

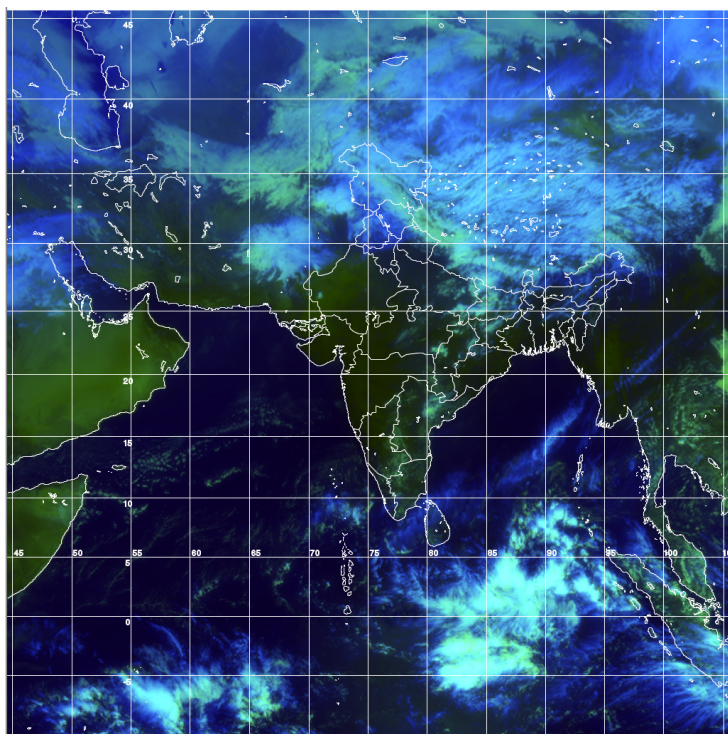


National Agromet Advisory Bulletin

Thursday, 24th February, 2011

(For the period 24th to 28th February, 2011)

Satellite image 0600 UTC Dated
25th February, 2011



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

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

Executive Summary

The rain occurred during last two weeks over northwest India is also beneficial for standing wheat crop. Temperature was near normal over most parts of Himachal Pradesh, Uttarkhand, Punjab, Haryana, Delhi and Uttar Pradesh and hence, favourable for the growth of wheat crop.

Hailstorm lashed several parts of the Bihar on 16th February 2011. This may cause considerable damage to standing crops like maize and pulse in Araria and Purina divisions. The rain, occurred after a long dry spell, is beneficial for the standing crops like wheat, maize, vegetables crops and facilitates the sowing of jute, summer maize and vegetables. It would also benefit litchi and mango crops.

Sufficient rain occurred in Kerala, Tamil Nadu, Coastal Andhra Pradesh, Telangana and Rayalaseema during last week. This will benefit rice crop in these regions. Farmers are advised to postpone irrigation and intercultural operations in view of improved soil moisture conditions. Land preparation for *puncha* rice in Kerala may be started utilizing the realized rainfall.

As dry weather is likely to prevail over remaining parts of the country, farmers are advised to complete intercultural operations utilizing the favourable weather conditions. Harvesting of crops may be undertaken during next three days taking the advantage of dry weather. Surface mulching with crop residues may be made in order to reduce loss of water through evaporation.

Weather condition is favourable for sowing of leafy vegetables *viz.*, summer sunflower, groundnut in Western Maharashtra Plain Zone, amaranthus, radish, fenugreek coriander, spinach etc. in Konkan region, watermelon, summer ladies finger in Central Vidarbha Zone in Maharashtra, sowing of green gram, cowpea etc. in Middle Gujarat Zone, groundnut in North Gujarat Zone, sowing of summer vegetables and transplanting of onion in Bihar, sowing of summer sunflower, green gram, groundnut, maize etc. in Orissa, sowing of summer green gram, black gram, maize, vegetables, nursery of early *ahu* rice etc. in Assam, sowing of summer vegetables in Tripura. Farmers are advised to undertake land preparation and sowing of these crops.

Due to congenial weather conditions there is report of incidence of hoppers and powdery mildew in mango and thrips in pomegranate in Rayalaseema, blast in rice in North East Zone and mealy bug in tapioca in North Western zone of Tamil Nadu, powdery mildew in mango and leaf spot in Sapota in Northern Transition zone of Karnataka, white backed plant hopper in rice in Problem Area Zone in Kerala, aphids and leaf miner in Wal, Kulthi and mustard in Konkan region and aphids and red rust in Western Maharashtra Plain Zone in Maharashtra. Farmers are advised to adopt appropriate plant protection measures to avoid severe crop damage.

Distribution of rainfall for the districts of Arunachal Pradesh, Assam, Himachal Pradesh, Punjab, Haryana, Jammu & Kashmir, East Uttar Pradesh, West Uttar Pradesh, Uttarakhand, Bihar, Chhattisgarh, Orissa, Sub-Himalayan West Bengal, Kerala, Tamil Nadu, Coastal Andhra Pradesh, Telangana and Rayalaseema during last Week

State/Districts	Actual	23.02.11
Arunachal Pradesh		
Changlang	**	**
East Kameng	**	**
East Siang	26.7	27
Lohit	8.9	-69
Lower Subansiri	**	**
Papumpara	20.0	-12
Tawang	**	**
Tirap	17.1	-31
Upper Siang	204.9	232
Upper Subansiri	2.0	-87
West Kameng	28.0	122
West Siang	12.8	-30
Assam		
Barpeta	8.9	5
Bongaigaon	10.4	-17
Cachar	12.2	-50
Darrang	**	**
Dhubri	21.9	1053
Dibrugarh	9.9	-34
East Garo Hills	20.1	337
East Khasi Hills	25.7	202
Goalpara	**	**
Golghat	3.0	-61
Hailakandi	3.5	-84
Jaintia Hills	**	**
Jorhat	20.3	114
Kamrup	15.8	123
Karbi Analog	11.2	-2
Karimganj	0.0	-100
Kokrajhar	9.0	-1
Lakhimpur	8.2	-32
Morigaon	6.6	-38
N.C.Hills	8.2	-43
Nowgong	2.9	-50
Nalbari	10.6	66
Sonitpur	7.1	3
Sibsagar	**	**
Tinsukia	11.1	-36
Himachal Pradesh		
Bilaspur	1.2	-93
Chamba	23.6	-16
Hamirpur	5.5	-73
Kangra	6.6	-68
Kinnaur	7.4	-74
Kullu	17.7	7
Lahaul and Spiti	2.5	-92
Mandi	11.8	-32
Shimla	11.4	-35
Sirmaur	2.8	-77
Solan	7.9	-64
Una	12.8	-19

State/Districts	Actual	23.02.11
Punjab		
Amritsar	0.3	-96
Bhatinda	5.6	-3
Faridkot	6.6	164
Fatehgarh Saheb	2.3	-64
Ferozpur	2.2	-56
Gurdaspur	5.6	-55
Hoshiarpur	1.1	-91
Jalandhar	0.6	-94
Kapurthala	2.0	-62
Ludhiana	0.7	-93
Moga	0.6	-89
Muktesar	5.5	57
Nawashahar	8.0	-36
Patiala	10.0	8
Ropar	0.5	-96
Sangrur	8.0	25
Haryana		
Ambala	0.0	-100
Bhiwani	5.4	9
Chandigarh	0.2	-99
Faridabad	4.0	0
Fatehabad	10.8	226
Gurgaon	0.3	-95
Hissar	1.1	-77
Jhajar	1.2	-79
Jind	9.6	84
Katihah	6.5	-14
Karnal	0.0	-100
Kurukshetra	0.0	-100
Mahendragarh	1.6	-67
Panchkula	0.7	-95
Panipat	4.4	-34
Rewari	6.5	44
Rohtak	1.2	-84
Sirsa	4.8	20
Sonepat	5.0	-29
Yamunanagar	0.1	-99
New Delhi	9.5	28
Jammu & Kashmir		
Anantnag	18.0	-38
Badgam	8.8	-54
Doda	27.6	-47
Jammu	12.6	-33
Kathua	6.6	-69
Kupwara	13.7	-58
Ladakh(Leh)	0.0	-100
Pulwama	6.5	-56
Srinagar	3.4	-82
Udhampur	4.2	-86
Chhattisgarh		
Bastar	4.6	52
Bilaspur	6.7	168

