and mustard. Carry out intercultural operations in sugarcane sown in the month of November.
 - Farmers in Jhabua Hills region of Madhya Pradesh are advised to give third irrigation in fully irrigated wheat and maize crops 55-60 DAS, also give recommended dose of fertilizer. They are also advised to arrange seed of summer vegetables i.e. cucurbit family, water melon, musk melon, okra, chilli, tomato, brinjal etc. and when temperature increase and fallow field available then sown these crops.
 - Due to dry weather forecast farmers in Nimar Valley region of Madhya Pradesh are advised to irrigate wheat and gram crop; also start planting of sugarcane and prepare nursery of chilli, brinjal, okra and tomato.
 - In view of dry weather conditions and low minimum temperature farmers in Central Narmada Zone of Madhya Pradesh are advised to irrigate the crops. Farmers are also advised to do for intercultural operations and irrigation in Lentil and Linseed. They are also advised to irrigate wheat crop. Harvest the pigeon pea at maturity stage.
 - Farmers in Malwa region of Madhya Pradesh are advised to irrigate wheat crop at flowering and grain formation stage. Farmers are also advised to prepare nursery for onion, transplanting of winter season brinjal and apply irrigation and fertilizer in onion.
 - Farmers in Satpura Plateau region of Madhya Pradesh are advised to do top dressing of urea in wheat crop. In winter sugarcane, intercultural and top dressing of fertilizer is recommended.
 - Farmers in Vindhyan Plateau region of Madhya Pradesh are advised to do intercultural operation in sugarcane crop and irrigate the crop.
 - Present weather conditions are favourable for planting of onion in Chattisgarh Plain Zone hence it is advised to complete the planting of onion seedlings.
 - Inter-culture, fertilizer application, earthing followed by irrigation is advised in sugarcane crop wherever the crop is at knee height stage. Also, where the crop is at knee height stage farmers are advised for topdressing of nitrogen followed by earthing and irrigation in Chattisgarh Plain Zone.
 - 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.
 - Farmers in Gird region of Madhya Pradesh are advised to irrigate *rabi* crops. Prepare nursery for summer vegetables and prepare field for sowing of summer urad and moong.
 - Mustard crop in Bundelkhand region of Madhya Pradesh are affected by aphids, for its control spray methyl demeton 25 E.C. or dimethoate 30 E.C. @ 2.0 ml. per liter of water.

- Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised that weather is congenial for insect attack in pigeon pea, therefore spraying of Indoxacarb or Quinalphos @ 2.0ml/liter is recommended.
- Chickpea crop is being damaged by the caterpillar in Central Narmada region of Madhya Pradesh so farmers are advised to monitor the chickpea crop and when pest reaches at ETL level, the spray of quinalphos 20E.C @ 2.0 ml. per liter of water is recommended.
- Farmers in Malwa region of Madhya Pradesh are advised that present weather favors potato blight, and apply copper fungicide as preventive measure. Coriander must be treated by Thyrum @ 3 gm/Kg of seed before sowing.
- Due to cloudy conditions powdery mildew attack can be there in the crops like lathyrus and lentilin Bastar Plateau Zone of Chhatisgarh. For its control any sulphur based fungicide can be used. In the safflower and mustard crop, the attack of aphids is being observed. For its control, Methyl demeton should be sprayed @ 1 ml/ litre of water.
- Incidence of stem borer is seen in the nursery of summer rice in Chattisgarh Plain Zone. Hence the farmers are advised to use light trap to control it. In case of heavy infestation of stem borer, apply Carbofuron @ 33 kg/ha.
- Incidence of *Heliothis* in gram is reported from many places in Chattisgarh Plain Zone and it is likely to increase. Farmers are advised to keep keen watch over the crops and adopt integrated pest management practices like light trap, pheromone trap, bird prech etc. for initial control. If necessary spray insecticides like Spinoshed @ 300 ml/ha or Aciphate WP @ 250 g/ha (250 ml/ha) or HNPV @ 250 LE/ha or Polytrin C @ 1 litre/ha.
- **Animal Husbandry & Poultry**
 - Farmers in Bundelkhand region are advised that there is possibility of clear sky conditions during next 5 days, hence sheep raiser are advised to do medicine bath in sunny condition to control parasites. Goat farmers are advised do the vaccination against P.P.R to Goats.
 - Farmers in Jhabua hills region of Madhya Pradesh are advised to vaccinate their animals to FMD, BQ, and HS via Raksha Triback vaccine. For control of Ranikhet disease in chicks vaccinate with F-1 or Lasota or R2B Strain vaccine.
 - Farmers in Central Narmada region and Satpura Plateau regions of Madhya Pradesh are advised to keep cattle's in dry and clean place in view of humid weather conditions. Create neem leaves smoke in the night to save them from mosquitoes and bees.

