



## Regionwise Salient Advisories

### Northern India

- **Major crops :** Wheat (harvesting), moong, urad (vegetative), summer vegetables (vegetative).



- As significant rainfall occurred in Baramula, Ganderwal, Srinagar districts of Jammu & Kashmir during last week, farmers are advised to postpone irrigation to the standing crops in above mentioned districts. Apply irrigation to vegetables in the remaining districts of Jammu & Kashmir, summer moong and urad in Uttarakhand, Uttar Pradesh and summer vegetables in Himachal Pradesh, Delhi and Rajasthan.

### Central India

- **Major crops :** Autumn sugarcane (vegetative / elongation), summer vegetables (transplanting / vegetative)



- As no significant rainfall occurred during last week and no rainfall is likely, farmers are advised to apply irrigation to sugarcane, summer maize and summer vegetables in the states of the region.

### Eastern India

- **Major crops :** summer vegetables (vegetative / flowering), moong, urad (sowing/ early vegetative), Jute (sowing / early vegetative)
- As there was significant rainfall in Sikkim, Cooch Behar, Jalpaiguri and south Dinajpur districts of SHWB; Dhenkanal and Malkangiri districts of Odisha during last week, farmers are advised to postpone irrigation to the standing crops in these districts. As no significant rainfall is likely in remaining parts of the states of the region, farmers are advised to apply irrigation to the standing summer maize, summer vegetable crops, moong, sunflower, onion, autumn and spring season sugarcane and summer rice.
- As thundersquall would occur at one or two places over West Bengal & Sikkim and Odisha during next 48 hours, farmers are advised staking in vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.

### Western India

- **Major crops :** New *suru* sugarcane (early tillering), summer groundnut (flowering / pegging / pod formation), summer bajra (grain formation), pulses (vegetative / flowering).



- As there was no significant rainfall in Maharashtra and mainly dry weather would prevail during the period, farmers are advised to apply irrigation to summer *bajra* at grain formation stage (Pune and Nasik region), groundnut at pod development stage and also to sugarcane and vegetables in morning or evening hours to avoid excessive evaporation. Also apply irrigation in groundnut at pegging / pod formation stage and vegetables in Gujarat.

### Northeast India

- **Major crops :** *Boro* rice (grain formation / grain maturity), early *ahu* rice (tillering), summer vegetables (transplanting /vegetative).



- As rain is likely to occur at many places over the States of the region in coming days, farmers are advised to postpone irrigation to the standing crops in these states.
- As thundersquall would occur at one or two places over the States of the region during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.

### South India

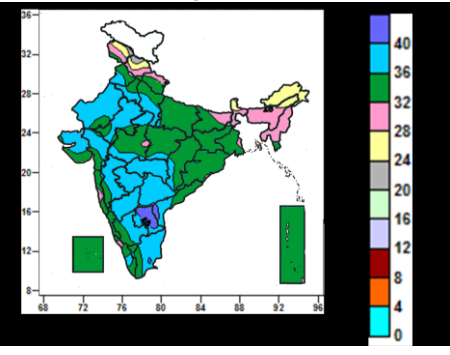
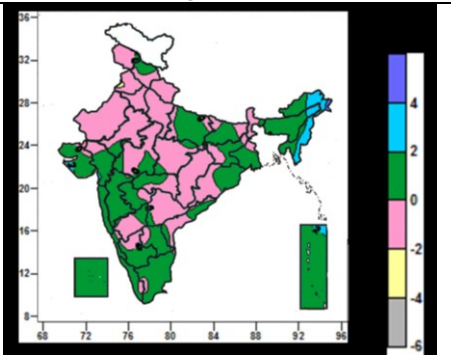
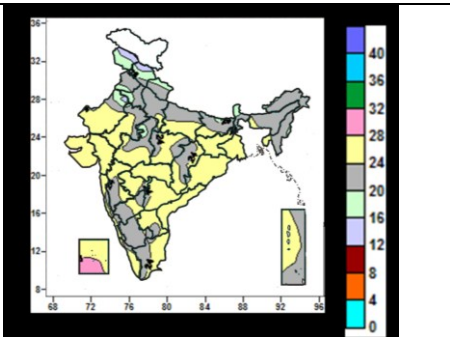
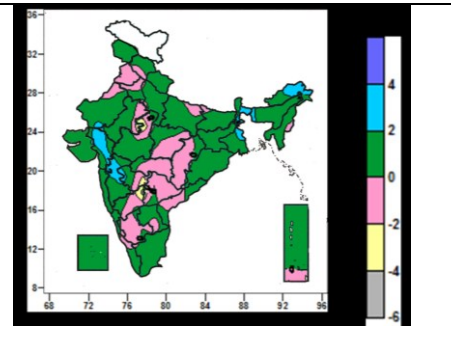
- **Major crops :** Sunflower (seed formation / maturity), summer pulses (vegetative / flowering), sugarcane (tillering), summer groundnut (early vegetative), maize (vegetative) and summer cotton (vegetative).
- Significant rainfall occurred in all the districts in Kerala except Thrissur and Mallapuram; in Coimbatore, Nilgiris in Tamil Nadu and Udupi and Dakshin Kannada in Coastal Karnataka, Chamrajnagar, Devangare, Hassan, Mandya, Mysore and Shimoga in South Interior Karnataka and Bagalkote, Bijapur, Gadag, Gulbarga and Haveri of North Interior Karnataka. Farmers are advised to postpone irrigation to the crops in the above mentioned districts and as mainly dry weather prevailed over remaining parts of the region, apply irrigation to rice, groundnut, sugarcane, summer cotton, summer pulses and vegetable crops in the rest of the region. Undertake intercultural operations and application of fertilizers and plant protection measures on a non- rainy day in Kerala.
- Thundersquall would occur at one or two places over Tamil Nadu and Kerala during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.

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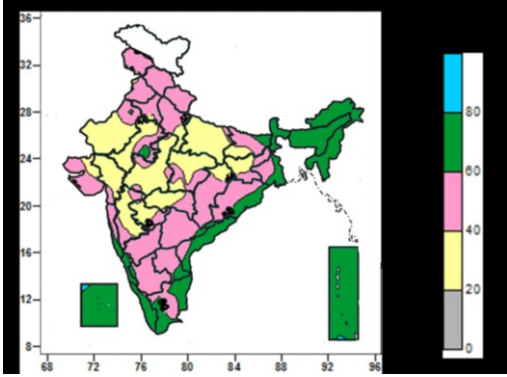
National Agrometeorological Advisory Service Centre, Agricultural Meteorology Division,  
India Meteorological Department, Shivajinagar, Pune.