State/Districts	Actual	23.02.11
Dantewara	0.0	-93
Dhamtari	6.8	258
Durg	6.0	757
Janjgir	29.9	2038
Jashpurnagar	19.3	302
Kanker	7.6	280
Korba	2.1	-17
Koriya	0.0	-100
Kowardna	0.0	-100
Mahasumund	0.0	-100
Raigarh	0.0	-100
Raipur	2.4	61
Rajandgaon	15.2	853
Surguja	3.3	38
East Uttar Pradesh		
Allahabad	0.6	-90
Ambedkar Nagar	4.0	-37
Azamgarh	1.1	-79
Bahraich	4.2	-5
Ballia	0.7	-79
Balrampur	3.0	-60
Banda	2.1	-65
Barabanki	0.1	-98
Basti	5.3	-7
Deoria	9.5	-14
Faizabad	5.1	-22
Farrukhabad	0.0	-100
Fatehpur	3.7	-56
Gazipur	0.0	-100
Gonda	9.5	116
Gorakhpur	14.8	253
Hardoi	3.6	-24
Jaunpur	0.0	-100
Kanpur City	0.4	-94
Kanpur Dehat	0.0	-100
Kheri	10.0	122
Kushi nagar	19.0	400
Lucknow	1.0	-86
Maharajanj	11.5	117
Mau	4.0	-17
Mirzapur	0.0	-100
Pratapgarh	5.5	-11
RaiBareilly	0.0	-100
Sant Ravidas Nagar	0.0	-100
Shrawasti	0.0	-100
Sidharthnagar	11.0	108
Sitapur	12.0	200
Sonbhadra	2.3	-66
Sultanpur	2.5	-56
Unnao	1.0	-87
Varanasi	0.8	-85

State/Districts	Actual	23.02.11
West Uttar Pradesh		
Agra	2.4	-40
Aligarh	0.0	-100
Auraiya	0.5	-92
Badaun	3.6	-42
Baghpat	0.0	-100
Bareilly	9.0	29
Bijnor	1.2	-85
Bulandsahar	0.0	-100
Etah	0.0	-100
Etawah	2.6	-35
Firozabad	1.8	-59
Ghaziabad	0.0	-100
Hamirpur	0.0	-100
Jalaun	0.0	-100
Jhansi	0.5	-89
Jotirba Phule Nagar	2.0	-73
Lalitpur	0.0	-100
Mahamaya Nagar	0.0	-100
Mainpuri	1.0	-75
Mathura	0.5	-88
Meerut	0.2	-96
Moradabad	3.1	-58
Muzaffarnagar	0.0	-100
Pilibhit	0.0	-100
Rampur	6.3	-21
Saharanpur	1.7	-81
Shahjahanpur	8.1	66
UttaraKhand		
Almora	15.6	26
Chamoli	7.0	-67
Champawat	8.0	-49
Dehradun	17.7	29
Garhwal Pauri	20.2	41
Garhwal Tehri	15.5	9
Haridwar	2.5	-75
Nainital	11.6	4
Pithoragarh	3.3	-80
Rudraprayag	33.8	42
Udham Sing Nagar	**	**
Uttarkashi	23.3	37
Bihar		
Araria	4.2	80
Aurangabad	2.3	-66
Begusarai	9.0	120
Bhabua	**	**
Bhagalpur	2.9	-12
Bhojpur	**	**
Buxar	**	**
Darbhanga	**	**
East Champaran	13.4	295
Gaya	2.6	-60
Gopalganj	0.0	-100
Jahanabad	0.0	-100
Jamui	**	**

State/Districts	Actual	23.02.11
Kathihar	1.6	-62
Khagadia	0.0	-100
Kishanganj	2.1	-30
Madhepura	2.0	-38
Madhubani	8.0	248
Monghyar	1.1	-76
Muzaffarpur	8.1	107
Nalanda	1.5	-68
Patna	1.4	-69
Purnea	4.0	54
Rohtas	1.2	-88
Saharsha	**	**
Samstipur	**	**
Saran	0.0	-100
Sitamarhi	**	**
Siwan	**	**
Supaul	0.0	-100
Vaishali	1.1	-73
West Champaran	**	**
Orissa		
Angul	34.3	1126
Balasore	33.6	211
Bargarh	0.0	-100
Bhadrak	9.3	-25
Bolangir	7.2	178
Boudh	0.0	-100
Cuttack	84.5	1161
Deogarh	0.0	-100
Dhenkanal	31.8	784
Gajapati	39.5	232
Ganjam	31.4	336
Jagatsingpur	21.2	159
Jajpur	17.1	109
Jharsuguda	11.1	258
Kalahandi	16.0	385
Kandhamal	28.2	442
Kendrapara	3.7	-54
Keonjhar	38.2	366
Khurda	22.8	287
Koraput	11.4	70
Malkangiri	0.0	-100
Mayurbhanj	17.7	292
Nawapara	2.0	-20
Nawarangpur	36.0	778
Nayagarh	44.1	451
Puri	10.0	-9
Rayagada	28.4	256
Sambalpur	11.0	278
Sonepur	2.0	-9
Sundargarh	16.3	504
West Bengal		
GWB		
Bankura	0.8	-60
Birbhum	2.3	-43
Burdwan	1.3	-76
Hooghly	1.1	-89
Howrah	2.8	-59

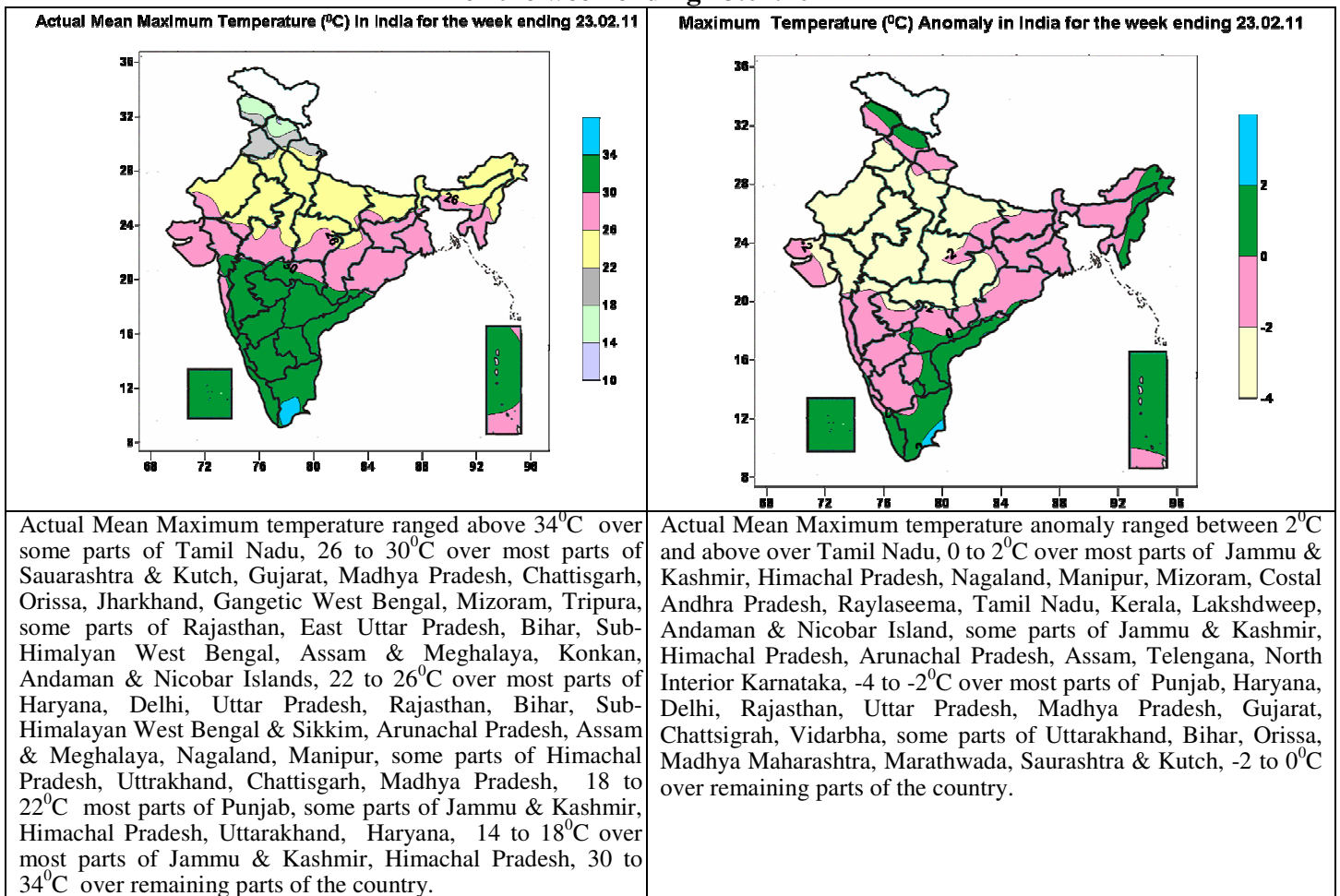
State/Districts	Actual	23.02.11
East Midnapore	8.7	124
Murshidabad	4.0	18
Nadia	0.0	-100
24 Pargana (N)	0.6	-88
Purulia	0.3	-89
24 Pargana (S)	6.3	-27
West Midnapore	8.1	145
SHWB		
Coochbehar	8.6	231
Darjeeling	7.8	-14
Jalpaiguri	7.1	45
Malda	6.2	182
Dinajpur (N)	**	**
Dinajpur (S)	10.3	72
North Sikkim	30.6	23
South Sikkim	4.2	-57
Kerala		
Alappuzha	12.4	88
Kannur	0.0	-100
Ernakulam	18.3	281
Idukki	20.1	205
Kasaragod	0.0	-100
Kollam	33.5	289
Kottayam	25.9	318
Kozhikode	0.0	-100
Malappuram	15.5	675
Palakkad	33.0	965
Pathanamthitta	40.0	145
Thiruvananthapuram	36.5	540
Thrissur	21.1	521
Wyanad	5.1	59
Tamil Nadu		
Chennai	40.6	401
Coimbatore	0.0	-100
Cuddalore	24.8	428
Dharmapuri	30.8	633
Dindigul	27.0	451
Erode	1.3	-67
Kanchipuram	23.6	490
Kanyakumari	19.4	218
Karur	1.4	-60
Krishnagiri	36.4	1417
Madurai	9.2	44
Nagapattinam	27.9	310
Namakkal	6.1	65
Nilgiris	35.6	189
Perambalur	0.0	-100
Puducherry	4.3	30
Pudukottai	10.3	102
Ramanathapuram	5.3	77
Salem	11.7	121
Sivaganga	15.1	228
Thanjavur	29.1	310
Theni	10.4	6
Tirunelveli	0.5	-89
Tiruvallur	39.9	613
Tiruvannamalai	42.0	794

