

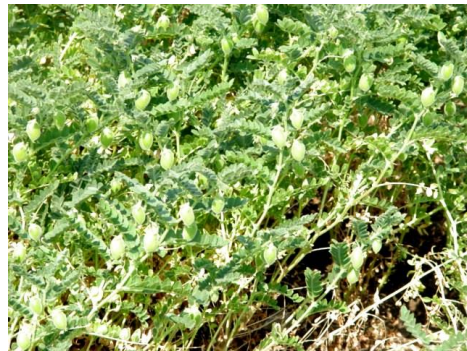
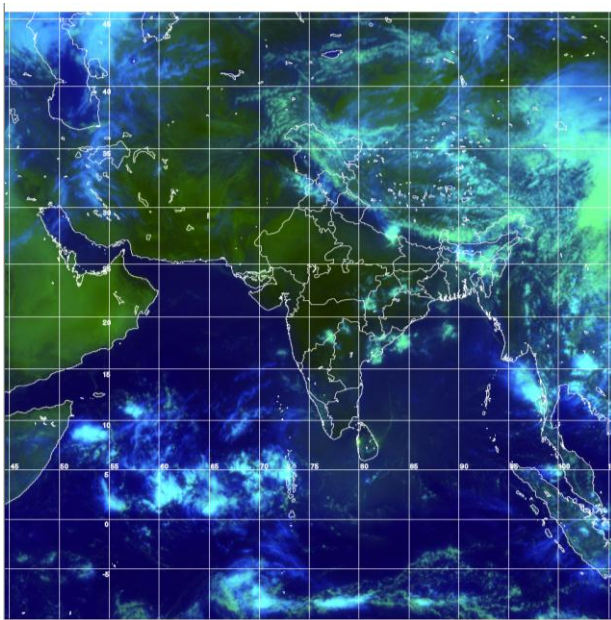


# National Agromet Advisory Bulletin

## Thursday, 12<sup>th</sup> May, 2011

(For the period 12<sup>th</sup> to 16<sup>th</sup> May, 2011)

Satellite image 1130 UTC Dated  
13<sup>th</sup> May, 2011



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National Agrometeorological Advisory Service Centre  
Agricultural Meteorology Division  
India Meteorological Department  
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Pune.

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# Executive Summary

Fairly widespread rainfall has occurred over West Bengal & Sikkim and scattered over Assam & Meghalaya, Manipur, Mizoram, Tripura, Bihar and south interior Karnataka. Farmers in West Bengal are advised to postpone irrigation to the standing crops. As fairly wide spread rain is likely to occur in northeastern States, farmers are advised to postpone irrigation, intercultural operation and application of fertilizers and plant protection measures to the crops in these States.

Due to continuous rains in West Bengal *boro* rice crop at maturity stage in Coastal Saline Zone may get affected in some areas due to germination of seeds in the field. Farmers are advised to harvest the crop immediately. Grains may be soaked in 5% salt solution to prevent germination.

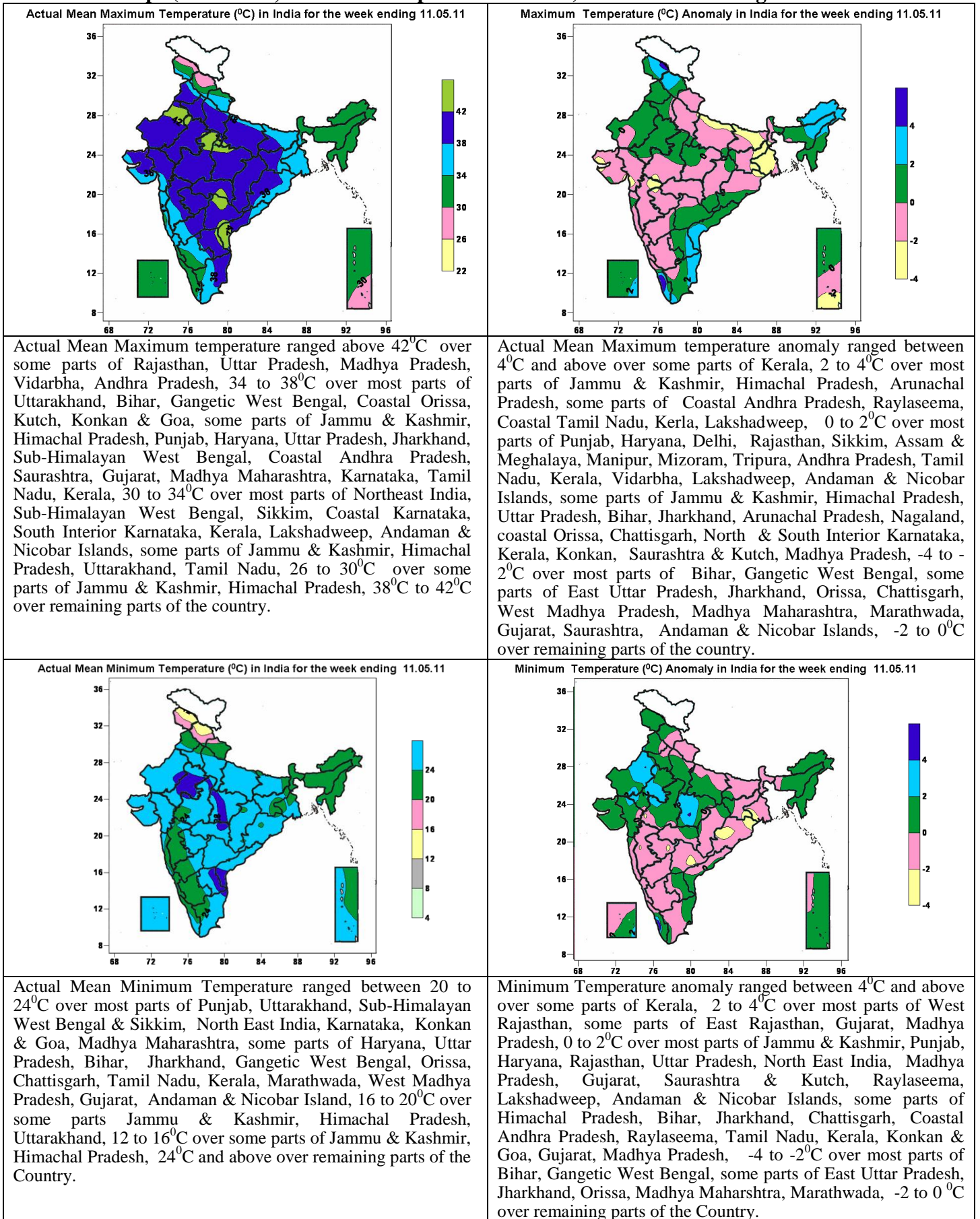
Maximum temperature ranged between 38 to 42<sup>0</sup>C over most parts of Rajasthan, Gujarat, Maharashtra, Andhra Pradesh, North Interior Karnataka, Madhya Pradesh, Chhattisgarh, Punjab, Haryana and Uttar Pradesh. Heat wave conditions are likely to continue over isolated pockets of West Rajasthan, East Uttar Pradesh and Orissa. Farmers are advised to undertake harvesting of remaining wheat crops and other *rabi* crops and store it at safer places. Light and frequent irrigation may be provided to standing summer crops to meet excess evaporative demand.

