

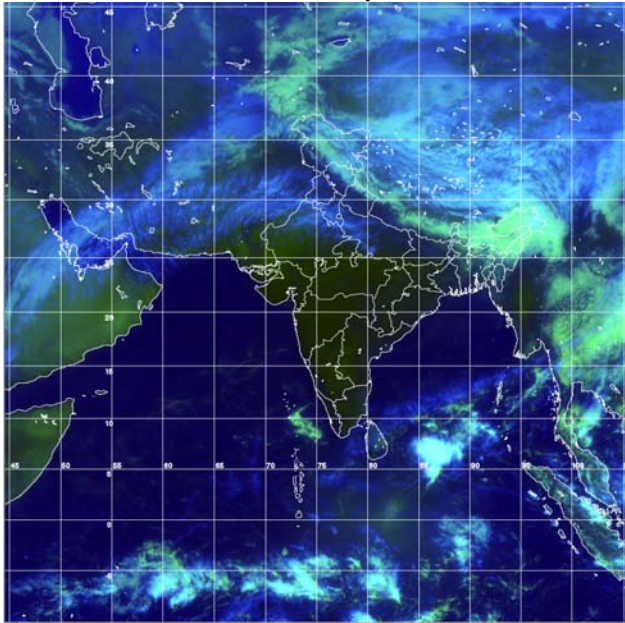


National Agromet Advisory Bulletin

Thursday, 17th March, 2011

(For the period 17th to 21st March, 2011)

Satellite image 0600 UTC Dated
18th March, 2011



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

Dry weather conditions prevailed over most parts of the country and scattered rainfall occurred over Gangetic West Bengal and Kerala during last week. Temperature conditions were near normal. Due to dry weather conditions water needs of the standing summer crops have increased to cope up with high evaporative demand. However dry weather conditions were favourable for harvesting and post-harvesting of *rabi* crops followed by summer ploughing.

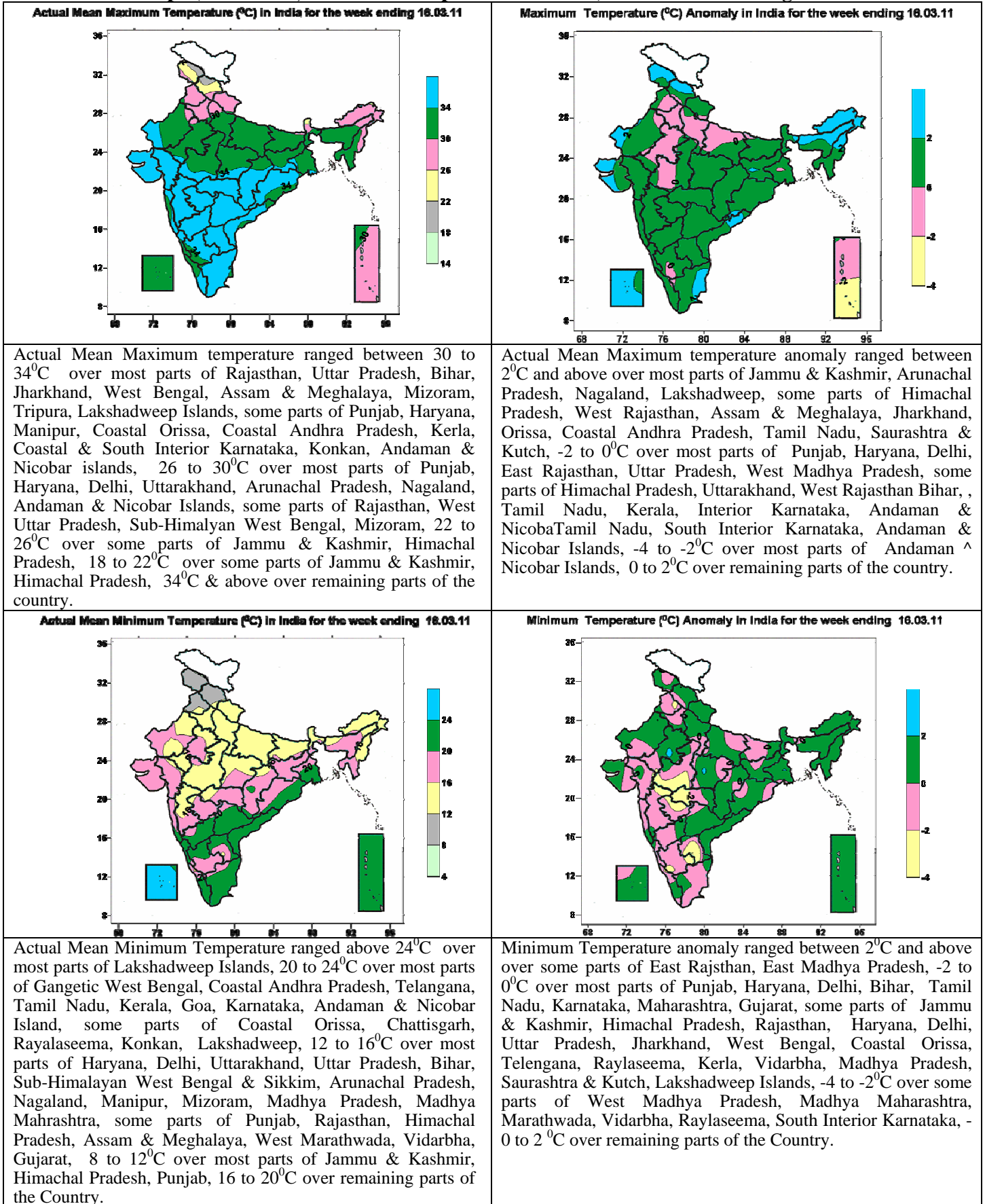
As there is possibility of rainfall at many places over the north eastern States and Sub Himalayan West Bengal and Sikkim along with heavy rainfall at isolated places, farmers are advised to postpone irrigation, intercultural operation and application of fertilizers and plant protection measures to the standing crops as well as sowing operation. Due to increase in temperature conditions in many parts of the remaining States of the country, farmers are advised to provide irrigation to the standing summer crops. After the harvesting of *rabi* crops, summer ploughing may be undertaken to conserve the moisture. Mulching may also be applied to prevent the loss of soil moisture. Since wind speed is expected to increase in the coming days in some of the States in the country, farmers are advised to undertake propping of sugarcane and staking of banana and tomato crops.