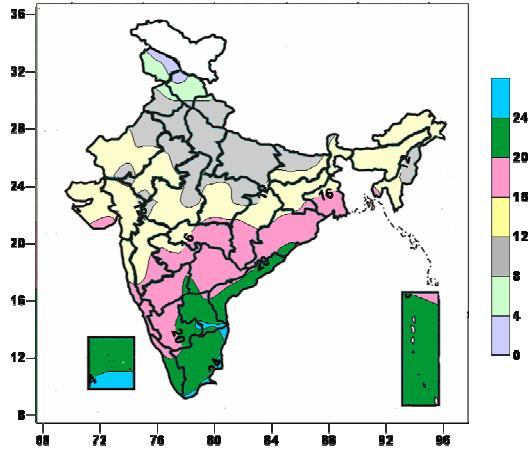
State/Districts	Actual	23.02.11
Tiruvarur	24.2	365
Toothukudi	11.3	66
Trichy	0.0	-100
Vellore	32.9	1395
Villupuram	15.0	552
Virudhunagar	25.9	156
Andhra Pradesh		
Coastal Andhra Pradesh		
East Godavari	11.7	256
Guntur	22.4	645
Krishna	23.6	615

State/Districts	Actual	23.02.11
Nellore	29.1	686
Prakasam	19.4	397
Sirkakulam	19.5	191
Visakhapatnam	8.3	93
Vizianagram	25.8	486
West Godavari	7.1	137
Telangana		
Adilabad	2.0	11
Hyderabad	20.2	621
Karimnagar	22.4	1020
Khammam	10.5	304

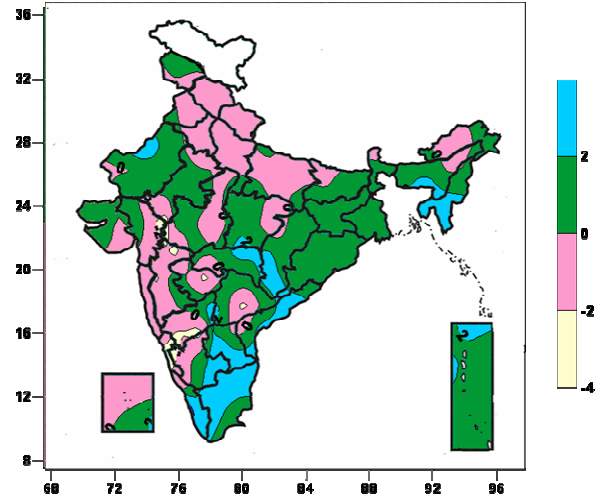
State/Districts	Actual	23.02.11
Mehabubnagar	0.0	-100
Medak	0.0	-100
Nalgonda	38.6	2171
Nizamabad	3.1	109
Rangareddy	0.0	-100
Warangal	0.0	-100
Rayalaseema		
Anantapur	0.2	-76
Chittoor	23.6	555
Cuddapah	1.8	122
Kurnool	3.4	588

Contour maps (Maximum, Minimum temperature and anomalies) for the week ending 23.02.2011



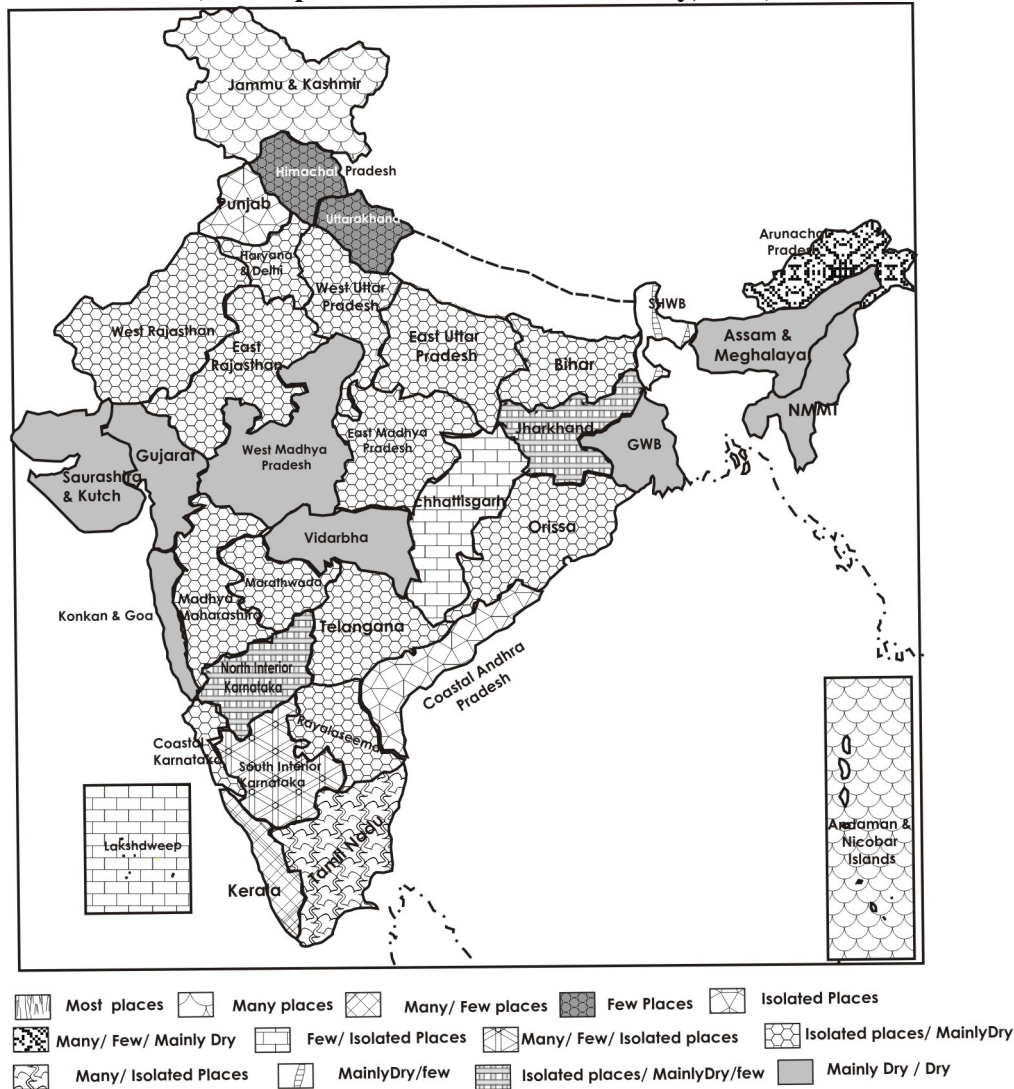
Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 23.02.11