Due to increasing temperature and dry weather conditions, crops like sugarcane, mango and litchi in Punjab, arecanut in Kerala, sugarcane and banana in Tamil Nadu and Karnataka and newly planted orchard saplings in Maharashtra face severe heat / moisture stress conditions. Wind speed is also high leading to more evaporation. Farmers are advised to apply mulching and provide light and frequent irrigation to the summer crops.

Farmers are advised to undertake sowing of rice in the nursery, summer moong and maize in Jammu & Kashmir, sowing of French bean, cucumber, bottle gourd and bitter gourd and transplanting of tomato, brinjal and chilli in Himachal Pradesh, sowing of red gram, cotton, baby corn and sweet corn in New Delhi, sowing of cotton in Punjab and Haryana, sowing of rice and maize in Uttarakhand, sowing of jute, planting of ginger, turmeric and arum and nursery sowing of *aus* rice in West Bengal, sowing of rice and planting of ginger in Karnataka, sowing of brinjal and chilli in Kerala and nursery sowing of *kuruvai* rice in Tamil Nadu.

Due to high temperature conditions, there are incidences of jassids, leaf hoppers and powdery mildew in mango and thrips in capsicum in Karnataka, leaf hopper and mealy bug in cotton in Tamil Nadu, aphids in khasi mandarine in Mizoram, fruit borer in tomato in New Delhi and thrips in green gram in Punjab. 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 11.05.2011



**Distribution of rainfall (% departure from normal) for the districts of Jammu & Kashmir, UttaraKhand, Bihar, Jharkhand, Orissa, West Bengal during last week.**

State/Districts	Actual	11.05.11
<b>Jammu &amp; Kashmir</b>		
Anantnag	24.8	7
Badgam	6.2	-63
Doda	31.6	95
Jammu	13.5	164
Kathua	2.8	115
Kupwara	16.9	-28
Ladakh(Leh)	0.0	-100
Pulwama	9.4	-48
Srinagar	8.0	-51
Udhampur	2.0	-88
<b>UttaraKhand</b>		
Almora	5.1	-41
Chamoli	12.5	3
Champawat	35.0	257
Dehradun	20.5	196
Garhwal Pauri	22.7	144
Garhwal Tehri	22.4	92
Haridwar	11.7	303
Nainital	13.2	38
Pithoragarh	38.6	152
Rudraprayag	17.0	-21
Udham Sing Nagar	0.0	-100
Uttarkashi	23.9	40
<b>Bihar</b>		
Araria	15.4	-46
Aurangabad	0.0	-100
Begusarai	12.0	52
Bhagalpur	6.2	-35
Buxar	0.4	-80
Darbhanga	7.3	-37
East Champaran	6.6	-28
Gaya	0.0	-100
Gopalganj	0.0	-100
Jahanabad	0.0	-100
Kathihar	0.8	-97
Khagadia	20.8	133
Kishanganj	17.5	-40
Madhepura	5.9	-71

State/Districts	Actual	11.05.11
Madhubani	24.4	53
Monghyar	3.8	-63
Muzaffarpur	7.6	-32
Nalanda	0.0	-100
Patna	0.0	-100
Purnea	35.9	65
Rohtas	1.5	67
Saharsha	11.6	-49
Saran	0.0	-100
Siwan	3.2	-43
Supaul	22.4	-1
Vaishali	0.0	-100
West Champaran	14.9	42
<b>Jharkhand</b>		
Bokaro	0.0	-100
Dhanbad	0.0	-100
East Singbhum	53.0	235
Girdih	6.1	-22
Hazaribagh	0.0	-100
Palamau	7.0	112
Ranchi	21.0	73
West Singbhum	9.2	-39
<b>Orissa</b>		
Angul	13.2	19
Balasore	54.3	111
Bargarh	0.0	-100
Bhadrak	56.3	121
Bolangir	0.0	-100
Boudh	0.0	-100
Cuttack	17.5	15
Deogarh	2.3	-58
Dhenkanal	36.8	139
Gajapati	19.9	-60
Ganjam	10.2	-64
Jagatsingpur	20.8	-1
Jajpur	18.0	-10
Jharsuguda	2.7	-56
Kalahandi	0.0	-100
Kandhamal	17.1	0

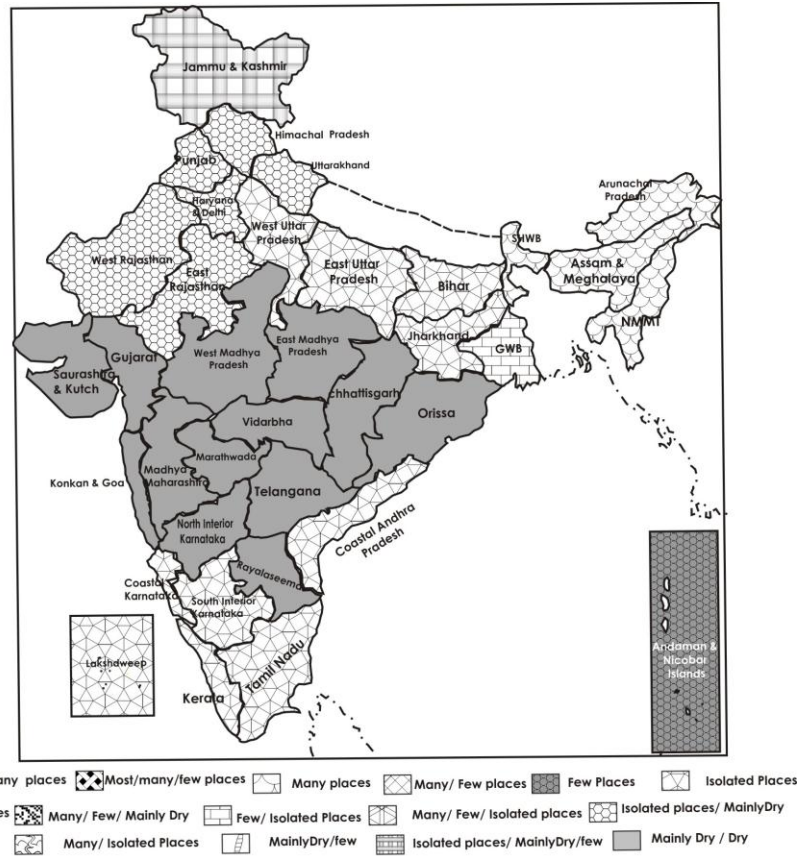
State/Districts	Actual	11.05.11
Kendrapara	0.0	-100
Keonjhar	29.4	22
Khurda	16.4	7
Koraput	10.8	-61
Malkangiri	0.0	-100
Mayurbhanj	28.8	43
Nawapara	0.0	-100
Nawarangpur	7.0	-59
Nayagarh	9.9	54
Puri	26.1	110
Rayagada	11.9	-65
Sambalpur	6.2	13
Sonepur	2.0	-62
Sundargarh	15.0	134
<b>West Bengal</b>		
<b>GWB</b>		
Bankura	63.8	356
Birbhum	10.8	-23
Burdwan	7.7	-32
Hooghly	21.2	8
Howrah	18.1	-10
East Midnapore	41.5	121
Murshidabad	36.9	116
Nadia	20.4	16
24 Pargana (N)	17.5	-20
Purulia	23	191
24 Pargana (S)	12.8	-40
West Midnapore	11.8	-33
<b>SHWB</b>		
Coochbehar	58.1	-4
Darjeeling	30.7	-35
Jalpaiguri	41.3	-31
Malda	20.6	0
Dinajpur (N)	47.2	52
Dinajpur (S)	9.4	-73
North Sikkim	27.4	-57
South Sikkim	24.9	-59