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

## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 01.05.2013

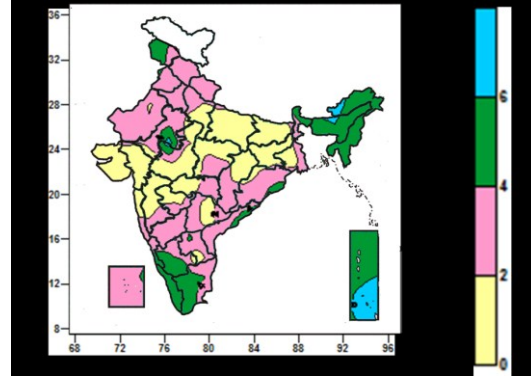
Actual Mean Maximum Temperature (°C) in India for the week ending 01.05.2013	Mean Maximum Temperature (°C) Anomaly in India for the week ending 01.05.2013
	
<ul style="list-style-type: none"> <li>• 36 to 40<sup>0</sup>C and above over most parts of Rajasthan, West Uttar Pradesh, West India (except Konkan &amp; Goa), Andhra Pradesh, Interior Karnataka, Tamil Nadu, some parts of Punjab, Haryana, Central India, Kerala.</li> <li>• 32 to 36<sup>0</sup>C over most parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, East India (except Sub-Himalayan West Bengal &amp; Sikkim), Central India except Vidarbha, Saurashtra, West Coast of India, North Costal Andhra Pradesh, Lakshadweep, Andaman &amp; Nicobar Islands.</li> <li>• 28 to 32<sup>0</sup>C over most parts of North East India (except Arunachal Pradesh), some parts of Jammu &amp; Kashmir, Himachal Pradesh, Uttarakhand, Bihar, West Bengal.</li> <li>• 24 to 28<sup>0</sup>C over many parts of Arunachal Pradesh, Sikkim, some parts of Jammu &amp; Kashmir, Himachal Pradesh, Assam.</li> <li>• 20 to 24<sup>0</sup>C over some parts of Jammu &amp; Kashmir, Himachal Pradesh.</li> </ul>	<ul style="list-style-type: none"> <li>• 0 to 2<sup>0</sup>C and above over many parts of North East India, East India (except Sub-Himalayan West Bengal &amp; Sikkim), East Uttar Pradesh, West India, South India (except Telanagana, North Interior Karnataka), some parts of Jammu &amp; Kashmir, Himachal Pradesh, North Interior Karnataka.</li> <li>• -2 to 0<sup>0</sup>C over many parts of Northwest India (except East Uttar Pradesh), Central India, Sub-Himalayan West Bengal &amp; Sikkim, Coastal Andhra Pradesh, Telangana, North Interior Karnataka, some parts of East Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Gujarat, Marathwada, Vidarbha, Raylaseema, Tamil Nadu, Kerala.</li> </ul>
Actual Mean Minimum Temperature (°C) in India for the week ending 01.05.2013	Mean Minimum Temperature (°C) Anomaly in India for the week ending 01.05.2013
	
<ul style="list-style-type: none"> <li>• 24 to 28<sup>0</sup>C over many parts of Rajasthan, Southern East Uttar Pradesh, East India (except Bihar, Sub-Himalayan West Bengal, Sikkim), Saurashtra &amp; Kutch, Marathwada, Vidarbha, Andhra Pradesh, Tamil Nadu, South Kerala, Lakshadweep, Andaman &amp; Nicobar Islands,</li> <li>• 20 to 24<sup>0</sup>C over many parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Northeast India (except Tripura), south Konkan &amp; Goa, South Madhya Maharashtra, Karnataka, West Tamil Nadu, some parts of Rajasthan, Sub-Himalayan West Bengal, Madhya Pradesh, Chhattisgarh, Telengana Rayalaseema, Kerala, Andaman &amp; Nicobar Islands.</li> <li>• 16 to 20<sup>0</sup>C over many parts of Sikkim, some parts of Jammu &amp; Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, West Madhya Pradesh.</li> <li>• 12 to 16<sup>0</sup>C over some parts of Jammu &amp; Kashmir, Himachal Pradesh, West Rajasthan, Bihar.</li> </ul>	<ul style="list-style-type: none"> <li>• 0 to 2<sup>0</sup>C and above many parts of the country (except Punjab, West Haryana, Southeast Madhya Pradesh, Chhattisgarh, Vidarbha, Telengana, central part of coastal Andhra Pradesh, Interior Karnataka), some parts of Himachal Pradesh, Rajasthan, East Uttar Pradesh, Bihar, Manipur, Rayalaseema.</li> <li>• -2 to 0<sup>0</sup>C over many parts of Punjab, Central India (except West Madhya Pradesh, North of East Madhya Pradesh), Telengana, central Part of Coastal Andhra Pradesh, Interior Karnataka.</li> <li>• -4 to -2<sup>0</sup>C over some parts of West Madhya Pradesh, Marathwada, Telengana, North Interior Karnataka.</li> </ul>

**Relative Humidity (%) over India for the week ending 01.05.2013**



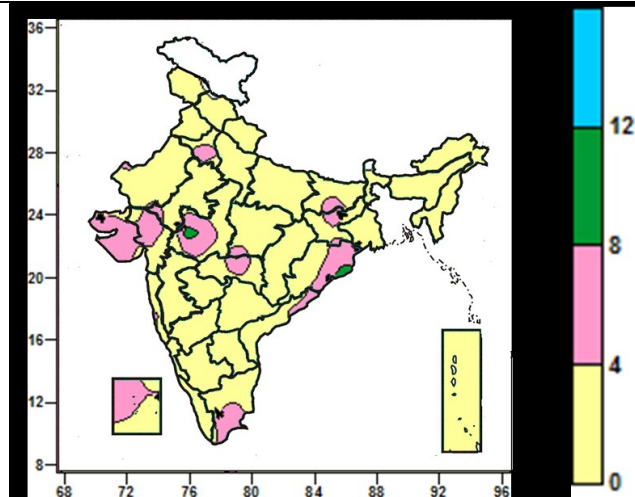
- 60 to 80% over many parts of Northeast India, West Bengal & Sikkim, east coast from Orissa to Tamil Nadu, Kerala, Coastal Karnataka, Goa, Lakshadweep, Andaman & Nicobar Islands.
- 40 to 60% over most parts of North India (except East Uttar Pradesh, Rajasthan), Saurashtra & Kutch, Chattisgarh, Orissa, Bihar, Konkan, Telangana, Raylaseema, North & South Interior Karnataka, some parts of Gangetic West Bengal, Jharkhand, Madhya Pradesh, Maharashtra, Gujarat, Tamil Nadu, Coastal Andhra Pradesh, .
- 20 to 40 % over many parts of East Uttar Pradesh, Rajasthan, Madhya Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, some parts of Haryana, Bihar, Jharkhand, Chattisgarh.

**Cloud amount (okta) over India for the week ending 01.05.2013**



- 6 okta and above over some parts of Arunachal Pradesh, Assam, Andaman & Nicobar Islands.
- 4 to 6 okta over many parts of Jammu & Kashmir, Northeast India, Sub-Himalayan West Bengal & Sikkim, Tamil Nadu, Kerala, Coastal & South Interior Karnataka, Andaman & Nicobar Islands, some parts of East Rajasthan, West Madhya Pradesh, Coastal Orissa, Coastal Andhra Pradesh.
- 2 to 4 okta over many parts of North India (except Uttar Pradesh), East Madhya Pradesh, South Chattisgarh, Orissa, Andhra Pradesh, North Interior Karnataka, Lakshadweep Islands, some parts of South Maharashtra, West Bengal, West Madhya Pradesh, Tamil Nadu, South Interior Karnataka.
- 0 to 2 okta over many parts of Uttar Pradesh, East India (except Orissa, Eastern part of West Bengal), Central India, West India.