Annexure I

Major Crops

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

- Sugarcane (old) (harvesting), sugarcane (new) (land preparation/ planting), *bororice* (transplanting/ seedling/tillering), *ahu* rice (sowing), wheat (vegetative/ear head/flowering), tomato, brinjal, country bean (vegetative/ flowering / fruiting), cauliflower, cabbage, knoll khol(vegetative/ head formation/harvesting), *rabi* pulses like pea, lentil (flowering / pod formation), onion(vegetative), khasi mandarin (fruit maturity / harvesting), potato (stolon formation /tuber development/ harvesting), rapeseed and mustard (flowering /siliqua formation/ seed formation), *rabi* maize(vegetative), pumpkin/bottle gourd (flowering/ fruiting), okra, pointed gourd, musk melon, water melon, ridge gourd, sponge gourd(sowing)in Assam.
- Cabbage, cauliflower, knolkhol etc. (head formation/maturity / harvesting), maize (silking/ cob formation / harvesting), mustard (flowering/ pod formation/ harvesting), potato (tuber formation/ harvesting) and pea (pod formation/ maturity/ harvesting), turmeric, ginger (maturity/harvesting)in Arunachal Pradesh.
- Rice(sowing), cucurbits (sowing/transplanting), rapeseed / mustard (flowering / siliqua formation), tomato/brinjal/chilli (transplanting/vegetative), potato (vegetative/ tuber formation), cauliflower and cabbage (head formation / maturity), pea (flowering/ fruiting/harvesting), *rabi* maize as inter-crop (vegetative), onion(vegetative) in Manipur.
- *Boro* rice (tillering/panicle initiation), wheat (ear initiation/ flowering/grain formation), garlic and lettuce (seedling / vegetative), toria, mustard, rapeseed (siliqua formation / maturity), spring potato (sowing/vegetative), potato (tuber formation), Khasimandarin (flowering / fruiting), lentil, Bengal gram, pea(flowering/ pod formation), *rabi* onion (vegetative/ bulb formation), cashew, apricot (planting / vegetative/maturity), cabbage and knol-khol(head formation / maturity)in Meghalaya.
- Ginger and turmeric (rhizome formation /maturity / harvesting), khasi mandarin (vegetative/fruiting/harvesting), banana (vegetative / fruiting / maturity / harvesting), cole crops(head formation/ harvesting), tomato (fruiting/ harvesting), pea, bean (pod formation /harvesting), maize (cob formation/doughing) in Mizoram.
- Cabbage, (vegetative / head formation), broccoli (flowering), pea (pod formation/ arvesting), rapeseed, mustard (siliqua formation), French bean (flowering / pod formation), potato (vegetative / tuber initiation), brinjal (flowering / fruiting / harvesting)and maize (tasseling / silking / cob formation)in Nagaland.
- *Boro* rice (tillering), pulse crop – pea, beans(vegetative/ flowering / pod formation), ginger and turmeric (rhizome formation / harvesting), mustard (siliqua formation), tomato (flowering/fruiting), cucurbits and other vegetables (flowering / fruiting/head formation/harvesting), potato (tuber formation), banana (vegetative/flowering / fruiting)in Tripura.

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

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

flowering / fruiting / harvesting), wheat (tillering / jointing), papaya (transplanting), gram (flowering / pod formation), onion, African or French marigold (sowing / vegetative) in Jharkhand.

