

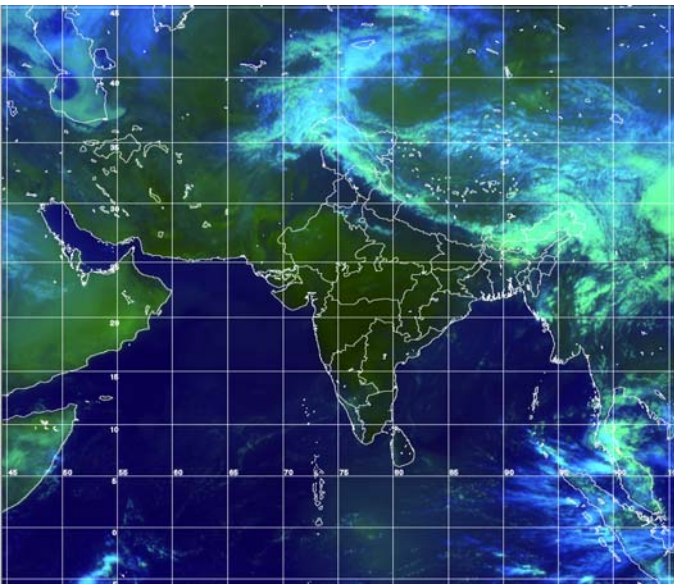


National Agromet Advisory Bulletin

Thursday, 31st March, 2011

(For the period 31st March to 4th April, 2011)

Satellite image 0600 UTC Dated
1st April, 2011



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National Agrometeorological Advisory Service Centre
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Executive Summary

Dry weather conditions prevailed over most parts of the country except some districts of Arunachal Pradesh, Assam, Jammu & Kashmir and Sub-Himalayan West Bengal during last week. Increased temperature conditions (4°C above normal) during the third week of March resulted in mixed impact on wheat crop prospects over Indo-Gangetic Plain. The late sown wheat crop, particularly in Rajasthan, M.P are affected as the same is at milk to dough stage in considerable areas. In Punjab, Jharkhand, Chhattisgarh and U.P, limited areas are in late sown crop; as a result the impact would be less compared to other states mentioned above. The temperature condition in above States improved during last week resulting in better prospect of wheat crop.

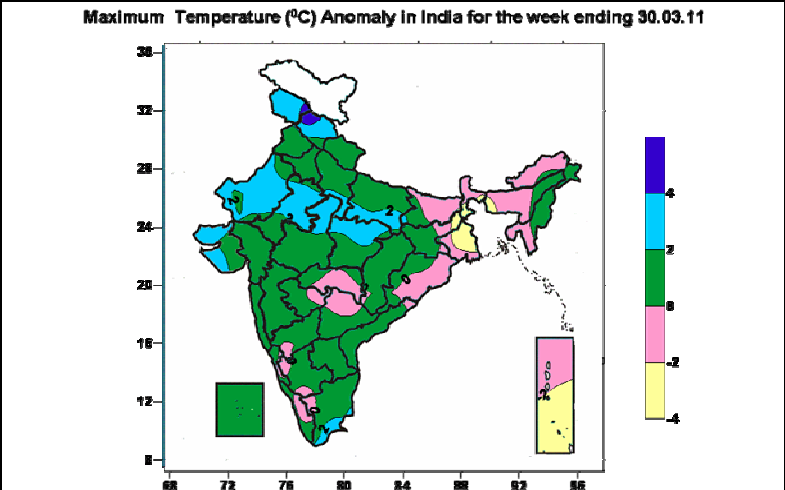
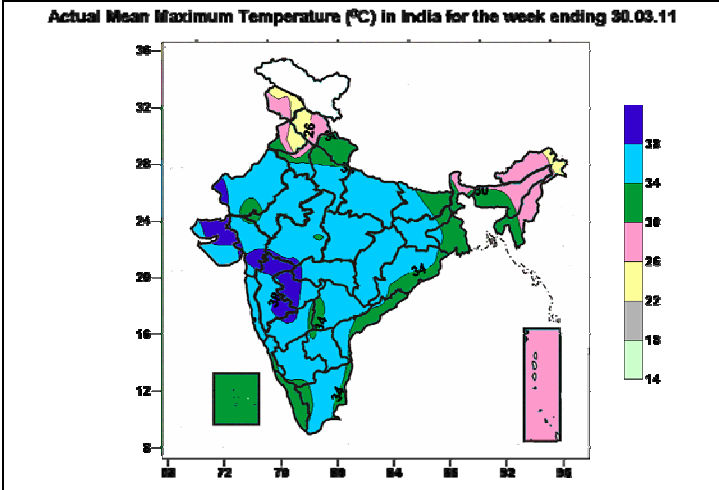
Due to prevalence of dry conditions in most of the States of the country, farmers are advised to provide irrigation to the standing summer crops. After the harvesting of *rabi* crops, summer ploughing may be undertaken to conserve the moisture. Mulching may also be applied to prevent the loss of soil moisture. As transpiration rate and temperatures are higher, provide irrigation frequently in summer crops in Madhya Pradesh. Due to the prevailing high temperatures provide one irrigation to mango to encourage fruit development in scarce rainfall zone of Andhra Pradesh.

Summer deep ploughing may be undertaken to expose the pupae and eggs of insect pests and weed seeds. High temperature may induce pollen sterility in rice in Kerala. Apply 5 cm standing water to maintain flooding during this stage from the available sources. High temperature may result in early maturity of crop and this may lead to reduced yields. As evaporation rate was increasing in Chhattisgarh plain zone (6 – 10 mm / day), farmers are advised to apply irrigation in summer vegetables, rice, groundnut and sunflower.

