

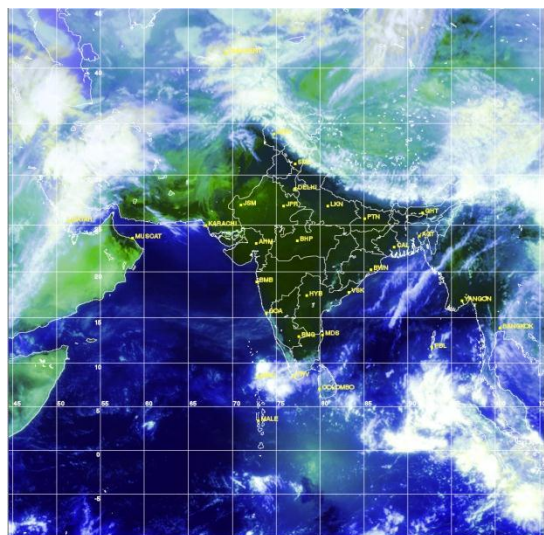
National Agromet Advisory Bulletin

Thursday, 29th March, 2012
(For the period 29th March to 2nd April, 2012)



Heat wave conditions prevailed over parts of northeast Madhya Pradesh on 28th March during last week. Maximum temperatures were 2^oC above normal over most parts of Jammu & Kashmir, Himachal Pradesh, Madhya Maharashtra, some parts of Uttarakhand, Jharkhand, Orissa, Manipur, West Madhya Pradesh, Vidarbha, Marathwada, Saurashtra and Gujarat. The prevailing weather conditions are conducive for wheat and other crops. Farmers are advised to undertake harvesting of matured *rabi* crops. Heat wave conditions would prevail over some parts of Gujarat state during next 2 days; farmers are advised to apply light and frequent irrigation to the standing crops.

Significant rainfall occurred over Lohit, Papumpara, Tawang, Tirap, Upper Dibang Valley, Upper Siang and West Siang districts in Arunachal Pradesh and Sonitpur and Sibsagar in Assam and Ganderwal in Jammu & Kashmir during last week. Realised rainfall in these districts is beneficial for the standing crops. Farmers in these districts are advised to postpone irrigation to the standing 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 crops. Taking the advantage of prevailing dry weather in most parts of the country, farmers are advised to undertake harvesting of matured *rabi* crops.



Satellite image 0600 UTC
dated 30th March, 2012

Due to favourable weather conditions, incidences of aphids in maize in Andhra Pradesh, pod borer in gram and tur in Bihar, red mites in cucurbitaceous vegetables in Jharkhand, stem borer in summer rice, thrips, leaf miner and leaf webber in summer groundnut and early shoot borer in sugarcane in Orissa and stem borer in maize 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.

Due to favourable weather, farmers are advised to undertake sowing of summer crops with assured irrigation. Sowing of the crops in different States of the country is mentioned below:

Assam: sowing of black gram, green gram, ladies finger, ridge gourd, sponge gourd and jute.

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

Manipur: transplanting of cabbage.

Nagaland: transplanting of tomato, nursery preparation of rice, planting of ginger and potato.

West Bengal: sowing of moong, jute, maize and bhindi.

Punjab and Haryana: sowing of summer moong, summer mash, okra.

Rajasthan: sowing of cotton.

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

Maharashtra: sowing of okra, water melon and bajra.

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

Karnataka: transplanting of sweet gourd, ridge gourd etc.

Tamil Nadu: sowing of black gram and green gram.



Issued by

National Agrometeorological Advisory Service Centre

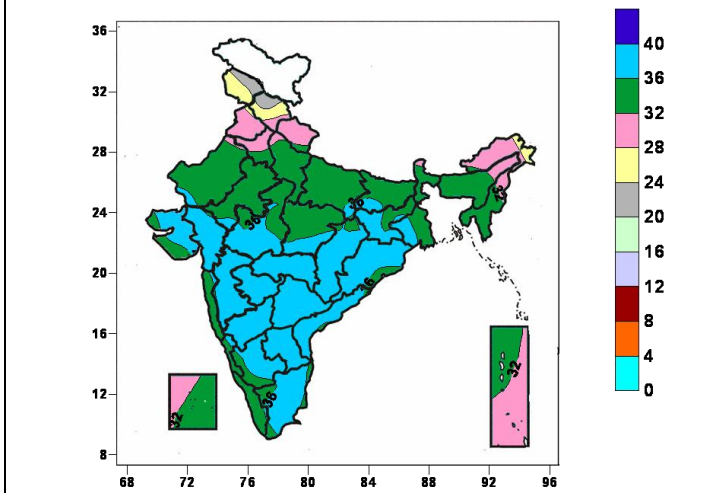
Agricultural Meteorology Division

India Meteorological Department, Shivajinagar, Pune.

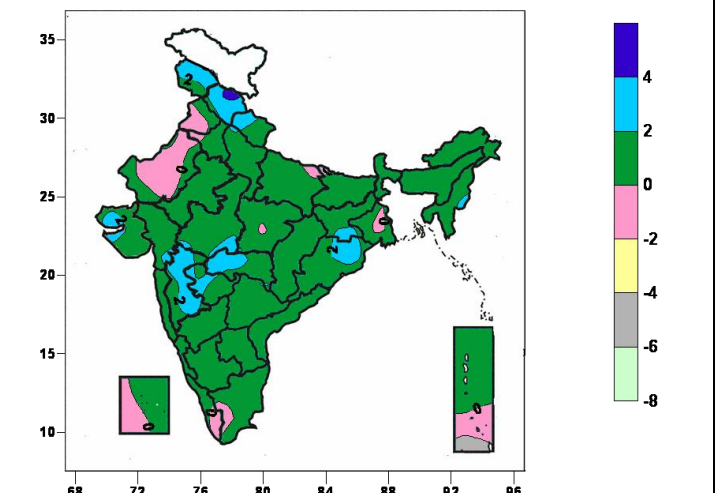
The bulletin is also displayed in the website (<http://www.imdagrimet.gov.in>) of the Division

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 28.03.2012

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 28.03.2012



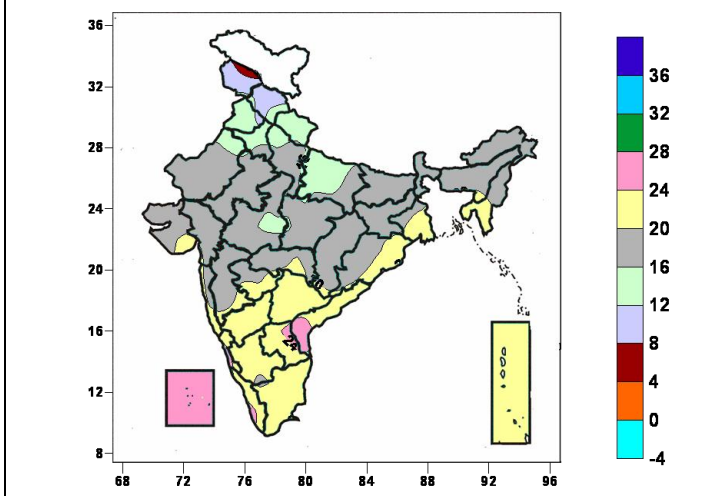
Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 28.03.2012