Due to dry weather, fruit drop is appeared as a common problem in mango in North Eastern Coastal Plain Zone of Orissa, Central Vidarbha zone in Maharashtra and Coastal Saline Zone of West Bengal. Spray water by pedal sprayer during forenoon hours to prevent fruit drop. Due to increase in temperature in High Rainfall Zone of Tamil Nadu., banana bunches may be affected due to heat; farmers are advised to cover bunches with dried leaves to avoid damage.

After the harvest of *rabi* crops, farmers are advised to undertake sowing of mung, urd, sunflower and vegetables like lady's finger, cowpea and cucurbitaceous crops, short duration varieties of carrot and radish in Madhya Pradesh, planting of sugarcane and sowing of vegetable crops like bhindi, cucumber, pumpkin, bitter gourd, bottle gourd, okhra etc. in Chattisgarh, nursery sowing and direct sowing of early *ahu* rice and also sowing of green gram, black gram, jute and early summer vegetable crops in Assam, lady's finger, bottle gourd, ridge gourd in Meghalaya, sowing of green gram, planting of sugarcane and sowing of summer vegetable crops like bhindi, bitter gourd, sponge gourd, pumpkin, cucumber etc. in Bihar, sowing of summer vegetable crops like long gourd, round gourd, ridge gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon, *okra*, brinjal and shimla mirch in Jharkhand and sowing of green gram and sunflower and planting of *Gladiolus* in West Bengal.

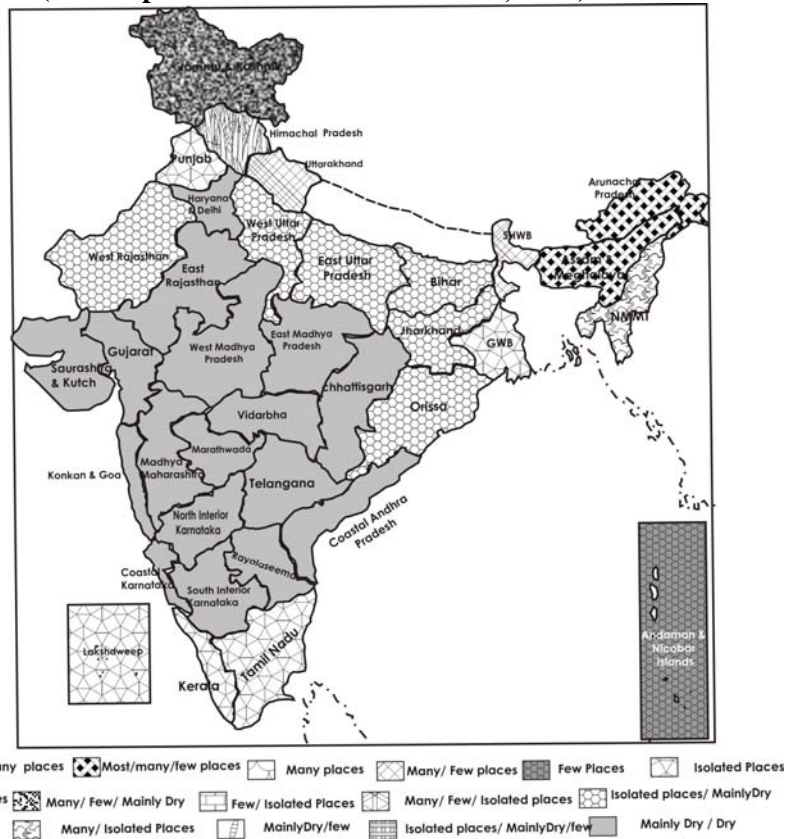
Due to high temperature conditions, there are incidences of white fly spreading virus disease in tomato in Southern Dry Zone of Karnataka, powdery mildew in mango, hoppers in mango and mites in arecanut in Central Dry Zone of Karnataka, stem borer and blast in rice, early shoot borer in sugarcane Southern Telangana Zone of Andhra Pradesh, wilt disease in lentil crop in some areas of Central Brahmaputra Valley Zone in Assam, pod borer in gram and pigeon pea in North West Alluvial Plain Zone and South Bihar Alluvial Zone of Bihar and aphids, thrips and blight in onion in Pune Division of Maharashtra. Farmers are advised to undertake plant protection measures to control the pests and diseases.

Contour maps (Maximum, Minimum temp. and anomalies) for the week ending 16.03.2011



Weather Forecast

(Valid upto 1430 hours of 20th March, 2011)



Major Feature of Weather Forecast (upto 1430 hours IST of 20th March, 2011)

- Widespread rain/snowfall would occur over Jammu & Kashmir during next 3 days.
- Fairly widespread rain/snowfall would occur over Himachal Pradesh and scattered over Uttarakhand during next 48 hours and increase thereafter.
- Scattered rain/thundershowers would occur over SubHimalayan West Bengal & Sikkim and northeastern states during next 24 hours and increase thereafter.
- Isolated rain/thundershowers would occur over Punjab, north Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Tamilnadu, Kerala and Lakshadweep and scattered over Andaman & Nicobar Islands.
- Gradual rise in maximum and minimum temperatures over many parts of the country during next 23 days. Heat wave conditions would prevail over isolated pockets of south Rajasthan, Gujarat and coastal Maharashtra during next 23 days.

Weather Warning

- Isolated heavy rain/snow would occur over Jammu & Kashmir during next 48 hours and over Himachal Pradesh on 18th and 19th.
- Isolated heavy rainfall would occur over Assam, Meghalaya, Arunachal Pradesh and Nagaland on 18th and 19th.
- Isolated thundersquall may occur over Punjab, Uttar Pradesh, Bihar, Jharkhand and West Bengal & Sikkim during next 24 hours and over northeastern states on 18th and 19th.