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

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

- Wheat (tillering), mustard (pod formation), sugarcane (planting), rabionion (transplanting), cauliflower, cabbage, broccoli, knolkhol (vegetative / fruiting), carrot, turnip, early sown tomato radish, spinach and coriander (vegetative/fruiting), pea, gram (flowering / pod formation), Chilli, tomato, brinjal, cucurbits (nursery preparation in polyhouse), ladies finger (sowing), onion (transplanting) in Delhi.
- Wheat (emergence/ early vegetative/ vegetative), vegetables (bhindi, cucurbits), potato (sowing), mirch, brinjal (nursery sowing in polyhouses), Khira, summer squash, bitter gourd, tur, brinjal, Shimla mirch, and tomato (sowing / transplanting), Apple and other temperate fruits (dormant stage in High Hill Temperate Dry Zone), arbi, amaranthus, turmeric, rice, maize, barley, radish, onion, pea, garlic, coriander, cabbage, knolkhol, parsley, lettuce, fennel, cauliflower, broccoli (sowing / planting) in Himachal Pradesh.
- Very late sown Wheat (sowing / emergence), early/normal sown wheat (CRI stage / vegetative), early/normal sown barley (jointing / tillering), late sown barley (CRI stage), onion (transplanting), winter vegetable crops viz. potato, radish, carrot, turnip, garlic, spinach, methi, onion (vegetative / fruiting/harvesting), cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative), rabi oilseeds i.e. gobisarson (bud formation), mustard (pod formation/ reproductive stage), late sown mustard (flowering), brown sarson (rosette stage), rabi pulses i.e. lentil, gram, pea (vegetative)], fodder crops like oats (vegetative (2nd cut)), berseem (vegetative), tomato, brinjal and chilli (nursery sowing), Horticultural crops viz. [Apricot, Apple (nursery sowing), orange & guava (fruiting), citrus fruits (harvesting)] in Jammu & Kashmir. Wheat, Brown Sarson, pea, lentil and Oat are in dormant stage in Srinagar.
- Chilli, capsicum, cauliflower, broccolli (transplanting/seedling), sugarcane (planting), litchi, loquat, peach, citrus (flowering / fruiting), mango (early varieties) (flowering), foxtail millet, okhra, bottle gourd, bitter gourd, ginger, turmeric (germination / vegetative), mustard (Siliquaformation), toria (harvesting), papaya (planting), sorghum, pigeon pea (vegetative), urd and pearl millets (germination/ early vegetative), potato (maturity / digging), barley, sarson (germination/ vegetative), onion, garlic (transplanting/germination), wheat (late tillering/ear head emergence), lentil, brinjal, potato (sowing) in Uttarakhand.
- Wheat (crown root initiation/ vegetative growth), winter sugarcane (vegetative growth), cucurbits like gourd, bitter gourd, cucumber, etc. and other vegetables like lady's finger, tomato, brinjal, chilli, bhindi etc. (vegetative / flowering / fruiting), coriander (vegetative), onion (transplanting / vegetative growth), mustard/ sarson (flowering / siliqua formation), barley (vegetative / tillering), jai, gram, alsi, maize, masoor, pea, pigeon pea, chick pea (vegetative growth / flower initiation), berseem (vegetative growth / 1st cutting), sugarcane (planting) in Uttar Pradesh.

- Spring sugarcane (sprouting), berseem (vegetative), autumn sugarcane (tillering), gram, lentil, mustard, rape seed (branching/flowering), barley (heading) radish, carrot, turnip, onion, cauliflower (transplanting/vegetative), wheat (Jointing / Pre-Heading/ - timely sown) 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 (Jointing / Pre-Heading/ - timely sown) in Haryana.
- Wheat (tillering/joint stage), very late sown wheat (germination), sweet potato, chilli and cluster bean (vegetative), mustard (flowering / siliqua/pod formation), gram(flowering / pod formation), coriander (germination), barley, oats, lentil, lucerne, taramira, linseed, opium poppy, vegetables (potato, fenugreek, brinjal, radish, chilli, carrot, palak, berseem, cumin, isabgol, ajwain, garlic (vegetative growth/flowering), green pea (vegetative growth / pod formation), summer tomato (nursery sowing), cauliflower, cabbage, rabi onion (transplanting) in Rajasthan.