**Wind speed (knots) over India for the week ending 01.05.2013**



- 8 to 12 knots over some parts of West Madhya Pradesh, Coastal Orissa.
- 4 to 8 knots over many parts of Haryana, Delhi, Gujarat, Saurashtra & Kutch, Coastal Orissa, South Tamil Nadu and some parts of Bihar, Jharkhand, Madhya Pradesh, Coastal Andhra Pradesh, Lakshadweep Islands.
- 0 to 4 knots over many parts of the country (except Haryana, Delhi, Gujarat, Saurashtra & Kutch, Coastal Orrissa, South Tamil Nadu).

## Significant realized rainfall during last week

Significant rainfall received in most of the districts of Assam, Meghalaya, Sub-Himalayan West Bengal & Sikkim, Kerala, many districts of Arunachal Pradesh, Aizwal district of Mizoram; Imphal east district of Manipur; Kohima, Mokokchung, Phek, Zunheboto districts of Nagaland; North Tripura, West Tripura districts of Tripura; Baramula, Ganderwal, Srinagar districts of Jammu & Kashmir; Dhenkanal, Malkangiri districts of Orissa; Dakshin Kannada, Udupi districts of Coastal Karnataka; Bagalkote, Bijapur, Gadag, Gulbarga, Haveri districts of North Interior Karnataka, Chamarajnar, Davangere, Hassan, Mandya, Mysore, Shimoga districts of South Interior Karnataka; Coimbatore, Nilgiris districts of Tamil Nadu. Mainly dry weather prevailed over rest parts of the country.

### Distribution of rainfall of the country during week ending on 01.05.2013

State/Districts	Actual (mm)	% Dep.
<b>Arunachal Pradesh</b>		
Anjaw	**	**
Changlang	24.2	-84
Dibang Valley	8.0	-93
East Kameng	2.2	-95
East Siang	53.4	-33
Kurung Kumey	**	**
Lohit	14.2	-82
Lower Dibang Valley	51.0	-58
Lower Subansari	1.2	-98
Papumpara	51.3	-17
Tawang	33.0	-25
Tirap	61.0	-23
Upper Siang	49.2	-58
Upper Subansari	0.0	-100
West Kameng	25.5	-42
West Siang	8.4	-83
<b>Assam</b>		
Baksa	50.2	-23
Barpeta	47.9	-27
Bongaigaon	71.4	21
Cachar	32.5	-57
Chirang	56.4	-5
Darrang	3.0	-95
Dhemaji	2.0	-96
Dhubri	88.1	59
Dibrugarh	26.2	-55
Goalpara	118.2	78
Golghat	21.6	-43
Hailakandi	51.1	-42
Jorhat	120.1	114
Kamrup(Rural)	39.4	-26
Kamrup(Metro)	37.6	-30
Karbi Anglong	**	**
Karimganj	15.2	-86
Kokrajhar	107.1	58
Lakhimpur	9.1	-83

State/Districts	Actual (mm)	% Dep.
Morigaon	24.0	-40
N.C.Hills	32.2	-16
Nowgong	11.8	-72
Nalbari	45.2	-50
Sonitpur	6.0	-88
Sibsagar	61.5	68
Tinsukia	31.8	-39
Udalgiri	22.5	-63
<b>Meghalaya</b>		
East Garo Hills	3.0	-97
East Khasi Hills	94.8	-22
Jaintia Hills	29.0	-71
Ribhoi	51.8	-6
South Garo Hills	58.0	-26
West Garo Hills	89.8	14
West Khasi Hills	9.0	-88
<b>Mizoram</b>		
Aizwal	22.0	-70
Champhai	8.0	-85
Chhingtuipei	**	**
Kolasib	15.0	-74
Lawngtlai	15.0	-69
Lunglei	13.0	-69
Mamit	8.0	-89
Saiha	3.0	-91
Serchhip	8.0	-83
<b>Manipur</b>		
Bishnupur	0.0	-100
Chandel	0.0	-100
Churachandpur	2.0	-96
Imphal east	21.5	-37
Imphal west	**	**
Tamenglong	**	**
Thoubal	15.0	15
Senapati	**	**
Ukhrul	1.0	-96
<b>Nagaland</b>		
Dimapur	13.5	-46

State/Districts	Actual (mm)	% Dep.
Kephire	3.0	-95
Kohima	28.0	-9
Longleng	**	**
Mokokchung	113.0	149
Phek	27.1	-12
Tuensang	**	**
Wokha	0.0	-100
Zunheboto	63.0	13
<b>Tripura</b>		
Dhalai	17.5	-77
North tripura	48.0	-26
South tripura	13.3	-78
West tripura	49.2	-22
<b>Jammu &amp; Kashmir</b>		
Anantnag	13.7	-48
Badgam	14.3	-40
<b>State/Districts</b>		
Bandipore	**	**
Baramula	24.1	-39
Doda	3.6	-85
Ganderwal	38.5	69
Jammu	1.0	-83
Kargil	0.0	-100
Kathua	0.0	-100
Kistwar	**	**
Kulgam	10.0	-62
Kupwara	18.4	-54
Ladakh(Leh)	0.0	-100
Poonch	0.0	-100
Pulwama	5.0	-79
Rajouri	0.0	-100
Ramban	9.2	-63
Reasi	1.4	-90
Samba	1.5	-75
Shopian	4.0	-83
Srinagar	20.0	-12
Udhampur	2.7	-80

State/Districts	Actual (mm)	% Dep.
<b>Orissa</b>		
Angul	4.6	-57
Balasore	7.3	-57
Bargarh	0.0	-100
Bhadrak	18.0	1
Bolangir	0.0	-100
Boudh	0.0	-100
Cuttack	14.1	-39
Deogarh	0.0	-100
Dhenkanal	28.3	80
Gajapati	13.9	-54
Ganjam	3.7	-65
Jagatsingpur	4.4	-81
Jajpur	10.2	-53
Jharsuguda	0.2	-97
Kalahandi	0.4	-96
Kandhamal	11.4	-15
Kendrapara	0.0	-100
Keonjhar	10.4	-59
Koraput	15.0	16
Malkangiri	22.0	165
Mayurbhanj	4.7	-78
Nawapara	0.0	-100
Nawarangpur	3.4	-49
Nayagarh	4.4	-70
Puri	0.0	-100
Rayagada	0.6	-95
Sambalpur	0.5	-92
Sonepur	0.0	-100
Sundargarh	0.4	-92
<b>West Bengal</b>		
<b>SHWB</b>		
Cooch Behar	70.5	18
Darjeeling	10.6	-78
East Sikkim	81.9	62
Jalpaiguri	48.8	-7
Malda	0.0	-100
North Dinajpur	0.0	-100
North Sikkim	80.8	42
South Dinajpur	35.4	22
South Sikkim	20.1	-60
West Sikkim	133.0	134