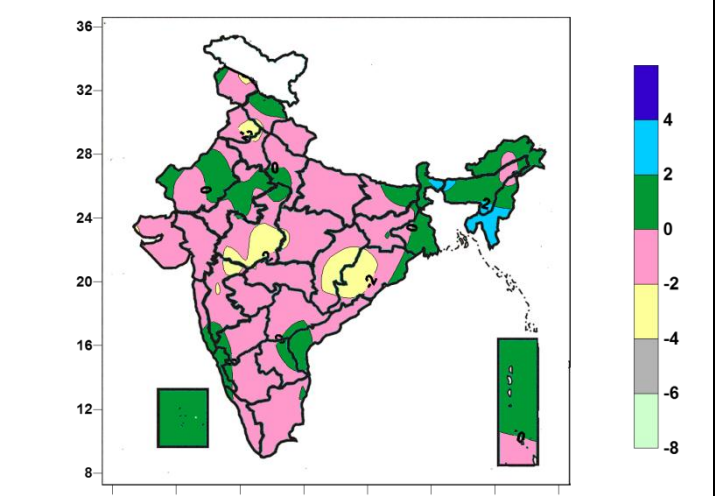
Actual Mean Maximum temperature ranged between 36°C and above over many parts of Madhya Pradesh, Orissa, Chattisgarh, Jharkhand, Maharashtra (except Konkan & Goa), Gujarat, Saurashtra, Interior Karnataka, Andhra Pradesh, Tamil Nadu, some parts of Rajasthan, East Uttar Pradesh, Bihar, Gangetic West Bengal, 20 to 24°C over some parts of Jammu & Kashmir, Himachal Pradesh and between 24 to 36°C over remaining parts of the country

Actual Mean Maximum temperature anomaly ranged between 2°C and above over most parts of Jammu & Kashmir, Himachal Pradesh, Madhya Maharashtra, some parts of Uttarakhand, Jharkhand, Orissa, Manipur, West Madhya Pradesh, Vidarbha, Marathwada, Saurashtra, Kutch, Gujarat, -2 to 0°C over most parts of West Rajasthan, Punjab, some parts of Haryana, East Uttar Pradesh, Bihar, Gangetic West Bengal, East Madhya Pradesh, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, between 0 to 2°C over rest of the country.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 28.03.2012



Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 28.03.2012



Actual Mean Minimum Temperature ranged between 24°C and above over many parts of Lakshadweep, some parts of Coastal Andhra Pradesh, Raylaseema, South Kerala, 8 to 12°C over most parts of Jammu & Kashmir, Himachal Pradesh, some parts of Punjab and between 12 to 24°C over remaining parts of the country.

Minimum Temperature anomaly ranged between 2°C and above over many parts of Mizoram, Tripura, some parts of Sub-Himalayan West Bengal, Assam, Manipur, -4 to -2°C over many parts of Chhattisgarh, Orissa, West Madhya Pradesh, some parts of Punjab, East Madhya Pradesh, Madhya Maharashtra and between -2 to 2°C over remaining parts of the country.

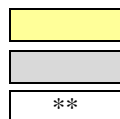
Distribution of rainfall of the country during week ending on 28.03.2012

State/Districts	Actual (mm)	28.03.12 (%)
Arunachal Pradesh		
Anjaw	**	**
Changlang	**	**
East Kameng	0.0	-100
East Siang	16.2	-43
Kurung Kumey	**	**
Lohit	34.9	-29
Lower Dibang Valley	**	**
Lower Subansiri	17.0	-39
Papumpara	22.1	-24
Tawang	24.0	37
Tirap	37.0	-5
Upper Dibang Valley	35.0	-42
Upper Siang	52.2	-27
Upper Subansiri	**	**
West Kameng	2.6	-85
West Siang	60.0	259
Assam		
Baksa	13.3	-35
Barpeta	2.3	-89
Bongaigaon	0.0	-100
Cachar	10.0	-82
Chirang	0.0	-100
Darrang	**	**
Dhemaji	8.0	-64
Dhubri	0.0	-100
Dibrugarh	16.4	-52
East Garo Hills	0.0	-100
East Khasi Hills	4.9	-86
Goalpara	2.7	-84
Golghat	10.3	-51
Hailakandi	0.0	-100
Jaintia Hills	0.0	-100
Jorhat	10.3	-58
Kamrup(Metro)	2.6	-87
Kamrup	18.3	-10
Karbi Analog	0.0	-100

Karimganj	7.5	-88
Kokrajhar	0.0	-100
Lakhimpur	19.7	-12
Morigaon	14.2	-20
N.C.Hills	0.0	-100
Nowgong	6.9	-56
Nalbari	11.8	-42
Ribhoi	0.0	-100
Sonitpur	23.6	61
Sibsagar	28.0	18
South Garo Hills	0.0	-100
Tinsukia	15.7	-60
Udalgiri	11.8	-20
West Garo Hills	0.0	-100
West Khasi Hills	0.0	-100
Jammu & Kashmir		
Anantnag	11.7	-66
Badgam	7.8	-70
Bandipore	**	**
Baramula	10.2	-88
Doda	11	-79
Ganderwal	27.7	3
Jammu	0	-100
Kargil	0	-100
Kathua	0	-100
Kistwar	**	**
Kulgam	11.1	-68
Kupwara	24	-48
Ladakh(Leh)	0	-100
Poonch	12.5	-56
Pulwama	4.2	-85
Rajouri	0	-100
Ramban	5	-90
Reasi	2.6	-93
Samba	0	-100
Shopian	0	-100
Srinagar	4.3	-84
Udhampur	0.5	-99

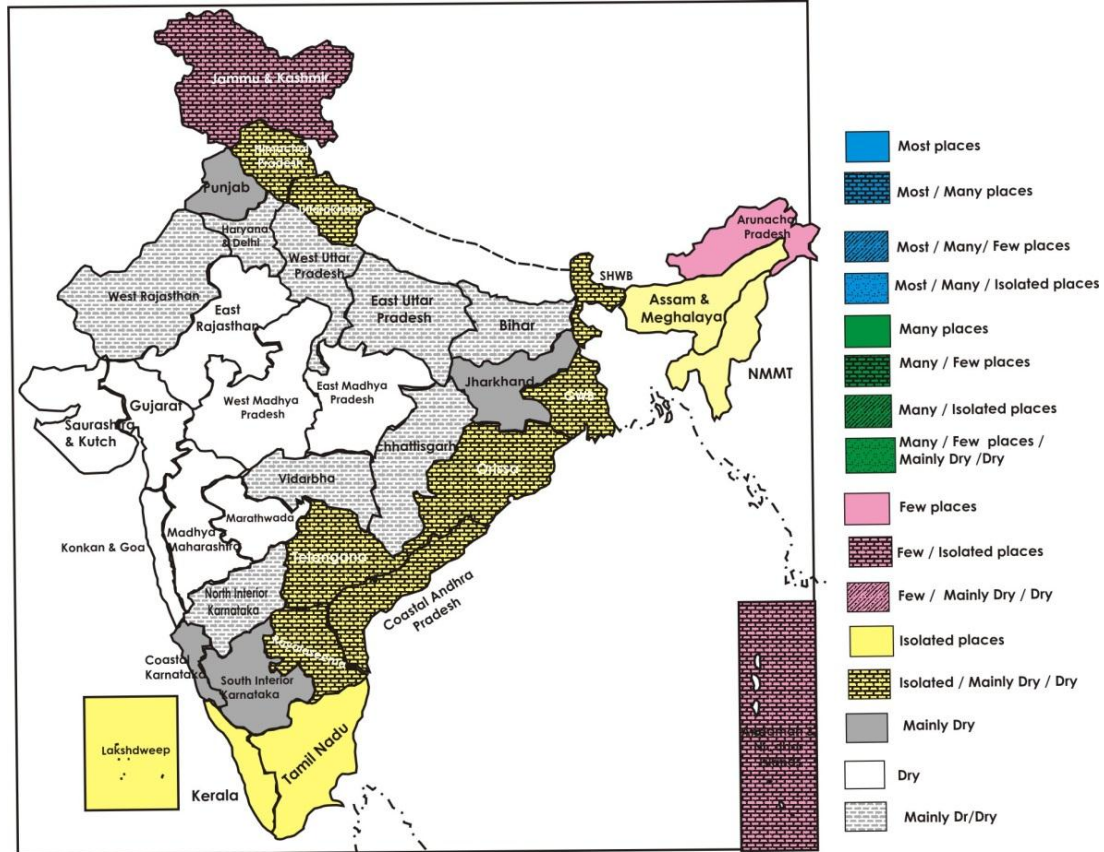


(20% or more) excess rainfall
 (-19 to +19%) normal rainfall
 (-20 to -59%) deficient rainfall