Farmers are advised to undertake sowing of summer cotton, nursery sowing of tomato and other vegetables in Karnataka, rice fallow black gram in Tamilnadu, sunflower, summer vegetables like okra, bitter gourd, cluster bean, planting of nendran banana in Kerala, planting of papaya and marigold in Orissa, 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 green gram and sunflower, summer vegetables like okra, bitter gourd, cluster bean, cow pea and ridge gourd and also planting of *Gladiolus* in West Bengal, sowing of onion, summer moong, mash, planting of sugarcane, peach, plum and pear in Punjab, mung and arhar in Haryana, sowing of foxtail millet and tomato in Uttarakhand, sowing of late sown moong, jowar, bajra in Uttar Pradesh, maize, sorghum, jowar, cowpea etc. in Madhya Pradesh.

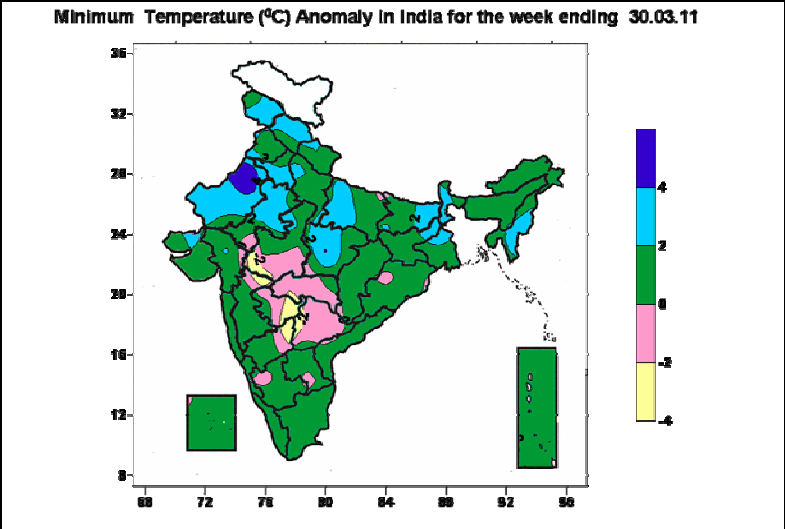
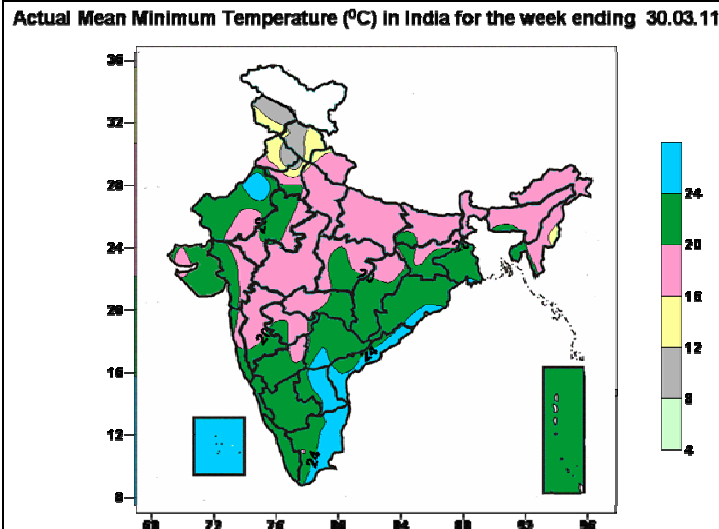
Due to high temperature conditions, there are incidences of mites in sweet orange and jasmine, stem borer and blast in rice and shoot borer in sugarcane in Andhra Pradesh, jassids / leaf hoppers and powdery mildew in mango, thrips in onion, brinjal and bhindi in Karnataka, aphids, thrips, mites, hoppers and white flies in rice fallow cotton in Tamil Nadu and aphids, soft rot in cauliflower in Himachal Pradesh. Farmers are advised to undertake appropriate plant protection measures to control the pests and diseases.

Contour maps (Maximum, Minimum temp. and anomalies) for the week ending 30.03.2011



Actual Mean Maximum temperature ranged 38⁰C and above over some parts of Gujarat, Saurashtra, Madhya Maharashtra, Marathwada, Vidarbha, West Rajasthan, West Madhya Pradesh, North Interior Karnataka, 30 to 34⁰C over most parts of Uttarakhand, West Bengal, Kerala, Coastal Karnataka, Lakashadweep Islands, some parts of Punjab, Haryana, Rajasthan, West Uttar Pradesh, Bihar, Jharkhand, Coastal Orissa, West Madhya Pradesh, Andhra Pradesh, Tamil Nadu, North & South Interior Karnataka, 26 to 30⁰C over most parts of Jammu & Kashmir, Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Maniour, Andaman & Nicobar Islands, some parts of Punjab, Himachal Pradesh, Sub-Himalayan West Bengal, Mizoram, 22 to 26⁰C over some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Arunachal Pradesh, 34 to 38⁰C over remaining parts of the country.

Actual Mean Maximum temperature anomaly ranged above 4⁰C over some parts of Jammu & Kashmir, Himachal Pradesh, 2 to 4⁰C and above over most parts of Jammu & Kashmir, Himachal Pradesh, Rajasthan, over some parts of Uttar Pradesh, Madhya Pradesh, Saurashtra & Kutch, Tamil Nadu, -2 to 0⁰C most parts of Bihar, Sikkim, Arunachal Pradesh, Assam & Meghalaya, Mizoram, Tripura, Coastal Orissa, Vidarbha, some parts of West Bengal, Jharkhand, Coastal Andhra Pradesh, Telengana, Tamil Nadu, Kerala, Karnataka, Marathwada, Andaman & Nicobar Islands, -4 to -2⁰C over most parts of Andaman & Nicobar Islands, some parts of West Bengal, Assam, 0 to 2⁰C over remaining parts of the country.