State/Districts	Actual (mm)	% Dep.
<b>Karnataka</b>		
<b>Coastal Karnataka</b>		
Dakshin Kannada	33.5	150
Udupi	36.2	197
Uttar Kannada	13.0	34
<b>N I Karnataka</b>		
Bagalkote	37.1	489
Belgaum	19.9	88
Bidar	19.5	323
Bijapur	28.5	352
Dharwad	7.6	-58
Gadag	42.9	241
Gulbarga	20.6	338
Haveri	43.6	137
Koppal	11.8	66
Raichur	18.7	334
Yadgir	7.8	30
<b>S I Karnataka</b>		
Bangalore Rural	2.3	-80
Bangalore Urban	0.6	-95
Bellary	9.9	13
Chamarajnagar	29.2	23
Chichballapur	3.5	-64
Chickmagalur	16.3	-21
Chitradurga	14.3	33
Davangere	37.2	171
Hassan	24.8	34
Kodagu	13.1	-49
Kolar	7.2	-21
Mandya	24.4	51
Mysore	27.7	34
Ramnagara	8.8	-51
Shimoga	33.5	154
Tumkur	9.3	-19
<b>Kerala</b>		
Alappuzha	24.5	-39
Kannur	27.8	33
Ernakulam	27.1	-34
Idukki	47.6	16
Kasaragod	76.8	354
Kollam	46.4	0
Kottayam	64.4	77

State/Districts	Actual (mm)	% Dep.
Kozhikode	20.4	-13
Malappuram	8.5	-69
Palakkad	25.9	-17
Pathanamthitta	38.0	-28
Thiruvananthapuram	31.5	-7
Thrissur	11.3	-53
Wyanad	40.3	82
<b>Tamil Nadu</b>		
Ariyalur	4.8	-37
Chennai	1.9	-50
Coimbatore	30.0	95
Cuddalore	0.0	-100
Dharmapuri	5.2	-61
Dindigul	10.7	-41
Erode	15.4	3
Kanchipuram	0.0	-99
Kanyakumari	14.4	-50
Karikal	0.0	-100
Karur	1.8	-87
Krishnagiri	8.9	-37
Madurai	14.3	5
Nagapattinam	0.2	-98
Namakkal	16.3	7
Nilgiris	48.1	143
Perambalur	5.5	-29
Puducherry	0.0	-100
Pudukottai	1.0	-91
Ramanathapuram	12.4	13
Salem	10.6	-40
Sivaganga	0.6	-95
Thanjavur	0.0	-100
Theni	16.6	-16
Tirunelveli	3.9	-74
Tirupur	10.5	-27
Tiruvallur	5.1	-6
Tiruvannamalai	0.6	-92
Tiruvarur	2.5	-76
Toothukudi	5.2	-43
Trichy	0.3	-98
Vellore	1.4	-84
Villupuram	0.0	-100
Virudhunagar	7.0	-50

### Legends

	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%) deficient rainfall		** Data not available

# Weather Forecast

## Major Feature of Weather Forecast up to 0830 hours IST of 6<sup>th</sup> May, 2013

- Rain/thundershowers would occur at a few places over Jammu & Kashmir and at one or two places over Uttarakhand & Himachal Pradesh from tomorrow.
- Rain/thundershowers would occur at many places over northeastern states and at a few places over Sub-Himalayan west Bengal & Sikkim.
- Rain/thundershowers would occur at one or two places over Bihar, Jharkhand, Gangetic West Bengal, Odisha and Interior Andhra Pradesh.
- Rain/thundershowers would occur at a few places over Kerala and Lakshadweep and at one or two places over Karnataka, Tamilnadu and Andaman & Nicobar Islands.

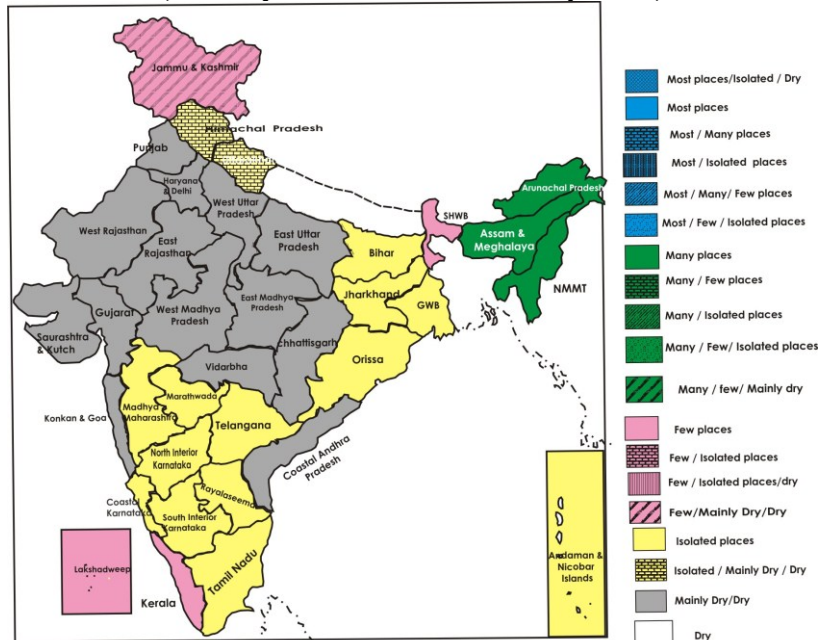
## Weather Warning during next 3 days

- Thundersquall would occur at one or two places over West Bengal & Sikkim, Assam, Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Odisha, Tamilnadu, Lakshadweep and Kerala during next 48 hours.

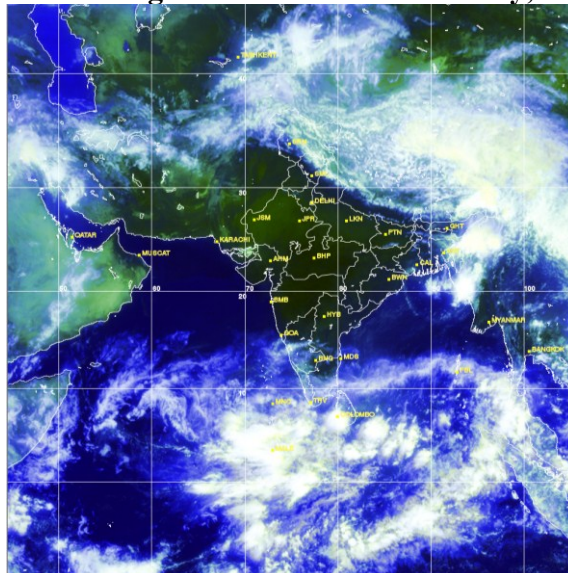
## Weather Outlook for subsequent 4 days from 6<sup>th</sup> to 10<sup>th</sup> May, 2013

- Rain/thundershowers would occur at a few places over Jammu & Kashmir and at one or two places over Himachal Pradesh & Uttarakhand.
- Rain/thundershowers would occur at many places over and northeastern states.
- Rain/thundershowers would occur at one or two places over extreme south peninsular India.
- Weather would be mainly dry over rest parts of the country.