Weather Outlook (upto 1430 hours IST of 22nd March, 2011)

- Fairly widespread rain/thundershowers would occur over northeastern states and Andaman & Nicobar Islands and isolated over Kerala and Tamilnadu. Maximum and minimum temperatures may fall by 23°C over northwest India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Weather remained mainly dry over the States of the region during the period.
- **Rainfall Forecast:** Rain is likely to occur at a few places during next 24 hours and at many places after that over sub Himalayan West Bengal and Sikkim. Dry or mainly dry weather is likely to prevail or isolated rain will occur over the remaining States of the region during the period. Isolated thunder squall may occur over Bihar, Jharkhand and West Bengal & Sikkim during next 24 hours.
- **Advisories:**
 - As rain is likely to occur at a few places during next 24 hours and at many places after that over sub Himalayan West Bengal and Sikkim, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures. As there was no significant rainfall during last week over the remaining States of the region and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to wheat at milk / dough stage and also to the summer vegetables and other summer crops like green gram, sesame, ground nut, sunflower etc.
 - Taking the advantage of dry weather, harvest already matured crops of mustard, tobacco, potato, pulses etc. in Bihar. Apply irrigation during tasseling and silking stage in maize and also to summer vegetables crop. Also undertake intercultural operations and apply fertilizers in standing onion crops before applying irrigation.
 - In view of increasing temperature in North West Alluvial Plain Zone of Bihar, the water need of the standing crops would increase. Farmers are advised to apply irrigation in *rabi* maize, sugarcane, wheat and summer vegetable crops.
 - Due to dry weather, fruit drop is appeared as a common problem in mango in North Eastern Coastal Plain Zone of Orissa. Spray water by pedal sprayer during forenoon hours to prevent fruit drop.
 - As there is no chance of rainfall in West Bengal, provide irrigation to summer vegetables such as Lady's finger, Spinach, various leafy vegetables etc.
 - In Orissa, the weather is optimum for planting of papaya, marigold etc. and sowing of sunflower with assured irrigation. Increased temperature may lead to moisture stress. Apply irrigation to groundnut and sugarcane.
 - Prepare the field and undertake sowing of green gram, planting of sugarcane and sowing of summer vegetable crops like bhindi, bitter gourd, sponge gourd, pumpkin, cucumber etc. in Bihar.
 - Farmers in West Bengal are advised to undertake field preparation and sowing of green gram and sunflower and also planting of Gladiolus. Adopt seed rate of 3.5 kg per bigha for green gram.
 - Prepare the field and undertake sowing of summer vegetable crops like long gourd, round gourd, ridge gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon, *okra*, brinjal and shimla mirch in Jharkhand.
 - After potato crops, summer green gram may be sown in case of limited irrigation facility in Western Plateau Zone of Jharkhand. Summer vegetables like bhindi, tomato, brinjal etc. may be grown in the same field if sufficient irrigation facilities are available.
 - After harvesting of already matured *rabi* crops, farmers are advised to undertake ploughing of the field without planking to facilitate in minimizing / destroying the existing weeds and pests of the field due to excessive solar heating.
 - Prepare the field and undertake sowing of *kharif* maize, summer potato and *kharif* vegetables in Sikkim after current spells of rain.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Infestation of pod borer is taking place at this time in gram and pigeon pea, in North West Alluvial Plain Zone and South Bihar Alluvial Zone of Bihar, which may intensify during this period. Farmers are advised to spray Endosulphan 35 EC @ 1.5 ml per litre of water.
 - Current weather is favourable for leaf eating caterpillar and thrips in Western Undulating Zone of Orissa; spray Imidacloprid @ 0.5 ml / litre of water.

- High differential temperature between day and night in Jagatsinghpur districts of Orissa may favour the infestation of blast in rice; spray 0.6 g Tricychlazole or 1 ml Ediphenphos per litre of water. Withhold top dressing of urea for five days after the spraying.
- There is possibility of infestation of stem borer in maize in Nayagarh and Puri district of Orissa due to rise in temperature; spray 2 ml Monochrotophos in 1 litre water.
- Due to variation of temperature between day and night in Coastal Saline Zone of West Bengal, rice plant may be infected by blast and brown spot diseases; spray Ediphenphos 50 EC @ 1 ml / litre or Carbendazim 50 W @ 1 g / litre or Tricyclozole 75 WP @ 0.6 g / litre of water when the above disease symptoms occur.
- Due to increase of temperature in Coastal Saline Zone of West Bengal, there is chance of stem borer in rice; spray alternatively triazophos 40 EC @ 1.2 ml / litre or cartap WP @ 1 g / litre or Endosulfan 1.5 ml / litre of water when 5% dead heart or one egg mass per hill is found.
- Under prevailing weather condition, there is chance of the attack of stem borer in New Alluvial Zone of West Bengal. If the infestation is more than 10%, apply control measures.
- Under this weather condition post emergence damping off may be found in the jute field in Terai Zone of West Bengal; spray companion (Saff) @ 2 g / litre of water and as the vector (whitefly) population of yellow vein mosaic may increase in this weather condition in ladies finger, spray Thiomethoxam 3 g / 16 litre or Imidacloprid 4 ml / 16 litre.
- Apply plant protection measures in sub Himalayan West Bengal and Sikkim after current spells of rainfall.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
- This is the congenial time for the growth of fish in South Eastern Plateau Zone and Western Plateau Zone of Jharkhand; feeding should be supplemented with rice husk and cakes of mustard @ 5 kg each per day per acre. Apply cow dung from one side along with uniform distribution of lime in the ponds.
- Fish farmers, in case have stocked fingerlings in the pond for fish culture, should monitor the quality, level of water and temperature in Jagatsinghpur and Kendrapara districts of Orissa. In case of water temperature goes above 30⁰ C or water level goes below 1 m. depth, farmers are advised to go for early harvest and discontinue fish seed production and culture activity.