Actual Mean Minimum Temperature ranged above 24°C over some parts of Raylaseema, Tamil Nady, south Interior Karnataka, Lakshdweep Islands, 20 to 24°C over most parts of Coastal Andhra Pradesh, Raylaseema, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Island, some parts of Orissa, Telengana, South & North Interior Karnataka, 16 to 20°C over most parts of Gangetic West Bengal, Orissa, Chattisgarh, Vidarbha, Marathwada, Telengana, Karnataka, Goa, some parts of East Madhya Pradesh, Kutch, Konkan, Madhya Maharashtra, Kerala, Tamil Nadu, Coastal Andhra Pradesh, Raylaseema, Andaman & Nicobar Islands, 8 to 12°C over most parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Nagaland, Manipur, some parts of Himachal Pradesh, Rajasthan, Sikkim, Mizoram, Madhya Pradesh, Chattisgarh, 4 to 8°C over most parts of Himachal Pradesh, some parts of Jammu & Kashmir, Punjab, 0 to 4°C over some parts of Jammu & Kashmir, Himachal Pradesh, 12 to 16°C over remaining parts of the Country.

Minimum Temperature ($^{\circ}\text{C}$) Anomaly In India for the week ending 23.02.11

Minimum Temperature anomaly ranged between 2°C and above over most parts of Tamil Nadu, Kerala, Mizoram, Tripura, some parts of West Rajasthan, Assam & Meghalaya, Orissa, Chattisgarh, Vidarbha, East Madhya Pradesh, Andhra Pradesh, North & South Interior Karnataka, Andaman & Nicobar Islands, -2 to 0°C over most parts of Himachal Pradesh, Uttarkhand, Punjab, Haryana, Delhi, Uttar Pradesh, Sikkim, Gujarat, Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Lakshadweep Islands, some parts of Jammu & Kashmir, Rajasthan, Bihar, Arunachal Pradesh, Assam, Chattisgarh, Madhya Pradesh, Andhra Pradesh, Karnataka, Kerala, -4 to -2°C over some parts of Telengana, Karnataka, Gujarat, West Madhya Pradesh, Madhya Maharashtra, Marathwada, 0 to 2°C over remaining parts of the Country.

Weather Forecast (Valid upto 1430 hours of 27th February, 2011)



Major Feature of Weather Forecast (upto 1430 hours IST of 27th February, 2011)

- Fairly widespread rain/snowfall would occur over Jammu & Kashmir and scattered over Himachal Pradesh and Uttarakhand.
- Isolated rain/thundershowers would occur over Punjab, Haryana, north Rajasthan and Uttar Pradesh, and east Madhya Pradesh during next 48 hours.
- Scattered rain/thundershowers would occur over Chhattisgarh and Jharkhand on tomorrow and decrease thereafter.
- Fairly widespread rain/thundershowers would occur over Kerala, Tamilnadu, south Karnataka and scattered over north Karnataka during next 24 hours and decrease thereafter.
- Fairly widespread rain/thundershowers would occur over Andaman & Nicobar Islands.

Weather Outlook (upto 1430 hours IST of 1st March, 2011)

- Fairly widespread precipitation would occur over western Himalayan region and Andaman & Nicobar Islands.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in Angul, Balasore, Cuttack, Dhenkanal, Gajapati, Ganjam, Jagatsingpur, Kandhamal, Keonjhar, Khurda, Nawarangpur, Nayagarh and Rayagada districts of Orissa and North Sikkim district of Sikkim during last week. Weather remained mainly dry over remaining parts of different States of the region.
- **Rainfall Forecast:** Rain is likely to occur at a few places over Sub Himalayan West Bengal and Sikkim during the period. Dry or mainly dry weather is likely to prevail or isolated rain will occur during the period over the remaining States of the region.
- **Advisories:**
 - As there was rainfall in Angul, Balasore, Cuttack, Dhenkanal, Gajapati, Ganjam, Jagatsingpur, Kandhamal, Keonjhar, Khurda, Nawarangpur, Nayagarh and Rayagada districts of Orissa and North Sikkim district of Sikkim during last week, postpone irrigation to the standing crops in these districts. As there was no significant rainfall during last week in remaining districts of different States of the region and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to pulses like lentil, gram, *arhar* etc., mustard, *rabi* vegetables and also to wheat at flowering stage.
 - As mainly dry weather is prevailing during last few weeks and there is no possibility of rainfall and day time temperature is high, apply irrigation to banana in New Alluvial zone of West Bengal.
 - As there was no significant rainfall in North West Alluvial Plain Zone of Bihar and mainly dry weather is likely to prevail, apply irrigation to normal sown wheat crop as soil moisture is very limiting in the field. Taking the advantage of dry weather, harvest already matured crops of *toria*. Apply irrigation during tasseling and silking stage in maize crop.
 - In Orissa, complete transplanting of *ragi*. The weather is also optimum for planting of papaya, marigold, land preparation and sowing of summer groundnut and sunflower.
 - 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 groundnut, sesame and sunflower and also planting of *Gladiolus*.
 - Prepare the field and undertake sowing of summer vegetable crops like long gourd, round gourd, ridge gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon, *okra*, brinjal and shimla mirch in Jharkhand.
 - After potato crops, summer green gram may be grown in case of limited irrigation facility in Western Plateau Zone of Jharkhand. Summer vegetables like bhindi, tomato, brinjal etc. may be grown in the same field if sufficient irrigation facilities are available.
 - Prepare the field and undertake sowing of *kharif* maize in Sikkim.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - After rain associated with cold and sunny weather in South Eastern Plateau Zone of Jharkhand, there may be attack of pod borer in *arhar*; spray Imidaclopride @ 2 ml / litre or Indoxacarb 0.5 ml per litre of water. Rainy and cloudy weather followed by clear sky with cold weather favours attack of insects on pods in chick pea; spray Prophenphos 50 EC @ 1 ml or Indoxacarb @ 0.5 ml per liter of water or Acephate 75SP @ 0.5 g per liter of water .
 - Cloudy weather may also favour occurrence of powdery mildew disease in field pea in South Eastern Plateau Zone of Jharkhand; spray Kerathen @ 1 ml or Sulfex WP @ 3 g per liter of water. Clear sky with cold and humid weather after rainy and cloudy days may favour attack of mango hopper in mango and litchi; spray Metasistox @ 1 ml or Kung-fu or Karate or Matador (Lambda cyhalothrin) @ 2 g per liter of water to minimize the affect of insects.
 - Due to variation of temperature between day and night and occurrence of dense fog in Coastal Saline Zone of West Bengal, rice plant may be infected by blast and brown spot diseases; Spray the crop with Ediphenphos 50 EC @ 1 ml / litre or Carbendazim 50W @ 1 g / litre or Tricyclozole 75WP @ 0.6 g / litre of water.