Actual Mean Minimum Temperature ranged above 24⁰C over most parts of Coastal Andhra Pradesh, Raylaseema, Coastal Tamil Nadu, Lakshadweep Islands, some parts of West Rajasthan, Coastal Orissa, Telengana, 20 to 24⁰C over most parts of Rajasthan, Jharkhand, Gangetic West Bengal, Orissa, Chattisgarh, East Madhya Pradesh, Saurashtra & Kutch, Gujarat, Telengana, Tamil Nadu, Kerala, Karnataka, Konkan & Goa, Andaman & Nicobar Island, some parts of Haryana, Delhi, Bihar, Assam, Tripura, Madhya Maharashtra, Marthwada, Vidarbha, 12 to 16⁰C over some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana,

Minimum Temperature anomaly ranged 4⁰C and above over some parts of West Rajasthan, 2 to 4⁰C most parts of Jammu & Kashmir, Himachal Pradesh, Rajasthan, Sub-Himalayan West Bengal & Sikkim, some parts of Punjab, Haryana, Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, Gangetic West Bengal, Manipur, Mizoram, Madhya Pradesh, Gujarat, Saurashtra & Kutch, -2 to 0⁰C over most parts of Vidarbha, Telengana, West Madhya Pradesh, some parts of East Uttar Pradesh, East Rajasthan, Orissa, East Madhya Pradesh, Raylaseema, North & South Interior Karnataka, Madhya Maharashtra, Marathwada, Gujarat, -4 to -2⁰C over some parts of Telengana, Vidarbha, Marathwada, Madhya Maharashtra, West Madhya Pradesh,

Manipur, 8 to 12°C over most parts of Jammu & Kashmir, Himachal Pradesh, some parts of Punjab, Haryana, 16 to 20°C over remaining parts of the Country.

0 to 2 °C over remaining parts of the Country.

Weather Forecast (Valid upto 1430 hours of 3rd April, 2011)



 Most/ Many places
  Most/isolated places
  Many places
  Many/ Few places
  Few Places
  Isolated Places

 Many/ Few/ Mainly Dry
  Few/ Isolated Places
  Many/ Few/ Isolated places
  Isolated places/ MainlyDry

 Many/ Isolated Places
  MainlyDry/few
  Isolated places/ MainlyDry/few
  Mainly Dry / Dry

Major Feature of Weather Forecast (upto 1430 hours IST of 3rd April , 2011)

- Fairly widespread rain/thundershowers would occur over northeastern States, SubHimalayan West Bengal & Sikkim and isolated over Bihar, Jharkhand, Gangetic West Bengal, Coastal Andhra Pradesh and Orissa.
- Scattered rain/snow would occur over Western Himalayan region from tomorrow.
- Isolated duststorm/thunderstorm would occur over Rajasthan, Punjab and Haryana during next 24 hours.
- Scattered rain/thundershowers would occur over Andaman & Nicobar Islands and isolated over Kerala, south Karnataka and Lakshadweep.

- No significant change in maximum and minimum temperatures over northwest and adjoining central India during next 23 days.

Weather Warning

- Isolated thundersqualls would occur over SubHimalayan West Bengal & Sikkim and northeastern states during next 48 hours.

Weather Outlook (upto 1430 hours IST of 5th April, 2011)