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:** Rain is likely to occur at a few places over Arunachal Pradesh, Assam and Meghalaya and at isolated places over Nagaland, Manipur, Mizoram and Tripura during next 24 hours. Rain is likely to occur at many places or most places over the States of the region after that. Isolated heavy rainfall would occur over Assam, Meghalaya, Arunachal Pradesh and Nagaland on 18th and 19th March.
- **Advisory:**
 - As there is possibility of rain at most places over the States of the region during the period, farmers are advised to postpone irrigation, intercultural operation, application of fertilizer and plant protection measures to the standing crops. Farmers are also advised to undertake sowing and transplanting of crops after current spells of rain. Also arrange for drainage facilities in view of isolated heavy rainfall.
 - As there is possibility of heavy rainfall, postpone harvesting of already matured crops of wheat in Assam.
 - Undertake direct sowing and nursery sowing of early *ahu* rice and also sowing of green gram, black gram, jute and early summer vegetables in Assam.
 - Farmers are advised for sowing of lady's finger, bottle gourd, ridge gourd in Ri-Bhoi, West Khasi, East Khasi, East Garo, West Garo hill in Meghalaya.
 - Farmers in Mizoram are advised for sowing of lady's finger, French bean and cucurbitaceous vegetables.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.

- Soil and air temperatures are favourable for the attack of stem borer in *boro* rice in Upper Brahmaputra Valley Zone in Assam; apply Darsban or Monocrotophos @ 2 tea spoon full per 5 litres of water in the field.
- Wilt disease in lentil crop is observed in some areas of Central Brahmaputra Valley Zone in Assam; farmers are advised to protect their crops by soil drenching with Bavistin @ 1 g / litre of water. Rust in field pea has also been observed in some locality. To prevent the spread of this disease spray Calixin @ 1-2 ml / litre of water.
- There is possibility of infestation of purple blotch in onion in Mizoram. To control purple blotch, spray the crop with 1.3 kg of Indofil M 45 mixed with 400 ml of linseed oil as sticker in 600 liters of water/ha.
- Apply plant protection measures after current spells of rain in the States of this region.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry:

- In Mizoram, the farmers are advised to be very cautious in the months of February and March as change in weather may lead to breakout of viral diseases in cattle. Therefore, ensure vaccination against foot and mouth disease, black quarter and haemorrhagic septicemia (HS). Farmers are also advised to maintain clean sanitary conditions of poultry sheds and equipment, provide balanced feed, fresh clean water; healthy chicks are essential to prevent diseases. Vaccination is advised against Ranikhet disease with R2B @ 0.5 ml through eye drop route.
- In Nagaland, proper monitoring should be done in case of poultry as many losses occurred in poultry breed due to breakout of many diseases and hot weather. Temperature between 10⁰C and 16⁰C is found to be optimum for egg production but if the nutrition is not a limiting factor, then the egg production is not affected even upto 25⁰C.

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

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Rainfall is likely at most / many places in Jammu & Kashmir and Himachal Pradesh and at a few places during next 48 hours and many places thereafter in Uttarakhand. Rainfall is likely at isolated places during next 24 hours in Uttar Pradesh and West Rajasthan and mainly dry thereafter. Isolated rain is likely in Punjab. Mainly dry weather will prevail over the remaining States.
- **Advisory:**
 - Postpone irrigation in Jammu & Kashmir, Himachal Pradesh, Uttarakhand as there are chances for the rainfall at most/many places.
 - As mainly dry or dry weather is likely in the region and gradually slight rise in maximum temperature is likely during next 2-3 days, farmers are advised to apply irrigation to wheat crop in the remaining states.
 - Farmers in Sub Tropical Zone of Jammu & Kashmir are advised to undertake sowing of bhindi, beans utilising realised rainfall. Undertake planting of evergreen fruit crops as well as deciduous fruits like mango, guava, logout, litchi, citrus, peach, plum and grapevine etc.
 - Farmers in Punjab and Haryana are advised to complete sowing of spring sugarcane. Farmers in Haryana are advised to undertake sowing of Baisakhi Mung.
 - In Mid Hills Sub-Humid zone of Himachal Pradesh, farmers are advised to undertake sowing of potato, tomato, capsicum, chilli, brinjal. Apply first dose of urea along with earthing up operation in cole crops.
 - Farmers in Bhabar and Terai Zone (Nainital and Udamsingh Nagar districts) of Uttarakhand are advised to start harvesting of timely sown wheat and sugarcane. Undertake sowing of Chiatee Dhan in nursery, sowing of mung, urd, vegetable pea, french bean, tomato and planting of sugarcane and intercropping of moong or urd with sugarcane.
 - Farmers in Delhi are advised to sow green gram, black gram, sugarcane, maize, baby corn and also direct sowing of cucurbitaceous crop, lady's finger, french bean, cluster bean, summer radish. Undertake harvesting of matured mustard immediately as over maturity of the crop will cause loss of grains due to shattering and transplant young seedlings of tomato, chilli and cole crop.

- Farmers in Rajasthan are advised to prepare field and undertake sowing of *zaid* pearl millet, sorghum (fodder), *zaid* green gram, groundnut, okra, cucurbitaceous vegetables like melon, bottle gourd, ridgegourd, bittergourd, pumpkin. They are also advised to undertake harvesting of matured mustard, gram, taramira, barley and potato. Due to rise in temperature irrigation may be given to wheat, barley, gram and vegetables.
- In Sub Tropical Zone of Jammu & Kashmir, weather is favourable for loose smut/ flag smut in wheat and barley. Farmers are advised to rouge out the loose smut/ flag smut affected plants from wheat & barley crops immediately in order to avoid further dispersal. Weather is favourable for aphid attack in late sown mustard crop under such situation spray Chloropyriphos 20EC @0.05% or Phosphamidon@ 0.03% or Metasystox@ 0.03%, if 50-60 aphids per 10cm terminal shoot are infested.