**LEGEND**

- EXCESS 20% OR MORE
- NORMAL +19% TO - 19%
- DEFICIENT - 20% TO - 59%
- SCANTY - 60% TO - 99%
- NO RAIN - 100%
- DATA NOT AVAILABLE



## Weather Forecast (Valid upto 1430 hours of 15th May, 2011)



### Major Feature of Weather Forecast upto 1430 hours IST of 15<sup>th</sup> May, 2011

- Fairly widespread rain/thundershowers would occur over northeastern states and SubHimalayan West Bengal & Sikkim ; scattered over Andaman & Nicobar Islands, Gangetic West Bengal and isolated over rest of India.
- Isolated rain/thundershowers would occur over western Himalayan region during next 2 days.
- Isolated duststorm/thunderstorms would occur over Rajasthan, Punjab, Haryana, Delhi and Uttar Pradesh during next 48 hours.
- Isolated rain/thundershowers would occur over south peninsular India.
- Heat wave conditions could continue over isolated pockets over west Rajasthan, east Uttar Pradesh and Orissa during next 12 days.

### Weather Warning

- Isolated thundersqualls would occur over Bihar, Jharkhand, West Bengal & Sikkim and northeastern states during next 48 hours.
- Isolated duststorms/thunderstorms accompanied with squall would occur over Rajasthan, Punjab, Haryana, Delhi and Uttar Pradesh during next 48 hours.
- Heat wave conditions would prevail over isolated pockets of Rajasthan, Uttar Pradesh and Orissa during next 12 days.

### Weather Outlook up to 1430 hours IST of 17<sup>th</sup> May, 2011

- Fairly widespread rain/thundershowers would occur over northeastern states, scattered over adjoining

g east India, Kerala and Lakshadweep.

## Zonewise Agromet Advisories

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

- **Realised Rainfall:** Purnea district of Bihar, East Singbhum in Jharkhand, Balasore, Bhadrak, Dhenkanal, Keonjhar and Mayurbhanj districts of Orissa, Bankura, East Midnapore, Murshidabad, Coochbehar, Darjeeling, Jalpaiguri and Dinajpur (N) districts of West Bengal received rain during last week.
- **Rainfall Forecast:** Fairly widespread rain / thundershowers would occur over Sub-Himalayan West Bengal & Sikkim; scattered over Gangetic West Bengal and isolated over remaining States of east India. Isolated thunder squalls would occur over Bihar, Jharkhand, West Bengal & Sikkim during next 48 hours.
- **Advisories:**
  - As fairly widespread rain / thundershowers would occur over Sub-Himalayan West Bengal & Sikkim, farmers are advised to postpone irrigation, intercultural operation and plant protection measures to the standing crops. As Bankura, East Midnapore and Murshidabad districts of Gangetic West Bengal received rain during last week and scattered rain is likely to occur in these districts, farmers are advised to postpone irrigation to the crops. As most of the districts of the remaining States of the region did not receive significant rain during last week and no significant rain is likely to occur, farmers are advised to apply irrigation to the crops in these districts.
  - Due to continuous rains in West Bengal *boro* rice crop at maturity stage in Coastal Saline Zone may get affected in some areas due to germination of seeds in the field. Farmers are advised to harvest the crop immediately. Grains may be soaked in 5% salt solution to prevent germination.
  - In Orissa, the weather is optimum for planting of ginger, turmeric, papaya, marigold etc. and sowing of jute, summer vegetables like *okra*, bitter gourd, cluster bean, cow pea and ridge gourd and also sowing of mixed green fodder like fodder maize and cow pea.
  - Farmers in West Bengal are advised to undertake field preparation and sowing of jute, planting of ginger, turmeric and arum and nursery sowing of *aus* rice.
  - Farmers are advised to plant ginger and turmeric in Western Plateau Zone of Jharkhand and to sow maize, Jowar and lobia for green fodder in Bihar.
  - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
  - Farmers in Bihar and Jharkhand are advised to harvest already matured summer crops and to protect at a safe place in view of predicted isolated thunder squall.
  - Rice is infested with BPH and cutworm at different places in Cuttack district of Orissa. To control BPH, Drain out the water. Allow the sun rays and aeration to the ground surface. Spray 3 ml Imidacloprid or 20 ml Fenobucarb in 10 liters of water if it crosses the ETL of 5 insects / hill. High differential temperature between day and night may also favour the infestation of blast. Spray 0.6 g Tricyclazole or 1 ml Ediphenphos in each litre of water. Withhold top dressing of urea for five days after the spraying.
  - Fruit and shoot borer in brinjal has been observed in Cuttack and Puri districts of Orissa; install Pheromone traps, spray Sevin WP @ 4 g or Malathion @ 2 ml in 1 litre of water.
  - Infestation of thrips has been noticed in groundnut in Nayagarh and Puri districts in Orissa; spray 2 ml Endosulphan in 1 litre of water.
  - Due to rainfall during last week and higher humidity, attack of collar rot and fruit rot may be noticed in chilli in low laying areas of New Alluvial Zone of West Bengal. Apply 3 g Thiram and 5 g Phytolan together per litre of water.
  - In some pockets of Western Plateau Zone of Jharkhand, it has been reported that summer rice is affected by leaf roller or stem borer. To control, spray insecticides like Monocrotophos or Trizophos @ 2.5 ml per litre of water in the evening.
  - In South Eastern Plateau Zone of Jharkhand, there is incidence of gundhi bug under prevailing weather condition. Apply 4% Endosulfun or 1.5% Quinalphos or Monocrotophos to control the insect. There is also chance of increase in egg laying of caseworm, hispa and brown plant hopper in rice due to increase in temperature. Farmers are advised to apply Prophenphos @ 1 ml or Endosulphan @ 1.5 ml or Monocrotophos @ 1 ml per litre of water. Incident on fruit borer has

also been noticed in summer vegetables in this region; spray Heliokill, Heliside or Kug Fu @ 2 mm or Trizofos or Prophenfas @ 1 ml per litre of water.

- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - As the temperature is quite high in Jharkhand and Orissa, animals should be protected against heat. To keep their rooms cool, gunny bags may be hung as curtain in the windows and water should be poured time to time. Do not allow animals to be exposed in sunlight during noon and avail fresh and plenty of water for drinking.