- Due to fog there is a chance of plant hopper and powdery mildew infestation in mango in Coastal Saline Zone of West Bengal; spray Monochrotophos @ 1.5 ml / litre or Carbaryl @ 2.5 g / litre of water with Dithane M-45 @ 2.5 g / litre at flowering and also at fruit setting stage.
- There is possibility that *Phalaris minor* weed may be very much dominant in wheat field in New Alluvial zone of West Bengal. Uproot the weeds for burning.
- Increased temperature may favour the egg laying of stem borer in rice in the main field in Kendrapara and Puri districts of Orissa. To attract the butterflies, place 4 pheromone traps / acre; collect the adults and destroy them by burying under soil or by burning. Increased difference between daily maximum and minimum temperature favours the infestation of blast in main field as well as nursery of rice. Spray 1 g Beam in one litre water.
- Occurrence of tikka disease and white ant is observed in *rabi* groundnut in Puri district of Orissa; spray 500 g Blitox-50 in 200 litres of water per acre for tikka and spray 2 ml Chloropyriphos in 1 litre water for white ant.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry

- Under present environmental condition, vaccination may be undertaken for prevention of FMD disease in cattle, pig and buffalo in South Eastern Plateau Zone of Jharkhand. During lean fodder phase preserve crop residues. Also protect fowls from ranikhet disease by administering vaccine. For swine fever prevention in pig, vaccination should be done by consulting veterinarian .
- Occurrence of EUC disease is noticed in Old Alluvial Zone of West Bengal. After six days of application of lime, apply KMnO_4 (potassium permanganate) @ 150 g / bigha / meter depth of pond water. For fish cultivation, lime should be applied @ 40 kg / bigha in the ponds. Periodic vaccination *viz.* FMD, HS & BQ may be undertaken to protect the dairy animals. Clean and hygienic water should be fed to dairy animals.

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

- **Realised Rainfall:** Rainfall occurred in East Siang, Papumpara, Upper Siang and West Kameng districts of Arunachal Pradesh and Dhubri, East Garo Hills, East Khasi Hills and Jorhat districts of Assam during last week. No significant rain occurred in remaining parts of the States of the region.
- **Rainfall Forecast:** Rain is likely to occur at a few places in Arunachal Pradesh and mainly dry weather is likely to prevail in remaining States of the region during the period.
- **Advisory:**
 - As there was no significant rain in most of the districts of the States of this region except Arunachal Pradesh and mainly dry weather is also likely to prevail over these States, farmers are advised to apply irrigation to the standing crops.
 - On account of fair weather forecast, harvesting of timely sown matured *toria* crop should be completed in Assam.
 - In view of prevailing dry weather, apply irrigation to wheat at flowering stage in Assam. Weeding and top dressing with urea should precede irrigation.
 - Irrigate the *boro* rice to maintain 3-5 cm standing water in the fields as there is no prediction of rainfall in Assam, Tripura and Manipur.
 - Due to reduced moisture, condition is favourable for cracking in banana and tomato in Mizoram. The cracking may be minimized by proper mulching and nutrient management, especially with application of boron.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Wilt disease in lentil crop is observed in some areas of Central Brahmaputra Valley Zone in Assam. Farmers are advised to protect their crops by soil drenching with Bavistin @ 1 g / litre water.
 - Spray Chloropyriphos 20 EC @ 1 ml / litre against potato tuber moth in standing late planted potato crop for late blight management in Lower Brahmaputra Valley Zone in Assam, as the minimum temperature favours occurrence of the disease.
 - Under the prevailing weather condition in Manipur, there is likely occurrence of early blight in tomato; spray Dithane M-45 (Mancozeb) @ 2 g / litre of water twice at 7 days interval.

- As temperature is increasing, there are chances of thrips attack in *boro* rice in Meghalaya. If thrips appear, spray Choloropyriphos @ 1-2 ml / litre of water.
- Due to continuous increase in temperature, there is possibility of infestation of purple blotch in onion in Mizoram. To control purple blotch, spray the crop with 1.3 kg of Indofil M 45 mixed with 400 ml of linseed oil as sticker in 600 liters of water / ha.
- Undertake intercultural operation and apply fertilizers and plant protection measures in Arunachal Pradesh on a non-rainy day.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry:

- In Nagaland, as the prevailing weather is favourable for contagious viral diseases, farmers are advised to monitor cattle, buffalo, sheep, goat and pigs. Crossbreds and young cattle may be severely affected. To prevent the outbreak of these diseases, make sure to vaccinate the animals against this disease.

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

- **Realised Rainfall:** Rain or light rain occurred in many districts in all States of the region except East Rajasthan and West Rajasthan during last week.
- **Rainfall Forecast:** Rainfall is likely at a few places in Uttarakhand and Himachal Pradesh and at many places in Jammu & Kashmir during next 3 days. Rainfall is likely either at isolated places or mainly dry weather will prevail during next three days over the remaining States.
- **Advisory:**
 - Farmers in Jammu & Kashmir are advised to postpone irrigation to standing *rabi* crops as rain is likely at many places during next three days. In Rajouri and Udhampur districts of Jammu & Kashmir in low laying areas, it is advised to provide drainage channels in all vegetable & standing crops to avoid water stagnation due to chances of rainfall during next five days. Pruning of apple may be done if not done earlier and apply white lead paint.
 - Farmers in Srinagar valley temperate zone of Jammu & Kashmir are advised to undertake sowing of tomato, cauliflower, cabbage, knoll-khol, kale and leafy vegetables like orach, spinach and methi in poly house.
 - Farmers in Srinagar advised to undertake sowing of bhindi and water melon and plantation of new orchards during these days.
 - Farmers in Punjab and Haryana are advised to start sowing of sugarcane from this week due to favorable weather conditions.
 - In Mid Hills Sub-Humid of Himachal Pradesh, farmers are advised to prepare nursery beds for sowing of tomato, capsicum, chilli, brinjal. Earthing up may be done on a non rainy days in peas onion and garlic fields to keep free from weeds.
 - Damage due to low temperature may occur in lower regions of Sub-Montane & Low Hills Sub-Tropical Zone (Palampur) of Himachal Pradesh and protect the nurseries of vegetables and forests plants and crops by covering nursery with polythene sheet. Nursery sowing of Mirch and brinjal may be done in the polyhouses. Sowing of potato should be taken up utilizing realized rainfall in mid hills and lower regions.
 - Farmers in Bhabar and Terai Zone (Nainital and Udamsingh Nagar districts) of are advised to continue harvesting of matured french beans. Farmers are advised to prepare field for sowing of moong and sunflower utilizing the realized rainfall during last week.
 - Farmers in Delhi are advised to undertake field preparation and arrange seeds of green gram and black gram for sowing during first week of March.
 - Farmers in Rajasthan are advised to prepare field for sowing of maize, groundnut, fodder crops etc. in Southern humid plain zone(Banswara district), cucurbits, zaid pearl millet fodder, zaid sorghum fodder, zaid green gram and okra in semi-arid western plain zone (Jaipur Division).
 - Farmers in Uttar Pradesh are advised to undertake sowing of sunflower and summer vegetables like lady finger, gourd and moong. Farmers in Western (Modipuram) and Eastern plain zone (Faizabad) are advised undertake harvesting of palak, fenugreek, coriander and harvesting of potato and prepare the land for sowing of urd or moong, tomato and carrot.

- Suitable varieties of the crops are mentioned in Annexure II.
- Due to humid weather, there is possibility of incidence of white rust in late sown mustard crop in eastern Zone of Haryana and hence farmers are advised to monitor the crop.
- In Punjab, present weather conditions are favourable for the incidence of yellow rust and attack of aphid and jassid in wheat. Farmers are advised to monitor the crop and spray Imidachloprid 200SL @ 40 ml/10 litres of water.
- In Eastern Plain Zone (Faizabad) of Uttar Pradesh, wheat is damaged by rats, farmers are advised to use poisonous bait of a mixture containing 1 part Zinc Phosphide, 1 part mustard oil and 48 part grains or Barium Carbonate 100 gm, wheat flour 860 gm, sugar 15 gm and 25 gm of mustard oil.
- Weather conditions are favourable for the incidence of Bhunga Gujiya and Dahiya disease in mango in Eastern Plain Zone (Faizabad) of Uttar Pradesh, farmers are advised to spray 2 gm soluble sulphur and 1 ml Monochrotophos in 1 lit. water. Remove infested leaves / small flowers from mango tree.
- In Bhabar and Terai Zone of Uttarakhand, under present weather conditions sporadic incidence of aphid are reported in mustard, farmers are advised to spray systemic insecticide.
- Weather conditions are favourable for incidence of aphid in mustard and vegetables in Delhi. Farmers are advised to monitor the crops and undertake spraying of Imidacloprid @ 0.25 to 0.5 ml per litre of water in vegetable crops after harvesting of mature fruits and Metasystox @ 1 ml per litre of water in mustard crop.
- In Bikaner (Arid Western Plain Zone) of Rajasthan, incidence of aphid may occur due to prevailing weather. Spray Thiomethoxam @ 5g/15lit. of water or Dimethoate @ 1.25 lit/ha to control the pest.
- Mango hopper may attack mango plants in Jaipur division of Rajasthan under prevailing weather conditions, to control the pest spray Malation 50 EC @ 1.0 ml or Endosulfan 35 EC @ 1.5 ml per litre water.
- Attack of Jhulsa (Alternaria blight) and Chhachaya are reported on Jeera in Jodhpur division of Rajasthan, farmers are advised to spray 2 gm Mancozeb and 2 gm soluble Sulphur per litre of water.
- Stages of major crops are mentioned in Annexure I.