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

- **Realised Rainfall:** Mainly dry weather prevailed during last week in all the States.
- **Rainfall Forecast:** : Dry weather is likely to prevail over the region except in Tamil Nadu and Kerala where isolated rain is likely to occur.
- **Advisories:**
 - As there was no significant rainfall in the region during last week and dry weather is likely during next three days, farmers are advised to apply irrigation to the standing crops.
 - As weather will be dry with bright sunshine during the next three days farmers are advised to continue the summer ploughing in Karnataka.
 - Farmers in High Altitude Zone of Tamil Nadu are advised to undertake planting of potato.
 - Temperature may rise in High Rainfall Zone of Tamil Nadu. Farmers are advised to apply irrigation and mulching to avoid heat injury to the standing crops. Banana bunches may be covered with dried leaves to avoid damage due to heat. Rice fallow pulses may be sown in rice field one week before harvesting of rice.
 - Provide adequate irrigation to groundnut crop at pod development stage by observing the soil moisture status, since day and night temperatures are increasing in Scarce Rainfall Zone of Rayalaseema of Andhra Pradesh.
 - Due to dry weather conditions, farmers in Southern Dry Zone of Karnataka may apply irrigation to dry land horticultural crops and other field crops depending on soil and crop condition. Due to high temperature conditions in Southern Dry Zone of Karnataka, white fly problem is severe and virus disease is prevalent in tomato crop, and leads to very poor flowering, fruit setting and low yields. Farmers are advised to spray Trayazophas @ 2 ml/lit of water or emidachloprid @ 0.5 ml/lit of water or oxidemitan methyle @ 2ml/lit of water.
 - Drying of shoot is noticed in Cashew orchards in Coastal Zone of Karnataka. Hence farmers are advised to remove affected dry part and take-up spraying of Copper Oxychloride @3g/lit of water.
 - Since temperature coupled with intermittent rainfall favours the development of leaf spot in arecanut in Hill Zone of Karnataka, farmers are advised to spray with blitex (2.5/lit) with streptocycline (0.6gm/lit).
 - Powdery Mildew in Mango, Hoppers in Mango and Mites in Arecanut was observed in Central Dry Zone of Karnataka. Farmers are advised to spray Carbendezim @1 gm / lit of water or Hexaconazole @1g / lit of water for Powdery Mildew, Melathion @ 2ml / lit of water or Monocrotophos @ 1.25ml / lit of water for Hoppers and Dicofal 2.5 ml/lit of water or soluble sulphur 4.0 g / lit of water for mites.
 - Incidences of stem borer and blast in paddy, early shoot borer in sugarcane, aphids and thrips in vegetables, thrips, mites and Chaenophora blight in chillies, leaf eating caterpillar in coconut are noticed in Southern Telangana Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures to control the pests and diseases.
 - The present weather is conducive for top shoot borer incidence in sugarcane and leaf spot in turmeric in the Western Zone of Tamil Nadu. Release Trichogramma egg parasites to control. shoot borer and spray carbendazim 500g/ha. to control leaf spot.
 - Since wind speed is expected to increase in the coming days in Southern Zone of Tamil Nadu , the sugarcane crop should be propped at seventh month after planting, to prevent lodging due to wind.

- Due to favourable weather conditions prevailing over North Western Zone of Tamil Nadu there are chances of attack of leaf-coiling worms and flies in gingelly. Spray Endosulfan (300 ml in 200 litres of water/acre) or Quinylphos (600 ml in 200 ml of water/acre) during morning and evening.
- Due to increase in humidity in High Altitude Zone of Kerala, there are chances of incidences of blast, brown spot, sheath rot, thrips, stem borer in rice, stem bleeding, red palm weevil, rhinoceros beetle and mealy bugs in coconut. Farmers are advised to undertake plant protection measures to control the pests and diseases.
- Leaf eating caterpillars is noticed in cowpea and powdery mildew attack is noticed in cucurbitaceous vegetable in Problem Areas Zone of Kerala. Spray Ekalux to control Leaf caterpillars and Bavistine to control powdery mildew.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised rainfall:** Mainly dry weather prevailed in the States of the region during the period.
- **Rainfall forecast:** Dry weather is likely to prevail over the States of the region during the period.
- **Advisory:**
 - As mainly dry weather prevailed over the States during last few weeks and dry weather is likely to prevail during the period, farmers are advised to apply light and frequent irrigation to the standing crops depending upon the soil texture.
 - As dry weather is persisting, farmers in Maharashtra are advised to complete the harvesting of the already matured jowar, gram, sunflower and safflower.
 - As there is no possibility of rain, farmers in Madhya Maharashtra are advised to apply second dose of Nitrogen @ 100 kg and neem powder along with Nitrogen to suru sugarcane after 6 to 8 weeks from planting followed by irrigation. Farmers are also advised to spray 1% Urea and 1% Potassium Nitrate as per stage i.e. marble stage and areca nut size stage to increase the production and quality improvement of mango fruits in Maharashtra.
 - Farmers in Konkan and East Vidharba region are advised to maintain 5 -8 cm water level in the transplanted rice field.
 - To prevent fruit dropping in mango in central Vidarbha zone, farmers are advised to spray 20 PPM NAA. Also spray 50 PPM NAA at pea stage of Orange.
 - As dry condition prevailed during last few weeks and is likely to prevail, farmers in Gujarat state are advised to irrigate vegetable and fruit crops and to harvest wheat crop.
 - Due to change in weather conditions there may be incidence of thrips in mango in Konkan; spray Spinosid 45 SL @ 25 ml or Dimethoate 30 EC @ 10 ml / 10 litres of water.
 - There may be attack of sap sucking pest in summer groundnut in Central Maharashtra Plateau Zone; spray Rogar @ 10 ml in 10 liters of water.
 - Due to prevailing weather there may be infestation of fruit borer and sucking pests at some places in lady's finger in western Maharashtra scarcity zone. To control fruit borer spray Deltamethrin @ 5 ml or Profenophos @ 10 ml in 10 liters of water. For sucking pests spray Imidachloprid @ 4 ml or Thiomethozam @ 4 g in 10 litres of water.
 - There may be attack of jassids & thrips in summer groundnut in Vidarbha region; spray 5% Neemark or if infestation exceeds ETL (15-20 jassids / plant or 5% thrips / apex), spray Diamethoate @ 10 ml or Formothion @ 12 ml in 10 liters of water.
 - Weather is congenial for incidence of leaf minor in groundnut in North Gujarat region. The farmers are advised to spray DDVP 76 EC @ 5 ml / 10 litres of water to control leaf miner in groundnut.
 - Weather is favourable for infestation of white rust and aphids in mustard crop in Bhal and coastal region of Gujarat. Farmers are advised to take proper plant protection measures to control the above pest / disease.
 - Weather conditions are favourable for incidence of mango hopper in North Saurashtra Zone of Gujarat; spray Imidachloprid 17.8 SL @ 2.5 ml / 10 litres of water to control mango hopper.
 - Stages of major crops are mentioned in Annexure I.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry during last week in the region.
- **Rainfall Forecast:** Dry weather is likely to prevail over the region.