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

Weather Forecast (Valid upto 0830 hours of 1st April, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 1st April, 2012

- Rain/thundershowers would occur at one or two places over Jammu & Kashmir tomorrow and at a few places thereafter.
- Rain/thundershowers would occur at one or two places over Himachal Pradesh and Uttarakhand from 31st March onwards.
- Rain/thundershowers would occur at a few places over Arunachal Pradesh and at one or two places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- Rain/thundershowers would occur at a few places over Nicobar Islands and Kerala and at one or two places over Andaman Islands, Tamilnadu and Lakshadweep.
- Rain/thundershowers would occur at one or two places over Gangetic West Bengal, Orissa and Andhra Pradesh on 31st March.
- The strong surface winds prevailing over northwest India likely to subside by 31st March morning.
- No significant change in Maximum and Minimum temperatures over northwest India during next 24 hours and Gradual rise thereafter.
- Weather would be mainly dry over remaining parts of the country.

Weather Warning

- Heat wave conditions would prevail over some parts of Gujarat state during next 2 days.

Weather Outlook up to 0830 hours IST of 3rd April, 2012

- Rain/thundershowers would occur at a few places over western Himalayan region.
- Rain/thundershowers would occur at one or two places over northeastern states and 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 over Lohit, Papumpara, Tawang, Tirap, Upper Dibang Valley, Upper Siang and West Siang districts in Arunachal Pradesh, Sonitpur and Sibsagar districts in Assam. There was no significant rainfall in the remaining states of the region.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over Arunachal Pradesh during next three days. Isolated rainfall is likely during the period over Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura.
- **Advisories:**
 - Significant rainfall occurred over Lohit, Papumpara, Tawang, Tirap, Upper Dibang Valley, Upper Siang and West Siang districts in Arunachal Pradesh and Sonitpur and Sibsagar districts in Assam, postpone irrigation to standing crops in these districts. As there was no significant rain in the remaining States during last week and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to the standing crops in the region.
 - Farmers in the Hill Zone of Assam are advised to raise nursery of transplanted *ahu* rice, prepare land for transplanting of *ahu* rice and continue sowing of okra and cucurbitaceous crops. Farmers in the Hill Zone of Assam are advised to start land preparation and sowing of black gram and green gram. Apply pre-sowing irrigation during land preparation.
 - Farmers in Central Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *Capsularis* jute, summer vegetables, summer pulses and early *ahu* rice and planting of sugarcane.
 - Farmers of Lower Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice, musk melon, water melon, maize and jute, summer pulses like black and green gram, summer vegetable like pointed gourd, pumpkin etc. and planting of sugarcane. Farmers are also advised to continue land preparation and sowing of *Bao* Paddy.
 - Farmers in the Upper Brahmaputra Valley Zone of Assam are advised to undertake sowing of summer green gram, black gram and okra.
 - Farmers of Barak Valley Zone of Assam are advised to raise nurseries for the transplanted early *ahu* rice. Farmers are also advised to provide mechanical support to the tomato plants at flowering stage to avoid fruit damage due to direct contact with soil. Farmers are also advised to continue sowing of black gram, green gram, ladies finger, ridge gourd, sponge gourd and jute. Apply irrigation to French bean.
 - Farmers in North Bank Plain Zone of Assam are advised to complete sowing of direct seeded *ahu* rice. Continue land preparation and sowing of summer vegetable, summer green gram and black gram and planting of sugarcane.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to undertake sowing of *Jhum* rice. Farmers are also advised to continue land preparation for maize crop and summer vegetables.
 - As dry weather prevailed during last few weeks, farmers in Mild Tropical Plain Zone of Tripura are advised to apply irrigation to maintain 5-7 cm water level in *boro* rice at tillering / flowering stage. Undertake land preparation for sowing of upland *aus* paddy and continue land preparation and sowing of summer vegetables and cucurbits.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue sowing of maize, jute and vegetables like ladies finger, pumpkin, French bean, bottle gourd, ash gourd etc. Prepare nursery for brinjal. Undertake harvesting of matured cauliflower, cabbage, lady's finger, pumpkin, French bean, apricot, early sown turnip, Bengal gram and matured mustard. Also undertake new sowing of cauliflower, cabbage of recommended varieties.
 - Farmers of Sub tropical Plain Zone of Manipur are advised to continue land preparation and planting of ginger and turmeric and sowing of French bean and bhindi.
 - Farmers of Sub tropical Plain Zone of Manipur are advised to transplant cabbage in the foot-hills. Give irrigation to onion and tomato and undertake transplanting of cauliflower.
 - In Mild Tropical Hill Zone of Mizoram, farmers are advised to undertake land preparation and sowing of summer vegetables like okra, beans, cucurbits etc. and also urad and moong and apply irrigation to okra for complete germination and best growth. Undertake harvesting of matured maize crop.
 - In Mild Tropical Hill Zone of Nagaland, farmers are advised to continue land preparation and planting of turmeric and ginger and sowing of rajma.

- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Blast disease is observed at nursery stage of rice in Mild Tropical Hill Zone of Nagaland; farmers are advised to spray Zineb 75 WP @ 1.25 kg / ha. Rajma plant should be supported by bamboo sticks 15-20 days after sowing as it increases pod yield as well as seed quality.
- Infestation of stem borer is observed at tillering stage of *boro* rice in the Central Brahmaputra Valley Zone of Assam. Farmers are advised to spray Chloropyrifos(20%) @ 2 ml / litre of water to control the attack.
- There are chances of infestation of stem borer in *boro* rice in Mild Tropical Plain Zone of Tripura; farmers are advised to spray Imidacloprid @ 1 ml per liter of water to control the attack.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to vaccinate cattle, goat and pigs against the Foot and mouth disease.
 - Poultry farmers in Upper Brahmaputra Valley Zone of Assam are advised to vaccinate poultry against the Ranikhet disease.
 - The farmers in Nagaland are advised to vaccinate poultry against bird flu and pigs / piglets against swine flu.
 - The farmers in Manipur are advised to vaccinate poultry against Ranikhet, IBD / Gumboro disease and also deworm and vaccinate pigs / piglets. Vaccinate and deworm cattle and buffalo against B.Q. & H.S. Vaccinate and deworm goat against Haemorrhagic Septicaemia.
 - Farmers in Mild Tropical Plain Zone of Tripura are advised to vaccinate cattle against BQ and goat kids above 6 months against Haemorrhagic Septicemia disease. Farmers are also advised to vaccinate poultry against Ranikhet disease and vaccinate the piglets against swine fever.
- **Pishiculture**
 - The farmers in Nagaland are advised to raise ducks in fish ponds so that much of their manure will go into the water. This will help the fish to grow. At the same time, the ducks will feed on the plants that grow in your ponds and help to keep the ponds free of plants, weeds and snails.