- Fairly widespread rain/thundershowers would occur over northeastern states.
- Scattered rain/snowfall would occur over western Himalayan region and isolated duststorm/thunderstorms over plains of northwest India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Monghyar district of Bihar, West Singbhum district of Jharkhand, Hooghly, Murshidabad, Nadia, 24 Pargana (N), Coochbehar districts of West Bengal and all the districts of Sikkim received rain during last week. Weather remained mainly dry over the remaining districts of the States of the region during the period.
- **Rainfall Forecast:** Fairly widespread rain / thundershowers would occur over Sub Himalayan West Bengal and Sikkim and isolated over Bihar, Jharkhand, Gangetic West Bengal and Orissa.
- **Advisories:**
 - As fairly widespread rain is likely to occur over Sub Himalayan West Bengal and Sikkim during the period, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures to the standing crops. As weather remained mainly dry over most of the districts of the remaining States during last week and no significant rainfall is likely to occur 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. in the region.
 - As light rainfall may occur in North West Alluvial Plain Zone in Bihar, farmers are advised not to keep the harvested tobacco produce in the open.
 - As light rainfall is expected (in the night of 27th March) across north Bihar districts which will add sufficient moisture in the soil, this would be helpful for good germination of summer moong crop. Farmers are advised to continue the sowing of moong.
 - Taking the advantage of dry weather, harvest matured crops of mustard, tobacco, potato, pulses etc. in remaining parts of 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.
 - Due to dry weather, fruit drop is appeared as a common problem in mango in North Eastern Coastal Plain Zone of Orissa. Farmers are advised to spray water by pedal sprayer during forenoon hours to prevent fruit drop.
 - Due to increase of temperature in Coastal Saline Zone of West Bengal also, fruit drop is a common problem in mango; spray water by foot sprayer during forenoon to prevent fruit drop. Apply straw or crop residue mulch for better moisture condition.
 - As there is no chance of significant rainfall in Gangetic 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. Farmers are advised to undertake field preparation and sowing. Increased temperature may lead to moisture stress in standing crops. Apply irrigation to groundnut and sugarcane. Farmers are advised for sowing jute, summer vegetables like *okra*, bitter gourd, cluster bean, cow pea and ridge gourd.
 - 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, summer vegetables like *okra*, bitter gourd, cluster bean, cow pea and ridge gourd, jute and also planting of *Gladiolus*. Adopt seed rate of 3.5 kg per bigha for green gram.
- Farmers are advised to 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.
- As chickpea and fieldpea is at maturity stage in Jharkhand, harvesting should be done immediately to avoid effect of scorching temperature and faster wind velocity and matured pods should be harvested before they shatter.
- Prepare the field and undertake sowing of *kharif* maize, summer potato and *kharif* vegetables in Sikkim.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Increased temperature may aggravate the white ant and white grub infestation in groundnut in Ganjam and Khurda districts in Orissa; drench the soil with Chloropyriphos solution @ 2 ml / litre water. There is also possibility of infestation of thrips in Kendrapara and Ganjam districts of Orissa; spray 2 ml Endosulphan in 1 litre water.
- High temperature may lead to fungal wilting in pointed gourd in Puri district of Orissa; spray 1.5 ml Carbendazim in 1 litre water. Wherever pointed gourd is at flowering and fruiting stage, don't go for weeding. The grasses and weeds will help in maintaining humidity and is also safe for creeping of the vines and does not allow the fruits to come in contact with soil and will help to avoid fruit rot.
- There is chance of infestation of gandhi bug and brown plant hopper at milk stage of rice in Coastal Saline Zone of West Bengal; spray Imidachlorpit @ 3 ml /10 litres of water or Buptosezin 25 EC @ 2 ml / litre or Acephate @ 2 g / litre of water at 7 days interval near ground level.
- Due to high temperature and humidity in Coastal Saline Zone of West Bengal, caterpillars bore into the top shoots and fruits of lady's finger; Remove and destroy attacked shoots and fruits and spray Dichlorovos @ 1.5 ml / litre or Carbaryl WP @ 2 g / litre of water.
- In the prevailing weather condition, there is a possibility of spread of blast disease in *boro* rice in New Alluvial Zone of West Bengal; apply Hinosan or Kitazin. There is also a chance of attack of rice hispa and if the infestation is more than 10%, apply Hostathion (1.5 ml per litre of water) or Phosphamidon (0.75 ml per litre of water).
- High humidity in Laterite and Red Soil Zone in West Bengal may cause the outburst of leaf blight in *boro* rice; to control this use carbendazim 50 WP and reduce use of nitrogen fertilizer.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry

- Fish farmers, who have stocked fingerlings in the pond for fish culture, should monitor the quality, level of water and temperature in Cuttack, Jagatsinghpur and Kendrapara districts of Orissa. If 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 cultural activity.
- Matured poultry birds get more affected in summer season by sudden increment in temperature rather than colder season in South Eastern Plateau Zone of Jharkhand. Presently, maximum day temperature ranged between 34 and 37⁰C causing death of birds due to heat stroke; hence, take proper care to protect the birds from heat.

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

- **Realised Rainfall:** East Siang, Lohit, Papumpara, Upper Siang and Upper Subansiri districts of Arunachal Pradesh and Cachar, Dibrugarh, East Garo Hills, East Khasi Hills, Lakhimpur, N.C.Hills, Nalbari, Sonitpur and Tinsukia districts of Assam received rain during last week.
- **Rainfall Forecast:** Fairly widespread rain / thundershowers is likely to occur over the States of this region during the period.
- **Advisory:**
 - As fairly widespread rain is likely to occur over the States of this region during the period, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures to the standing crops.

- Postpone the sowing of jute, summer green and black gram in Central Brahmaputra Valley Zone in Assam due to the possibilities of rain.
- Farmers are advised to sow lady's finger, bottle gourd, ridge gourd etc. in Ri-Bhoi, West Khasi, East Khasi, East Garo and West Garo hill district in Meghalaya after current spells of rain.
- Farmers in Mizoram are advised for sowing of lady's finger, French bean and cucurbitaceous vegetables after current spells of rain.
- In Nagaland, support should be given to the banana with the help of bamboo so as to protect the plants from bending or falling down due to heavy wind speed.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- In Central Brahmaputra Valley Zone in Assam, wilt disease in lentil crop is observed in some areas. 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, Calixin @ 1-2 ml/ litre may be sprayed depending upon the disease intensity.
- Due to recent rainfall and also possibility of rain to occur, incidence of late blight may be observed in potato in Sub Tropical Plain Zone in Manipur; farmers are advised to spray Metalaxyl based fungicide, like Redomil MZ-72 WP @ 2 g / litre alternately with Mencozeb @ 2 g / litre of water at 14 days interval for 2-3 times.
- There is possibility of infestation of purple blotch disease in onion in Mizoram. To control purple blotch disease, 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.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry:

- In Meghalaya, the farmers are advised to give vaccination to broiler poultry to control Ranikhet disease in Ri-Bhoi, South Garo, East Garo and West Garo districts. Vaccination schedule against FMD, Blue tongue (BT), Brucellosis, Haemorrhagic Septicaemia, Anthrax in large ruminants and PPR and sheep and goat Pox PPR in small ruminants must be carried out in hot humid areas of Ri-Bhoi, South Garo and Jaintia Hills districts.
- 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. Animals with disease conditions that have become chronic and require repeated treatments must be culled from the herd.
- In Tripura and Mizoram, due to the weather change, some viral / bacterial diseases may outbreak in Poultry birds and cattle. Vaccination like FMD, Black Quarter and Haemorrhagic septicemia (HS) in cattle and Ranikhet in poultry may be undertaken. Keep sanitary conditions in poultry sheds and also keep the equipment clean. Provide balanced feed and fresh clean water to the cattle.