- **Advisory:**

- As there was no significant rainfall during last week in the region and dry weather is likely during next three days, farmers are advised to apply irrigation to the standing wheat and other *rabi* crops.
 - Farmers in Jhabua Hill Zone of Madhya Pradesh are advised to sow summer moong, urd and transplanting of onion. Undertake harvesting of mature crop of early sown wheat, maize and gram.
 - Farmers in Kymore Plateau and Satpura Hill Zone of Madhya Pradesh are advised to complete sowing of mung, urd, sunflower and vegetable crops like lady's finger, cowpea and cucurbitaceous crops in irrigated condition after harvesting of *rabi* crops.
 - Farmers in Vindhya Plateau Zone are advised to undertake sowing short duration varieties of carrot and radish and transplanting of vegetables. Also farmers are advised to undertake planting of sugarcane.
 - Farmers in Nimar Valley Zone are advised to undertake sowing of cucurbitaceous crops, transplanting of brinjal and chilli and planting of sugarcane and fodder crops. Farmers in Gird Zone are advised to undertake transplanting of tomato, chilly and cucurbit crops.
 - Farmers in Budelkhand Zone of Madhya Pradesh are advised to do the staking to the tomato plants as it is expected that wind will blow with an average speed of 8 km/hr otherwise there is possibility of breaking of plants due to high wind speed.
 - Farmers in Northern Hill Zone of Chattisgarh are advised to prepare land for planting of sugarcane and sow vegetable crops like bhindi, cucumber etc..
 - As the average temperature is suitable for proper germination of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc in Chattisgarh Plain Zone in Chattisgarh, farmers are advised for sowing of these vegetables at the earliest.
 - Due to above normal temperatures in Chattisgarh Plain Zone in Chattisgarh, the evaporation rates has increased during past week (5-6 mm/day) and water requirement of rabi crops has also increased. Therefore, farmers are advised to reduce the interval between two irrigations (particularly in wheat crop) to maintain proper soil-moisture and micro-climate within the crop canopy to minimise the adverse effect of higher temperature or thermal stress. The farmers who have drip irrigation system for vegetables and plantation crops should regulate the water discharge rate accordingly to maintain proper soil moisture around root zone.
 - Farmers are advised to undertake weeding and intercultural operations in winter vegetables and weeding should be done in Bastar plateau Zone and after that fertilizer application should be done.
 - Weather is congenial for sucking pests in vegetable crops in Nimar Valley and Central Narmada Valley Zone in Madhya Pradesh, farmers are advised to spray Metasistox or Dimethoate 1 ml/litre of water.
 - Weather is congenial for leaf curl disease in tomato and chilli in Gird and Bundelkhand Zone of Madhya Pradesh, farmers are advised to spray Methyl dimeton 25 E.C @ 2.0 ml or Emidachloprid @ 0.5 ml per litre of water.
 - Weather conditions are favourable for incidence of stem borer in summer rice in Chhattisgarh plain zone, hence it is advised to monitor the crop and if the damage is above ETL apply granular insecticides Cartap or Fipronil @ 25 kg/ha in the fields. About 5 cm standing water should be maintained in the fields while applying the granular insecticides and do not allow the water to out of the field at least for 24 hours.
- **Animal Husbandry & Poultry**
 - As there is possibility of partial cloudy conditions during next five days in Gird Zone, hence sheep farmers are advised to apply pesticides in sunny hours to control parasites. Cattle should be provided with balanced and nutrient rich feed having protein, carbohydrate, fat, vitamins and antibiotics.
 - At present, due to large variations in day temperature in Bundelkhand Zone of Madhya Pradesh which may decrease in disease resistance in chicken, hence it is advised to add antibiotic in their feed.

Annexure I Major Crops

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

- Gram (pod maturity / harvesting), mustard and sarson (pod maturity / harvesting), wheat (milk / dough), maize (tasseling / silking / cob formation), potato (tuber maturity / harvesting), vegetables like cauliflower, cabbage (head formation / maturity), chillies, tomato (fruiting / harvesting), palak, carrot, radish etc. (harvesting), barseem, lucerne, oat (vegetative), sugarcane (planting), *boro* rice (tillering), green gram, maize and black gram (sowing / early vegetative) and summer vegetables like bhindi, bitter gourd, sponge gourd, pumpkin, cucumber etc. (sowing / early vegetative) in Bihar.
- Arhar and green pea (pod maturity / harvesting), wheat (milk / dough), potato (tuber maturity / harvesting), mustard (pod maturity / harvesting), pea, lentil and gram (pod maturity / harvesting), onion (bulb enlargement / maturity), tomato (fruiting / harvesting), cabbage and cauliflower (head formation / harvesting), chilli and brinjal (transplanting / early vegetative), summer rice (tillering), summer vegetables (sowing / transplanting / vegetative), summer green gram (sowing / early vegetative), sugarcane (planting), mango and litchi (flowering / pea stage), papaya (transplanting) in Jharkhand.
- *Rabi* vegetables (fruiting / harvesting), *rabi* oilseeds like groundnut (pod maturity / harvesting), mustard and sunflower (pod maturity / harvesting), arhar (pod maturity / harvesting), wheat (milk / dough / harvesting), potato (tuber maturity / harvesting), *rabi* pulses like gram, lentil and field pea (pod maturity / harvesting), sugarcane (harvesting), *boro* rice (tillering / panicle initiation stage), maize (sowing / vegetative), black gram, green gram, garlic, sunflower (sowing / early vegetative), sesame, groundnut (early vegetative), mango, papaya, summer marigold, tuberose (planting), summer cow pea (sowing / early vegetative), summer vegetables (sowing / early vegetative) and sugarcane (sprouting / vegetative / tillering), summer pulses, colocasia (land preparation / sowing / planting) in Orissa.
- *Boro* rice (tillering), wheat (milk / dough / early maturity), arhar (pod maturity / harvesting), mustard (pod maturity / harvesting), potato (tuber maturity / harvesting), lentil, pea, Bengal gram (pod maturity / harvesting), mango (flowering / fruiting), *rabi* vegetables like cabbage and cauliflower (head formation / harvesting), sunflower (sowing / early vegetative), groundnut, sesame (early vegetative) and summer vegetables like ladies finger, *Kakrol*, amaranthus, spinach, various leafy vegetables, brinjal, chili (sowing / early vegetative) in West Bengal.
- Large cardamom (vegetative lag phase), orange (end harvesting), wheat (flowering / milk / dough / harvesting), *rabi* potato (tuberization / early maturity), ginger (harvesting), *rabi* vegetables (flowering / fruiting / harvesting), mustard (seed maturity / harvesting), seed potato, maize (sowing / germination / early vegetative), summer potato (sowing / germination), *kharif* vegetable (sowing / nursery sowing) in Sikkim.