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:** Either isolated rain/thundershowers are likely to occur or mainly dry / dry weather is likely to prevail over the 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.
 - 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 complete sowing of summer sunflower.
 - Farmers in North Central Plateau Zone of Orissa are advised to undertake sowing of summer vegetables.
 - Due to increase in temperatures, the evaporation rates have increased and thereby the water requirement of crops has also increased. Therefore, the farmers of North Eastern Plateau Zone of Orissa are advised to reduce the interval between two irrigations. Maintain the water level in transplanted rice field and use / broadcast Blue Green Algae @ 4 kg per acre.
 - The farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to complete sowing of summer vegetables and also undertake sowing of jute as the weather is optimum for sowing of this crop.
 - As temperature condition is now congenial for sowing of summer vegetables and 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 maize, vegetable crops and harvest matured tobacco crop. Continue sowing of summer moong and urad crops and ensure moisture in the field at the time of sowing for better germination and crop stand. Farmers are also advised to apply irrigation in sugarcane and summer vegetable crops as per soil moisture condition.

- In South Bihar Alluvial Zone, undertake land preparation and sowing of moong. Harvest, thresh and sun dry matured wheat, lentil, lathyrus and oilseeds crop and keep it in safe place.
 - 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. Moisture deficiency may cause heavy reduction in yield. Undertake harvesting of the wheat crop.
 - Farmers in New Alluvial Zone of West Bengal are advised to undertake the land preparation for sowing of jute. Also complete the sowing of moong and lentil within next week.
 - Farmers in Old Alluvial Zone of West Bengal are advised to undertake sowing of summer vegetables like pointed gourd, lady's finger, brinjal, chilli etc.
 - Taking the advantage of dry weather, Farmers in Terai Zone of West Bengal are advised to undertake sowing of *Capsularis* and *Olitorious* jute. It is the optimum time of sowing of marigold for the summer and rainy season flowering.
 - Farmers in Hill Zone of West Bengal are advised to undertake land preparation and sowing of maize and planting of *Gladiolus*. Farmers are also advised to complete the sowing of okra.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Infestation of pod borer is observed in North West Alluvial Plain Zone of Bihar in gram and pigeon pea crops; farmers are advised to spray Endosulphan 35 E.C @ 1.5 ml per litre of water.
 - Different cucurbitaceous vegetables are attacked by red mites in Western Plateau Zone of Jharkhand. To control the mites, spray neem based insecticides like Achook, Neemerin, Neemetin or Neemesidin @ 5 ml per litre of water.
 - Stem borer attack has been widely noticed on summer rice in North Central Plateau Zone, North Eastern Plateau Zone and North Eastern Coastal Plane Zone of Orissa. Farmers are advised to use pheromone trap @ 20-25 no. per hectare. Apply Fipronil or Triazophos @ 2 ml / litre of water when pest population reaches ETL level.
 - In East and South Eastern Coastal Plain zone of Orissa infestation of thrips, leaf minor and leaf webber has been noticed on summer groundnut crop. Farmers are advised to Spray 2 ml Endosulphan in 1 litre of water. Increased temperature may aggravate the white ant and white grub in groundnut. Go for thorough soil drenching with Chloropyriphos solution @ 2 ml / litre of water.
 - Early stem borer infestation has been found on sugarcane crop in East and South Eastern Coastal plain zone of Orissa. The farmers are advised that, if it crosses the ETL level (5% dead heart), go for hoeing, weeding and apply 4 kg phorate or 12 kg Carbofuran or 10 kg Cartap followed by earthing up or spray 400 ml Monocrotophos / Tryozophos / Profenophos.
 - In the Coastal Saline Zone of West Bengal, betel vine may be attacked by chital disease. Spray Blitox @ 50 g / litre of water or Kalaxin @ 3 g / litre of water. Green gram and okra may be attacked by caterpillar. Spray Endosulfun @ 1.5 ml / liter of water or Monochrotophos @ 1.5 ml / liter of water.
 - In the Hill Zone of West Bengal, mustard and chilli may be infested by aphids . To protect, spray with either Imidacloprid @ 1 ml / litre of water or Acetamiprid @ 1 g / litre of water. Seedlings of Cucurbits may be infested by whitefly, for the management spraying with Monocrotophos @ 1.5 ml / litre or Acephate @ 1 g / litre of water.
 - Due to prevailing weather condition in New Alluvial Zone of west Bengal, there is a possibility of attack of Anthracnose leading to black spot in mango. To control it, spray 1 ml Carbendazim per litre of water.
 - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - As the temperature is increasing, the farmers of North Eastern Plateau Zone of Orissa are advised to give sufficient water and rice water to the animals before leaving them to grazing. Foot & Mouth Disease may occur; vaccinate the animals.
 - In North Central Plateau Zone of Orissa, foot and mouth disease are noticed in cows. Apply potassium permanganate on lesions in the mouth and sulphur treatment is recommended for foot lesions.
 - The prevailing weather condition is conducive for the attack of T.P.R. disease in Western Plateau Zone of Jharkhand in which animals suffering with high fever and accompanied with secretion of water droplets from their eyes and nose. The animals also show the characteristics of Pneumonia disease. To control the disease animals should be vaccinated with T.P.R. vaccine.

- **Pisciculture**

- Now the temperature is rising continuously which is favourable for growth of fish. Hence, farmers of North Eastern & Central Plateau Zone of Orissa and Western Plateau of Jharkhand are advised to add cow dung and lime in the ponds as natural food 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).
- The farmers of North Eastern Coastal Plane Zone of Orissa are advised to maintain average water depth at 5 ft level in the pond, feed fishes with oil cake: bran mixture at 2% of their body weight daily and start partial harvesting of fishes above ABW 750g.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the States in the region except in Ganderwal district of Jammu & Kashmir.
- **Rainfall Forecast:** Mainly dry weather is likely in Jammu & Kashmir during next 48 hours, isolated rainfall after 24 hours and at a few places thereafter. Mainly dry weather is likely over Himachal Pradesh during next 48 hours and isolated rainfall thereafter. Mainly dry weather is likely over Uttarakhand during next 48 hours and isolated rainfall thereafter. Mainly dry/ dry weather is likely in the remaining States of the region.
- **Advisory:**
 - As there was no significant rain over the region except in Ganderwal district of Jammu & Kashmir and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing *rabi* crops.
 - In view of increasing temperatures, wind speed and evaporation rate in Delhi, farmers are advised to irrigate wheat crop. In present weather conditions planting of sugarcane sets should be done as early as possible. Harvesting of the matured mustard may be done as clear sky is forecasted for the next five days. In present weather conditions, transplanting of young seedlings of tomato, chilli and cucurbits crop may be done.
 - In Rajasthan, due to rise in temperature farmers are advised to irrigate summer vegetables, young fruit plants and other standing crops as per need. Undertake harvesting of matured wheat, barley, gram crops and mustard, planting of sugarcane, sowing of summer groundnut, summer cucurbits like melon, bottle gourd, bitter gourd, ridged gourd, round gourd, pumpkin and smooth gourd, etc., raising nursery of brinjal, summer chilli, okra, transplanting of seedlings of tomato, land preparation for summer guar, complete the sowing of summer green fodder, *zaid* pearl millet fodder, *zaid* sorghum fodder, *zaid* green gram with cow pea. Start seed selection and land preparation for sowing of cotton.
 - Farmers in Punjab and Haryana are advised to give irrigation to the normal sown wheat. Timely sown raya and taramira should be harvested during this week. Undertake sowing of summer moong, summer mash, okra.
 - 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 without any further delay. Start harvesting of matured mustard crop. Undertake field preparation for sowing of jowar under irrigated condition and also for sowing of summer pulses like mash, moong in vacated field after harvesting of early sown mustard and potato crop.
 - In Valley Temperate zone of Jammu & Kashmir, farmers are advised to give second dose of nitrogen as per university guidelines if not done earlier to wheat, brown sarson, pea, lentil, oat crops which were in dormant stage upto previous week.
 - In Intermediate Zone of Jammu & Kashmir, farmers are advised carry out nursery sowing for tomato, brinjal, chillies and capsicum.
 - Farmers in Leh region of Jammu & Kashmir are advised to undertake sowing of turnip in the lower belts, nursery raising of cruciferous crops such as cabbage, cauliflower, knolkhol, kale, broccoli & solanaceous crops such as brinjal, tomato, capsicum, chilli and paprika and also onion should be done in green houses & trenches, cucurbits in polybags and polybags should be put in trenches or greenhouses for proper germination and growth.
 - Farmers in Mid Hills Sub-Humid Zone of Himachal Pradesh farmers are advised to complete planting of apple and stone fruits plants. In high hills planting can be done after melting of snow. Preparation of nursery beds for raising the nursery of tomato, capsicum, brinjal and chilli may also be carried out.