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

- **Realised Rainfall:** Mainly dry weather prevailed during last week in all the States except in Kollam, Palakkad, Pathanamthitta and Thiruvananthapuram in Kerala, Nalgonda in Andhra Pradesh and Chennai, Dharmapuri, Krishnagiri, Nilgiris, Tiruvallur, Tiruvannamalai, Vellore, in Tamilnadu where excess rainfall was received.
- **Rainfall Forecast:** Fairly widespread rain/thundershowers would occur over Kerala, Tamilnadu and South Interior Karnataka and scattered over north Karnataka during next 24 hours and decrease thereafter.
- **Advisories:**
 - As there was no significant rainfall in the region except in Kollam, Palakkad, Pathanamthitta and Thiruvananthapuram in Kerala, Nalgonda in Andhra Pradesh and Chennai, Dharmapuri, Krishnagiri, Nilgiris, Tiruvallur, Tiruvannamalai, Vellore in Tamilnadu, farmers are advised to apply irrigation to the standing crops. Postpone irrigation in the above districts as there was excess rainfall during last week.
 - Farmers in Scarce Rainfall Zone of Andhra Pradesh may undertake harvesting of groundnut. After harvesting ploughing may be undertaken to conserve moisture and destroy insect pupa and pathogens.
 - Due to increasing temperature conditions in Central Zone of Kerala, arecanut suffers from heat stress conditions. Farmers are advised to undertake white washing of palm and apply irrigation in the morning hours.
 - Suitable varieties of the crops are mentioned in Annexure II.
 - Weather is congenial for blast on rice in Krishna Godavari Zone of Andhra Pradesh, apply nitrogen fertilizers and spray 0.6 g of tricyclozole or 1.5 ml of Casucamycin. In the Krishna Godavari Zone of Andhra Pradesh, Also castor botrytis was noticed in spray of carbondizam @ 1g or copper oxychloride @ 3g/lt of water.
 - Weather is congenial for sclerotium rot on paddy nursery in Southern Dry Zone of Karnataka, farmeres are advised to spray bevistin @ 1 gm/lt of water.

- Weather is congenial for rice blast in paddy in North Eastern Zone of Tamil Nadu, spray Propiconazole (Tilt) 2ml in one liter of water.
- Weather is congenial for the incidence of hopppers and powdery mildew in mango orchards in Scarce Rainfall Zone of Andhra Pradesh, spray Confidor@ 0.4 ml+Bavistin @ 1g per litre of water. Also incidence of thrips in pomegranate and chillies, spray Fipronil @ 2ml per litre of water.
- In Problem Areas Zone of Kerala, in the rice fields, Bacterial leaf blight is noticed in many of the padasekharams in Kuttanadu. Yellow to orange discolouration starting from the tip and progressing downwards along the sides of the leaves and subsequent drying are the symptoms of the disease. To prevent the spread of the disease to other padasekharams, it is advisable to keep bleaching powder in small bundles at the entrance of irrigation channels @ 2 kg/acre. Spraying fresh cowdung water made by mixing cowdung in water @ 20 g/litre is effective for controlling the disease in the initial stages.
- Fruit fall disease is observed In Problem Areas Zone of Kerala in some of the plants of nutmeg, spray 1% Bordeaux mixture two or three times or Tilt@1ml/litre or Contaf @1.5ml/Litre. Also leaf caterpillars are observed in cowpea, spray Ekalurance.
- Weather is congenial for aphid attack in Southern Zone of Kerala in bhindi, cowpea, brinjal etc., spray Beauveria bassiana to control.
- Stages of major crops are mentioned in Annexure I.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised rainfall:** Mainly dry weather prevailed over the States of the region during last week.
- **Rainfall forecast:** Either isolated rain will occur or dry or mainly dry weather will prevail over the States of the region during the period.
- **Advisory:**
 - As mainly dry weather prevailed over the State during last few weeks and either isolated rain will occur or dry or mainly dry weather will prevail during the period, farmers are advised to apply irrigation to the standing crops.
 - In view of prevailing dry weather, farmers in Maharashtra are advised to complete harvesting of the already matured jowar and gram as early as possible.
 - Taking advantage of prevailing weather farmers in Central Vidarbha Zone are advised to undertake planting of watermelon and summer ladies finger.
 - As dry condition prevailed during last few weeks and is likely to prevail, farmers in Gujarat state are advised to irrigate wheat, gram, mustard, pigeon pea, isabgol, and vegetable crops like brinjal, tomato, etc.
 - The farmers in middle Gujarat and North Gujarat region are advised to undertake sowing of green gram and cowpea and continue sowing of summer groundnut.
 - Taking advantage of favourable weather, farmers in south Gujarat heavy rainfall region are advised to undertake planting of summer sunflower.
 - Suitable varieties of the crops are mentioned in Annexure II.
 - Prevailing weather conditions may increase the infestation of aphids, thrips and blight in onion in Pune division of Maharashtra; spray Neon @ 2 ml or Aciphate @ 0.5 g plus Diathane M-45 @ 2.5 g or Chlorothalonil @ 2 g and sticker @ 0.5 g / litre of water. Also there may be attack of hairy caterpillar in cucumber, ridge gourd, water melon and leaf eating caterpillar in lemon, orange, sweet lemon. Farmers are advised to take plant protection measures to control the above pests.
 - Changes in weather condition may cause anthracnose on mango inflorescence in Konkan region of Maharashtra; to control spray Carbendazim @ 10 g or Thiophenate Methyl @ 10 g or Propineb @ 20 g per 10 litres of water.
 - As cloudy and rainy weather prevailed during last week, there is chance of attack of powdery mildew on mango blossom in Central Vidarbha Zone of Maharashtra; to control spray Sulphur WS @ 30 g or Dinocap @ 10 ml or Tridemorph @ 5 ml in 10 liters of water.
 - Weather conditions are favourable for infestation of sucking pests in vegetables in North Gujarat region; spray Dimethoate 30EC 0.1% to control sucking pests in the crop. Also as cloudy conditions prevailed during last week, there may be infestation of blight disease in tomato crop; spray 0.25% Mancozeb to control the disease.