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

- Sugarcane (planting / cane development), *boro* rice (tillering), wheat (early sown) (harvesting), wheat (grain formation / early maturity), early *ahu* rice (seedling / transplanting), jute (sowing / seedling), summer vegetables (sowing), summer sesame (germination / early vegetative) and maize (sowing) in Assam.
- Tomato (maturity / harvesting), pea (pod maturity), maize (sowing / vegetative), potato (harvesting), mustard (harvesting) and orange (maturity) in Arunachal Pradesh.
- Summer vegetables (sowing / early vegetative / vegetative) and *boro* rice (tillering) in Tripura.
- *Boro* rice (tillering), *ahu* rice (nursery sowing / seedling / transplanting), rapeseed and mustard (pod maturity / harvesting), *rabi* maize (vegetative), wheat (grain formation), winter potato (tuber maturity), winter potato at high altitude (harvesting) and summer vegetables (sowing / early vegetative) in Meghalaya.
- Rice (sowing), *rabi* maize (vegetative / pre-flowering), mustard and rapeseed (pod maturity / harvesting), field pea (pod formation / maturity), onion (vegetative / bulb formation), cauliflower and cabbage (head formation / harvesting) and potato (tuber maturity / harvesting) in Manipur.

- *Khasi* Mandarin (Vegetative / newflush stage), banana (vegetative / fruiting / maturity), onion (vegetative), pea (pod formation / maturity / harvesting), beans (pod formation / harvesting), carrot and radish (harvesting), tomato, chilli and capsicum (fruiting / harvesting), cole crops (head formation / harvesting), ginger, turmeric (harvesting) and summer vegetables (sowing / early vegetative) in Mizoram.
- Maize (land preparation / sowing), potato (tuber formation) and banana (fruiting) in Nagaland.

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

- Wheat (milking), mustard (pod maturity / harvesting), pea and gram (pod maturity), broccoli, cauliflower, cabbage and onion (early vegetative / vegetative), tomato, chilli (transplanting), brinjal & cucurbits crops (sowing), lentil (pod formation), maize, baby corn (sowing), green gram and black gram (sowing) in Delhi.
- Wheat (flowering / milking), potato (tuber formation/harvesting), vegetables (flowering / fruiting / harvesting), garlic (planting), pea, potato (sowing) in Himachal Pradesh.
- Gram (grain formation / maturity), berseem (vegetative), oats (flowering), wheat, barley (jointing / flag leaf stage / ear head formation), very late sown wheat (jointing stage), lentil (pod formation), field pea (pod formation), toria (harvesting), mustard (pod maturity), vegetable crops like tomato, chilli, brinjal, cucurbits (vegetative / flowering), onion (vegetative), cauliflower, cabbage, carrot (fruiting), onion and tomato(sowing/transplanting) in Jammu & Kashmir.
- Sugarcane (maturity / harvesting), wheat (maturity / harvesting), potato (maturity / harvesting), toria (maturity / harvesting), mustard (maturity), chickpea (flowering / pod formation), barley (tillering), garlic, seasonal vegetables (vegetative / flowering/harvesting), onion (vegetative), pea (harvesting), chilli, tomato (sowing / transplanting) and lahi (flowering / fruiting) in Uttarakhand.
- Spring sugarcane (germination), berseem (vegetative), wheat (grain filling), barley (heading), lentil, gram (maturity), African sarson (pod formation), radish (vegetative), ghobi sarson (vegetative), oilseeds (raya, taramira) (pod formation/ maturity), papaya, onion (transplanting), vegetables, sugarcane (sowing/ germination), summer pulses(sowing) in Punjab.
- Sugarcane (spring season) (planting/emergence/early vegetative), wheat (flag leaf/grain development), berseem (vegetative), gram (pod maturity), rapeseed and mustard (maturity/harvesting) in Haryana.
- Wheat (grain formation), barley, oats (tillering/flowering), toria (pod maturity), arhar (flowering / pod formation / grain formation), mustard, sarson, (pod maturity / harvesting), potato (vegetative / tuber formation / digging), field pea, chick pea, lentil, linseed (late vegetative / flowering), winter sugarcane (vegetative), winter vegetables like carrot, garlic, onion (vegetative), tomato, brinjal (flowering / fruiting), cabbage, cauliflower (flowering / fruiting / maturity / harvesting) and vegetable pea (flowering / pod formation) etc. in Uttar Pradesh.
- Winter sugarcane (initial growth), wheat (grain formation / maturity / harvesting), oats, barley (tillering / ear head emergence), taramira, mustard (pod formation / maturity / harvesting), gram (pod maturity / harvesting), lentil (vegetative / flowering), ajwain, fenugreek and isabgol (vegetative), potato (tuberization / maturity), cabbage, cauliflower (late vegetative / head formation) and tomato (flowering/ fruiting) in Rajasthan.