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

- Sugarcane (planting), maize (vegetative/ harvesting), sunflower (heading), Bengal gram (harvesting), red gram (maturity/harvesting), rabi jowar (grain filling/grain development stage), late planted paddy (harvest), wheat (grain formation), finger millet (harvest), black gram (sowing), green gram (sowing), mango (flowering), chilli (flowering), ginger (vegetative), vegetable (nursery) and horticultural crops (vegetative growth/ flowering/ fruit development) in Karnataka.
- *Rabi* groundnut (pegging/ pod development), Early sown paddy (pre-harvest/harvesting) *rabi* paddy (transplanting /tillering stage), maize (vegetative/tasseling), sunflower (heading), sugar-cane (ratooning/planting), jowar (grain filling), rabi pulses (flowering/maturity), rice fallow maize (seedling), rice fallow jowar (seedling), rice fallow pulses(seedling), red gram (maturity/harvesting), castor (vegetative/ flowering), vegetables (flowering/ fruiting), chilli (vegetative / flowering) tomato (flowering / fruiting stages) and bhendi (various stages), mango(flowering) in Andhra Pradesh.
- Rice (tillering/ panicle emergence/flowering), arecanut (harvesting), pepper (harvesting), ginger (harvesting started), cardamom (harvesting), nutmeg (maturity), sugarcane (harvesting/ planting), vegetables (sowing/vegetative/ flowering/ harvesting), banana rainfed (maturity), banana irrigated (vegetative/ harvesting/planting), mundakan paddy (harvesting), virippu paddy (nursery sowing), coconut (picking) in Kerala.
- Rice - Samba (maturity), Thaladi (flowering/maturity), Rice fallow Pulses (sowing), cotton (boll formation/maturity), vegetables (vegetative/ harvest), sugarcane (planting), maize (harvest), millets like sorghum (vegetative), pulses (vegetative), groundnut (various stages), chilli (flowering), ginger and turmeric (pod development /harvest) in Tamil Nadu.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane (old *adsali* and old pre-seasonal) (cane maturity / harvesting), sugarcane (old *suru*) (elongation / cane maturity), sugarcane (new *adsali*) (early vegetative), sugarcane (new pre-seasonal) (sprouting / early tillering), sugarcane (new *suru*) (planting in Madhya Maharashtra and Marathwada), *rabi* jowar (grain formation), safflower (head formation / seed maturity), irrigated gram (pod development / pod maturity), irrigated wheat (flowering / milking), sunflower (head formation / seed maturity), maize (cob initiation), summer rice (early tillering in South Konkan & transplanting / early tillering in East Vidarbha), summer groundnut (germination in South Konkan and sowing in Madhya Maharashtra, Marathwada and West Vidarbha) in Maharashtra.
- Wheat (booting / milking), gram (flowering / pod development), *rabi* maize (vegetative), Isabgol (branching / flowering), sugarcane (planting / early vegetative), jowar (seedling / vegetative), cotton (picking), castor (capsule formation / maturity / harvesting), mustard (flowering / siliqua formation), vegetables (vegetative / flowering / fruiting / maturity), cluster bean, cauliflower, cabbage, sweet corn (vegetative) and potato (vegetative / tuber development) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

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

Annexure II

List of Varieties

Assam**Ridge gourd:**PusaNasdar,AAUJ-1, AAUJ-2, AAUC-3.**Sponge gourd:** Pusa Chikni.**Musk melon:**PusaSharbati, Hara Madhu, Punjab Sunehri, Durgapur Madhu, ArkaRajhans and ArkaJeet.**Water melon:**Asahi, PusaBedana, Sugar Baby, Faizabadi.**Sugarcane:**Kolong, Luhit, Dhansiri, Doris, Co 1148.**Ahu rice:**Luit, Kopilee,Rasi.**Tall varieties:**Banglami, Dubaichenga, Rangadaria (115-120 days), Ahujoha (110-120 days)**Short duration variety:**Dogaranga (85-95days)**Spring potato:** KufroJoyti, KufriMegha, KufriGiriraj**Okra:** Pusa Sawani, Arka Anamika, Parbhdani Kranti.**Meghalaya****Boro rice:**NEH Megha Rice-1, NEH Megha Rice-2.**West Bengal****Boro Rice:** Supriya, Jamini, Bhupen, IET-2233.**Green gram:**TM-99-50, PDM-11, TARM-12**Jharkhand****Papaya:** Pusa Giant, Pusa Dwarf, Honey Dew, Pusa Majesty.**Onion:** Pusa Red, PusaRatnar, N-53, ArkaNiketan, ArkaKalyan, Agrifound Dark Red.**Summer Rice:** MTU 1010, IR 36, 64, Naveen, Lallat.

Orissa

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

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

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

Sesame: Uma, Kalika, NirmalaPrachi, Usha.

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, coriander: 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

Radish: Japanese White, white Icicle,

Turnip: Golden Ball,

Haryana

Radish: Japanese White, white Icicle,

Turnip: L-1, Carrot: Selection 21 and PC-34

Sugarcane: CoJ85.CoJ64, CoJ83

Delhi

Spinach:Jyoti

Coriander:Pant Haritma

Maharashtra:

Suru sugarcane:Co-86032(Neera), Co-94012(Savitri), CO-419, CO-M7125, CO-M (Phule265).

