

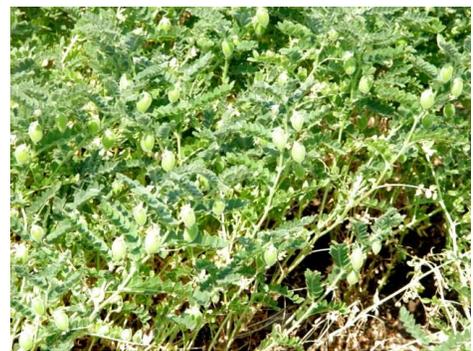
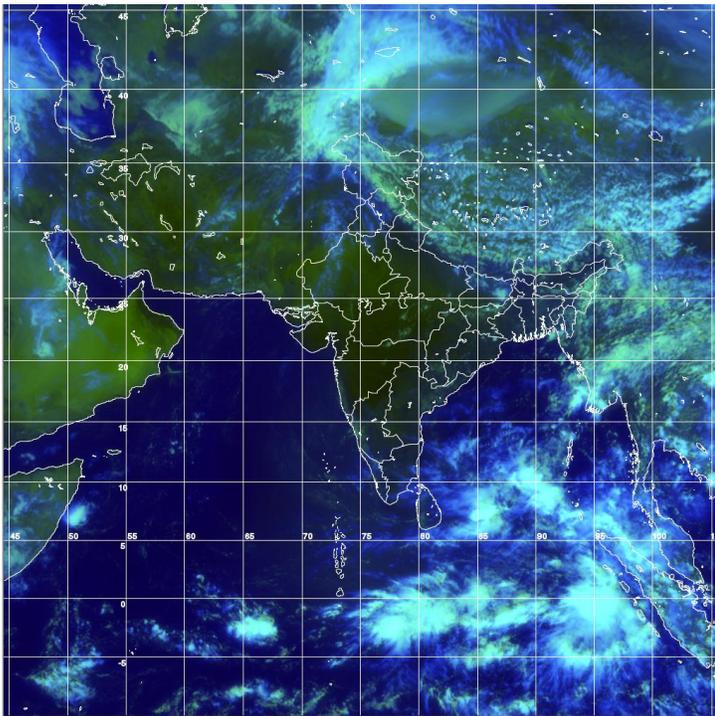


National Agromet Advisory Bulletin

Thursday, 28th April, 2011

(For the period 28th to 2nd May, 2011)

Satellite image 1130 UTC Dated
29th April, 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

Rainfall occurred in most of the districts of South Interior Karnataka, Kerala, Tamil Nadu and some districts of Assam, Arunachal Pradesh, Gangetic West Bengal, Sub Himalayan West Bengal, Chhattisgarh, Vidarbha, Orissa and Coastal Andhra Pradesh during last week. Maximum temperature ranged above 34 to 38⁰C over most parts of Rajasthan, Gujarat, Saurashtra & Kutch, West Madhya Pradesh, Uttar Pradesh, Marathwada, some parts of Bihar, Madhya Maharashtra, Vidarbha and Raylaseema. Farmers are advised to undertake harvesting of wheat and other *rabi* crops and store it at safer places in Bihar, West Bengal, Sikkim, Punjab, Haryana, East Rajasthan and Uttar Pradesh as isolated thundersqualls would occur over these States during next two days. Due to rise in temperature and dry conditions in most of the region, the farmers are advised to apply frequent irrigation in summer crops and vegetables.

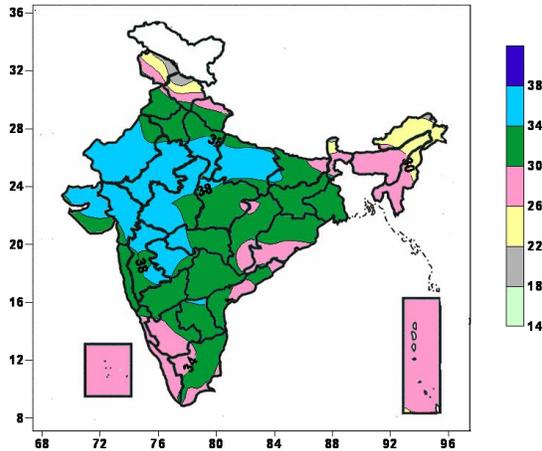
As there was sufficient rainfall in South Interior Karnataka, Kerala, Tamil Nadu, postpone irrigation to the standing crops in these States. Undertake summer ploughing in Tamil Nadu, Andhra Pradesh and Karnataka utilizing the rainfall during last week.

Farmers are advised to undertake sowing of cowpea, green gram, black gram, sesamum, sorghum and cotton in Karnataka, sowing of maize, brinjal, bhindi, chilli in Tamil Nadu, sowing of french bean, bhindi, cucurbitaceous vegetables and transplanting of tomato, brinjal, chillies in Himachal Pradesh, sowing of rice, bhindi, cucurbitaceous vegetables in Uttarakhand, sowing of summer mung, mash and pigeon pea in Punjab and Haryana, sowing of baby corn in Delhi, sowing of irrigated cotton in Rajasthan, sowing of rice in nursery, maize, mung, mash in Jammu & Kashmir, sowing of french bean, mung, urd and transplanting of wet seeded rice etc. in Arunachal Pradesh and sowing of summer sesamum in Assam.

Due to high temperature conditions, there are incidences of aphids and caterpillars in raddish, turnip, cauliflower in Himachal Pradesh, shoot and root borer in cashew in Maharashtra, red spider mite in tapioca in Tamil Nadu, smut disease in rice in Kerala, neck blast in rice, early shoot borer in sugarcane in Andhra Pradesh, pod borer in beans, powdery mildew in pulse crops in Karnataka and stem borer in rice in Chhattisgarh. Farmers are advised to undertake appropriate plant protection measures to control the pests and diseases.

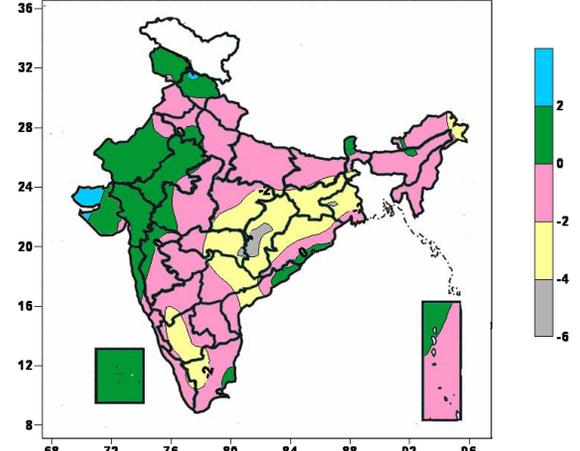
Contour maps (Maximum, Minimum temp. and anomalies) for the week ending 27.04.2011