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

- **Realised Rainfall:** Papumpara, Upper Siang and West Kameng districts of Arunachal Pradesh and East Garo Hills, East Khasi Hills, Golghat, Jorhat and Kokrajhar districts of Assam received rain during last week.
- **Rainfall Forecast:** Fairly widespread rain / thundershowers would occur over the states of the region during the period. Isolated thunder squalls would occur over these states during next 48 hours.
- **Advisory:**
  - As fairly widespread rain / thundershowers would occur over the states of the region during the period, farmers are advised to postpone irrigation, intercultural operation and application of fertilizer and plant protection measures to the crops.
  - In Assam, sowing of jute, summer vegetables and maize and planting of ginger, turmeric and papaya may be carried out.
  - Farmers are advised to sow *Aus* Rice and cucurbitaceous vegetables in Tripura.
  - Farmers in Manipur are advised to undertake planting of ginger and turmeric and sowing of cucurbitaceous vegetables after current spells of rain.
  - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
  - In Upper and Central Bramhaputra Valley Zone of Assam, due to increase in RH and probable increase in temperature in the coming days, the condition may be suitable for the attack of blast disease in *ahu* rice. Farmers are advised to spray Bavistin @ 1 g per litre of water when the symptoms appear.
  - In Temperate Sub Alpine Zone in Meghalaya, soil and air temperatures are favourable for the attack of stem borer in *boro* rice. If eggs of the pests are noticed, apply Monocrotophos @ 2 teaspoon full per 5 litres of water in the field. As there is a rise in temperature in Ri-Bhoi, East Khasi and South Garo Districts, there is possibility of late blight in potato, which may be controlled by prophylactic spray of Dithane M-45 (2.5 ml / litre) or Curzate (3 ml / litre).
  - In Mild Tropical Hill Zone of Mizoram, due to high relative humidity along with occasional rainfall, infestation of aphids is severe. Farmers are advised to spray Bordeaux mixture (1:1:100) in Khasi Mandarin.
  - Apply plant protection measures after current spells of rain.
  - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry:**
  - 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 Hemorrhagic 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.
  - In Tripura, due to heat wave and humid weather animals may be under environmental stress followed by dehydration, heat stroke. Farmers are advised to keep the animals in shade, get water-splashing 2 to 3 times in a day. Cattles may also be provided with succulent products. Animals and birds may be provided with plenty of water with 1% salt, mineral mixture.

- In Nagaland, all the livestock owners are advised to carry out the deworming and vaccination programmes against infectious diseases, particularly “Foot and Mouth disease”, as the monsoon season is approaching.

#### **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:** Rain is likely to occur at isolated places during next 48 hours and mainly dry weather thereafter.
- **Advisory:**
  - As there was no significant rainfall during last week and there are chances for no significant rainfall during next three days, farmers are advised to apply irrigation to standing crops.
  - As high temperature is likely to be continuing in the region, the evaporative demand increases so farmers are advised to apply frequent irrigation in summer crops, vegetables, horticultural plants and cover the tree sapling with thatching material to protect against high temperature.
  - Heat wave conditions are likely to continue over isolated pockets of West Rajasthan and East Uttar Pradesh. Farmers are advised to undertake harvesting of remaining wheat crops and other rabi crops and store it at safer places. Light and frequent irrigation may be provided to standing summer crops to meet excess evaporative demand.
  - Farmers in Delhi are advised to sow red gram and cotton after 15<sup>th</sup> May. Sowing of baby corn and sweet corn may also be done.
  - Farmers are advised to undertake sowing of French bean, cucumber, bottle gourd and bitter gourd and transplanting of tomato, brinjal and chilli in Himachal Pradesh.
  - In High Hill Temperate Dry Zone of Himachal Pradesh the nursery sowing of vegetables {cauliflower, cabbage, tomato, capsicum, cucumber, Summer squash (hybrid green, lettuce, broccoli) can be taken up.
  - Farmers in Rajasthan are advised to prepare field for sowing of irrigated groundnut, undertake sowing cotton, cucurbitaceous vegetables like melon, bottlegourd, ridgegourd, bittergourd, pumpkin, smoothgourd, leafy vegetables like spinach and amaranthus and transplanting of tomato and brinjal, nursery planting of papaya.
  - Under favourable weather conditions farmers in Punjab and Haryana are advised to complete the sowing of cotton during the first fortnight of this month and follow clean cultivation.
  - Due to prevailing hot weather conditions farmers in Punjab and Haryana are advised to spray water and give frequent irrigation to litchi, peach and plum trees to avoid splitting of fruits due to prevailing hot weather conditions. In sugarcane crop moisture conservation may be done by spreading mulch in between cane rows.
  - Farmers in Uttar Pradesh are advised to undertake sowing of turmeric, ginger, maize / fodder maize, summer sugarcane with intercropping of moong and urd crops and transplanting of *Kharif* Brinjal. They are also advised to do mulching to reduce evaporation and conserve moisture.
  - Weather is favourable for attack of yellow mosaic disease in urd & moong in Uttar Pradesh, uproot affected plants carefully and destroy it and spray the solution of Dimethoate, 30 E.C. @ 1 Litre/hectare.
  - Due to dry weather conditions there are chances of attack of early shoot borer and termite on sugarcane crop in Punjab and Haryana. Spray 2 litre of Durmet/Classic/Dursban 20 EC (Chlorpyrifos) in 400 litres of water per acre at post germination stage.
  - Weather is congenial for attack of mites on chilli and hopper on mango in Delhi. Farmers are advised to monitor the crop for above pest and take proper plant protection measures.
  - Stages of major crops are mentioned in Annexure I.

#### **Animal Husbandery**

- In Rajasthan, farmers are advised to adopt adequate measures to protect animal from heat stroke. Keep them in cool & shade area and give them cold water for drinking. Do not bath them in midday.



- To maintain level of milk productivity it is advised to feed balanced mineral mixture of UMLB & green fodder. Make arrangement for fresh drinking water so that fresh milk production may be obtained.

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

- **Realised Rainfall:** No significant rainfall occurred in most parts of the region.
- **Rainfall Forecast:** Rainfall is likely at isolated places during next three days in the region.
- **Advisories:**
  - As no significant rainfall occurred in most parts of the region, apply irrigation to the standing crops in all the districts.
  - Farmers in Eastern dry zone of Karnataka are advised to provide irrigation to the summer crops like, grapes and vegetables since no rainfall is expected in the coming days and also to take up ploughing with available moisture.
  - Due to congenial moisture condition in the soil, farmers in Southern dry zone of Karnataka are advised to take up sowing of important crops like pulses viz., cowpea, green gram, black gram, oil seed crop like sesamum, sorghum and cotton
  - Farmers in Coastal Zone of Karnataka are advised to undertake land preparation for sowing of rice in the nursery. In Hill Zone, as wind speed is increasing, provide mechanical support to banana and sugarcane crops to prevent from lodging.
  - Farmers in Problem Area Zone of Kerala are advised to undertake land preparation and sowing of direct seeded rice. Arecanut crop is affected by scorching sun; undertake whitewashing of stem portion and provide irrigation in the early morning / evening hours.
  - Since moderate rainfall is expected in weekend days in the High Altitude Hill zone of Tamil Nadu, irrigation can be scheduled accordingly. Planting of spice crops, plantation crops and medicinal plants can be undertaken in the High Rainfall zone of Tamil Nadu with the available rainfall.
  - Incidence of spodoptera and heliothis is noticed in March sown groundnut crop in Scarce rainfall of Rayalseema of Andhra Pradesh. Spray tracer @ 2.5 ml in 10 liters of water to control spodoptera and spray larvin @ 1.5 g per liter of water to control Heliothis. Present weather conditions are favourable for the incidence of spotted wilt virus in tomato and chillies and thrips in papaya. Spray Fipronil @ 2 ml +Mancozeb @ 2.5 g per litre of water to control spotted wilt virus and Neem oil @5ml+ Acephate @ 1.5 g per litre of water to control thrips.
  - In Hill zone of Karnataka, there is a severity of leaf spot in Banana and farmers are advised to go for spray with Carbendazim (1gm/lt).
  - Capsicum crop is severely affected by thrips in Southern dry zone of Karnataka. This pest can be controlled by spraying of nimbicidin @ 5ml or nuvocron @ 2ml/lt.of water.
  - In cotton plants, leaf hopper and mealy bug menace are seen in North Western Zone of Tamil Nadu. To control leaf hopper pests, spray a solution containing 40 mg/acre of Imidoglobrid and to control mealy bugs, solution containing 400 ml of Prophanophos has to be sprayed per acre using water as the carrier. Mealy bug is seen in Tapioca. It is advised to place 30 numbers of beneficial parasites per acre.