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

- **Realised Rainfall:** Dry weather prevailed over the region except rainfall in some districts of Jammu & Kashmir during last week.
- **Rainfall Forecast:** Rainfall at a few places over Jammu & Kashmir and Himachal Pradesh after 24 hours and at many places thereafter over Jammu & Kashmir, Himachal Pradesh and Uttarakhand. Except that mainly dry weather or isolated rainfall is likely in the region.
- **Advisory:**
 - As there was no significant rainfall in the region during last week and due to increase in maximum temperature in the region, farmers are advised to apply irrigation to standing crop in the remaining states.
 - 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. In present weather condition, early harvesting of matured wheat is advised to avoid shattering of grains.

- Farmers are advised to undertake sowing of bhindi, frenchbean and nursery sowing of khira, summer squash, bitter gourd, gladiolus, liliium and China aster, glardia, rudevekia, Kochia, African Marigold, French Marigold, partulaca, Tithinia, Torinia and cleome, red and white clover, fodder maize, fodder maize + legume, moong, mash, nursery sowing of vegetables like cauliflower, cabbage, tomato, capsicum, cucumber, lettuce and broccoli in Himachal Pradesh utilising realised rainfall during last week.
- Farmers in advised to undertake planting/sowing of mango, guava, loquat, litchi, citrus, okra, cucumber, beans, muskmelon, watermelon, round gourd, bottle gourd, sponge gourd, bitter gourd, tomato, capsicum, chilli, brinjal in Jammu & Kashmir.
- Farmers in advised to undertake sowing cucurbitaceas vegetables like melon, bottlegourd, ridgegourd, bittergourd, pumpkin and smoothgourd, leafy vegetables like spinach and amaranthus and transplanting of tomato and brinjal in Rajasthan.
- Undertake sowing of foxtail millet and tomato in Uttarakhand
- Farmers in Punjab and Haryana are advised to complete sowing of spring sugarcane and advised to undertake sowing of summer moong and mash. Farmers in Western Zone are advised to apply requirement based irrigation, recommended dose of fertilizer and intercultural operation.
- Farmers in Bhabar and Terai Zone (Nainital and Udamsingh Nagar districts) of Uttarakhand are advised to start harvesting of timely sown wheat.
- Farmers in Rajasthan are advised to undertake harvesting of matured mustard, gram, taramira, barley and potato.
- In Southern Humid Plain Zone (Banswara region) of Rajasthan farmers are also advised to protect the nursery plants and zaid crops from high temperature.
- Farmers in Uttar Pradesh are advised to prepare for late sowing of Lady's finger, summer Sugarcane and undertake harvesting of matured crops viz. wheat, barley, gram, mustard, arhar etc.
- In Modipuram region of Uttar Pradesh, irrigate cucurbitaceous fruit orchards as cracks are appearing in some places due to dry weather and as a result quality & yield may decrease for control spray, GA i.e. Gibberelic acid 10 ppm solution i.e 10 mg active GA per liter of water on trees.
- Due to prevailing weather of Seobagh_Mild Hills Sub Humid Zone of Himachal Pradesh, late blight is expected. Farmers are advised to spray Dithane M-45 @ 25 gram in 10litres of water and repeat the spray at 10-15 days interval.
- Farmers in Undulating Plain Zone of Punjab are advised to protect sugarcane crop from termite attack by application of 10 Kg Reagent 0.3 G (Fipronil) or 15 kg Kanodane 1.3 DP mixing in 20 kg wet sand before the sets are covered with soil by planking. Spray 2 litre of Classic 20 EC (Chlorpyriphos) or Lindane/Kanodane 20 EC (gamma BHC) in 400-600 litre of water per acre against attack of early shoot borer.
- In Flood prone eastern plain zone (Bharatpur region), there is infestation of powdery mildew disease in mango this leads to flower and fruit drop in mango. Spray Karathane @ 1ml/l water to manage the disease.
- In Kanpur region of Uttar Pradesh, weather is congenial for white fly on tomato, to control this spray Metosystox @1 lit. per hectare.
- Stages of major crops are mentioned in Annexure I.

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

- **Realised Rainfall:** No significant rainfall occurred over in most of the districts in all the states.
- **Rainfall Forecast:** No significant rainfall is during next three days in the region.
- **Advisories:**
 - As there was no significant rainfall in most of the districts in all the states and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to the standing crops.
 - The farmers of Eastern Dry Zone of Karnataka are advised not to undertake threshing of the crops since rain is expected in the coming days.
 - Farmers in North East Transition Zone of Karnataka are advised to provide irrigation to mango for better development of fruits as the fruits are in maturity stage.
 - Farmers in North Dry Zone of Karnataka are advised to continue the summer ploughing and take up plant protection sprayings in horticultural crops.