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 27.04.11



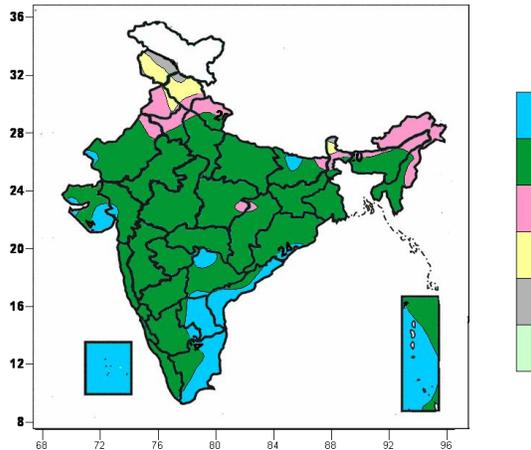
Actual Mean Maximum temperature ranged above 34 to 38°C over most parts of Rajasthan, Gujarat, Saurashtra & Kutch, West Madhya Pradesh, Uttar Pradesh, Marathwada, some parts of Bihar, Madhya Maharashtra, Vidarbha, Raylaseema, 26 to 30°C over most parts of Sub_himalayan West Bengal, Assam & Meghalaya, Maipur, Mizoram, Tripura, Kerala, Coastal & South Interior Karnataka, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Arunachal Pradesh, Orissa, Chattisgarh, Coastal Andhra Pradesh, Tamil Nadu, East Madhya Pradesh, 22 to 26°C over most parts of Arunachal Pradesh, Nagaland, some parts of Jammu & Kashmir, Himachal Pradesh, Sikkim, Assam & Meghalaya, Manipur, 18 to 22°C over some parts of Jammu & Kashmir, Himachal Pradesh, Sikkim, 30 to 34°C over remaining parts of the country.

Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 27.04.11



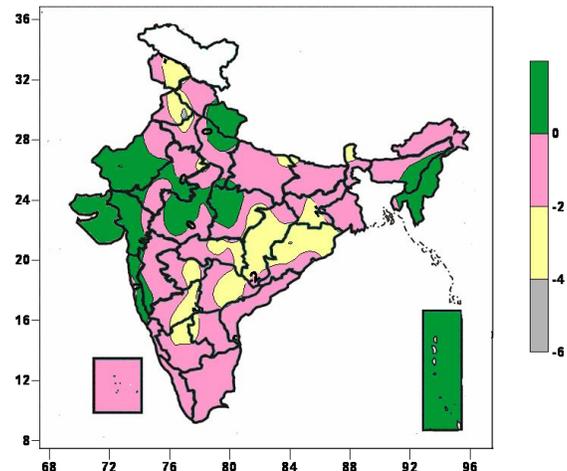
Actual Mean Maximum temperature anomaly ranged between 2°C and above over some parts of Himachal Pradesh, Saurashtra & Kutch, 0 to 2°C over most parts of Jammu & Kashmir, Himachal Pradesh, Rajasthan, Gujarat, Saurashtra & Kutch, Konkan, Sikkim, Lakshadweep Islands, some parts of Haryana, Delhi, Arunachal Pradesh, Assam & Meghalaya, Orissa, Coastal Andhra Pradesh, Coastal Tamil Nadu, Madhya Maharashtra, West Madhya Pradesh, Andaman & Nicobar Islands, -4 to -2°C over most parts of Jharkhand, Gangetic West Bengal, Chattisgarh, East Madhya Pradesh, Vidarbha, Telengana, South Interior Karnataka, some parts of Bihar, Sub-Himalayan West Bengal, Orissa, Coastal Andhra Pradesh, Tamil Nadu, North Interior Karnataka, -2 to 0°C over remaining parts of the country.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 27.04.11



Actual Mean Minimum Temperature ranged above 24°C over most parts of Coastal Andhra Pradesh, Rayalaseema, Lashadweep, Andaman & Nicobar Islands, some parts of West Rajasthan, Bihar, Orissa, Telengana, South Interior Karnataka, Gujarat, Saurashtra & Kutch, 16 to 20°C over most parts Punjab, Arunachal Pradesh, Nagaland, Manipur, some parts of Himachal Pradesh, Uttarakhand, Haryana, West Rajasthan, Bihar, Sub-Himalayan West Bengal, Assam & Meghalaya, 12 to 16°C over most parts of Himachal Pradesh, some parts of Jammu & Kashmir, Punjab, 8 to 12°C over some parts of Jammu & Kashmir, Himachal Pradesh, 20 to 24°C over remaining parts of the Country.

Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 27.04.11



Minimum Temperature anomaly ranged between 0°C and above over most parts of West Rajasthan, Uttarakhand, Nagaland, Manipur, Mizoram, Tripura, Gujarat, Saurashtra & Kutch, Madhya Pradesh, Konkan & Goa, Andaman & Nicobar Islands, some parts of East Rajasthan, Uttar Pradesh, Assam & Meghalaya, Madhya Maharashtra, -4 to -2°C over most parts of Jammu & Kashmir, Punjab, Orissa, Chhattisgarh, some parts of East Rajasthan, Haryana, Delhi, Himachal Pradesh, East Uttar Pradesh, Bihar, Jharkhand, Telengana, Raylaseema, North & South Interior Karnataka, Marathwada, Vidarbha, East Madhya Pradesh, -2 to 0°C over remaining parts of the Country.

Distribution of rainfall (% departure from normal) for the districts of Arunachal Pradesh, Assam, Chattisgarh, Maharashtra, Orissa, West Bengal, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh during last Week.

State/Districts	Actual	27.04.11
Arunachal Pradesh		
Changlang	**	**
East Kameng	6.3	-82
East Siang	56.4	7
Lohit	35.8	-51
Lower Subansiri	17.0	-74
Papumpara	40.4	-47
Tawang	**	**
Tirap	4.8	-93
Upper Siang	169.8	86
Upper Subansiri	0.8	-97
West Kameng	**	**
West Siang	**	**
Assam		
Barpeta	24.2	-50
Bongaigaon	0.6	-99
Cachar	24.8	-59
Darrang	**	**
Dhubri	33.2	-23
Dibrugarh	36.5	-39
East Garo Hills	**	**
East Khasi Hills	36.6	-49
Goalpara	10.5	-82
Golghat	2.9	-90
Hailakandi	6.0	-91
Jaintia Hills	**	**
Jorhat	2.2	-95
Kamrup	2.4	-94
Karbi Analog	0.4	-99
Karimganj	0.0	-100
Kokrajhar	17.8	-78
Lakhimpur	36.9	-18
Morigaon	3.8	-88
N.C.Hills	4.2	-92
Nowgong	0.3	-99
Nalbari	24.1	-39
Sonitpur	16.9	-52
Sibsagar	**	**
Tinsukia	29.7	-40
Chattisgarh		
Bastar	11.5	32
Bilaspur	32.3	850
Dantewara	33.7	702
Dhamtari	13.5	1025
Durg	3.2	167
Janjgir	4.1	490
Jashpurnagar	18.6	879
Kanker	14.4	365
Korba	0.0	-100
Koriya	23.9	2883
Kowardna	12.0	532
Mahasumund	9.1	1038