- Farmers in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh are advised for continue 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 continue sowing of chari, bajra and maize in low hills.
- Farmers in Uttar Pradesh are advised to give light irrigation in late sown wheat, *rabi* pulses, *rabi* oilseeds, potato, already transplanted vegetable crops. Complete planting of sugarcane, continue sowing of sunflower, guava seeds, vegetables viz. bitter gourd, bottle gourd, pumpkin, cucumber, taroi, lady's finger, tomato, brinjal, chilli, lobia, rajmah etc. and continue sowing of moong or urad in vacated field.
- In Bhabar and Tarai Zone & Hill zone of Uttarakhand, temperature is expected to rise and weather will remain dry, hence under these expected weather conditions, farmers are advised to go for light irrigation in late sown wheat crop in the evening when wind speed is low. Other wise avoid irrigation so as to avoid lodging of crop and damage of wheat grain by rodents. Complete sowing of maize, moong, urad, okra, chiatee Dhan, foxtail millets, fodder crops in vacated field.
- In Hill zone of Uttarakhand, farmers are advised to continue sowing of capsicum, tamoto in non-irrigated land and also give light irrigation in already transplanted vegetable crops.
- In western Plain Zone of Uttar Pradesh, farmers are advised to start sowing of summer sugarcane in vacated field.
- In western Plain Zone of Uttar Pradesh, farmers are advised to continue sowing of urad, moong, maize and sunflower.
- In Central plain zone of Uttar Pradesh due to expect increase in temperature, there are more chances of pod borers in chickpea crop. There may be various stages of these insects and more population in field can reduce yield even by 50 %. Therefore, farmers are advised to spray 5 % Neem Oil extract two times at an interval of 10 days or spray 800 ml of Triphenophos dissolved in 250 ml water per acre crop area.
- In Flood Prone Eastern Plain Zone (Bharatpur), there is infestation of powdery mildew in mongo, due to rise in temperature, this leads to flower and fruit drop in mango. Farmers are advised to spray Karathane @ 1ml/l water to manage the disease.
- Downy mildew in cole crops is appearing as weather is conducive, farmers are advised to spray Dithane M-Z 2-3 g per litres of water at the interval of 10-15 days in Himachal Pradesh.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Farmers in Punjab and Haryana are advised to vaccinate all the animals against FMD, if still not, then get them vaccinated immediately, keep their record and repeat after six months.
 - 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.
 - In Transitional Plain Zone of Inland Drainage (Fatehpur), cow, sheep & goats are likely to be affected by blood parasites specially protozoa attack. This disease is spread by external parasites like ticks. Treat affected animals immediately by approaching veterinary doctor.

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

- **Realised Rainfall:** No significant rainfall occurred over most of the States of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over Tamil Nadu and Kerala. Weather would be mainly dry over remaining parts of the region.
- **Advisories:**
 - As there was no significant rainfall occurred over most states of the region during last week, no significant rainfall is likely in the region, apply irrigation to the standing crops.
 - Maize crop is facing drought conditions in the Scarce Rainfall Zone of Andhra Pradesh. Farmers are advised to provide supplemental irrigation to save the crop. Ferrous deficiency is noticed in curry leaf plants. Farmers are also advised to spray 20 g of FeSO₄ with half lemon (juice) in 10 liters of water to reduce the deficiency.
 - Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to provide irrigation to groundnut, *rabi* maize, rice fallow maize, rice fallow jowar, rice fallow pulses and chilli, since the crops suffer due to moisture stress. They are also advised to provide irrigation to fruit crops and apply mulches on the basins for effective utilization of moisture and avoid the evaporation loss.

- Farmers in the North Dry Zone of Karnataka are advised to complete harvesting of wheat, take up transplanting of sweet gourd, ridge gourd under irrigated condition and raisin making in grapes.
- Farmers in the Coastal Zone of Karnataka are advised to provide irrigation to arecanut, as and when irrigation facilities are available and sundry harvested arecanut.
- Farmers in the North Transition Zone of Karnataka are advised to undertake harvesting and threshing of chickpea, maize, sorghum, chilli and wheat as early as possible, plough the land and keep it exposed to sun for destroying weeds and pest eggs in rainfed areas and undertake surface mulching with crop residues in order to reduce evaporation loss of water and weed growth.
- Farmers in the North Western Zone of Tamil Nadu are advised to undertake sowing of black gram and green gram.
- Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to undertake land preparation and sowing for crops like carrot, potato, peas, radish, beetroot and turnip, select high yielding and disease resistant varieties, raise nursery for crops like cabbage, cauliflower, knol khol and exotic vegetables, undertake cultural measures like application of dolomite in extremely acidic fields and apply farm yard manures prior to transplanting.
- Farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake summer ploughing, watering of nursery plants twice a day and grafting works of garcinia and nutmeg.
- Farmers in the Southern Zone of Kerala are advised to give irrigation to paddy, coconut and banana and provide mulching in banana basins, since no rain is expected and dry weather is prevailing in the State. They are also advised to start tapping of rubber, only after few good showers of rain.
- Farmers in the Problem Area Zone of Kerala are advised to harvest paddy. They are also advised to cover harvested paddy with plastic sheets, plough the harvested field and inundate water to maintain soil property and to prevent drying.
- 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. Farmers are also advised to undertake plant protection measures to control dry root rot in orange, flower and fruit drop in mango, bacterial leaf blight and thrips in pomegranate.
- Farmers in the Southern Zone of Kerala are advised to keep vigil against fungal diseases in vegetables, red palm weevil in coconut and leaf roller, stem borer and bug in rice and undertake plant protection measures.
- 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.
- **Animal Husbandry**
 - With increase in day and night temperatures in the North Western Zone of Tamil Nadu, stress will be high causing feed intake to dip which in turn will lead to size drop in eggs. Farmers are advised to give additional dose of vitamin C in feed and water along with electrolytes to save the birds from stress and stroke and adapt to the summer management very seriously and use fogger usage in order to reduce the stress.
 - Farmers in the North East Transition Zone of Karnataka are advised to give mineral supplements to animals, based on the deficiency in the region.
 - Farmers in the North East Dry Zone of Karnataka are advised to vaccinate all the animals approaching nearest veterinary health centers, since weather conditions are favorable for foot and mouth disease in 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. Heat wave condition is likely to prevail over some parts of Gujarat State during next 2 days.
- **Weather warning:** Heat wave conditions would prevail over some parts of Gujarat state during next 2 days.
- **Advisories:**
 - As heat wave condition is likely to prevail over some parts of Gujarat State during next 2 days, farmers are advised to apply irrigation to standing crops.
 - As dry weather prevailed over remaining parts of the region during last week and dry weather is likely to prevail during next three days, farmers are advised to apply irrigation to standing crops.