## Weather Forecast Map (Valid upto 0830 hours of 6<sup>th</sup> May, 2013)



## Satellite image 0600 UTC dated 3<sup>rd</sup> May, 2013



## Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in Baramula, Ganderwal, Srinagar districts of Jammu & Kashmir. Weather remained mainly dry over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Jammu & Kashmir and at one or two places over Uttarakhand & Himachal Pradesh from 4th onwards. Mainly dry weather would prevail over rest of the region.
- **Advisory:**
  - As significant rainfall occurred in Baramula, Ganderwal, Srinagar districts of Jammu & Kashmir during last week, farmers are advised to postpone irrigation to the standing crops in above mentioned districts. Apply irrigation to vegetables in the remaining districts of Jammu & Kashmir, summer moong and urad in Uttarakhand, Uttar Pradesh and summer vegetables in Himachal Pradesh, Delhi and Rajasthan.
  - In view of prevailing dry weather condition in Eastern Plain Zone of Uttar Pradesh, farmers are advised to apply irrigation in maize, fodder crops and also in Central Plain Zone in early sown vegetables.
  - Farmers in Punjab and Haryana are advised to complete harvesting of matured wheat crop in dry weather condition.
  - Also due to prevailing hot weather conditions, sugarcane crop require frequent irrigations at 8 to 10 days interval. Therefore moisture conservation may be undertaken by spreading mulch in between two rows by using rice straw / wheat straw / rice husk.
  - As mainly dry weather would prevail in Delhi, farmers are advised to complete harvesting of matured wheat crops in clear weather and give light irrigation to all vegetable crops.
  - Due to prevailing dry weather conditions in Central Plain Zone of Uttar Pradesh, fruit dropping may occur in mango, farmers are advised to spray Nephthalin Acetic Acid @ 15 ppm per litre of water or Lanofix @ 5 ml per 9 litres of water.
  - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - As dry weather conditions prevail in Arid Western Plain Zone of Rajasthan, farmers are advised to make arrangements for proper shade, water and green fodder during this period.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the region.
- **Weather forecast:** Mainly dry weather would prevail over the region.
- **Advisories:**
  - As no significant rainfall occurred during last week and no rainfall is likely, farmers are advised to apply irrigation to sugarcane, summer maize and summer vegetables in the states of the region.
  - In Narmada Valley Zone of Madhya Pradesh, farmers are advised to apply irrigation to summer green fodder viz. lobia, cowpea, jawar and maize in view of prevailing dry weather conditions.
  - Farmers in Jhabua Hills Zone are advised to protect young fruit plants from high temperature, apply mulching and irrigation to mango plants at 10-12 days interval.
  - Due to increase in temperature, farmers in Malwa Plateau Zone are advised to protect the vegetables from the white fly and fruit borer attack. For their control apply Dimethoate (Rogor) 1 ml/liter of water.
  - Due to prevailing hot weather condition farmers in Bundelkhand Zone are advised to apply irrigation to all vegetable crops and orchards.
  - Due to increase in day and night temperature evaporation rate is around 12 mm /day in Chhattisgarh Plain Zone. Farmers are advised to apply irrigation in summer vegetables, rice, groundnut and sunflower.
  - In Bastar Plateau Zone of Chhattisgarh farmers are advised to apply mulching in cashew seedlings with grass and other vegetation to conserve soil moisture.
  - Due to prevailing hot weather condition farmers in Bundelkhand Zone are advised to control leaf curl disease in chilly crop farmers are advised to spray Methyl Dematon 25 E.C. @ 2.0 ml per litre of water.
  - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - Farmers of Madhya Pradesh are advised to keep animals in shady and cool places and provide frequent drinking water (two-three times) in view of the prevailing high temperature.

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

- **Realised Rainfall:** Significant rainfall occurred in Sikkim, Cooch Behar, Jalpaiguri and South Dinajpur districts of Sub Himalayan West Bengal; Dhenkanal and Malkangiri districts of Odisha and mainly dry weather prevailed over rest part of the region during last week.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Sub-Himalayan West Bengal & Sikkim and at one or two places over Gangetic West Bengal, Bihar, Jharkhand and Odisha.
- **Weather Warning:** Thundersquall would occur at one or two places over West Bengal & Sikkim and Odisha during next 48 hours.
- **Advisories:**
  - As there was significant rainfall in Sikkim, Cooch Behar, Jalpaiguri and south Dinajpur districts of SHWB; Dhenkanal and Malkangiri districts of Odisha during last week, farmers are advised to postpone irrigation to the standing crops in these districts. As no significant rainfall is likely in remaining parts of the states of the region, farmers are advised to apply irrigation to the standing summer maize, summer vegetable crops, moong, sunflower, onion, autumn and spring season sugarcane and summer rice.
  - As thundersquall would occur at one or two places over West Bengal & Sikkim and Odisha during next 48 hours, farmers are advised staking for vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.
  - In view of prevailing dry weather condition in South Bihar Alluvial Zone, farmers are advised to apply irrigation to summer vegetables, moong and fodder crops like fodder lobia, sorghum, hybrid napier grass.
  - As dry weather prevailed during last week, farmers in North West Alluvial Plain Zone of Bihar are advised to apply light irrigation in vegetables and maize crops in the evening. Farmers are also advised to spray solution of Boron @2g and Profenofas @2ml per litre of water and Planofix @1ml per 4.5 litre of water immediately in litchi orchard to protect fruit from cracking, insect and to reduce fruit dropping due to high temperature.
  - Taking advantage of recent rain, the farmers of North Eastern Coastal Plain Zone of Odisha are advised to undertake sowing of jute.
  - As maximum temperature is expected to be around 44<sup>0</sup>C, farmers in Western Undulating Zone of Odisha are advised to maintain optimum water depth in summer rice which is at flowering stage and also apply irrigation in vegetable crops.
  - As mainly dry weather prevailed in Orissa and no significant rainfall is expected, farmers of North Eastern Coastal Plain Zone of Odisha are advised to irrigate the maize crop and apply 65 kg urea per hectare.
  - As mainly dry weather prevailed with high temperature and summer green gram is at flowering to pod formation stage and groundnut is at flowering to pegging stage in Bhadrak district of North Eastern Coastal Plain Zone of Odisha, farmers are advised to irrigate the crop at this critical stage.
  - High difference between day and night temperature favours infestation of blast and stem borer in summer rice. Farmers of North Eastern Ghat Zone and West Central Table Land Zone of Orissa are advised to spray Tricyclazole@0.5g/l or Kasugamycin@1.5g/litre of water for control blast and for stem borer use pheromone trap @20-25 no. per hectare.
  - Due to high temperature there is possibility of thrips infestation and purple blotch in onion and garlic. Farmers of West Central Table Land Zone of Odisha are advised to spray Prophenophos @ 4ml/litre with sticker and Mancozeb @ 4g/litre with sticker alternatively at 10 days interval.
  - Due to humid weather in Terai Zone of West Bengal, there is possibility of occurrence of downey mildew in bitter gourd and possibility of branch and fruit rot in pointed gourd. To control downey mildew, spray Mancozeb @ 2g/litre or Metalaxyl 8% and spray Mancozeb 64%+ Metalaxyl 8%, 1 g per litre of water for control of branches and fruit rot.
  - At present the day temperature is approaching about 40<sup>0</sup>C in Jharkhand. Hence farmers are advised to irrigate summer moong and vegetables at regular interval.
  - Due to prevailing dry weather and high temperature conditions in Jharkhand, farmers are advised to irrigate the fruit bearing mango and litchi tree at regular interval and spray sulfex @ 2 g per litre of water against powdery mildew disease.
  - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - In view of the prevailing high temperature, farmers in South West Alluvial Plain Zone of Bihar are advised to keep livestock in shade and provide more amount of drinking water.
  - Farmers of Western Undulating Zone of Odisha are advised that due high temperature reduces the oxygen in the fishpond, stir the pond water early in the morning from a corner for better oxygen supply.
  - In Jharkhand, there is possibility of attack of heat stroke in animals due to prevailing high day temperature. Hence, animals should be kept in shade during noon hours and give plenty of fresh water for drinking. To keep the shed cool, jute bag may be hanged as curtain in the windows and it should be wetted time to time.