#### **Animal Husbandry**

- Care should be taken against the maximum and minimum diurnal temperature variation for silk worms, poultry and dairy rearing houses by maintaining optimum room temperature and hygienic condition.
- Protect dairy animals from direct sunlight. Give plenty of water frequently and shade is must for them.

- Prevailing weather conditions may lead the occurrence of Hemorrhagic Septicemia, Black Quarter, Foot and mouth disease in cattle, ET and sheep pox in sheep, Ranikhet disease in poultry. To prevent the diseases, vaccinate the animals.

#### WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised rainfall:** Mainly dry weather prevailed over the States of the region during the period.
- **Rainfall forecast:** Dry weather would prevail over the States of the region during the period.
- **Advisory:**
  - As weather was dry during last few weeks and dry weather is likely during next few days over the States of the region, farmers are advised to apply irrigation to the standing crops.
  - As mainly dry weather is likely to prevail during the period, farmers in Sindhudurg district of Maharashtra are advised to undertake harvesting of early maturing rice varieties. Before harvesting drain out water at least 8–10 days from main field.
  - Taking advantage of dry weather, apply last dose of Nitrogen @ 100 kg (217 kg Urea), 55 kg Phosphorous (344 kg SSP) and 55 kg Potash (92 kg MOP) / ha at the time of final earthing up to suru sugarcane in Madhya Maharashtra and Marathwada followed by irrigation.
  - As prevailing weather is not favourable for sowing of BT cotton in western Maharashtra, Farmers are advised to delay sowing till 25th May.
  - Farmers in Gujarat are advised to undertake deep ploughing in harvested fields and prepare land for kharif crops.
  - As there is no possibility of rain, farmers in Gujarat state are advised to apply third dose of nitrogen @ 87 kg / ha to sugarcane at evening time assuring that sufficient moisture is available in the soil.
  - Farmers in South Saurashtra Zone and North Gujarat Zone are advised to dig the pits as per recommendation in fruit orchards (1 m X 1 m X 1 m) with spacing of 10 m X 10 m between two mango plants, 8 m X 8 m between two sapota plants and 6 m X 6m between two coconut plants and allow for drying in sunlight.
  - Due to increase in temperature there is more evaporation from sugarcane field; farmers in Gujarat state are advised to spread dry leaves of sugarcane in between two rows of the crop to reduce moisture loss.
  - To reduce temperature impact and spongy tissue, farmers in Middle Gujarat Zone are advised to spread wheat or mustard straw under mango tree.
  - Prevailing weather is favourable for the incidence of powdery mildew in cucurbits and water melon in sub Montane Zone of Maharashtra; spray Carathen @ 10 ml in 10 liters of water.
  - Due to increasing temperature and cloudy weather there may incidence of downey and powdery mildew in bitter gourd, bottle gourd and ridge gourd in Western Maharashtra Scarcity Zone. For preventive measure spray Bordeaux mixture (1%) or Mancozeb or Copper Oxy Chloride @ 25 g in 10 liters of water at 8-10 days interval after 20 days of germination. On the incidence spray Metalaxyl MZ-72 @ 25 g in 10 liters water. On the incidence of powdery mildew alternate spraying of Dinocap or Tridemorph or Carbendazim @ 5-10 g in 10 liters of water at 8-10 days interval may be done.
  - Due to variable sky conditions there is possibility of pod borer in green gram in North Gujarat Zone. Farmers are advised to spray 0.2% solution of Quinalphos 25 EC to manage it. Also there are chances of sucking pest infestation in vegetables. Farmers are advised to spray 0.1% solution of Dimethoate 35 EC to manage the pest.
- **Animal Husbandry:**
  - In view of high temperature forecast in Gujarat, keep animals under shade during noon hours and provide clean drinking water. Vaccinate animals against FMD and BQ to avoid disease outbreak during ensuing monsoon season. Avoid transportation of poultry birds during noon time. Put curtains on west side of poultry house and sprinkle water on curtains during noon time.

- In Maharashtra also, spray Neon insecticide 1 to 1.5 ml per liter of water to control ecto parasites in animal house. The drinking water should be made available at least four times a day to the livestock and if possible the animals should be kept under tree shade. Livestock should be washed by using cold water. Livestock should be vaccinated against foot and mouth disease.

#### **CENTRAL INDIA [M.P., CHHATTISGARH]**

- **Realised Rainfall:** No significant rainfall occurred in the region.
- **Rainfall Forecast:** Mainly dry weather is likely over Madhya Pradesh and Chhattisgarh.
- **Advisory:**
  - Currently temperatures are higher in Kymore plateau and Satpura hill zone in Madhya Pradesh causing higher evapotranspiration, provide light and frequent irrigation to different summer crops like moong, urad and soybean and sunflower.
  - Maximum temperature will be around 43-44°C during this week in Bundelkhand Zone of Madhya Pradesh hence farmers are advised to apply light irrigation in all vegetable crops, including orchards in the evening or in early morning.
  - Farmers in Nimar Valley Zone of Madhya Pradesh are advised to undertake planting / sowing of sugarcane, fodder maize, fodder jowar, fodder bajra and other summer vegetables.
  - In present weather condition, farmers are advised to harvest the rabi crops as early as possible. Weather condition is suitable for proper germination of summer maize and summer vegetables; hence it is advised to complete sowing of these crops in well pulverized fields at the earliest in Chattisgarh Plain Zone
  - Due to prevailing dry weather conditions and increase in evaporation rate in Chattisgarh Plain and Kymore plateau zone of Chattisgarh, farmers are advised to apply irrigation to summer vegetables, rice, groundnut, mung, urd, soybean and sunflower.
  - 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.
  - As weather is congenial for stem borer in sugarcane in Vindhya Plateau Zone of Madhya Pradesh, farmers are advised to spray Phorate @ 10 kg per hectare. Also there may be attack of caterpillar on pomegranate because of cloudy condition, spray Malethion 50 EC or Quinolphos 25 EC per litre of water.
  - Infestation of stem borer is observed in trace at few places Chhattisgarh plain zone. Hence, farmers are advised to keep watch over the crop and if the damage is above ETL apply granular insecticides Cartep or Fipronil @ 25 kg/ha in the fields. About 5 cm standing water should be maintained in the fields while applying the granular insecticides and do not allow the water to out of the field at least for 24 hours
- **Animal Husbandry & Poultry**
  - Due to increase in temperature in Budelkhand Zone of Madhya Pradesh during the next 5 days, hence dairy farmers are advised to provide frequent drinking the water (two-three times) to dairy animals and to arrange the green and juicy fodder for them.
  - Presently temperatures are higher in day time Kymore plateau and Satpura hill zone in Madhya Pradeh hence provide cold water twice to cattle.