- Prevailing day temperature in Maharashtra except in Konkan region is above normal and therefore evaporation rate has been increased, farmers are advised to spray Kaolin or chalk powder solution over crop to minimize rate of evaporation. Also reduce the duration between two irrigations.
- Farmers of South Konkan region of Maharashtra are advised to maintain 5 cm water level in the rice field at flowering stage. In some places mango is in marble/arecanut stage and there is rise in temperature in the region, apply 150 to 200 litres of water to mango tree once in a week. To increase the production and quality of mango fruits, spray 1% Potassium Nitrate at pea/marble and arecanut size stage.
- As dry weather is prevailing, farmers of Central Vidarbha Zone are advised to spray 20 ppm NAA to avoid fruit dropping in mango. Also spray 50 ppm NAA on orange at pea stage.
- Under prevailing weather conditions, farmers in Madhya Maharashtra and East Vidarbha are advised to undertake sowing of fodder crops.
- Due to high temperature, farmers in North Gujarat Zone are advised to carry out weeding and intercultural operations and apply irrigation at regular intervals in standing crops. Taking advantage of clear weather, carry out harvesting of wheat and castor followed by threshing. Apply nitrogenous fertilizer or ammonium sulphate @ 2 kg per mango plant followed by irrigation for development of fruits.
- Farmers in Middle Gujarat Zone are advised to carry out sowing of summer pulses (green gram, urad, cow pea etc.). Complete sowing of summer pearl millet. Apply 20 kg Nitrogen, 40 kg Phosphorus and 20 kg Sulphur/ha in summer pulses. For conservation of soil moisture, use wheat straw and banana waste as a mulch material (12.5 kg / plant) in banana orchards.
- Farmers in Bhal and Coastal Zone are advised to carry out sowing of summer pulses and cluster bean. Apply fertilizers in fruit crops. Picking of capsules in castor should be done during early morning hours.
- Farmers in South Saurashtra Zone of Gujarat are advised to apply second dose of top dressing in the form of Urea @ 109 kg/ha or Ammonium Sulphate @ 250 kg/ha in sugarcane. Apply irrigation and second dose of top dressing fertilizer in the form of urea @ 15kg Nitrogen/ha after 45 DAS in pearl millet. Carry out weeding in groundnut and sugarcane.
- Farmers in South Gujarat Heavy Rainfall Zone are advised to harvest the matured papaya fruits in North Gujarat Zone and South Gujarat Heavy Rainfall Zone. For conservation of soil moisture, use wheat straw and banana waste as a mulch material (12.5 kg / plant) in banana orchards. Remove the disease infected plants from vegetable field.
- Farmers in South Gujarat Zone are advised to bury the stem of cotton in the soil with help of rotavator after last picking of cotton. Apply 2.5 kg Ammonium Sulphate or 1.250 kg urea per mango tree at time of small pea size of fruits. As there is increase in temperature, apply irrigation to vegetable crops.
- Due to prevailing weather conditions, farmers in North Saurashtra Zone are advised to apply irrigation to groundnut, onion and garlic.
- Farmers in North West Zone are advised to harvest *rabi* crops and then deep plough field across slope in summer. Also carry out sowing of vegetables.
- Suitable varieties of the crops for sowing are mentioned in Annexure II.
- As maximum temperature has been considerably increased there is a possibility of incidence of thrips on new flush of various fruit crops/grafts in North Konkan, spray Acephate @ 1.5 g per litres of water.
- Due to rise in temperature there may be attack of white fly in okra in Pune division, spray Malathion 50 EC @ 250 ml /ha in 500 litres water.
- The infestation of blight and thrips may increase in onion in Western Maharashtra Scarcity Zone, spray Chlorothalonil or Copper-oxychloride @ 25 g plus Carbosulfan @ 10 ml or Trizophos + Deltamethrin @ 20 ml or Rijent @ 15 ml + sticker 10 ml in 10 litres of water.
- Under prevailing weather there may be attack of sap sucking pests in floriculture crops in Marathwada, spray Thimethoxam @ 4 g or Trizophos @ 20 ml in 10 litres of water. Also there may be attack of sap sucking pests in summer groundnut, spray Dimethoate @ 10 ml or Methyl Demeton @ 8 ml in 10 litres of water.
- Stages of major crops are mentioned in Annexure-I.

Animal Husbandry:

- Due to high temperature in North Gujarat Zone, keep animals under shade during noon hours and avoid feeding between 11 to 15 hrs. Make arrangement of curtains for poultry house.
- Make arrangement of shade with proper ventilation to protect cattle in Middle Gujarat Zone.

- In South Gujarat Heavy Rainfall Zone, give shower with cold water two to three times in a day to cattle, provide fresh and cold water for drinking and increase the green fodder quantity for feeding.
- Give Anthrax vaccination and tablet for controlling karamia in cattle in North Saurashtra Zone.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Clear sky with no rainfall over the region.
- **Rainfall Forecast:** Mainly clear sky with no rainfall over the region during the period.
- **Advisories:**
 - As dry weather prevailed during last week and dry weather is likely to continue, farmers in this region are advised to provide irrigation to the standing crops.
 - Forecast of clear weather in coming days hence, farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to harvest and thresh different *rabi* crops (wheat and chickpea) after drying properly. Store the produce at room temperature. Transpiration rate and temperatures are higher so provide irrigation frequently in different summer crops like moong, urad, sunflower, cucurbitaceous crops, ladyfinger, cowpea and other vegetable crops. Weeding and intercultural operations should be done in 20-25 days old different summer crops. Sow maize, sorghum, cowpea etc. as summer forage crops.
 - Farmers of Gird Zone of Madhya Pradesh are advised to prepare field for sowing of summer urad and moong. Also sow bajra, jowar, maize and lobia for green fodder purpose.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised to harvest matured crops. Farmers are also advised for preparation of the fallow field for sowing of summer moong and urad. Farmers are also advised to irrigate vegetable crops.
 - Farmers in Vindhyan Plateau region of Madhya Pradesh are advised to irrigate sugarcane crop at 12-15 days interval. Also start sowing of summer moong.
 - Farmers in Central Narmada Zone of Madhya Pradesh are advised to irrigate maize crop and harvest matured wheat crop. Prepare the field and carry out sowing of summer urad, moong, ladyfinger and spinach also sow lobia, cowpea, jowar and maize for the summer green fodder.
 - In Chattisgarh Plain Zone, harvest the matured *rabi* crops viz., gram, mustard, lentil, lathyrus, etc. followed by threshing and marketing/storage of the produce. Farmers are advised for summer deep ploughing for soil solarization. Irrigate standing crops /vegetables frequently as per requirement.
 - In Chattisgarh Plain Zone, intercultural operations, fertilizer application, earthing up followed by irrigation is advised in sugarcane crop wherever the crop is at knee height stage.
 - Weather conditions are suitable for proper germination of summer green gram; hence it is advised to prepare the fields after harvesting of wheat/gram and complete the sowing of green gram at the earliest.
 - Farmers in Bastar Plateau Zone of Chhattisgarh are advised to complete sugarcane planting at the earliest and earlier planted sugarcane should be irrigated. Summer crops of moong, urad and maize crops of high yielding varieties may be selected and sowing should be done.
 - In sugarcane crop, stem borer and panicle borer insects are being observed in Bastar Plateau Zone of Chhattisgarh. For their control, Cartap Hydrochloride should be sprayed @ 2.0 grams per litre of water. If scale insects or milli bug insect-pests attack is being observed in sugarcane, then Profenophos (1 ml) + Dimethoate (2 ml) should be sprayed mixed per one litre of water.
 - White fly attack is being observed in Dantewada and Bijapur districts of Chhattisgarh in cowpea and okra crops. For control of this insect, yellow sticky trap (yellow card with polythene and grease is spread all across the card) and this trap card should be used at a distance of 5 meters up to the height of crop. In cucurbitaceous crops, red pumpkin beetle is being observed and for its control, Carbaryl 50 WP should be applied @ 2 grams per litre or malathion @ 1 ml/ litre of water. In maize, stem borer attack is being observed in 30-40 days after sowing. For its control, granular Carbofuran 3g should be used @ 4-5 grains / whorl.
- **Animal Husbandry & Poultry**
 - Farmers in Kymore Plateau and Satpura Hills region and Central Narmada Zone of Madhya Pradesh are advised that presently temperatures are higher in day time hence; provide cold water twice to cattle. Create shade in cattle shade to prevent them from mosquitoes. Arrange for vaccination for foot and Mouth disease in cattle.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised that present weather is suitable for the sheep wool cutting, hence do wool cutting to avoid heating during the day time. As day temperature is high, cover the window and doors of poultry farms with gunny bags.