- **Poultry**

- In Jharkhand, due to rise in temperature by 2<sup>0</sup>C, preventive measure should be taken by giving mixture of Vitamin C and spraying of cool water during noon time to poultry birds. Roof of asbestos sheet should be painted with white paint, supply sufficient amount of wet poultry feed.
- Due to high temperature, hens may be affected from heat stroke. Farmers in South Bihar Alluvial Zone are advised to take special care to protect the hens.

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

- **Realised Rainfall:** Significant rainfall occurred in Changlang, East Siang, Lower Debang Valley, Papumpara, Tawang, Tirap, Upper Siang and West Kameng districts of Arunachal Pradesh, all the districts except Darrang, Dhemaji, Karbi Anlong, Lakhimpur, Nagaon and Sonitpur districts of Assam, East Garo Hills and West Khasi Hills districts of Meghalaya, Aizwal district of Mizoram, East Imphal district of Manipur, Kohima, Zunheboto and Mokokchung districts of Nagaland, North Tripura, Phek and West Tripura districts of Tripura. No significant rainfall occurred over the remaining districts of the States of the region during last week.
- **Weather Forecast:** Rain / thundershowers would occur at many places over the states of the region.
- **Weather warning:** Thunder squall would occur at one or two places over the States of the region during next 48 hours.
- **Outlook:** Rain / thundershowers would occur at many places over the States of the region.
- **Advisories:**
  - As rain is likely to occur at many places over the States of the region in coming days, farmers are advised to postpone irrigation to the standing crops in these states.
  - As thundersquall would occur at one or two places over the States of the region during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.
  - In view of likely occurrence of rain at many places during the period, farmers in Mild Tropical Hill Zone of Nagaland are advised to provide proper drainage and earthing up in maize as the crop is highly susceptible to water logging.
  - In Sub-Tropical Hill Zone of Arunachal Pradesh, farmers are advised to arrange for adequate drainage to avoid water stagnation in the fields of maize, black gram, green gram, soybean and vegetables.
  - Due to prevailing weather conditions in Central Brahmaputra Valley Zone of Assam, there is chance of attack of blast disease in *ahu* rice; farmers are advised to spray Bavistin @ 1 g per litre of water after current spells of rain.
  - Due to prevailing weather conditions in Barak Valley Zone of Assam, there is chance of attack of beetles and fruit and shoot borer in summer gourd, vegetables and okra; farmers are advised to spray Malathion 50 EC @ 1.5 litres / ha mixed in 500 – 700 liters of water after the current spells of rain.
  - Due to high Relative Humidity and temperature in North Bank Plain Zone of Assam, the weather condition is suitable for the attack of blast disease in *ahu* rice. If 2-3 leaf spots appear, spray Dithane M-45 @ 2 g / litre or Carbendazim @ 1 g / litre of water after current spell of rain.
  - In Sub-Tropical Hill Zone of Arunachal Pradesh, high humidity and cloudy conditions are favourable for attack of aphids in cucurbits, French bean and ladies finger; famers are advised to spray Imidacloprid 17.5 SL @ 2 ml/ 5 litres of water after current spell of rain.
  - In Mild Tropical Plain Zone of Tripura, cloudy weather with high humidity is conducive for attack of mango hopper in mango. For its control spray Thiamethoxam (0.005%, i.e., 0.2 g per liter of water) or Acephate (1.5 g per liter of water) after current spells of rain. Also, due to prevailing weather conditions, there is chance of fruit and shoot borer on summer brinjal and tomato; farmers are advised to apply Cypermethrin @ 1.5 ml or Flubendamid @ 0.5 ml per litre of water after current spell of rain.
  - Weather is favourable for incidence of Cercospora / Sigatoka leaf spot in banana in Mild Tropical Hill Zone of Mizoram; farmers are advised to spray combination of fungicides Mancozeb + Carbendazim @ 2 g / litre of water after current spell of rain.
  - Stages of major crops are mentioned in Annexure I.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Mainly dry weather prevailed on most of the days over the States of the region.
- **Weather Forecast:** Mainly dry weather would prevail over the States of the region.
- **Outlook:** Mainly dry weather would prevail over the States of the region.
- **Advisories:**
  - As there was no significant rainfall in Maharashtra and mainly dry weather will prevail during the period, farmers are advised to apply irrigation to summer *bajra* at grain formation stage (Pune and Nasik region), groundnut at pod development stage and also to sugarcane and vegetables in morning or evening hours to avoid excessive evaporation. Also apply irrigation in groundnut at pegging / pod formation stage and vegetables in Gujarat.
  - Due to prevailing high temperature and acute water shortage in the State, farmers in Madhya Maharashtra are advised to apply either drip / sprinkler irrigation or flood irrigation in alternate furrow to sugarcane and mulch with 5 tons trash / ha in furrow to conserve soil moisture. Farmers are also advised to apply 2 litres of water per dripper to vegetable crops.
  - Considering high day temperature in Konkan, farmers are advised to apply 15 to 20 liters of water per newly planted mango grafts at an interval of 10-15 days and apply mulching to reduce high evaporation. Provide shade net to saplings of coconut, arecanut, cinnamon, nutmeg, clove, etc. to protect from scorching sun.
  - Due to high temperature in Konkan region, farmers are advised to use 25 micron thickness black polythene mulch between 2 trenches or beds of the fruit crop nursery to control weeds and improve soil water conservation.
  - As high temperature (above 40 °C) persists, there may be premature mango fruit dropping in Marathwada; farmers are advised to spray NAA (10 ppm). Also apply drip irrigation to sugarcane and if there is more water stress, apply flood irrigation in alternate furrow. Farmers are also advised to apply mulch to reduce the rate of evaporation.
  - As high temperature is predicted in North Saurashtra Zone, South Gujarat Heavy Rainfall Zone and Middle Gujarat Zone, farmers are advised to apply irrigation in groundnut at pegging / pod formation stage.
  - In South Gujarat Zone and South Gujarat Heavy Rainfall Zone farmers are advised to protect banana bunches from high maximum temperature by covering with plastic sheet.
  - Undertake mulching in sugarcane in South Gujarat Zone and in mango in Bhal and Coastal Zone of Gujarat using crop residues to minimize the rate of evaporation due to high temperature.
  - High maximum temperature may favour dropping of flowers and may cause poor fruit setting in Sapota in Middle Gujarat Zone. Use mulching to maintain the soil moisture.
  - Due to cloudy weather conditions, there is possibility of incidence of anthracnose on mango fruits in North Konkan; spray Bordeaux mixture 1% or Carbendazim @ 10 g in 10 litres of water. Due to rise in day temperature, there is possibility of incidence of thrips on new flush and grafts of various fruit crops; spray Acephate @ 1.5 g per litre of water.
  - Rise in temperature is congenial for attack of early shoot borer in newly planted sugarcane in Pune region; use 2 Phule Trichocard per acre at 10 days interval for 2-3 times.
  - Due to rise in temperature, there may be attack of thrips and spider mite in summer chilli in Western Maharashtra Scarcity Zone; spray Methyl Dimeton 25 EC @ 15 ml or Dimethoate 30 EC @ 16 ml + sulphur 80 % @ 20 g per 10 liters of water.
  - In Middle Gujarat Zone, due to rise in temperature there is chance of occurrence of blast disease in summer rice; apply carbendazim @ 10 g per 10 litres of water 2-3 times at an interval of 10 days.
  - In South Gujarat Heavy Rainfall Zone, due to high maximum temperature, attack of mealy bug in mango has been observed and is likely to continue; farmers are advised to spray Carbaryl 50% WP @ 40 g or Monocrotophos 36 EC @ 10 ml or Phozelon @ 20 ml in 10 litres of water for its effective control.
  - Stages of the crops are mentioned in Annexure I.
- **Animal Husbandry**
  - As high maximum temperature is persisting and also predicted in Gujarat, keep animals under shade during noon hours and provide clean drinking water. Increase the green fodder quantity for feeding. Make arrangement of curtains for poultry house. In North Saurashtra Zone, vaccinate animals against FMD and BQ to avoid disease outbreak.