## Annexure I Major Crops

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

- Maize (cob formation / maturity / harvesting), chillies, tomato (fruiting / harvesting), palak, carrot, radish etc. (harvesting), barseem, lucerne, oat (vegetative), sugarcane (early vegetative / vegetative), *boro* rice (grain formation / early maturity), green gram and black gram (vegetative / flowering / pod formation) and summer vegetables like bhindi, bitter gourd, sponge gourd, pumpkin, cucumber etc. (sowing / early vegetative / vegetative / flowering / fruiting), maize, Jowar, lobia for green fodder (sowing) in Bihar.
- Chilli and brinjal (transplanting / early vegetative / vegetative / flowering / fruiting), summer rice (grain formation / early maturity), summer vegetables (vegetative / flowering / fruiting), green gram (vegetative / flowering), sugarcane (early vegetative / vegetative), mango and litchi (fruiting), papaya (transplanting) in Jharkhand.
- *Boro* rice (grain formation / maturity), black gram, green gram (flowering / pod formation), sunflower (vegetative / flowering), sesame (flowering / pod formation / early maturity), groundnut (pod formation / pod maturity), mango, papaya, summer marigold, tuberose (planting), cow pea (sowing / early vegetative), summer vegetables (vegetative / flowering / fruiting) and sugarcane (sprouting / vegetative / tillering), jute (sowing) and ginger (planting) in Orissa.
- *Boro* rice (grain formation / maturity), mango (flowering / fruiting), sunflower (vegetative / bud initiation / flowering), green gram (branching / pod formation), groundnut (pod formation / early maturity), sesame (flowering / pod formation / early maturity) and *aus* rice, maize, jute (sowing), ginger (planting), summer vegetables like ladies finger, *kakrol*, *amaranthus*, spinach, various leafy vegetables, brinjal, bitter gourd (sowing / vegetative / flowering / fruiting), chilli (flowering / fruiting) in West Bengal.
- Large cardamom (vegetative lag phase / primary flowering / secondary flowering), *rabi* potato (maturity / harvesting), *kharif* vegetables (transplanting / vegetative), orange (flowering / transplanting of Seedlings from nursery), maize (early vegetative / vegetative / late vegetative / tasseling / silking / cob formation), ginger (planting / germination) in Sikkim.

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

- Sugarcane (cane development / active vegetative), *boro* rice (grain formation / maturity / harvest), *bau* rice (sowing / early vegetative), normal *ahu* rice (transplanting / early vegetative / tillering), early *ahu* rice (panicle initiation / flowering), summer green gram and black gram (seedling / vegetative / pod formation), jute (sowing / seedling / early vegetative / vegetative), summer vegetables (vegetative / flowering / fruiting), summer sesame (flowering / pod formation / maturity) and maize (tasseling / silking / cob maturation) in Assam.
- Rice (nursery preparation / transplanting), French bean (germination / early vegetative / vegetative), okra (sowing / germination / early vegetative), maize (sowing / germination / early vegetative / vegetative) and ginger / turmeric (sowing), summer vegetables, millet (sowing / germination / vegetative) in Arunachal Pradesh.
- *Rabi* maize (tasseling / silking / grain formation / maturity), rice (tillering / panicle initiation), soyabean, groundnut (sowing), onion (bulb formation / maturity / harvesting) and ginger and turmeric (sowing) in Manipur.
- Groundnut, soyabean, ginger and turmeric, okra and other summer crops (sowing), Khasi mandarin (fruit bearing), banana (vegetative / fruiting / maturity), *kharif* maize (cob formation / harvesting), onion (bulb formation), beans (pod formation / harvesting) and summer vegetables (early vegetative / vegetative) in Mizoram.
- *Aus* or pre *kharif* rice (sowing), sesame (flowering / pod formation / early maturity), summer vegetables (early vegetative / vegetative / flowering) and *boro* rice (grain formation / early maturity) in Tripura.
- *Boro* rice (grain formation / early maturity), *ahu* rice (nursery sowing / seedling / transplanting / early tillering), *rabi* maize (tasseling / silking / cob formation), winter potato (tuber maturity), winter

potato at high altitude (harvesting) and summer vegetables (sowing / vegetative / flowering) in Meghalaya.

- Maize, summer crops (vegetative / flowering), rice (vegetative), okra (vegetative), tomato (planting) and banana (fruiting) in Nagaland.

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

- Tomato, chilli (transplanting), brinjal & cucurbits crops (flowering/fruiting), lentil (pod formation), maize, hybrid cluster bean, baby corn (sowing/ vegetative), green gram and black gram (sowing), Sugarcane(sowing) in Delhi.
- Wheat (harvesting), potato (tuber formation/harvesting), vegetables (flowering / fruiting / harvesting), garlic (planting), pea, potato (sowing), cucurbits (transplanting), Khira, summer squash, bitter gourd, tur, brinjal, Shimla mirch, pepper and tomato (nursery sowing) in Himachal Pradesh.
- Berseem (vegetative), oats (flowering), wheat, barley (Early sown – maturity, Normal sown – Hard dough, Late sown – Dough stage), lentil (maturity/harvesting), field pea (pod formation), mustard (pod maturity/harvesting), vegetable crops like tomato, chilli, brinjal, cucurbits (vegetative / flowering), onion (vegetative), cauliflower, cabbage, carrot (fruiting/harvesting), onion, tomato, brinjal and chilli (transplanting), summer pulses, cowpea, okra, maize, jowar (sowing), rice (nursery sowing), Summer moong (sowing) in Jammu & Kashmir.
- Wheat (harvesting), potato (7000-800-ft a.s.l.) (sowing), toria (maturity / harvesting), moong, urd (flowering / pod formation), barley (tillering), garlic, seasonal vegetables (vegetative / flowering/ harvesting), onion (vegetative), pea (harvesting), chilli, tomato (sowing / transplanting) and lahi (flowering / fruiting), sugarcane (planting), rice (nursery sowing), mango (flowering / fruiting), foxtail millet, maize, okra, bottle gourd, bitter gourd, ginger, turmeric (sowing) in Uttarakhand.
- Spring sugarcane (sprouting), berseem (vegetative), African sarson (pod formation/maturity), radish (vegetative), ghobi sarson (vegetative), oilseeds (raya, taramira) (maturity/harvesting), papaya, onion (harvesting), vegetables, sugarcane (sowing/ germination), summer pulses (sowing) in Punjab.
- Sugarcane (spring season) (planting/emergence/early vegetative), berseem (vegetative), summer pulses, moong, mash, pigeon pea (sowing) in Haryana.
- Arhar (grain formation / maturity / harvesting), mustard, sarson (pod maturity / harvesting), field pea,
- lentil, linseed (maturity / harvesting), winter sugarcane (vegetative), summer sugarcane (planting), winter vegetables like carrot, garlic, onion tomato, brinjal (vegetative / flowering / fruiting), cabbage, cauliflower (fruiting / maturity / harvesting) and moong, urd, black gram, maize / fodder maize, vegetables (sowing) in Uttar Pradesh.
- Winter sugarcane (initial growth), lentil (maturity), ajwain, fenugreek and isabgol (vegetative), potato (tuberization / maturity), cabbage, cauliflower (late vegetative / head formation) and tomato (flowering/ fruiting), fodder jowar & bajra (sowing), cotton (sowing) in Rajasthan.