State/Districts	Actual	27.04.11
Raigarh	4.1	23
Raipur	39.2	2513
Rajandgaon	0.0	-100
Surguja	6.3	385
Maharashtra		
Vidarbha		
Akola	8.3	1560
Amraoti	4.0	900
Bhandara	17.6	1251
Buldhana	**	**
Chandrapur	36.4	1200
Gadchiroli	47.7	2411
Gondia	28.4	3957
Nagpur	14.8	957
Wardha	40.3	1579
Washim	21.3	10525
Yeotmal	**	**
Orissa		
Angul	21.9	231
Balasore	32.6	68
Bargarh	22.0	547
Bhadrak	17.6	8
Bolangir	20.8	352
Boudh	0.0	-100
Cuttack	9.5	-19
Deogarh	13.3	316
Dhenkanal	31.9	161
Gajapati	51.6	66
Ganjam	10.6	-16
Jagatsingpur	8.1	-21
Jajpur	39.5	158
Jharsuguda	17.3	194
Kalahandi	4.3	-41
Kandhamal	31.4	270
Kendrapara	0.0	-100
Keonjhar	42.3	194
Khurda	6.2	-29
Koraput	25.0	63
Malkangiri	17.0	65
Mayurbhanj	30.4	84
Nawapara	0.0	-100
Nawarangpur	30.3	21
Nayagarh	27.9	127
Puri	1.8	-68
Rayagada	42.9	252
Sambalpur	9.2	186
Sonepur	14.8	640
Sundargarh	16.1	373
West Bengal		
GWB		
Bankura	69.4	379
Birbhum	23.9	94

State/Districts	Actual	27.04.11
Burdwan	28.2	119
Hooghly	7.9	-54
Howrah	11.8	-16
East Midnapore	24.4	86
Murshidabad	13.0	65
Nadia	32.0	154
24 Pargana (N)	25.2	59
Purulia	28.8	136
24 Pargana (S)	108.2	1027
West Midnapore	44.7	132
SHWB		
Coochbehar	62.9	19
Darjeeling	8.3	-80
Jalpaiguri	40.5	-5
Malda	0.0	-100
Dinajpur (N)	**	**
Dinajpur (S)	12.2	-36
North Sikkim	37.8	-28
South Sikkim	6.8	-85
Karnataka		
Coastal Karnataka		
Dakshin Kannada	52.8	347
Udupi	7.0	-19
Uttar Kannada	8.9	39
North Interior Karnataka		
Bagalkote	17.2	136
Belgaum	9.6	13
Bidar	13.6	148
Bijapur	18.3	221
Dharwad	16.8	12
Gadag	19.8	71
Gulbarga	16.7	209
Haveri	16.6	13
Koppal	6.1	-2
Raichur	3.8	-38
South Interior Karnataka		
Bangalore Rural	67.6	468
Bangalore Urban	120.0	838
Bellary	8.0	-8
Chamarajnagar	75.7	257
Chickmagalur	34.1	88
Chitradurga	16.8	98
Davangere	18.3	52
Hassan	52.3	171
Kodagu	80.0	198
Kolar	66.4	655
Mandya	91.1	520
Mysore	113.5	482
Shimoga	7.4	-28
Tumkur	48.8	328
Kerala		

State/Districts	Actual	27.04.11
Alappuzha	46.8	42
Kannur	52.0	306
Ernakulam	49.7	86
Idukki	129.8	232
Kasaragod	133.2	851
Kollam	84.8	84
Kottayam	39.9	53
Kozhikode	70.0	204
Malappuram	104.9	381
Palakkad	99.8	251
Pathanamthitta	101.3	103
Thiruvananthapuram	63.0	129
Thrissur	58.8	194
Wyanad	110.3	365
Tamil Nadu		
Chennai	19.4	322
Coimbatore	116.7	548
Cuddalore	95.1	1386
Dharmapuri	156.1	1007
Dindigul	66.6	281
Erode	99.0	588
Kanchipuram	55.9	582
Kanyakumari	55.3	153
Karur	81.1	519

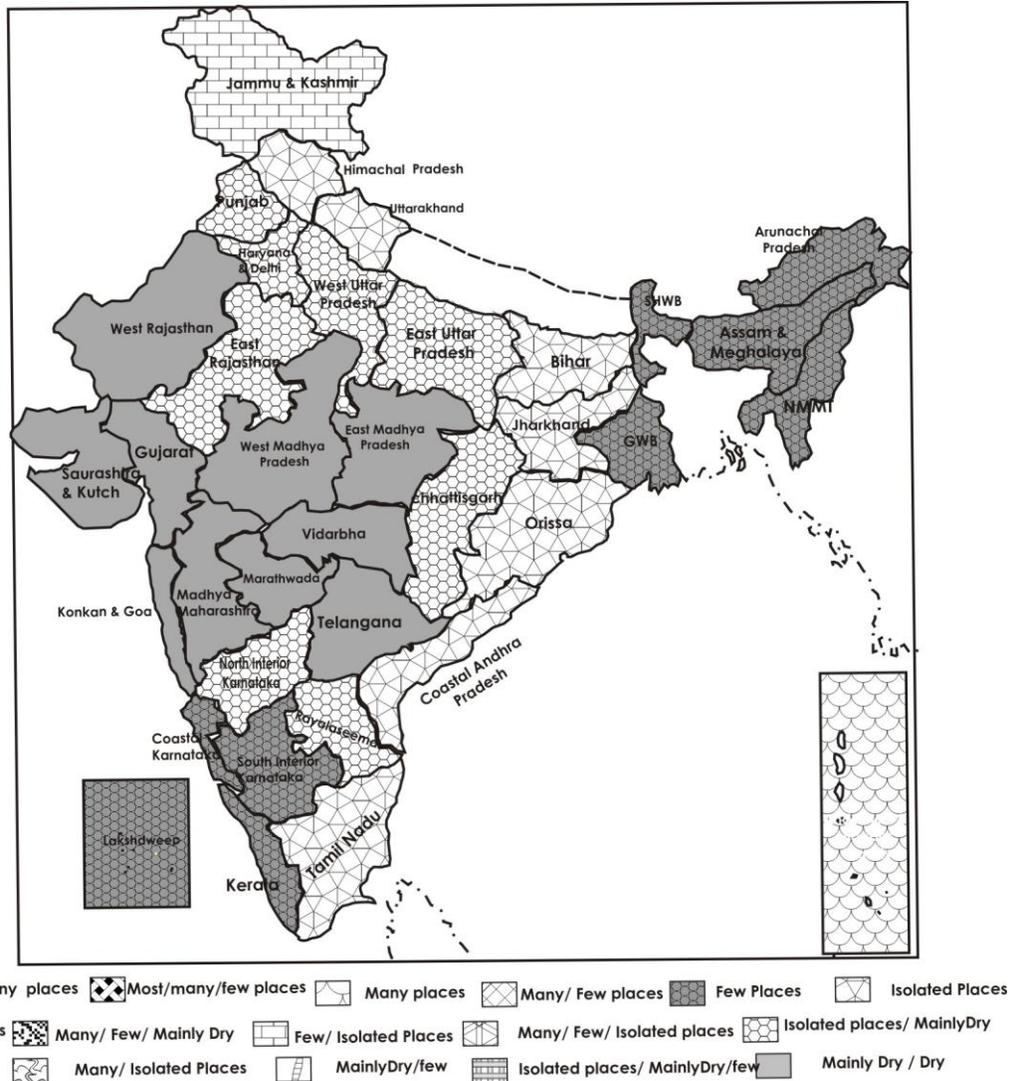
State/Districts	Actual	27.04.11
Krishnagiri	83.6	510
Madurai	81.7	456
Nagapattinam	53.7	517
Namakkal	133.9	758
Nilgiris	98.1	354
Perambalur	148.3	1168
Puducherry	64.2	523
Pudukottai	42.9	182
Ramanathapuram	128.5	873
Salem	52.0	300
Sivaganga	80.4	696
Thanjavur	87.5	327
Theni	55.7	276
Tirunelveli	92.9	446
Tiruvallur	42.9	709
Tiruvannamalai	75.2	1006
Tiruvarur	73.8	525
Toothukudi	33.5	210
Trichy	72.5	504
Vellore	66.4	810
Villupuram	94.1	1551
Virudhunagar	45.7	174
Andhra Pradesh		
Coastal Andhra Pradesh		
East Godavari	47.4	471