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

Summer groundnut: erect varieties – SB-11, JL-286, TPJ-41, TAG-24, TG-26, JL-501 and TMV-10; semi-spreading varieties – SB-11, TAG-37.

Okra: Phule Utkarsha, Parbhani Kranti, Arka Anamika or Arka Abhay.

Summer bajra: Shraddha, Saburi, Shanti.

Gujarat:

Summer bajra: GHB-526 and GHB-558.

Summer Groundnut: GG-2, GG-4, GG-5, 7 and GG-20, TG-37A, TGP-41

Madhya Pradesh

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

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

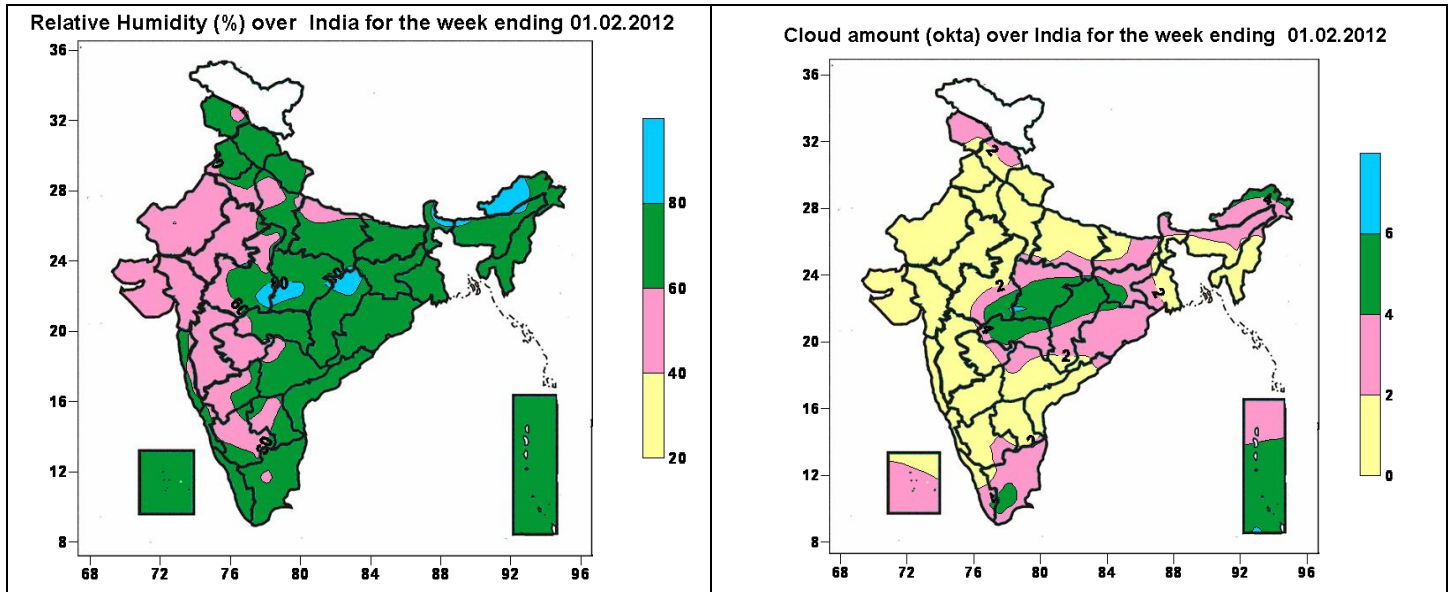
Lentil-JLS-03

Sugarcane- CoJN 86032, CoJN 86582

Chattisgarh

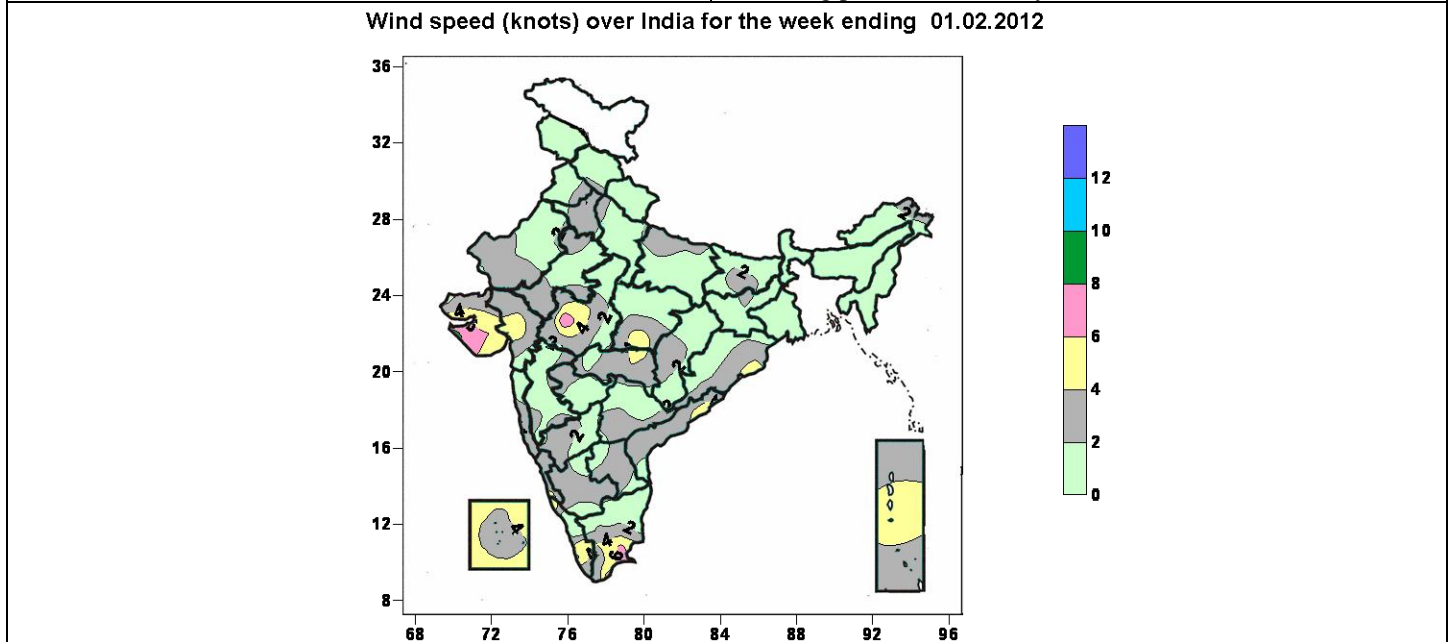
Annexure III

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 01.02.2012



Relative humidity ranged between 80% and above over Arunachal Pradesh, some parts of Sub-Himalayan West Bengal, Sikkim, Assam, Madhya Pradesh, Chattisgarh, , 40 to 60% over most parts of Rajasthan, West India (except Konkan, Vidarbha), South & North Interior Karnataka, some parts of Haryana, Punjab, Delhi, Uttar Pradesh, Telangana, Rayalaseema, Tamil Nadu 60 to 80% over remaining parts of the country.