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

- Rice (harvesting/ nursery sowing/ transplanting), rice fallow cotton (vegetative / flowering), rice fallow pulses (harvesting), 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/vegetative), groundnut (harvesting), cotton (boll development/ picking), safflower (maturity), rice (harvesting), mango (harvesting) in Karnataka.
- Bengal gram (maturity), rice (harvesting), red gram (maturity), sunflower (seed development), groundnut (pod development / maturity) in Andhra Pradesh.
- Rice (Transplanting/harvesting), arecanut (maturity), ginger (planting), coconut (seed nut collection), pepper (harvesting/new planting) in Kerala.



**WEST INDIA [GOA, MAHARASHTRA, GUJARAT]**

- Sugarcane (Adsali) (active tillering), Sugarcane (pre seasonal) (vegetative), Sugarcane(suru) (sprouting / early vegetative), summer rice (grain formation / maturity in Konkan and flowering / grain formation in East Vidarbha), groundnut (pod development / pod maturity in Konkan and pegging / pod formation in other divisions), sunflower (head formation), maize (tasseling and silking / cob initiation), bajra (grain formation / grain maturity in early sown crop).
- Summer bajra (flowering / grain filling), brinjal and tomato (fruiting / harvesting), green gram (pod maturity / harvesting), sugarcane (vegetative), summer groundnut (pod development / grain filling / pod maturity), summer pulses (seed development) in Gujarat.

**CENTRAL INDIA [M.P., CHHATTISGARH]**

- Wheat (harvesting), 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/maturity), wheat (grain maturity), rice (seedling / tillering), sunflower (sowing), sugarcane (sowing), linseed (flowering), maize, green gram and sesame (sowing), ginger and turmeric (sowing), groundnut and sunflower (pod/grain filling stage) in Chhattisgarh.

**Annexure II**  
**List of Varieties**

**Orissa**

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

**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.

**Jute:** JRO-524 (Naveen).

**Okra:** Improved high yielding varieties like Utkal Gourav, Arka Anamika, Uphar, Parvani Kranti and hybrid varieties like Varsa, Vijay, Vishal, Tara, Adhunik, Atyadhunik, and Supriy.

**Bitter gourd:** Pusa Domousumi, Coimbatore long green, and Arka Harit.

**Ridge gourd:** Pusa Najdar, Jaypur long, and any local variety.

**Cluster bean:** Pusa Naubahar.

**Ginger:** Suprava, Suruchi, Surabhi.

**Turmeric:** Roma, Surama, Rang, Rashmi etc.

**Fodder maize:** African Tall.

**Fodder Cowpea:** EC-4216.

**West Bengal**

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

**Arum:** BCC-17, BCC-33, BCC-02, BCC-01, BCC-9.

**Assam**

**Jute:** Tarun, JRC 321 (Sonali), UPC 94 (Reshma), JRC 321, JRC 7447, UPC 94, JRO 524, JRO 7835, JRO 632, JRC 212, JRC 7447 etc.

**Maize :** Kisan, Ganga

**Papaya:** Ranchi, Washington, Halflong, Coorg Honeydew etc.

**Tripura**

**Ridge gourd:** Pusa Nasdar, Satputia.

**Cucumber:** Japanese long, Straight 8.

**Delhi**

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.

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

### **Himachal Pradesh**

Cauliflower: Sweta, Madhuri

Cabbage: Golden Acre, Varun

Tomato: 7711, Him sona, Him 1

Capsicum: California wonder

Cucumber: Kiyan

Summer squash: hybrid green

Lettuce: Iceberg

Brinjal : Arka Nidhi, PPC

Ageti bhindi : P-8, Prabhini kranti, Arka anamika

Frenchbean : Contender

Pepper : Surjmukhi

Broccoli: Palam Samridhi

### **Jammu & Kashmir**

Rice : var. IET-1410, K-39, Ratna, PC-19, Jaya RR-8585, Basmati 370 and Ranbir Basmati) in tropical area

Mash: Mash Pant, U-19, T-9

Moong: PDM-54, PS-16, PS-17, ML-131

### **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

Pigeon pea: UPAS 120, T-21.

### **Uttar Pradesh**

**Moong:** Yellow Mosaic resistant variety PDM-139A, Pant Moong-2A, Narendra Moong-1A, Malaviya Jagruti, H.U.M-2, Moong JANpriya, MALaviya Jyoti, Malaviya Janchetana.

For intercropping : Moong : Pant Moong-1 / 2, Urd : Pant Urd-12 / 35

Summer Sugarcane: K.S. 97264, K.S.-8432, K.S.-767, K.S.-92423, K.S.-95268, K.S.-98268, K.S.-96275, K.S.-95270

### **Uttarakhand :**

Rice : VL-Dhan-206, Majdera-7 etc. ( un-irrigated )

Maize : Ganga-2, Ganga-7, African Tall etc.

Lobia : Russian Joint, EC-4216, UPC-5286 etc.

Okra : VL Bhindi-1

### **Rajasthan**

**Cotton :** improved varieties : RG-8, RG-18, hybrid varieties : Raj D.H.-9

Bikaneri Nerma (190-200 days), Ganganagar Ageti (170-180 days), RST-9 (185-200 days) & RG-8 ( Desi ,170-180 days).