State/Districts	Actual	27.04.11
Guntur	43.0	949
Krishna	38.6	671
Nellore	30.7	438
Prakasam	8.9	51
Sirkakulam	27.3	319
Visakhapatnam	23.3	70
Vizianagram	14.2	71
West Godavari	45.2	679
Telangana		
Adilabad	11.2	230
Hyderabad	0.0	-100
Karimnagar	20.4	467
Khammam	50.9	707
Mehabubnagar	22.8	293
Medak	18.4	207
Nalgonda	26.0	442
Nizamabad	7.0	182
Rangareddy	10.3	54
Warangal	42.3	1358
Rayalaseema		
Anantapur	20.7	200
Chittoor	45.7	431
Cuddapah	15.4	130
Kurnool	6.1	-16

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 1st May, 2011)



Major Feature of Weather Forecast upto 1430 hours IST of 1st May, 2011

- Fairly widespread rain/thundershowers would occur over Andaman & Nicobar Islands and scattered over Lakshadweep, coastal & south interior Karnataka and Isolated over Tamilnadu.
- Scattered rain/thundershowers would occur over northeastern States and West Bengal & Sikkim and isolated over Jharkhand, Bihar, Orissa and Chhattisgarh.
- Isolated rain/thundershowers would occur over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours and increase over Jammu & Kashmir thereafter.
- Isolated duststorms/thunderstorms would occur over plains of northwest India and adjoining central and west India during next 2 days.

Weather Warning

- Isolated thundersqualls would occur over Bihar and west Bengal & Sikkim during next 24 hours.

Weather Outlook up to 1430 hours IST of 3rd May, 2011

- Fairly widespread rain/thundershowers would occur over northeastern states and scattered over adjoining east India.
- Scattered rain/thundershowers would occur over south peninsular India.
Mainly dry weather would prevail over northwest and adjoining west and central India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Some districts of Orissa, Gangetic West Bengal, Sub Himalayan West Bengal and Sikkim received rain during last week. Bihar and Jharkhand received no significant rain during last week.
- **Rainfall Forecast:** Scattered rain / thundershowers would occur over Sub Himalayan West Bengal & Sikkim and Gangetic West Bengal and fairly widespread rain/thundershowers occurred over Andaman & Nicobar Islands and isolated over Orissa, Jharkhand and Bihar. Isolated thundersqualls would occur over Bihar, West Bengal, Sikkim during next 24 hours.
- **Advisories:**
 - As Balasore, Dhenkanal, Gajapati, Jajpur, Kandhamal, Keonjhar, Mayurbhanj, Nawarangpur, Rayagada districts of Orissa, Bankura, 24 Pargana (S), West Midnapore districts in Gangetic West Bengal, Coochbehar, Jalpaiguri districts in Gangetic West Bengal and North Sikkim received rain during last week, postpone irrigation to the standing crops. As no significant rain will occur over remaining districts of different States of the region, apply irrigation to the crops.
 - Farmers are advised to undertake harvesting of wheat and other *rabi* crops and store it at safer places in Bihar, West Bengal, Sikkim as isolated thundersqualls would occur over these States during next 24 hours. Taking the advantage of dry weather, harvest matured crops of tobacco, pulses etc. in Bihar. Apply irrigation during tasseling and silking stage in maize and also to summer vegetables crop. Also undertake intercultural operations and apply fertilizers in standing onion crop before applying irrigation.
 - In Orissa, the weather is optimum for planting of papaya, marigold etc. and sowing of sunflower. Farmers are advised to undertake field preparation and sowing. Increased temperature may lead to moisture stress in standing crops. Apply irrigation to groundnut and sugarcane. Farmers are advised for sowing jute, summer vegetables like *okra*, bitter gourd, cluster bean, cow pea and ridge gourd.
 - Prepare the field and undertake sowing of summer pulses in Bihar and Jharkhand.
 - Farmers in West Bengal are advised to undertake field preparation and sowing of jute, elephant foot yam, ginger and turmeric.
 - Farmers are advised to prepare the field and undertake sowing of summer vegetable crops like long gourd, round gourd, ridge gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon, *okra*, brinjal, shimla mirch and transplant seedlings of cauliflower, cabbage, tomato, brinjal, chilli in Jharkhand.
 - As chickpea and field pea is at maturity stage in Jharkhand, harvesting should be done immediately to avoid effect of scorching temperature and faster wind velocity and matured pods should be harvested before they shatter.
 - Prepare the field and undertake sowing of summer potato and *khariif* vegetables in Sikkim.
 - Due to strong wind in coastal belt crops are badly affected. This is the flowering period of many crops. But due to high wind velocity flowers are shaded. Hence, farmers are advised to grow some forest tree like casurina, sirish etc. as wind break in Coastal Saline Zone of West Bengal.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.

- High difference in day and night temperature may favour blast disease in South Eastern Plateau Zone of Jharkhand; spray of Tricyclazole @ 0.5 g per liter of water.
- Fruit and shoot borer in brinjal has been observed in vegetables in Cuttack and Puri districts of Orissa; install Pheromone trap, spray 4 g Sevin WP or 2 ml Malathion in 1 litre water.
- Infestation of thrips has been noticed in Jagatsinghpur and Puri districts in Orissa; spray 2 ml Endosulphan in 1 litre water. White ant and white grub attack has also been found. Thorough soil drenching with Chloropyrifos solution @ 2 ml / litre water is recommended.
- There is a chance for Gundhi bug and brown plant hopper attack in rice in Coastal Saline Zone of West Bengal. Control measure should be taken when 15-20 nymphs or adults of BPH per hill will be noticed. Spraying of any one of the insecticides like Imedaclopride 17.8 SL @ 3 ml / 10 litres or Buptofezin 25 EC @ 2 ml / litre or Acephate 75 WP @ 1 g / litre of water at 7 days interval is recommended.
- Due to the high temperature and humidity fruits may be attacked by Anthracnose in chilli in Coastal Saline Zone of West Bengal. Farmers are advised to undertake two sprayings of any one of the fungicides like Carbendazim 50 WP @ 1 g or Saaf @ 2 g / litre of water at 10 days intervals before the disease symptoms are appeared.
- Due to temperature increase, there is possibility of mite attack in pointed gourd in New Alluvial Zone of West Bengal; apply kelthane @ 2 ml / litre of water.
- In this weather condition, post emergence damping off may be found in jute field in Terai Zone of West Bengal; spray Carbendazim 12% + Mancozeb 64% (Saaf) @ 2 g / litre of water.
- Apply plant protection measures in Sub Himalayan West Bengal & Sikkim after current spells of rain and in Gangetic West Bengal and Orissa on a non-rainy day.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Increase in temperature, cloudy weather and decline in water level may cause low concentration of soluble oxygen. It is advised for taking out all fishes and making ripples by beating with sticks or boating faster hither and thither or faster drawing and pumping water from and again back to the same ponds. This may increase the solubility of atmospheric oxygen in water. Apply Potassium permanganate @ 1 - 2 ppm or lime @ 800 g per acre. Stop supplementing feeds and fertilizers until normal situation in Jharkhand.
 - During summer season, animals should be protected against heat. To keep their rooms cool, jute bags may be hanged as curtain in the windows and it should be wetted time to time. Do not allow animals to expose in sunlight during noon and avail fresh and plenty of water for drinking in Jharkhand.