Cloud amount 4 to 6 okta over most parts of East Madhya Pradesh, Vidarbha, Andaman & Nicobar Islands, some parts of Arunachal Pradesh, Sikkim, Jharkhand, Orissa, Chattisgarh, Tamil Nadu, 2 to 4 okta over most parts of Jammu & Kashmir, Sikkim, Bihar, Jharkhand, Orissa, Tamil Nadu, Lashadweep Islands, some parts of Uttarakhand, West Uttar Pradesh, West Bengal, Nagaland, Madhya Pradesh, Andhra Pradesh, Kerala, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Rajasthan, East Uttar Pradesh, Bihar, Assam & Meghalaya, Tripura, Coastal Andhra Pradesh, Rayalaseema, 0 to 2 okta over remaining parts of the country.



Wind speed ranged between 6 knots and above some parts of West Madhya Pradesh and Kutch, 4 to 6 knots over some parts of Orissa, Madhya Pradesh, Kutch, Coastal Andhra Pradesh, Kerala, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, 2 to 4 knots over most parts of Haryana, Delhi, Karnataka, Andhra Pradesh, Vidarbha, Andaman & Nicobar Islands, some parts of Uttar Pradesh, Bihar, Jharkhand, Orissa, Arunachal Pradesh, Chattisgarh, Madhya Pradesh, Gujarat, Saurashtra & Kutch, Maharashtra (except Vidarbha Kerala, Tamil Nadu, Lakshadweep, Islands, 0 to 2 knots over remaining parts of the country.