- Weather conditions are congenial for infestation of powdery mildew in cumin and coriander crops in South Saurashtra region of Gujarat state; spray hexaconazol 10 ml in 10 liters of water to control the disease.
- Stages of major crops are mentioned in Annexure I.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry during last week in the region. Isolated rainfall occurred over Chhattisgarh.
- **Rainfall Forecast:** Dry weather is likely to prevail over the region.
- **Advisory:**
 - Taking the advantage of dry weather, farmers are advised to undertake intercultural operations in the early sown crops to keep the fields weed free and apply irrigation to the standing crops as there is chance of increase in temperature.
 - As there are chances of dry weather conditions during the next five days, farmers in Bundelkhand Zone are advised to transplant tomato, chilli and sow cucurbit crops in the field.
 - Farmers in Jhabua Hill Zone are advised to sowing of okra and complete preparation of nursery for summer onion. Also farmers are advised to sow cucurbit vegetables, watermelon and muskmelon.
 - In Bundelkhand region in Madhya Pradesh, there is a possibility of cloudy weather conditions during the next 5 days hence farmers are advised to delay sowing of watermelon, muskmelon, cucumber, ladyfinger, Brinjal, bottle guard and pumpkin.
 - Farmers in Chattisgarh Plain Zone are advised for sowing of cucurbitaceous crops, sowing of leafy vegetables short duration varieties of carrot and radish and complete sowing of sunflower as early as possible. Also the average temperature is now suitable for proper germination of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. Hence sowing of these vegetables should be completed at the earliest.
 - Suitable varieties of the crops are mentioned in Annexure II.
 - Weather is congenial for leaf curl disease in tomato and chilli in Gird Zone of Madhya Pradesh, farmers are advised to spray Methyl demeton 25 E.C. @ 2.0 ml. or Emidachloprid @ 0.5 ml. per litre of water.
 - Weather is congenial for infestation of sucking insects and Helicoverpa in Pea, Bean and Chickpea in Vindhay Plateau Zone in Madhya Pradesh, farmers are advised to spray of Quinalphos 25 E C @ 1.5 lit. / ha. or profenophos 40 E.C. @ 2 ml / lit for sucking pests and (gram pod borer) and for sucking pest spray of Dimethoate 30 E.C. @ 1 ml. / lit for Helicoverpa. Also there is possibility of powdery mildew disease in peas, spray of sulphex or soluble sulphur 3 gm. or carbendazim 2 to 2.5 gm / lit water.
 - As there are chances of rise in temperature in coming days in Kymore Plateau Zone, farmers are advised to monitor chickpea for pod borer incidences. If caterpillars are more than 2 or 3 per meter row length spray 10% of the neem leaves extract, spray Chlorpyrifos 20 EC or Endosulfan 35 EC per liter @ 500 litre of water.
 - In Powerkheda region of Madhya Pradesh, spray Phorate 10G 3.0 KG per acre as wheat crop is infected by Mahu and also infected by Dimak, spray Chlropayrifas 20 EC in 1 lit after irrigation.
 - There is a possibility of light rainfall during next two days and sky will be cloudy during the next 5 days in Bastar Plateau Zone in Chattisgarh hence farmers are advised to monitor the chickpea crop against pod borer. When 2 to 3 pod borer found in chickpea crop, then spray the crop with Endosulfan 35 E.C. or Quinolphos 25 E.C. @ 2.0 ml. per liter of water for their control. Farmers are advised to create T type wooden stand in the field at a distance of 20.0 feet and also monitor mustard and lentil crops against attack of aphids. If found, it is advised to spray of methyl demeton 25 E.C. or dimethoate 30 E.C. @ 2.0 ml. per liter of water for their control. Monitor tomato, coriander and cabbage crops for the attack of aphids. If found, it is advised to spray of methyl demeton 25 E.C. @ 2.0 ml. per liter of water for their control. Due to cloudy conditions, powdery and downey mildew attack can be there in the crops like lathyrus, lentil and peas. For its control any sulphur based fungicide can be used. Irrigate standing crops whenever required.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry & Poultry

- There is possibility of increase in day temperature in Bundelkhand Zone of Madhya Pradesh; farmers are advised to protect the sheep shearing. Also balanced diet should be given to the buffaloes and cows so that milk production is not affected by the fluctuating weather.

Annexure I

Major Crops

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

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

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

- Cole crops like cauliflower and cabbage (head formation / maturity / harvesting), sugarcane (cane development), potato (late planted) (tuber development / maturity), rapeseed and mustard (pod filling / maturity / harvesting), *boro* rice (early tillering / tillering), wheat (flowering / milk), early *ahu* rice (nursery sowing / seedling) and maize (sowing) in Assam.
- Tomato (fruiting / maturity / harvesting), pea (pod formation / maturity), maize (vegetative) and potato (tuber maturity / harvesting), mustard (pod maturity / harvesting) and orange (maturity) in Arunachal Pradesh.
- Summer vegetables (sowing) and *boro* rice (tillering), potato (tuber maturity / harvesting) in Tripura.
- *Boro* rice (tillering), *rabi* vegetables (fruiting / harvesting), rapeseed and mustard (pod filling / pod maturity), *rabi* maize (vegetative), *rabi* maize at medium and low altitudes (harvesting), wheat (flowering / milk), winter potato (tuber initiation / tuber formation), winter potato at high altitude (harvesting) and summer vegetables (sowing) in Meghalaya.

- Rice (sowing), *rabi* maize (vegetative / pre-flowering), mustard and rapeseed (pod formation / early maturity), field pea (flowering / pod formation), onion (vegetative / bulb formation), cauliflower and cabbage (head formation / harvesting), tomato (transplanting / early vegetative) and potato (tuber formation / early maturity) in Manipur.
- *Khasi* Mandarin (vegetative), banana (vegetative / fruiting / maturity), onion (vegetative), pea (pod formation / maturity / harvesting), beans (pod formation / harvesting), carrot and radish (harvesting), tomato, chilli and capsicum (flowering / fruiting / harvesting), cole crops (head formation / harvesting), ginger, turmeric (harvesting) and maize (cob formation / maturity) in Mizoram.
- Cabbage (heading / harvesting), potato (vegetative), pea (fruiting / harvesting), mustard (pod formation / early maturity), *toria* (pod formation / maturity) and papaya and tomato (fruiting) in Nagaland.

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

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

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

- Rice (grain development/maturity), pulses (pod initiation / development), rice fallow black gram (flowering), maize (harvesting), sorghum (harvesting), groundnut (late vegetative), cotton (boll development), sugarcane (vegetative) in Tamil Nadu.
- Sugarcane (ratooning), mango (fruiting), pigeon pea (harvesting), Bengal gram (pod formation/maturity/harvesting) bitter gourd (fruiting), cotton (boll formation/ picking), sunflower (head filling), safflower (flowering), wheat (Earhead emergence / maturity), jowar (grain milking stage), mango (flowering/fruiting) in Karnataka.

- Vegetables (vegetative / flowering), rice (seedling), coconut (Harvesting) in Kerala.
- Bengal gram (pod development to maturity), rice (Tillering to vegetative stage), red gram (pod development), sunflower (flowering / seed development), groundnut (pod development) in Andhra Pradesh.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Summer rice (early tillering in Konkan and East Vidarbha), Jowar (maturity / harvesting), *rabi* gram (pod maturity / harvesting), safflower (seed maturity), maize (cob initiation / cob maturity), sunflower (head maturity), irrigated wheat (milk / dough / early maturity in early sown crop), sugarcane (*adsali*) (active tillering), sugarcane-preseasonal (early vegetative), sugarcane (*suru*) (planting / sprouting), summer groundnut (early vegetative / vegetative in konkan and sowing / germination in other divisions), summer sunflower (sowing / germination), summer maize (sowing / germination), summer bajra (early vegetative) in Maharashtra.
- Mustard (pod development / seed formation / maturity), pigeon pea (seed formation / maturity), gram (pod development / grain formation / maturity), potato (tuber formation / maturity), brinjal and tomato (flowering / fruiting / harvesting), *rabi* fennel (flowering / seed formation), cumin (seed formation / maturity), early sown wheat and timely sown wheat (milk / dough), late sown wheat (ear emergence / flowering), isabgol (grain formation / maturity), sugarcane (sprouting / early vegetative) and summer groundnut (sowing) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Wheat (flowering / grain formation), mustard (maturity), chickpea (pod formation), pigeon pea (pod formation), sugarcane (planting), cotton (boll formation), maize (milky/ dough), onion (nursery preparation), gram/linseed (fruiting/ harvest), okhra (sowing) in Madhya Pradesh.
- Pigeon pea (pod development), gram (pod formation / development), wheat (grain formation / milky), mustard (maturity), sunflower (sowing), sugarcane (vegetative) in Chattisgarh.

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.

Orissa

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

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

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.

Sesame: Uma, Kalika, Nirmala, Prachi and Usha.

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

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

West Bengal

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

Green gram: TM-99-50, PDM-11, TARM-1, 2, Samrat.

Sesame: Tilottama, Rama.

Groundnut: JL-24, J-11, AKG-12-24.

Jharkhand

Summer Rice: IR 36, 64, Naveen, Lallat, Taichung Native.

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

Early *Ahu* Rice: Banglami, Puthichapali, Nilajee, Hasakumra, Lachit, Chilarai, Gopinath, Luit, Kapilee, Dichang, Dikhow and Kalong.

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

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

Jammu & Kashmir

Tomato : Pusa ruby & Pb. Chuhara

Chillies : NP-46A & Pusa Ruby

Brinjal : PPL, PPG, PPR & PK

Bhindi : pusa sawani

Uttar Pradesh

Sunflower : Modern KBSH-1

Lady Finger : VRO-6, 5, IIVR-10, P-Kanti

Gourd : Swarna Purna, Swarna Sweta, Swarna Ageti and hybrid varieties like Aman and Priya.