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

- **Realised Rainfall:** Rain occurred in Lohit, East Siang, Papumpara, Upper Siang districts of Arunachal Pradesh and Dubri, Dibrugarh, East Khasi Hills, Lakhimpur districts in Assam received rain during last week.
- **Rainfall Forecast:** Scattered rain / thundershowers would occur over the states of this region during the period.
- **Advisory:**
 - As rain occurred in Lohit, East Siang, Papumpara, Upper Siang districts of Arunachal Pradesh and Dubri, Dibrugarh, East Khasi Hills, Lakhimpur districts in Assam received rain during last week, postpone irrigation to the standing crops.
 - In Assam, sowing of jute, summer vegetables, summer green gram and black gram, nursery sowing and transplanting of *ahu* rice and planting of sugarcane may be carried out.
 - Farmers are advised to sow lady's finger, bottle gourd, ridge gourd etc. in Ri-Bhoi, West khasi, East Khasi, East Garo and West Garo hill district in Meghalaya and Mild Tropical Hill Zone in Nagaland.
 - Farmers in Manipur are advised to undertake sowing of ginger, turmeric and cucurbitaceous vegetables.

- In Nagaland, support should be given to the banana with the help of bamboo so as to protect the plants from bending or falling down due to heavy wind speed.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- In Lower Bramhaputra Valley Zone of Assam, farmers are advised to take preventive IPM approach in summer rice to control stem borer attack (Lighting up of fire at evening). In case of severe attack, apply Chloropyriphos @ 1 ml / litre of water.
- There is possibility of infestation of purple blotch disease in onion in Mizoram. To control purple blotch disease, spray the crop with 1.3 kg of Indofil M 45 mixed with 400 ml of linseed oil as sticker in 600 liters of water / ha.
- Soil and air temperatures are favourable for the attack of stem borer in *boro* rice. If eggs of the pests are noticed, apply Darsban or Monocrotophos @ 2 teaspoon full per 5 litres of water.
- In Upper 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 Manipur, Sub Tropical Plain Zone, to prevent Black Heart Disease in potatoes, it should not be stored and transit at high temperature (above 32°C). The storage rooms should be well ventilated
- Apply plant protection measures on a non-rainy day.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry:

- In Nagaland, proper monitoring should be done in case of poultry as losses may occur in poultry breed due to breakout of many diseases and hot weather. Animals with disease conditions that have become chronic and require repeated treatments must be culled from the herd.
- In Tripura and Mizoram, due to the weather change, some viral / bacterial diseases may outbreak in Poultry birds and cattle. Vaccination like FMD, Black Quarter and 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.

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:** Isolated rain/thundershowers would occur over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours and increase over Jammu & Kashmir thereafter. Isolated duststorms / thunderstorms would occur over Punjab, Haryana, Rajasthan and Uttar Pradesh on 29th & 30th April 2011.
- **Advisory:**
 - As there was no significant rainfall in most of States in the region and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to standing crop.
 - As high temperature is likely to be continuing in some parts of Rajasthan (Bikaner), the evaporative demand increases so farmers are advised to apply frequent irrigation in summer crops and vegetables.
 - Farmers are advised to undertake harvesting of wheat and other *rabi* crops and store it at safer places in Punjab, Haryana, East Rajasthan and Uttar Pradesh as isolated thundersqualls would occur over these States during next two days.
 - Farmers in Delhi are advised to sow jowar, maize, bajra, cluster bean as fodder crops and green gram, senai as green manure crop. Sowing of baby corn may also be done.
 - Farmers in Delhi are advised to complete the harvesting of wheat, bengal gram, mustard as early as possible as weather will remain dry during the period.
 - Due to prevailing dry weather conditions in Delhi, light irrigation at short interval may be given to onion, chilli, brinjal, bitter gourd, spinach, lady's finger and tomato crop in the morning and in the evening hours.
 - Farmers are advised to undertake sowing of pea, bhindi, frenchbean and nursery sowing of khira, summer squash, bitter gourd, gladiolus, liliun and China aster, glardia, rudevekia, Kochia, African

Marigold, French Marigold, Partulaca, Tithinia, Torinia and cleome, red and white clover, fodder maize, fodder maize + legume, moong, mash, nursery sowing of vegetables like cauliflower, cabbage, tomato, capsicum, cucumber, lettuce and broccoli in Himachal Pradesh.