- Farmers in North Transition Zone of Karnataka are advised to harvest jowar, bengal gram, wheat and sunflower.
- Farmers of Hill Zone of Karnataka are advised to undertake sowing of cotton under irrigated condition.
- Irrigation should be provided to rice fallow cotton as dry weather condition prevailed during last week and likely to continue during next three days in Cauvery Delta Zone of Tamil Nadu.
- Farmers in Coastal Zone of Karnataka may take up threshing, winnowing, cleaning, drying of pulse crops like green gram, black gram, cow pea etc.
- Farmers in Southern Dry Zone of Karnataka are advised to apply irrigation to horticulture crops.
- Due to high temperature conditions prevailing over High Rainfall Zone of Tamil Nadu, cover the banana bunches with dried leaves. Also arrange for shading in the rice nurseries. Undertake sowing of rice fallow pulses one week prior to harvesting.
- Due to the prevailing high temperature, farmers are advised to provide irrigation to encourage fruit development in scarce rainfall zone of Andhra Pradesh.
- In rice fallow cotton, maize, sugarcane and groundnut, irrigation may be provided due to dry weather condition in cauvery delta zone of Tamil Nadu.
- With possibilities of light rains in the forthcoming days in North Western Zone of Tamil Nadu, farmers are advised to prepare the field for nursery sowing of summer rice.
- Irrigation may be given to all the crops in Northern Zone of Kerala in order to reduce the heat stress. Farmers are advised to undertake plant protection measures and intercultural operations utilising the favourable weather conditions.
- High temperature may induce pollen sterility in rice in Southern Zone of Kerala. This can be reduced to some extent by alternate wetting and drying of fields. Farmers are advised to provide irrigation to coconut and banana since temperature is very high.
- Present dry weather conditions are favourable for the incidence of Tomato spotted wilt virus in chillies and thrips in chillies and bhindi in Scarce Rainfall Zone of Rayalaseema of Andhra Pradesh. Spray Fipronil @ 2 ml per litre of water or Tracer @ 2.5 ml per 10 litres of water to control tomato spotted wilt virus and mix Admire@ 30 g + Dithane -M-45@ 400 g in 200 litres of water per acre and spray. Incidence of mites is noticed in sweet orange. To control mites mix Admire@ 30 g + Dithane -M-45@ 400 g in 200 litres of water per acre and spray.
- Incidence of stem borer, White Backed Plant Hopper/Brown Plant Hopper, leaf folder and blast in rice in Southern Telangana Zone of Andhra Pradesh. Spray Cartap hydrochloride @ 2 g or Phosphomidon @ 2 ml per litre of water if 5 % dead hearts or 1 adult or egg mass is noticed per square meter area to control stem borer. Spray Acephate @ 1.5 g or Imidacloprid @ 0.25 ml or Thiomethoxam @ 2.0 g or Ethofenprox @ 1.5 ml per litre of water to control WBPH/BPH, Cartap hydrachloride 50% SP @ 2 g or Acephate @ 1.5 g per litre of water to control leaf folder.
- Because of continuous dry weather, thrips damage are more severe in vegetables in North East Dry Zone of Karnataka. Spray oxydemeton methyl (1.5 ml) or dimethoate (1.7 ml) or monocrotophos (1.0ml) per liter of water to control them.
- In rice fallow cotton, occurrence of aphid, thrips, mite, hoppers and white flies are being noticed in Cauvery Delta Zone of Tamil Nadu due to the prevailing hot weather. To check these insects use yellow trap smeared with castor oil or white grease and spray Azadirachtin 0.03% (3 ml/l) along with sticking agent in the morning or evening using hand sprayer.
- Red Spider Mite is observed in tapioca in North Western Zone of Tamil Nadu. To control the pest, spray 2.5 ml of Omag per litre of water.

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 dry weather prevailed over the states of the region during last week and dry weather would prevail during the period, farmers are advised to apply light & frequent irrigation to standing crops. Also farmers are advised to complete the harvesting of the already matured irrigated wheat.
 - As there is no possibility of rain during the period, apply Nitrogen @ 136 kg, phosphorous @ 85 kg and Potash @ 85 kg / ha to pre seasonal sugarcane in Madhya Maharashtra at the time of final earthing up followed by irrigation.