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts in Kerala except Thrissur and Mallapuram, Coimbatore, Nilgiris in Tamil Nadu, Udupi and Dakshin Kannada in Coastal Karnataka, Chamrajnagar, Devangre, Hassan, Mandya, Mysore and Shimoga in South Interior Karnataka and Bagalkote, Bijapur, Gadag, Gulbarga and Haveri of North Interior Karnataka. Mainly dry weather prevailed over remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over Kerala, Lakshadweep and at one or two places over Interior Andhra Pradesh, Karnataka, Tamil Nadu, Andaman & Nicobar Islands. Mainly dry weather would prevail over rest of the region.
- **Warning:** Thundersquall would occur at one or two places over Tamil Nadu, Kerala and Lakshadweep during next 48 hours.
- **Advisories:**
  - Significant rainfall occurred in all the districts in Kerala except Thrissur and Mallapuram; in Coimbatore, Nilgiris in Tamil Nadu and Udupi and Dakshin Kannada in Coastal Karnataka, Chamrajnagar, Devangare, Hassan, Mandya, Mysore and Shimoga in South Interior Karnataka and Bagalkote, Bijapur, Gadag, Gulbarga and Haveri of North Interior Karnataka. Farmers are advised to postpone irrigation to the crops in the above mentioned districts and as mainly dry weather prevailed over remaining parts of the region, apply irrigation to rice, groundnut, sugarcane, summer cotton, summer pulses and vegetable crops in the rest of the region. Undertake intercultural operations and application of fertilizers and plant protection measures on a non- rainy day in Kerala.
  - Thundersquall would occur at one or two places over Tamil Nadu and Kerala during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.
  - Due to prevailing high day and night temperatures in Southern Zone of Tamil Nadu, farmers are advised to conserve soil moisture by adding crop residues or coconut pith around the root zone of coconut trees.
  - Utilizing the summer showers occurred in North Western Zone of Tamil Nadu, farmers are advised to undertake sowing of drought resistant summer maize variety Co-30 for cereal as well as fodder purpose.
  - Due to dry weather prevailed and no significant rainfall is likely, farmers in the North Eastern Zone of Tamil Nadu are advised to conserve soil moisture by mulching of dry leaves or with coir pith in coconut.
  - Due to prevailing high temperature in the Western Zone of Tamilnadu, there is a chance of incidence of cob borer in maize. If observed farmers are advised to take appropriate plant protection measures.
  - High temperatures are conducive for incidence of sucking pests in vegetables in Southern Zone of Kerala. Farmers are advised to spray Neem oil emulsion 2% at fortnightly interval or Rogor 1.5 ml per litre of water as a prophylactic measure against this pests and protect cucurbitaceous fruits with cuelure traps.
  - Light showers which occurred last week are conducive for bud rot in coconut in the Problem Area Zone of Kerala. Hence, farmers are advised to cut and remove the affected tissues of the crown and burn them or spray Bordeaux mixture 1% on spindle leaves and crown of disease affected as well as neighbouring palms.
  - Prevailing high temperature (>28°C ) in the Northern Zone of Kerala is conducive for incidence of Brown Plant Hopper(BPH) in rice. Farmers are advised to spray Acephate @ 1.5 g or Monocrotophos @ 2.2 ml per litre of water.
  - As dry weather is going to prevail for the next few days in the North Coastal Zone of Andhra Pradesh, farmers are advised to undertake harvesting of rice, maize and groundnut crops.
  - Prevailing high temperature is congenial for incidence of thrips and white flies in vegetables in South Telangana Zone of Andhra Pradesh. Farmers are advised to spray Acephate @ 1.5 g or Fipronil @ 2 ml per litre for control of thrips and Triazophos @ 2 ml per litre of water as control measure for white flies.
  - Weather is conducive (T> 33°C) for incidence of leaf folder in rice in Southern Zone of Andhra Pradesh. Farmers are advised to spray Hydrochloride 1.5 g or Rinoxypire 0.3 ml per litre of water.
  - Due to dry weather prevailed and no significant rainfall is likely for the next few days, farmers in the North Transition Zone of Karnataka are advised to conserve soil moisture by mulching of dry leaves and grass in the sugarcane crop.
  - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry:**
  - Farmers in the Scarce Rainfall Zone of Andhra Pradesh are advised to provide animals with mineral mixture along with salt regularly and grains like sorghum, Bajra and jaggary etc. may be provided @ 10%-20% in the daily ration during summer season to meet the energy requirement of the animals.
  - Farmers in the North Transition Zone of Karnataka are advised to apply 4-6 inch thick hay thatch as a roofing material on animal sheds. Water may be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals.

## Annexure I

### Stages of Major Crops

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

- Wheat (harvesting), pome and stone fruits (flowering), apple (green tip to pink bud), onion (vegetative), cabbage, cauliflower (maturity), capsicum, tomato, brinjal (sowing / transplanting), cucurbits, okra, French bean, fodder crops (chari, bajra) (sowing/early vegetative) in Himachal Pradesh.
- Wheat (maturity / harvesting), onion (bulb formation), cluster bean, amaranthus, summer radish, summer green gram, vegetable lobia, lady's finger, bottle gourd, cucumber, ridge gourd (sowing / early vegetative), chilli, tomato, brinjal and cucurbits (vegetative) in Delhi.
- Wheat (flag leaf initiation), pulses (pea and lentil) (flowering), fodder oat (harvesting), vegetables (sowing / planting / transplanting), rice (nursery raising), maize (field preparation / sowing), fruit crops (nursery bed preparation in Valley Temperate Zone (Srinagar)), sunflower (early vegetative / vegetative), garlic, cucurbits, okra (seedling / early vegetative), radish, spinach (sowing), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), wheat, barley (late sown – dough, normal / early sown – maturity / harvesting), pulses (pod formation), oat, berseem (vegetative), summer moong & mash (sowing), dhaincha (sowing), fodder jowar (sowing), fruit crops (nursery bed preparation) in Jammu & Kashmir.
- Wheat (harvesting), arhar (harvesting), ginger (vegetative), garlic (harvesting), autumn sugarcane (vegetative), barley (harvesting), oat (tillering / ear head emergence), moong, urd (vegetative / flowering), okra (seedling / vegetative), sugarcane, cucurbits (sowing / planting / seedling), fodder jowar (sowing), rice (nursery sowing) in Uttarakhand.
- Wheat (harvesting), linseed, jai (pod maturity), onion, garlic (maturity/harvesting), maize (maturity / harvesting), moong, urad (germination / vegetative), summer vegetables, spring sugarcane (planting/vegetative), summer green fodder like maize, lobia, sunhemp, dhaincha (sowing/seedling) in Uttar Pradesh.
- Wheat (maturity / harvesting), sugarcane (harvesting), new sugarcane (early vegetative), maize (sowing / germination), pulses (field preparation for sowing), cucurbits (sowing), berseem (vegetative / cutting), fruit (planting) in Punjab.
- Wheat (maturity/ harvesting), sugarcane (harvesting), new sugarcane (early vegetative), barseem (vegetative / cutting), other fodder crops (bajra, lobia, Sudan grass and Napiar grass) (sowing), cotton (field preparation / sowing) in Haryana.
- Cotton (field preparation / sowing), *Zaid* crops (moong, groundnut, fodder crops) (sowing / germination / early vegetative), sugarcane (maturity / harvesting), new sugarcane (field preparation/sowing), maize (maturity), capsicum, guar, water melon, muskmelon (maturity / harvesting), vegetables (tinda, pumpkin, cucumber, coriander, bhindi, ridge gourd) (seedling / vegetative), wheat (grain maturity / harvesting), barley (grain maturity / harvesting), opium poppy (pre-flowering / flowering) in Rajasthan.