- Due to presence of sufficient moisture farmers in Jammu & Kashmir are advised to undertake nursery sowing of rice, sowing of jowar, maize, beans, bottle gourd, sponge gourd, bittergourd, cucumber, pumpkin, bhindi, okra, sowing of cowpea as intercrop in between the fruit plants, planting of potato, transplanting of tomato, chillies, brinjal, cabbage, knol-khol, pear, peach, plum and grapevine mango, guava, litchi, citrus. Undertake harvesting of early sown wheat and oilseed crops (mustard).
- Farmers in Rajasthan are advised to undertake sowing cotton, cucurbitaceae vegetables like melon, bottlegourd, ridgegourd, bittergourd, pumpkin and smoothgourd, leafy vegetables like spinach and amaranthus and transplanting of tomato and brinjal and also advised to undertake harvesting of matured mustard, gram, taramira, barley and potato. In Southern Humid Plain Zone (Banswara region) are advised to protect the nursery plants and zaid crops from high temperature.
- Farmers in Uttarakhand are advised to undertake sowing of foxtail millet, potato (7000 – 8000 feet height areas), maize, okra, bottle gourd, bitter gourd, ginger, turmeric etc., nursery sowing of Chiatee Dhan and transplanting of tomato, pumpkin (mid-hills), chilly, brinjal (irrigated hilly areas). Farmers in Bhabar and Terai Zone (Nainital and Udamsingh Nagar districts) are advised to complete harvesting of wheat.
- Farmers in Punjab and Haryana State are advised to complete the sowing of *Baisakhi* mung and arhar crops.
- Farmers in Punjab and Haryana State are advised to complete the harvesting/threshing of matured oilseeds, barley, oil seeds and wheat crop as early as possible as weather will remain dry during the period.
- Farmers in Punjab and Haryana state are advised to give light irrigation to tomato, onion, Barseem, sugarcane crop. As temperature is increasing, apply light and frequent irrigation to fruit crops along with other measures like white wash to trunk and shelter to young trees.
- Farmers in Uttar Pradesh are advised to undertake harvesting of matured crops viz. wheat, barley, gram, mustard, arhar etc. and undertake sowing of moong, urd, maize / fodder maize, summer sugarcane with intercropping of moong and urd crops.
- In Uttar Pradesh, present weather is favourable for white fly, sucking pests in late sown tomato crop. Affected crop may be buried in the soil.
- The present weather is congenial for increase the aphid population in cucurbits & bhindi crop in Jammu division, under such situation spray the crop with Endosulfan @ 0.07%.
- Farmers in Punjab and haryana are advised to monitor onion crop against thrips and the fruit crops for anthracnose and powdery mildew and take proper plant protection measures as prevailing weather conditions are favourable for the attack.
- Present weather conditions are favourable for infestation of red pumpkin beetle and powdery mildew in cucurbitaceous crops in Delhi. Farmers are advised to monitor and take proper plant protection measures.
- Due to prevailing weather conditions, rouging of viral infested crop should be done in chilli in Delhi. Infected crop should be uprooted and buried in the soil. After rouging, spraying of Imidacloprid @ ½ ml / litre of water is advised to control the vector.
- Weather is favourable for attack of mite, jassid and hoper in lady's finger crop and thrips in onion crop in Delhi. Farmers are advised to monitor and take proper plant protection measures.
- Stages of major crops are mentioned in Annexure I.

Animal Husbandry

- 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.

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

- **Realised Rainfall:** Dakshin Kannada in Coastal Karnataka, some districts of Coastal Andhra Pradesh and most of the districts of South Interior Karnataka, Kerala, Tamil Nadu received good rainfall. No significant rainfall occurred in remaining parts of the region.
- **Rainfall Forecast:** Rainfall is likely at a few places during next three days in Kerala, Coastal Karnataka and South Interior Karnataka and either isolated rain or mainly dry weather is likely in the remaining region.
- **Advisories:**
 - As there was sufficient rainfall in East Godavari, Guntur, Krishna, Nellore, West Godavari districts of Coastal Andhra Pradesh, Dakshin Kannada in Coastal Karnataka and most of the districts of South Interior Karnataka, Kerala, Tamil Nadu, postpone irrigation to the standing crops in these districts/States.
 - As rainfall is likely at a few places during next three days in Kerala, Coastal Karnataka and South Interior Karnataka undertake intercultural operation and application of fertilizer and plant protection measures to the standing crops on non rainy day.
 - Farmers are advised to undertake sowing of cowpea, green gram, black gram, sesamum, sorghum and cotton in Karnataka, sowing of maize, brinjal, bhindi, chilli in Tamil Nadu utilizing the realized rainfall during last week.
 - Undertake summer ploughing in Tamil Nadu, Andhra Pradesh and Karnataka utilizing the rainfall during last week.
 - Utilising the realized rainfall, farmers in the North East dry zone of Karnataka, are advised to undertake moisture conservation measures across the slope to avoid runoff and soil erosion.
 - In Problem Area Zone of Kerala, in the fields where false smut disease is severe, it is advised to remove the affected panicles very carefully so that the yellow spores do not fall in field.
 - Incidence of WBPH/BPH, panicle mite and neck blast is noticed in rice in Andhra Pradesh. To control WBPH/BPH spray Acephate @ 1.5 g or Imidacloprid @ 0.25 ml or Thiomethoxam @ 2.0 g or Ethofenprox @ 1.5 ml per litre of water, and also avoid application of excess nitrogen. To control Panicle mite, spray Profenophos @ 2 ml per litre of water and to control neck blast, spray Tricyclazole @ 0.6 g per litre of water.
 - In northern transition zone of Karnataka, sugarcane is infected with leaf spot and rust, to control it spray Mancozeb @ 2 g/l. Jassids /leaf hoppers & powdery mildew observed in mango, to control these, spray carbaryl (50 W.P.) @ 4 grams /l or Endosulphan (35 EC) @ 2 ml/ l plus wettable sulphur @ 3 grams / carbendazim (50 WP) @ 2 gram per litre. To reduce flower and fruit drop in mango spraying of 4 ml planofix in 16 liter of water is recommended. Leaf spot is noticed in Chikoo, to control it spray 2 g Mancozeb (Dithane M-45) per liter of water. Leaf Webber and Diamond Black Moth noticed in Cabbage, spray NSKE (4 %) at 10-15 days interval for 3 to 4 times or Quinolphos / Chlorpyrifos (0.05%) @ 2 ml per litre. Beans are infested with pod borer. To control it spray the crop with Carbaryl (50 WP) @ 4 g/l or Melathion (50 EC) @ 2 ml/l or Endosulphan (35 EC) @ 2 ml/l.
 - In Hill zone of Karnataka, There is a severity of leaf spot in Banana and advised to go for spray with Carbendazim (1gm/lt).
 - In Southern dry zone of Karnataka, following pest and diseases were noticed, Farmers are advised to take up following plant protection measures,
 - Powdery mildew in Pulse crops: For control of this spray, Carbendazim @ 1.0 gm or Water soluble Sulphur @ 3 gm per liter of water.
 - Powdery mildew in Mango: Spray Carbendazim @ 1 gm / lit of water or Hexaconazole @ 1g / lit of water.
 - Hoppers in mango : Spray Melathion @ 2ml / lit of water or Monocrotophos @ 1.25ml / lit of water.
 - Inflorescence bug in arecanut: Place the 10 gms Phorate granules in small polythene bag and keep inside the inflorescence part of arecanut