- As temperature is increasing there is more evaporation of water. Hence, farmers in South Konkan Coastal Region are advised to irrigate groundnut at an interval of 8-10 days. Also to increase the production and to improve the quality of mango, farmers in Konkan region are advised to spray 1 % Urea and 1 % Potassium Nitrate at pea stage, marble stage and arecanut size stage.
- Due to increase in temperature there may be more transpiration in banana, farmers in Maharashtra state are advised to spray mixture of 800 gm kaolin dissolved in 10 liters of water.
- Farmers in Madhya Maharashtra region are advised to sow fodder crops like sorghum, maize and pearl millet.
- As dry condition prevailed during last few weeks and is likely to continue, farmers in Gujarat state are advised to irrigate groundnut at flowering and pegging stage along with other vegetable and fruit crops and also harvest matured crops like wheat, mustard, isabgul and cumin, gram etc.
- Farmers in North West region of Gujarat are advised to undertake sowing of lady's finger.
- Weather is congenial for Tikka (leaf spot) disease in groundnut crop in South Konkan Coastal Region of Maharashtra. To control spray carbendazim @ 10 g per 10 litres of water at 15 days interval. Weather is also favourable for incidence of mealy bug and fruit borer in mango. To control apply Dimethoate @ 10 ml and Quinalphos @ 10 ml per 10 litres of water. Do not spray insecticides 20-25 days before maturity of fruits.
- Due to congenial weather conditions, there may be incidence of thrips in mango in North Konkan Coastal Region of Maharashtra. To control spray spinosid 45 SL @ 25 ml or Dimethoate 30 EC @ 10 ml / 10 litres of water.
- Due to prevailing weather conditions there may be virus infestation on chilli in western Maharashtra region, spray Methyl Dimeton 20 ml + water soluble Sulphur 20 gm + 10 liter water at the interval of 10 days as and when required.
- There may be incidence of early shoot borer in sugarcane crop due to prevailing weather conditions in Western Maharashtra region; spray Endosulphan 35 EC @ 15 ml in 10 liters of water.
- Weather is favourable for attack of leaf rolling caterpillar in groundnut in Western Maharashtra region; spray Phosphamidon @ 2.5 ml or Cypermethrin @ 4 ml or Quinalphos @ 20 ml in 10 liters of water.
- Weather is favourable for incidence of bud borer in vegetable crops like brinjal and okra in Bhal and Coastal region of Gujarat. Farmers are advised to spray Endosulphan @ 20 ml / 10 liters of water.
- Due to increase in temperature and humidity, there may be incidence of sucking pests in vegetable crops in North Gujarat region; spray monocrotophos 36 EC @ 0.1% to manage sucking pests.
- Weather conditions are favourable for incidence of mango hopper in North Saurashtra Zone. Spray Imidachloprid 17.8 SL @ 2.5 ml / 10 litres of water to control mango hopper. Also there may be dropping of unripe fruits in mango orchard. Spray NAA @ 2 g or Gibberelic Acid 1 g + 2 kg urea / 100 liter of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry during last week in the region.
- **Rainfall Forecast:** Main dry or dry weather is likely over the region.
- **Advisory:**
 - As dry weather conditions prevailed during last week and no significant rain is likely in the next three days in the region, farmers are advised to apply irrigation to the standing wheat, gram, sugarcane and other *rabi* crops.
 - As weather conditions are suitable for proper germination of summer maize, green gram, sesame and summer vegetables like brinjal, tomato, chillies and sugarcane, farmers are advised to undertake sowing in Bastar Plateau zone. Mulching should be done in the thalass of fruit plants and PVC method, sprinkler method/ drip method may be followed in vegetables and fruit plants for water conservation.
 - As evaporation rate was increasing in Chhatisgarh plain zone(6.0-10 mm/day), farmers are advised to apply irrigation in summer vegetables, rice, groundnut and sunflower.
 - Due to dry weather and there is chance of increase in temperature. Farmers in Madhya Pradesh and Chattisgarh are advised to harvest the *rabi* crops to avoid grain shattering.
 - Farmers in Northern Hill Zone of Chattisgarh are advised to prepare land for planting of sugarcane and sow moong, urad, fodder crops like maize, jowar, bajra crops etc.

- Farmers in Satpura Plateau Zone and Nimar Valley Zone of Madhya Pradesh are advised to undertake sowing of summer sugarcane, fodder maize, fodder jowar, fodder bajra and other summer vegetables.
- As the temperatures are above normal, apply irrigation from available sources to wheat at milking and grain filling stages in Malwa plateau zone.
- **As transpiration rate and temperatures are higher in Kymore plateau and Satpura hill zone, provide irrigation frequently in summer crops like moong, urd and sunflower. Sowing of maize, sorghum, jowar, cowpea etc. for summer forage crops may be undertaken.**
- In Gird Zone and Jhabua Hill Zone of Madhya Pradesh as dry weather conditions would prevail and maximum temperature may raise by 2-3°C during the next 5 days, farmers are advised to transplant tomato, chilli, onion and cucurbit crops in the main field and undertake sowing of summer chari (green fodder); start harvesting of early sown wheat, gram and mustard.
- In Vindhya Plateau Zone of Madhya Pradesh, cloudy weather and high wind speed is forecast for next 5 days, farmers are advised to undertake propping of sugarcane and also apply mulching to summer vegetables.
- Due to dry weather, farmers in Gird Zone in Madhya Pradesh advised to keep watch for thrips attack in onion, if found spray Carbaryl @ 2gram/ liter 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 Emidachlopid @ 0.5 ml per litre of water.
- Infestation of stem borer is observed in trace at few places in Chhattisgarh plain zone. Hence, farmers are advised to monitor the crop and if the damage is above ETL apply granular insecticides like 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 clear sky conditions during next 5 days, cattle should be kept in dry place, provide balanced and nutrient rich feed having protein, carbohydrate, fat vitamins and antibiotics in Gird Zone of Madhya Pradesh.
- At present, due to increase in day temperature in Bundelkhand Zone of Madhya Pradesh, farmers are advised to allow the buffalos to swim in the water pond and also wash their body with water twice in a day to keep their body temperature cool.

Annexure I

Major Crops

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

- Wheat (milk / dough / early maturity), maize (tasseling / silking / cob formation), vegetables like cauliflower, cabbage (maturity / harvesting), chillies, tomato (fruiting / harvesting), palak, carrot, radish etc. (harvesting), barseem, lucerne, oat (vegetative), sugarcane (planting), *boro* rice (tillering / panicle initiation), 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 / early maturity), pea, lentil and gram (pod maturity / harvesting), onion (bulb enlargement / maturity), tomato (fruiting / harvesting),