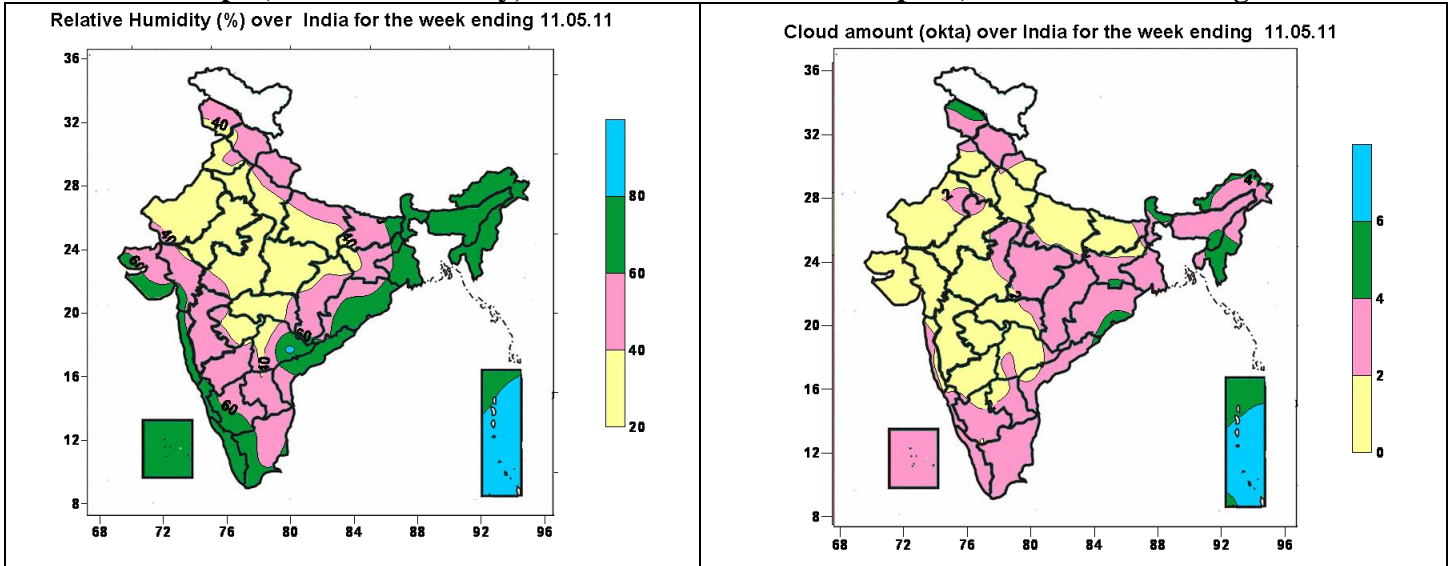
Papaya : improved varieties Honey dew, Coorg Honey dew, Pusa delicious, Pusa Nanaha and CO-2.

### **Madhya Pradesh**

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

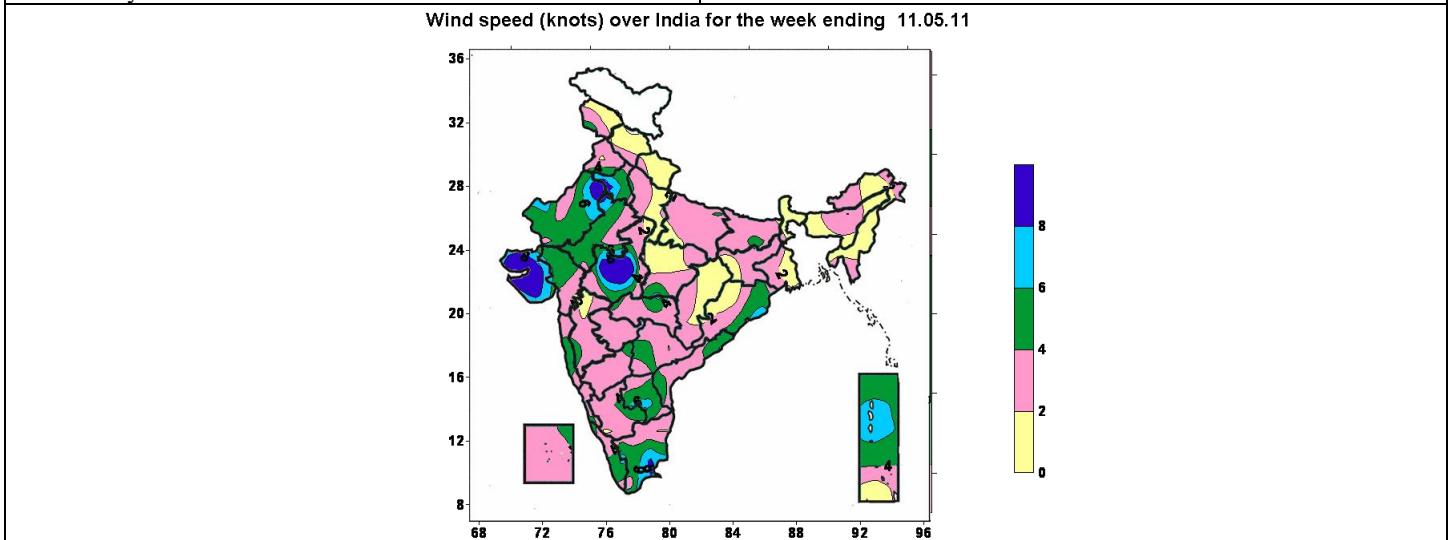
**Annexure III**

**Contour maps (Relative humidity, Cloud amount and Wind Speed) for the week ending 11.05.2011**



Relative humidity between 80% and above over most parts of Andaman & Nicobar Islands, some parts of Telengana, 40 to 60% over most parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Bihar, Jharkhand, Chattisgarh, Gujarat, Saurashtra & Kutch, Raylaseema, Tamil Nadu, North & South Interior Karnataka, some parts of Punjab, Uttar Pradesh, West Rajasthan, Orissa, West Madhya Pradesh, Vidarbha, Marathwada, Telengana, Coastal Andhra Pradesh, Tamil Nadu, 20 to 40% over most parts of Rajasthan, Punjab, Haryana, Delhi, South Uttar Pradesh, Madhya Pradesh, Marathwada, Vidarbha, some parts of Jammu & Kashmir, Himachal Pradesh, Bihar, Jharkhand, Chattisgarh, Telengana, 60 to 80% over remaining parts of the country.

Cloud amount 6 okta and above over most parts of Andaman & Nicobar Islands, 4 to 6 okta over most parts of Sikkim, Mizoram, Tripura, some parts of Sub-Himalayan West Bengal, Arunachal Pradesh, Assam & Meghalaya, Mizoram, Jharkhand, Orissa, Lakshadweep Islands, 0 to 2 okta over most parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Bihar, West Madhya Pradesh, Gujarat, Saurashtra & Kutch, Madhya Maharashtra, Marathwada, Vidarbha, North Interior Karnataka, Telengana, some parts of Jharkhand, East Madhya Pradesh, Coastal Andhra Pradesh, Rayalseema, Coastal & South Interior Karnataka, Konkan & Goa, 2 to 4 okta over remaining parts of the country.



Wind speed ranged between 8 knots and above over most parts of Saurashtra & Kutch, some parts of Rajasthan, Haryana, West Madhya Pradesh, 6 to 8 knots over some parts of Haryana, Rajasthan, West Madhya Pradesh, Saurashtra & Kutch, Orissa, Rayalaseema, Tamil Nadu, Kerala, Andaman & Nicobar Islands, 4 to 6 knots over most parts of Haryana, Rajasthan, Gujarat, Andaman & Nicobar Islands, some parts of Punjab, Bihar, Orissa, Madhya Pradesh, Madhya Maharashtra, Konkan & Goa, Vidarbha, Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Lakshadweep Islands, 0 to 2 knots over most parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram, some parts of Punjab, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Orissa, East Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Andaman & Nicobar Islands, 2 to 4 knots over remaining parts of the country.