Moong : K-851, JM-721

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

Harayna

Sugarcane : COH-92, CO-7717, COH-99, COS-8436, COH-119, CO-1148, COS-767 and COS-110.

Delhi

Spinach: Jyoti

Coriander: Pant Haritma

Fenugreek: PEB, AM-1

Ladies finger: A-5 and Parvani Kranti

Gram : Green gram – Pusa Visal, Pusa Vaisakhi, PDM-11, SML-32 and Black gram – Pant Urd 19, Pant Urd 30, Pant Urd 35, PDU1.

Uttarakhand:

Brinjal: Pant Samrat, Pant Rituraj, Pant Brinjal-4, ARU-1

Potato : Kufri Jyoti, Kufri Ashok & Kufri Anand

Moong : Pant Moong-2, Pant Moong-4, Pant Moong-5, Pant Moong-6, Narendra Moong-1

Rajasthan

Green gram : K-851 (60-70 days), PDM-11 (60-65 days), Pusa Baisakhi (60-80 days), RMG-268 (65-70 days)

Summer Okra : Pusa sawani, Pusa Makhmali, Parbhani, Kranti, Ark Abhay & Arka Anamika

Gujarat

Greengram: GM-3, GM-4.

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

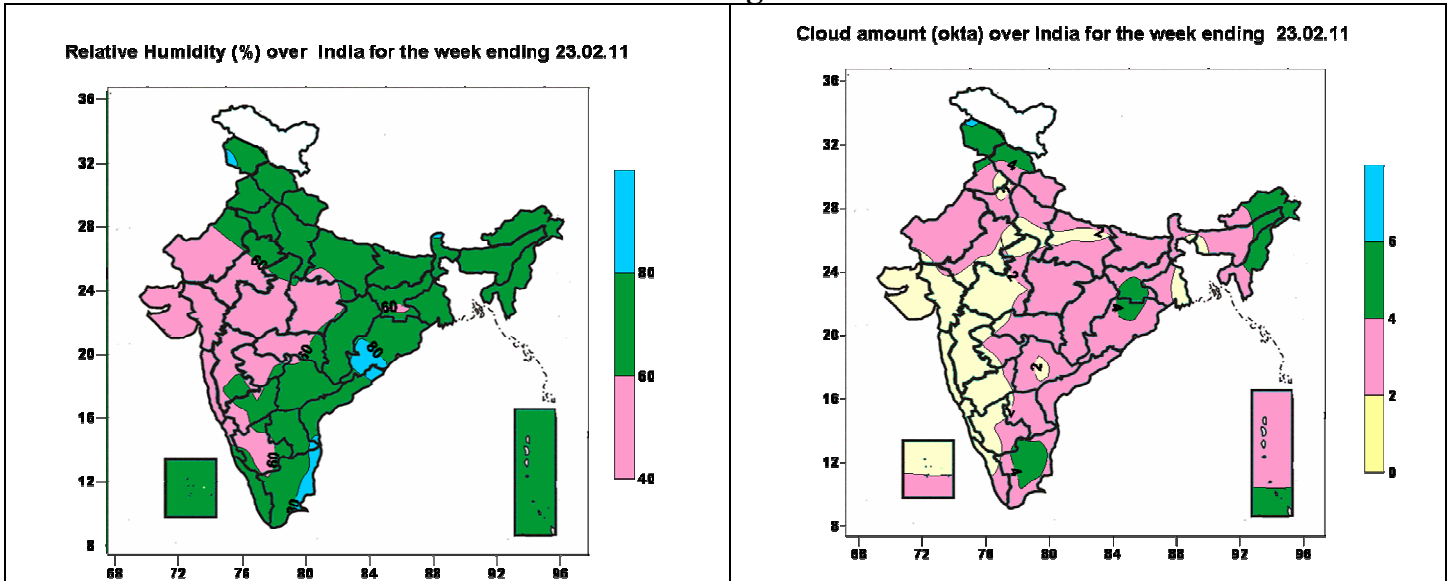
Summer groundnut: GG-2, 5 and 7 for Bhal and Coastal region and GG-2 or GG 20 for North Gujarat region.

Maharashtra

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

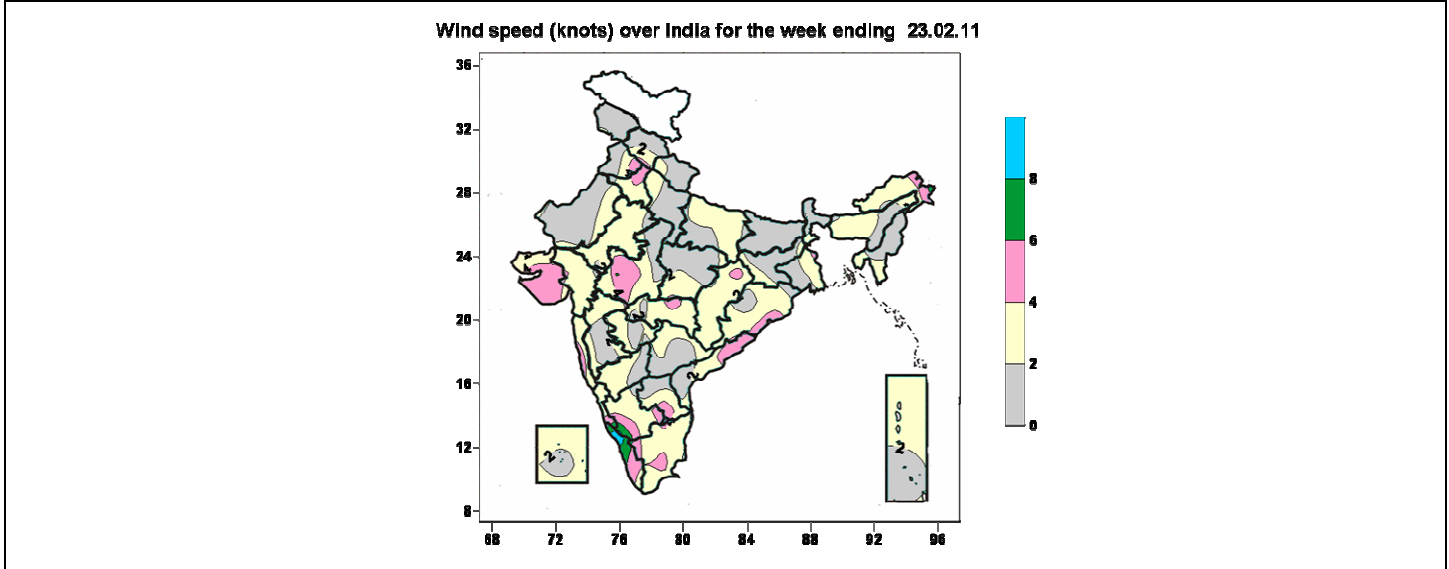
Ladies finger: Arka Anamika, Parbhani Kranti, Akola Bahar and Phule Utkarsha.

Annexure III
Contour maps (Relative humidity, Cloud amount and Wind Speed)
for the week ending 23.02.2011



Relative humidity between 80% and above over some parts of Jammu & Kashmir, Orissa, Coastal Andhra Pradesh, Rayalaseema, Tamil Nadu 40 to 60% most parts of Rajasthan, Saurashtra & Kutch, Gujarat, Madhya Pradesh, Maharashtra, Coastal & South interior Karnataka, some parts of East Uttar Pradesh, Jharkhand, North Interior Karnataka, Telengana, 60 to 80% over remaining parts of the country.

Cloud amount 6 okta and above over some parts of Jammu & Kashmir, 4 to 6 okta over most parts of Jammu & Kashmir, Uttarakhand, Arunachal Pradesh, Nagaland, Manipur, Tamil Nadu, some parts of Punjab, Assam, Mizoram, Jharkhand, Orissa, Andaman & Nicobar Islands, 0 to 2 okta over most parts of Saurashtra & Kutch, Gujarat, West Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Karnataka, Lakshadweep Island, some parts of Punjab, Haryana, Uttar Pradesh, Rajasthan, West Bengal, Assam & Meghalaya, Telengana, Rayalaseema, Kerala, 2 to 4 okta over remaining parts of the country.



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