cabbage and cauliflower (maturity / harvesting), chilli and brinjal (transplanting / early vegetative), summer rice (tillering / panicle initiation), 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), arhar (pod maturity / harvesting), wheat (dough / 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), jute (sowing) in Orissa.
- *Boro* rice (tillering / panicle initiation), wheat (dough / early maturity), arhar (pod maturity / harvesting), mango (flowering / fruiting), *rabi* vegetables like cabbage and cauliflower (maturity / harvesting), sunflower (sowing / early vegetative / bud initiation / flowering), green gram (vegetative), groundnut, sesame (early vegetative / vegetative) and *aus* rice, maize, ginger, jute, summer vegetables like ladies finger, *Kakrol*, amaranthus, spinach, various leafy vegetables, brinjal, chili, bitter gourd (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 / panicle initiation), *Bau* Rice (sowing), wheat (grain formation / early maturity), early *ahu* rice (seedling / transplanting / early vegetative), jute (sowing / seedling), summer vegetables (sowing / vegetative), summer sesame (germination / early vegetative) and *rabi* pulses and oil seeds (pod maturity / harvesting) in Assam.
- French bean (sowing), *okra* (sowing), maize (sowing / vegetative) and orange (maturity) in Arunachal Pradesh.
- Summer vegetables (early vegetative / vegetative) and *boro* rice (tillering / panicle initiation) in Tripura.
- *Boro* rice (tillering / panicle initiation), *ahu* rice (nursery sowing / seedling / transplanting / early tillering), rapeseed and mustard (pod maturity / harvesting), *rabi* maize (vegetative), wheat (grain formation / early maturity), winter potato (tuber maturity), winter potato at high altitude (harvesting) and summer vegetables (sowing / vegetative) in Meghalaya.
- *Rabi* maize (flowering), mustard and rapeseed (pod maturity / harvesting), field pea (pod formation / maturity), onion (bulb formation), cauliflower and cabbage (head formation / harvesting) and potato (tuber maturity / harvesting) in Manipur.
- *Khasi* Mandarin (new flush / blooming stage), banana (vegetative / fruiting / maturity), Maize (cob formation / maturity / harvesting), onion (bulb formation), pea (harvesting), beans (pod formation / harvesting), carrot and radish (harvesting), tomato, chilli and capsicum (harvesting), cole crops (head formation / harvesting) and summer vegetables (sowing / early vegetative) in Mizoram.
- Maize, summer crops (land preparation / sowing / early vegetative), potato (tuber maturity) and banana (fruiting) in Nagaland.

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

- Rice (flowering/maturity), rice fallow cotton(maturity), pulses (pod maturity), rice fallow black gram (flowering), maize (harvesting), sorghum (harvesting), groundnut (harvesting), cotton (vegetative/ boll formation/ boll maturity), vegetables (vegetative/fruiting), sugarcane (vegetative/ grand growth phase) in Tamil Nadu.

- Sugarcane (ratooning), groundnut (flowering/pegging), pigeon pea (harvesting), bitter gourd (fruiting / harvesting), cotton (boll development/ picking), sunflower (maturity), safflower (flowering), rice(tillering), bengal gram (harvesting), rabi jowar (harvesting), mango (fruiting/maturity) in Karnataka
- Bengal gram (maturity), rice (panicle initiation/ flowering/ grain formation/ maturity), red gram (maturity), sunflower (seed development), groundnut (pod development / maturity) in Andhra Pradesh.
- Vegetables(harvesting), rice(panicle initiation/flowering /grain filling/ harvesting), arecanut (maturity), ginger (planting), coconut (seed nut collection), pepper(harvesting) in Kerala.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

• Major Crops:

- Irrigated wheat (harvesting), sugarcane-*Adsali* (active tillering), Sugarcane-pre seasonal (vegetative), sugarcane-*Suru* (sprouting/ early growth), summer paddy (tillering / panicle initiation in Konkan and tillering in East Vidarbha), groundnut (pegging / pod formation in Konkan & vegetative growth /flowering in other divisions), sunflower (vegetative growth / floral bud initiation), summer maize (vegetative), bajra (vegetative growth / flag leaf initiation / flowering) in Maharashtra.
- Pigeon pea, cumin, gram (harvesting), Summer Bajra (booting), brinjal and tomato (fruiting / harvesting), early sown wheat and timely sown wheat (harvesting), late sown wheat (maturity / harvesting), sugarcane (sprouting / early vegetative), Mango (flowering) and summer groundnut (flowering / pegging) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Wheat (grain development/ harvesting), mustard (harvesting), chickpea (pod formation), pigeon pea (maturity/harvesting), sugarcane (planting / vegetative), cotton (boll formation), maize (maturity), onion (transplanting), gram / linseed (fruiting / harvesting), okra (sowing) in Madhya Pradesh.
- Pigeon pea (pod development), wheat (grain formation), rice (seedling/tillering), sunflower (sowing), sugarcane (sowing), linseed (flowering), maize, green gram and sesame(sowing) 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, Co-1, Co-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 IGF-450.

Jute: JRO-524 (Naveen)

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.

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.

Jute: Chaitali, Basudev, Naveen, Sonali, Sobuj Sona.

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. Dimru, Maibi, Jaya, IR-50

Transplanted early *ahu* rice: Lachit, Chilarai, Gopinath, Luit, Kapilee, Dichang, Dikhow and Kalong, IR-36, TTB 14-1, Krishna

Bau Rice: Maguri, Panikekua, Amona, Negheri

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

Lady's Finger: Parvani Kranti, Arka Anamika.

Sugar cane :Co1008, Co997, Co740, Co961

Meghalaya

Lady's Finger: Paravin Kranti, Akra Anamika.

Mizoram

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

Madhya Pradesh

Sugarcane: Jawahar-86-141, Jawaharlal-86572, Co- Jawaharlal-86600, Co.-86032

Maharashtra

Fodder sorghum: Phule Ruchira, Phule Amruta or M-35-1 (Maldandi).

Fodder pearl millet: Giant Bajra.

Fodder Maize: African Tall.

Annexure III
Contour maps (Relative humidity, Cloud amount and Wind Speed) for the week ending
30.03.2011