- The dropping of tender nuts and buds in arecanut: For control, take up the spray Carbendazim @ 1 gm or Mancozeb @ 2 gm per liter of water.
- Mites in coconut: Spray water soluble sulphur @ 5gm/liter of water or spray a mixture of neem oil (20 ml) + garlic solution (20 gm) + soap powder solution (5 gm) per liter of water to the coconut flower and fruit bunch.
- In rice fallow cotton, bollworm incidence is being noticed in Cauvery Delta Zone of Tamil Nadu. Spray profenophos at 2 ml/lit of water during morning or evening hours to it.
- Red spider mite is seen in tapioca plant in North Western Zone of Tamil Nadu. To control, spray 2.5 ml of Omag per litre of water.
- **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.
- Vaccinate desi chicken against New Castle (Ranikhet) disease which is very important during summer season like this.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised rainfall:** Rain occurred over some districts of Vidarbha and no significant rain occurred over remaining regions.
- **Rainfall forecast:** Mainly dry / dry weather would prevail over the region during the period.
- **Advisory:**
 - As mainly dry weather is likely during next 2-3 days, farmers in the region are advised to apply irrigation to standing crops. Farmers in Gadchiroli, Chandrapur and Warda in Vidarbha are advised to postpone irrigation to the crops as there is sufficient rainfall in the above districts.
 - Untimely rain may damage matured late sown wheat, farmers in Vidarbha are advised to complete the harvesting of the already matured crop as early as possible.
 - As dry weather would prevail during the period, farmers of Sindhudurga district of Maharashtra are advised to start harvesting of matured early rice varieties.
 - As dry weather would prevail apply third dose of Nitrogen@25kg/ha(54 kg Urea) after 12 to 16 weeks from planting to pre seasonal sugarcane in Madhya Maharashtra and Marathwada followed by irrigation.
 - Farmers in Western Maharashtra Scarcity Zone are advised to undertake sowing of irrigated cotton.
 - As dry weather would prevail, farmers in Gujarat state are advised to apply third dose of nitrogen @ 87 kg/ha to sugarcane crop at evening time and sufficient moisture in the soil.
 - Due to increase in temperature there is more water evaporation from sugarcane field, farmers in Gujarat state are advised to spread dry leaves of sugarcane in between two rows of sugarcane.
 - Due to cloudy and rainy weather there may be incidence of anthracnose on mango fruits in konkan region of Maharashtra. Spray Carbendazim @10 g or Thiophenate methyl @10 g or Propineb @20 g per 10 litres of water. There may also be incidence of mealy bugs and fruit borer in mango. Spray Dimethoate@ 10 ml and Quinolphos@ 10 ml respectively per 10 litres of water. Do not spray insecticides 20-25 days before maturity of fruits.
 - Due to prevailing high temperature there may be incidence of shoot borer in sugarcane in Madhya Maharashtra and Marathwada. Spray Endosulfan 35 EC @ 15 ml in 10 liter of water.
 - Due to increase in temperature there may be incidence of thrips and mites in chilli in Western Maharashtra Scarcity Zone. Spray Methyl Dimeton 25 EC @15 ml or Dimethoate 30EC@ 16 ml +Sulphur 80% @ 20 g in 10 liters of water. Prevailing weather is also favourable for the incidence of yellow vein mosaic virus in ladies finger. Spray 5 % Neemark or Malathion@10 ml in 10litres water at fruiting stage.
 - Present weather may increase the infestation of leaf roller in summer groundnut in central Maharashtra plateau zone. Spray Dimethoate 30 %WSC @ 10 ml in 10 liter water.
 - Weather conditions are favourable for incidence of powdery mildew disease in mango in South Gujarat Heavy Rainfall Zone. Spray 0.1% Karathane 48 EC to manage the disease.

- Weather condition are favourable for out break of mango hopper in mango tree in North Gujarat Zone. Spray solution of Endosulphan 35 EC @ 20ml or Carbaryl 50% wettable powder @ 40 gram in 10litre of water to the pest.
- **Animal Husbandry**
 - Due to high temperature forecast 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.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** No significant rainfall occurred except Bilaspur, Dantewara, Raipur district in Chhattisgarh.
- **Rainfall Forecast:** Mainly dry weather is likely over Madhya Pradesh and Chhattisgarh.
- **Advisory:**
 - As weather conditions are suitable for proper germination of summer maize, green gram, sesame and summer vegetables like brinjal, tomato, chillies and sugarcane, farmers are advised to undertake sowing in Bastar Plateau zone.
 - Due to prevailing dry weather conditions and increase in evaporation rate in Chattisgarh Plain and Kymore plateau zone of Chattisgarh, farmers are advised apply irrigation in 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.
 - Farmers in Kymore plateau and Satpura hill zone of Madhya Pradesh are advised to harvest wheat immediately and store the produce in covered place.
 - Farmers in Satpura Plateau Zone and Nimar Valley Zone of Madhya Pradesh are advised to undertake planting / sowing of summer sugarcane, fodder maize, fodder jowar, fodder bajra and other summer vegetables.
 - In Vindhya Plateau Zone and Jhabua hill zone of Madhya Pradesh, farmers are advised to sow moong and urad and nursery sowing of tomato, brinjal and chilli. Undertake propping of sugarcane and also apply mulching.
 - As weather is congenial for sucking pests in vegetables in Nimar Valley Zone of Madhya Pradesh, spray Metasystox or Dimethoate @ 1 ml per litre of water.
 - Due to dry weather, farmers in Gird Zone in Madhya Pradesh advised to keep watch for thrips attack in onion, if found spray Carbaryl @ 2gram/ liter of water. Weather is congenial for leaf curl disease in tomato and chilli in Gird and Bundelkhand Zone of Madhya Pradesh, farmers are advised to spray Methyl dimeton 25 E.C @ 2.0 ml or Imidachloprid @ 0.5 ml per litre of water.
 - 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.
 - Infestation of stem borer is observed in trace at few places Chhattisgarh plain zone. Hence, farmers are advised to 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**
- As there is possibility of clear sky conditions during next 5 days, cattle should be kept in dry place, provide balanced and nutrient rich feed having protein, carbohydrate, fat vitamins and antibiotics in Gird Zone of Madhya Pradesh.
- At present, due to increase in day temperature in Bundelkhand Zone of Madhya Pradesh, farmers are advised to allow the buffalos to swim in the water pond and also wash their body with water twice in a day to keep their body temperature cool.

Annexure I Major Crops

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

- Maize (tasseling / silking / cob formation), chillies, tomato (fruiting / harvesting), palak, carrot, radish etc. (harvesting), barseem, lucerne, oat (vegetative), sugarcane (planting / early vegetative), *boro* rice (panicle initiation / flowering / grain formation), green gram, maize and black gram (sowing / early vegetative / vegetative) and summer vegetables like bhindi, bitter gourd, sponge gourd, pumpkin, cucumber etc. (sowing / early vegetative / vegetative) in Bihar.
- Arhar and green pea (pod maturity / harvesting), onion (bulb enlargement / maturity), tomato (fruiting / harvesting), chilli and brinjal (transplanting / early vegetative), summer rice (panicle initiation / flowering / grain formation), summer vegetables (sowing / transplanting / vegetative/ flowering), green gram (sowing / early vegetative), sugarcane (planting / early vegetative), mango and litchi (flowering / fruiting), papaya (transplanting) in Jharkhand.
- Arhar (pod maturity / harvesting), sugarcane (harvesting), *boro* rice (panicle initiation / flowering / grain formation), maize (sowing / vegetative), black gram, green gram, garlic, sunflower (sowing / early vegetative / vegetative), sesame (vegetative / flowering / pod formation), groundnut (vegetative / flowering / pegging), mango, papaya, summer marigold, tuberose (planting), summer cow pea (sowing / early vegetative), summer vegetables (sowing / early vegetative / vegetative) and sugarcane (sprouting / vegetative / tillering), summer pulses, colocasia (land preparation / sowing / planting), jute and ginger (sowing) in Orissa.
- *Boro* rice (heading to harvesting), mango (flowering / fruiting), sunflower (vegetative / bud initiation / flowering), green gram (flowering, pod formation and grain filling), groundnut (vegetative / flowering / pegging), sesame (vegetative / flowering / pod formation) and *aus* rice, maize, ginger, jute, summer vegetables like ladies finger, Kakrol, amaranthus, spinach, various leafy vegetables, brinjal, bitter gourd (sowing / early vegetative), Chilli (fruiting), Oil seed (pod formation) in West Bengal.
- Large cardamom (vegetative lag phase), orange (end harvesting), wheat (dough / harvesting), *rabi* potato (tuberization / early maturity), ginger (harvesting), *rabi* seed potato, maize (sowing / germination / early vegetative), summer potato (sowing / germination) in Sikkim.