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

- Ladies finger (flowering / fruiting / harvesting), sugarcane (elongation), lobia, cowpea, jawar, maize (sowing), summer vegetables (sowing / transplanting/early vegetative) in Madhya Pradesh.
- Sugarcane (early vegetative), pigeon pea, groundnut (pod filling/maturity), sesame (late vegetative), ginger, turmeric, papaya (vegetative), onion (transplanting/ early vegetative), vegetable crops (transplanting / vegetative), millet (flowering), rice (transplanting), niger, kulthi (vegetative) in Chhattisgarh.

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

- Sunflower (head formation), sugarcane (early vegetative/tillering), summer vegetables (vegetative), moong, urad (vegetative), yam (sowing) in Bihar.
- Pigeon pea (pod formation), onion (transplanting), vegetables (vegetative / flowering / fruiting ), ginger and turmeric (planting), rice (panicle Initiation to flowering stage) and maize (vegetative to cob formation) in Jharkhand.
- Jute (sowing), summer rice (panicle initiation/flowering), sugarcane (tillering), banana (vegetative), *rabi* groundnut (maturity/harvesting), cowpea (pod formation / maturity), fruit crops (planting / seedling), tomato (flowering / fruiting), summer vegetables (sowing/early vegetative), sunflower (seed formation/maturity) in Odisha.

- *Boro* rice (maturity/harvesting), sesame (flowering), summer vegetables (transplanting/ early vegetative), potato (tuber maturity / harvesting), mango (flowering /fruiting), tomato (flowering / fruiting), Bitter gourd, pointed gourd, ladies finger (flowering to fruiting), sunflower (flowering), groundnut (pegging to pod formation), chilli (flowering / fruiting) in West Bengal.
- Ginger (sprouting / early vegetative), large cardamom (primary flowering / secondary flowering), summer vegetables (vegetative), rice (grain formation / maturity) in Sikkim.

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

- Sugarcane (planting), *boro* rice (grain formation / grain maturity), transplanted early *ahu* rice (tillering), transplanted normal *ahu* rice (seedling / transplanting), early *ahu* (direct seeded) (seedling / tillering), *bao* rice (sowing), maize (sowing), jute (sowing / seedling), summer pulses (seedling / vegetative), okra (sowing), cucurbits (vegetative / flowering / fruiting), coconut, ginger, turmeric, banana, papaya (planting) and summer vegetables (flowering / fruiting), cow pea (sowing) in Assam.
- *Jhum* rice (vegetative), okra, maize, soybean (vegetative), green gram, black gram (seedling / vegetative), French bean (vegetative / flowering) and cucurbits (vegetative), banana (planting) in Arunachal Pradesh.
- Pre-*kharif* rice (early vegetative / vegetative), maize (vegetative / silking / cob formation), groundnut and soybean (sowing), tomato, brinjal, chilli (flowering / fruiting), beans (early vegetative / vegetative), cucurbits (flowering / fruiting), okra (sowing), turmeric, ginger (planting) in Manipur.
- *Kharif* maize (germination/ vegetative), *boro* rice (grain filling/grain maturity), jute (vegetative), black gram, green gram (vegetative), okra (flowering / fruiting/ harvesting), French bean, bottle gourd, ash gourd (vegetative), brinjal (vegetative), tomato, potato, turmeric, ginger (sowing) in Meghalaya.
- Maize (sowing), banana (vegetative / fruiting / harvesting), okra, cucurbits, French bean (sowing), chilli, brinjal, ginger and turmeric (nursery raising / planting) in Mizoram.
- Maize (vegetative), upland rice (germination / vegetative), lowland rice (nursery raising), cucurbits (vegetative), chilli (vegetative), okra (germination / early vegetative), ginger (sowing) and brinjal (transplanting) in Nagaland.
- *Jhum* rice (sowing / seedling), summer brinjal, tomato (flowering / fruiting), summer green gram and black gram (vegetative / flowering), okra (flowering / fruiting), cucurbits (sowing / seedling), summer maize (vegetative / tasseling) and summer sesamum (flowering / capsule formation) in Tripura.

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

- Sugarcane New *adsali* (tillering / elongation), new pre seasonal (tillering), new *suru* sugarcane (early tillering), summer rice (grain maturity / harvesting in early variety and grain formation in mid late and late varieties in South Konkan and grain formation in Western Ghat region and East Vidarbha), summer groundnut (pod maturity / harvesting in South Konkan and pod formation in Madhya Maharashtra, Marathwada and Vidarbha), summer bajra (grain formation in Pune and Nasik region) in Maharashtra.
- Pearl millet (vegetative / tillering), pulses (vegetative / flowering), summer groundnut (flowering / pegging / pod formation), sorghum (vegetative), mango (maturity), summer rice (grain formation), summer vegetables (vegetative / flowering / fruiting), sugarcane (elongation / grand growth) in Gujarat.

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

- Summer groundnut (early vegetative), *rabi* maize (harvesting), sunflower (seed formation/maturity), *rabi* rice (grain hardening/harvesting), summer rice (panicle initiation), summer cotton (early vegetative), Green gram (flowering/ pod development), cowpea (pod maturity/harvest), sesame (flowering /capsule formation), sugarcane (tillering), mango (harvesting) and vegetables (all stages) in Andhra Pradesh.
- Black gram (sowing/early vegetative), summer cotton (vegetative/flowering/boll formation), sesame (flowering), sugarcane (tillering /grand growth), pearl millet (vegetative), maize (vegetative), ground nut and sorghum (sowing/ early vegetative) and vegetables (all stages) in Tamil Nadu.
- Summer rice (tillering /panicle initiation), arecanut (flowering) mango (fruit maturity/harvesting), sugarcane (tillering), banana (planting to harvesting), vegetables( all stages) pepper, ginger and cardamom (planting /early vegetative) in Kerala.
- Mango (fruit maturity /harvesting), summer green gram/ black gram (early vegetative), sugarcane (tillering), arecanut (flowering), banana (fruit development) and vegetables (all stages) in Karnataka.