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

- Rice (grain development/harvesting), pulses (pod maturity), rice fallow black gram (pod formation / development), maize (harvesting), sorghum (harvesting), groundnut (pegging), cotton (boll development), vegetables (vegetative/fruiting), sugarcane (vegetative/ grand growth phase) in Tamil Nadu.
- Sugarcane (ratooning), groundnut (flowering), pigeon pea (harvesting), bitter gourd (fruiting / harvesting), cotton (boll development/ picking), sunflower (head formation), safflower (flowering), mango (fruiting) in Karnataka

- Vegetables (harvesting), rice (harvesting), Arecanut (maturity/harvesting), ginger (planting), coconut (seed nut collection) in Kerala.
- Bengal gram (maturity), rice (grain development / maturity), red gram (maturity), sunflower (seed development), groundnut (pod development / maturity) in Andhra Pradesh.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Jowar, safflower, gram, *rabi* sunflower, maize (harvesting), irrigated wheat (dough / maturity / harvesting), sugarcane-*Adsali* (active tillering), Sugarcane-pre seasonal (early vegetative), sugar cane-*Suru* (sprouting), summer rice (tillering in Konkan and East Vidarbha), groundnut (vegetative / flowering in Konkan and early vegetative growth in other divisions), summer sunflower (germination / early vegetative), summer maize (germination / early vegetative), bajra (early vegetative / vegetative) in Maharashtra.
- Mustard (maturity / harvesting), pigeon pea (seed maturity / harvesting), gram (pod maturity / harvesting), potato (tuber maturity / harvesting), brinjal and tomato (fruiting / harvesting), cumin (seed formation / maturity), early sown wheat and timely sown wheat (maturity / harvesting), late sown wheat (milk / dough), sugarcane (sprouting / early vegetative) and summer groundnut (early vegetative / flowering) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Wheat (grain development), mustard (harvesting), chickpea (pod formation), pigeon pea (pod development/maturity), sugarcane (planting / vegetative), cotton (boll formation), maize (maturity), onion (transplanting), gram / linseed (fruiting / harvest), okra (sowing) in Madhya Pradesh.
- Pigeon pea (pod development), gram (pod development/ maturity), wheat (milky), mustard (maturity /early harvest), sunflower (sowing), sugarcane (vegetative) in Chhattisgarh.

Annexure II List of Varieties

Bihar

Bhindi: Parvani Kranti, Arka Abhay, Arka Anamika, KS 312 and hybrid varieties such as Bhawani, Krishna, Lam Hybrid, Hybrid 6, Hybrid 8, Indranil.

Green gram: Pusa Baishakhi, T-9.

Summer moong: Pusa Vishal, Samrat, Sona, PS 16, SML 668.

Urd: Type 9.

Orissa

Summer maize: Dhabal and Navjot and Hybrid varieties like Ganga, Deccan 105, Kargil 900-M, PRO 345, Kargil 633.

Summer Sunflower: High yielding variety like Modern and hybrid varieties like PAC 36, KBSH, MSFH-8 and MSFH 17.

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

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

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

Summer cow pea: Bush type – Pusa Phalguni, Pusa Komal; runner type – American Long and Banarasi Long; other improved varieties like Russian Giant, EC-4316, NP-3, C-152, UPC-286, UPC-5286 and IGFI-450.

West Bengal

Sunflower: Morden, Surya (90-95 days duration), Pack 36 (hybrid variety, 104 days duration), KBSH (90-95 days duration).

Green gram: Sonali (B-1), Panna (B-105), Pusa Baishakhi etc.

Jharkhand

Green gram: Pusa Vishal, SML-668 and PDM-11.

Sugarcane: High yielding variety – BO147 (red rot resistant and high sugar content-10.7%).

Bhindi: High yielding varieties – Pusa A-4, Parvani Kranti, Arka Anamika etc. and hybrid varieties – Sonal and Sharita.

Assam

Direct seeded early *Ahu* Rice: Banglami, Puthichapali, Nilajee, Hasakumra.

Transplanted early *Ahu* rice: Lachit, Chilarai, Gopinath, Luit, Kapilee, Dichang, Dikhow and Kalong.

Green gram: T44, AAU 34, AAU 39, Pratap, SG1.

Black gram: T 9, Pant U 19, JU 78 etc.

Cucumber: Chinese Green, Pusa Sanyog, Poinsette.

Bitter Gourd: Long Green, Extra Long, Pussa Do Mausmi.

Ridge Gourd: Pusa Nasdar, AAUJ-2, AAUC-3.

Okra: Pusa Sawani, Arka Anamika, Parbhdani Kranti.

Jute: JRC 321 (Sonal), UPC 94 (Reshma), JRC 321, JRC 7447, UPC 94, JRO 524, JRO 7835, JRO 632 etc.

Lady's Finger: Parvani Kranti, Arka Anamika.

Ridged gourd: Pusa Nasdur.

Summer sesame: TC 25 and Binayak.

Meghalaya

Lady's Finger: Paravin Kranti, Akra Anamika.

Mizoram

Lady's Finger: Pusa Sawani, Pusa Makhmali, Punjab Padmini, Arka Anamika, Arka Abha.

Delhi

Variety: -

Green gram – Pusa Visal, Pusa Vaisakhi, Pusa 9531, Pant moong 1, , Pant moong 5, PDM-11, SML-32

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

Maize – African Tall.

Hybrid cluster bean (Pusa Komal, Pusa Sukamol)

Baby corn HM-4.

Punjab

Summer moong - SML-668.

Summer mash -Sathi mash, i.e. Mash 1008 or Mash-414 or Mash-218.

Haryana

Baisakhi Mung - K851 and Type 44 and Muskan

Gujarat

Greengram: GM-3, GM-4.

Cowpea: Guj. Cowpea-1, 2, 4 or Pusa Falguni.

Summer groundnut: GG-2, 5 and 7 for Bhal and Coastal region and GG-2 or GG 20 for North Gujarat region.

Maharashtra

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

Ladies finger: Arka Anamika, Parbhani Kranti, Akola Bahar and Phule Utkarsha.

Madhya Pradesh

Sugarcane: Jawahar 86141, Ko Jawahar-86572, Ko Jawahar-86600, Ko-Jawahar-86032

Moong: PDM-11 JM-721, TJM-1

Urad: Urad-2, PDU-1, TPU-4

Annexure III
Contour maps (Relative humidity, Cloud amount and Wind Speed) for the week ending
16.03.2011