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

- Sugarcane (planting / cane development), *boro* rice (flowering / grain formation / early maturity), *bau* rice (sowing / early vegetative), normal *ahu* rice (nursery raising / transplanting), early *ahu* rice (tillering / panicle initiation), summer green gram and black gram (sowing / early vegetative / vegetative), jute (sowing / seedling / early vegetative / vegetative), summer vegetables (sowing / vegetative / flowering / fruiting), summer sesame (vegetative / flowering / pod formation) and maize (tasseling / silking) in Assam.
- Rice (nursery preparation), french bean (sowing), *okra* (sowing), maize (sowing / vegetative) and ginger / turmeric (sowing), summer vegetables, millet (sowing) in Arunachal Pradesh.
- *Rabi* maize (flowering / grain formation / maturity), Rice (tillering) field pea (harvesting), onion (bulb formation), cauliflower and cabbage (harvesting), potato (harvesting) and ginger and turmeric (land preparation / sowing) in Manipur.
- *Khasi* mandarin (new flush / blooming stage), banana (vegetative / fruiting / maturity), maize (harvesting), *kharif* maize (sowing), onion (bulb formation / cutting), beans (sowing), tomato, chilli and capsicum (harvesting), cole crops (head formation / harvesting) and summer vegetables (early vegetative / vegetative) in Mizoram.
- *Aus* or pre *kharif* rice (sowing), summer vegetables (early vegetative / vegetative / flowering) and *boro* rice (panicle initiation / flowering / grain formation) in Tripura.
- *Boro* rice (panicle initiation / flowering / grain formation), *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 (Germianating/ early vegetative), *okra* (vegetative stage), potato (vegetative/ tuber maturity) and banana (fruiting) in Nagaland.

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

- Wheat (harvesting), mustard (pod maturity / harvesting), pea and gram (pod maturity/harvesting), broccoli, cauliflower, cabbage and onion (early vegetative / vegetative), 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 (grain maturity), 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.
- Gram (maturity), berseem (vegetative), oats (flowering), wheat, barley (Early sown – maturity, Normal sown – Hard dough, Late sown – Dough stage), lentil (maturity/harvesting), field pea (pod formation), toria (harvesting), mustard (pod maturity/harvesting), vegetable crops like tomato, chilli, brinjal, cucurbits (vegetative / flowering), onion (vegetative), cauliflower, cabbage, carrot (fruiting/harvesting), onion, tomato, brinjal and chilly (transplanting), summer pulses, cowpea, okra, maize, jowar (sowing), rice (nursery sowing) in Jammu & Kashmir.
- Wheat (harvesting), potato (7000-800-ft a.s.l.) (sowing), toria (maturity / harvesting), mustard (maturity / harvesting), chickpea, 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 (germination), berseem (vegetative), wheat (harvesting), barley (harvesting), lentil, gram (harvesting), African sarson (pod formation/maturity), radish (vegetative), ghobi sarson (vegetative), oilseeds (raya, taramira) (maturity/harvesting), papaya, onion (transplanting), vegetables, sugarcane (sowing/ germination), summer pulses(sowing) in Punjab.
- Sugarcane (spring season) (planting/emergence/early vegetative), wheat (flag leaf/grain development), berseem (vegetative), gram (pod maturity/harvesting), rapeseed and mustard (harvesting), summer pulses, moong, mash, pigeon pea (sowing) in Haryana.
- Wheat (maturity/ harvesting), barley, oats (tillering/flowering), toria (pod maturity), arhar (grain formation / maturity / harvesting), mustard, sarson (pod maturity / harvesting), field pea, chick 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), wheat (maturity / harvesting), oats, barley (maturity/harvesting), taramira, mustard (maturity / harvesting), gram (pod maturity / harvesting), lentil (flowering/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), 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 (pod maturity), cotton (boll development/ picking), safflower (flowering), rice (tillering), mango (fruiting/maturity) in Karnataka.
- Bengal gram (maturity), rice (grain formation/ maturity), red gram (maturity), sunflower (seed development), groundnut (pod development / maturity) in Andhra Pradesh.

- Rice (maturity / harvesting), arecanut (maturity), ginger (planting), coconut (seed nut collection), pepper (harvesting/new planting) in Kerala.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Wheat (harvesting), sugarcane-*Adsali* (active tillering), Sugarcane-pre seasonal (vegetative), sugarcane-*Suru* (sprouting / early vegetative), summer rice (grain formation / maturity stage in Konkan and panicle initiation / flowering in East Vidarbha), groundnut (pod development/ pod maturity in Konkan & flowering/pegging/ pod formation in other divisions), sunflower (vegetative / floral bud initiation), maize (tasseling & silkin g/ cob initiation), bajra (flowering / grain formation) in Maharashtra.
- Summer bajra (ear head emergence), brinjal and tomato (fruiting / harvesting), green gram (pod formation), sugarcane (sprouting / early vegetative) and summer groundnut (pod formation / pod filling), Summer pulses (flowering) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Wheat (grain maturity/ harvesting), mustard (harvesting), chickpea (pod formation/maturity), 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) in Chhattisgarh.

Annexure II List of Varieties

Bihar

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

Green gram: Pusa Baishakhi, T-9.

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

Urd: Type 9.

Orissa

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

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

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

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

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

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

Jute: JRO-524 (Naveen).

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

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

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

Cluster bean: Pusa Naubahar.

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

Ginger: Suprava, Suruchi, Surabhi.

West Bengal

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

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

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

Jharkhand

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

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

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

Assam

Direct seeded *ahu* rice: Banglami, Puthichapali, Nilajee, Hasakumra, Dimru, Maibi, Jaya and IR-50.

***Bau* rice:** Maguri, Panikekua, Amona, Negheri.

Normal *ahu* rice: Dimru, Maibi, Jaya, IR-50, Gobind, IR-36, Lachit, Chilarai.

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

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

Cucumber: Chinese Green, Pusa Sanyog, Poinsette.

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

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

Okra: Pusa Sawani, Arka Anamika, Parbhani Kranti.

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.

Sugar cane: Co1008, Co 997, Co 740, Co 961.

Meghalaya

Lady's Finger: Paravin Kranti, Akra Anamika.

Mizoram

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

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

Tomato: 7711, Him sona, Him 1

Capsicum: California wonder

Cucumber: Kiyani

Summer squash: hybrid green

Lettuce: Iceberg

Brinjal : Arka Nidhi, PPC

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

Frenchbean : Contender

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).

Maharashtra

Cotton: Phule-492 and NHH-44(Nanded-44).

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 27.04.2011