Annexure I Major Crops

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

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

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

- Sugarcane (vegetative), lobia for green fodder (vegetative), mishrikand (vegetative), fruit trees (transplanting), wheat (early maturity / maturity), vegetables (flowering / fruiting / harvesting), maize (silking & tasseling), sugarcane, onion (planting), *boro* rice (tillering / panicle initiation), moong, summer maize (sowing) in Bihar.
- Turmeric and ginger (rhizome formation), elephant foot yam (tuber elongation), green pea (pod maturity / harvesting), cauliflower, chilli, tomato (flowering / fruiting / harvesting), wheat (maturity / harvesting), papaya (transplanting), summer moong (sowing), summer vegetables (transplanting), okra, summer maize (sowing), onion (transplanting) in Jharkhand.
- Summer rice (tillering / panicle initiation), summer groundnut (vegetative / flowering / pegging), sunflower (vegetative / pre-flowering), sugarcane (new) (tillering), wheat (early maturity / maturity), banana (vegetative), tomato (flowering / fruiting / maturity) in Orissa.
- *Boro* rice (tillering / panicle initiation), winter vegetables (flowering / fruiting / harvesting), wheat (maturity / harvesting), groundnut (vegetative / flowering / pegging), chilli (flowering / fruiting), mango (flowering), Jute (sowing) in West Bengal.
- *Rabi* vegetables (harvesting), orange (harvesting), large cardamom (vegetative), wheat (milk / dough), mustard (seed maturity / harvesting), vegetables (sowing / nursery sowing) in Sikkim.

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

- Wheat (grain maturity), 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 vegetative) in Delhi.

- Wheat (grain maturity), vegetables (bhindi, cucurbits), potato (sowing/germination), mirch, brinjal (nursery sowing in polyhouses), cucurbits viz. cucumber, summer squash, bitter gourd, bottle gourd (nursery sowing in polytubes inside polyhouse), bush type French bean (Contender), bhindi, surajmukhi (sowing/germination), 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 sown wheat (grain maturity), Normal sown wheat (grain formation), late sown wheat (grain formation), Early sown barley (grain maturity), normal sown barley (dough), very late sown barley (grain formation), onion (transplanting), cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative/flowering), *rabi* oilseeds i.e. gobi sarson (pod formation), normal sown mustard (maturity stage), late sown mustard (seed formation stage), brown sarson (flowering/pod formation stage), jowar, summer moong, mash (land preparation / sowing), *rabi* pulses i.e. lentil, gram, (pod formation / reproductive)], pea (pod formation), fodder crops like oats (vegetative (2nd cut)), berseem (vegetative), turnip, cruciferous crop (viz. cabbage, cauliflower, knolkhol, kale, broccoli, solanaceous crops (tomato, brinjal and chilli, capsicum), paprika, onion, cucurbits in polybags (Leh region) (nursery sowing/transplanting), Horticultural crops (various stages) viz. [peach, plum & mango (flowering), ber, orange & guava (fruiting), citrus fruits, (harvesting)] in Jammu & Kashmir. Wheat, brown sarson, pea, lentil and oat are now in various stages 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 (pod formation), papaya (planting), sorghum, pigeon pea, chick pea (vegetative/pod formation/pod maturity), urd and pearl millets (early vegetative/vegetative), barley, sarson (germination/ vegetative), onion, garlic (transplanting/germination), wheat (grain maturity/harvesting), lentil (maturity), brinjal, potato (germination/vegetative), sunflower(germination) in Uttarakhand.
- Wheat (grain maturity/harvesting), winter sugarcane (vegetative growth), sunflower, summer moong, urad (germination/vegetative), vegetables [tomato, brinjal, lady's finger, cucurbits like bottle gourd, bitter gourd, cucumber] (sowing/germination/vegetative), coriander (vegetative/ flowering), onion (transplanting / vegetative growth), mustard/ sarson (silique formation/ grain formation), barley (vegetative / tillering), arhar, jai, gram, alsin, maize, masoor, pea, pigeon pea, chick pea (grain formation/maturity), berseem (vegetative growth), fodder maize, lobia, jowar (sowing), sugarcane (planting) in Uttar Pradesh.
- Spring sugarcane (sprouting/tillering), berseem (vegetative), gram, lentil (pod formation), mustard, rape seed (pod formation/maturity), barley (heading) radish, carrot, turnip, onion, cauliflower (transplanting/vegetative), wheat (grain filling), tomato, cucurbits, okra, sunflower(sowing) in Punjab.
- Sugarcane (spring season) (early vegetative), barseem (vegetative), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), barley (heading/pre heading), mustard, sarson, raya (vegetative/flowering), radish, turnip (sowing), wheat (grain filling) in Haryana.
- Wheat (grain maturity / harvesting), very late sown wheat (tillering), sweet potato, chilli and cluster bean (vegetative/pod formation), mustard (pod maturity/harvesting), gram (pod formation / maturity/ harvesting), barley (maturity / harvesting), oats, lentil, lucerne, taramira, linseed, opium poppy, vegetables (potato, fenugreek, brinjal, radish, chilli, carrot, palak, berseem, cumin, isabgol, ajwain, garlic (vegetative growth/flowering), summer tomato (germination/vegetative), cauliflower, cabbage, *rabi* onion (transplanting/germination), summer cucurbits, summer green fodder(sowing/germination), okra, *zaid* pearl millet fodder, *said* sorghum fodder, *zaid* green gram (sowing), sugarcane (new planting), cotton (seed selection / land preparation) in Rajasthan.

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

- Sugarcane (vegetative), summer groundnut (flowering), jowar (harvest), safflower (harvest), maize (harvesting), sunflower (harvesting), Bengal gram (harvesting), late planted paddy (harvesting), wheat (harvesting), black gram /green gram (harvest), mango (fruiting), cotton (picking), vegetables (fruiting) and horticultural crops (fruit development) in Karnataka

- *Rabi* groundnut (maturity/harvesting), *rabi* paddy (flowering), *rabi* maize (flowering), 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 (maturity), vegetables (fruiting), chilli (fruiting), green gram & black gram (maturity), tomato (fruiting) and bhindi (various stages), mango (flowering), fruit crops (flowering to fruit initiation), water melon (sowing) and sesasum (sowing) in Andhra Pradesh.
- Pepper & ginger (land preparation / preparation of planting materials), rubber (tapping), irrigated banana (harvesting/planting), cardamom (nursery), nutmeg (maturity), sugarcane (grand growth), vegetables (flowering/harvesting), virippu paddy (nursery sowing), coconut (seed nut collection) in Kerala.
- Rice - *Samba* (harvest), *Thaladi* (harvest), rice fallow pulses (harvesting), sugarcane (various stages), gingelly (vegetative/flowering), tomato(maturity), irrigated chilli, cotton, pulses (vegetative), pulses (flowering/ harvesting), cotton (vegetative/flowering), vegetables (harvest), maize (various stages), pearl millet (grain filling/grain maturity), sorghum(harvesting), irrigated groundnut (maturity/harvesting), chilli (fruiting), ginger and turmeric (pod development /harvesting) in Tamil Nadu.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane (new *adsali*) (active tillering), sugarcane (new pre-seasonal) (early tillering / tillering), sugarcane (new *suru*) (sprouting / early vegetative in Madhya Maharashtra and Marathwada), irrigated wheat (maturity / harvesting), summer rice (flowering / grain formation in South Konkan & tillering / panicle initiation in North Konkan and East Vidarbha), summer groundnut (pod development in South Konkan and pegging / pod formation in Madhya Maharashtra, Marathwada and West Vidarbha), bajra (flag leaf initiation / flowering in Pune and Nashik divisions) in Maharashtra.
- Summer groundnut (vegetative), summer rice (early tillering / tillering), summer bajra (seedling), summer moong, urad, cow pea (seedling), wheat (maturity / harvesting), *rabi* maize (cob formation), sugarcane (early vegetative), castor (maturity / harvesting), vegetables (flowering / fruiting / harvesting), cluster bean (sowing / seedling) and cauliflower, cabbage (maturity / harvesting) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Sugarcane (knee height stage), vegetables (fruiting), mustard (maturity / harvesting), moong (sowing), maize (harvesting), onion, garlic (harvesting) tomato, brinjal, chilli (sowing/ transplanting), fodder crops (sowing) 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, horse gram, ramtil, toria, cauliflower, cabbage (transplanting), niger, kulthi (sowing), wheat (grain maturity / harvesting), onion (planting), summer rice (tillering),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, Cauvery, Culture-1, Chilarai, Gopinath, Krishne, Kushal, Puthichapali, Nilajee, Hasakumra, Gobind, IR-36, IR 50.

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

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

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

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

Green gram: T 44, Kopergaon, K 851, ML 56, PIMS 1, AAU 34, AAU 39, Pratap(SG-1), ML-55.

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

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

Bao Paddy: Maguri, Kekua Bao, Negheri Bao, Tara Bao.

Meghlaya

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

Okra: Arka Anamika, Pusa Sawani, Parbhani Kranti.

Brinjal : Umroi, Mutakesh, Narrow.

Bottle gourd: PusaSummer, Prolific Long, Prolific Round, PusaMeghdoot.

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

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

Mizoram

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

Moong: Jawahr, Pusa Baishakhi, KM

Urad: PDU 1, Barkha, Type 1ND U 99-2

Manipur

Cabbage: Rare ball & Golden Acre

Cauliflower: Pusa Snow Ball 1, Pusa Snow Ball 2 & Snow Ball

Orissa

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

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.

Okra: Utkal Gourav, Arka Anamika, Varsha Uphar, Parvani Kranti an all available hybrid varieties

Bitter gourd: Pusa Domousumi, Coimbatore Long Green, and Arka Harit,

Ridge gourd: Pusa Najdar, Jaypur Long, and any local variety

Cluster bean: Pusa Naubahar,

Cow pea: Arka Garima, Utkal Manika, Selection-2-6-3 and Pusa Kamal.

Jute: JRO-524 (Naveen).

Sunflower: Modern.

Bihar

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

Moong: Pusa Baishakhi, T-9.

West Bengal

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

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

Banana: Gaint Governor, Robusta, Kabuli.

Water melon: Sugar Baby, Ashi Yeamoto.

Jute : Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali.

Jharkhand

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

Summer moong: Pusa Vishal, Pant Mung-2, Samrat, S.M.L.-668.

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

Himachal Pradesh

Lettuce: Iceberg,

Brinjal: ArkaNidhi, PPC

Agetibhindi: P-8, Prabhnikranti, Arkaanamika,

Frenchbean: Contender

Pepper :Surjmukhi,

Broccoli:PalamSamridhi,

Rajmash: Triloki,Jwala,baspaKailash

Raddish: japoni white and early mino white,

Turnip: PTWG-1.

Cabbage: Snow ball K-1 Palamuphar, golden acre.

Knolkhol : WhiteBina,

Cauliflower: Pride of India.

Jammu & Kashmir

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

Jowar :Ujjain, Swarna-413, M.P.chari & PoineerJowar ,**Summer mash:** Mash Pant, U-19, T-9) and **moong:** PDM-54, PS-16, PS-17, ML-131

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).

Summer moong: SML-668, SML 832

Summer mash:Sathi mash, Mash 1008 , Mash-414 ,Mash-218.

Onion: Agri Found Dark Red, N 53

Okra: PusaSawani ,PunjabPadmini ,Punjab 7 or 8.

Haryana

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

Summer moong: SML-668, SML 832

Summer mash:Sathi mash, Mash 1008 , Mash-414 ,Mash-218.

Onion: Agri Found Dark Red, N 53

Okra: PusaSawani ,PunjabPadmini ,Punjab 7 or 8.

Delhi

Green gram: Pusa-9531, PusaVisal, PusaVaisakhi, PDM-11, SML-32

Black gram :Pant Urd 19, Pant Urd 30, Pant Urd 35, PDU1.

Maize: African Tall

Cluster bean:PusaKomal, PusaSukomal.

Baby corn : HM-4

Sugarcane: Karan-1, Karan-2, Co-64, and Co-1496.

Uttarakhand

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

Okra:PusaSavani, Punjab Padmini, Selection -1, HissarUnnat, Vaishali, Madhu, ParbhaniKranti etc.

Brinjal:PusaSavani, Punjab Padmini, Selection -1, HissarUnnat, Vaishali, Madhu, ParbhaniKranti etc.

Potato:KufriJyoti, Kufri Ashok &KufriAnand 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

ChiateeDhan : VL-Dhan-207, VL-Dhan 208 & VL - Dhan 209

ChiateeDhan.

Tomato :with improved variety like VL-Tomato – 3

French bean :with improved varieties like VL **Boni Bean**-1, VL Bean-2, Kantender, Pant Anupama etc.

Pea : VL Ageti Matar-7 or Vivek Matar-10

Uttar Pradesh

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

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

Moong : Type-44, Pant Moong-1,2, Narendra Moong-1, PDM-11, MUM-2, MalviyaJagruti, Samrat, PusaVaishakhi K. , K-851, JM-721 etc.

Urad : Azad Urd-1,2, Bhokhar-1,2, Type-9, Uttara etc. JT-9, pant u-19, Narendra ;, pant U-35

Vegetables : Bitter gourd: KalyanSona, Arka, Harit, Bottle gourd: KalyanpuriHari, Lambi Azad, Nootan, Pusa, Navin, Narendra, NarendraDharidar, NarendraBhankar, Lowki-4, Pumpkin: PusaVishwas, Coimbatore-1,2, Kalyanpur Pumpkin-1, NarendraAgrim, NarendraAmrut, Cucumber: Fine set, China, Japanese, Langreen, Taroi: Pusachikani, PusaNasdar, Satputiya, Punjab, Sadabahar, Lady's Finger: Azad Bhindi-1,2, ParmaniKranti, P-7, Varsha, Uphar, Hissar, Unnat, P-Kanti.

Rajasthan

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

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

Cotton : R.G. -8, R.G.-18, H.D. 123, hybrid Var. : Raj D.H.-9

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

Cucurbits : **Bottle guard** :Pusa Naveen, ArkaBahar, **Pumpkin** :PusaVishwas, ArkaChandan, PuasAlankar, ArkaSuryamukhi, **Bitter guard** :ArkaHaritPusaVishesh, Priya, **Round gourd** :Arkatinda, Bikaneri green, Punjab-48.

Gujarat:

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

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

Cow pea: Pusa Falguni, Gujarat cow pea-2

Urad: T-9

Cluster bean: Gujarat Guar-2.

Maharashtra

Fodder (Madhya Maharashtra): Ruchira, Phule Amruta, Maldandi 35-1, M.P. Chari, **Bajra**: Jayant ,

Maize: African Tall

Fodder (East Vidarbha): Pusachari, M.P. Chari and SSG 898.

Madhya Pradesh

Ladies Finger- Pusa Makhamali, Pusa Sawani, 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 28.03.2012

