



## Regionwise Salient Advisories

### North India

#### Major crops

- Wheat (dough / grain maturity/harvesting), mustard (capsule formation / maturity / harvesting)



- As there was no significant rainfall during last week in the region except in Ganderwal district of Jammu & Kashmir and mainly dry weather is likely to prevail over the region, farmers are advised to apply irrigation to the standing crops in the region. Postpone irrigation to the standing crops in Ganderwal district of Jammu & Kashmir as there was sufficient rainfall during last few weeks.

### Central India

#### Major crops

- Wheat (grain maturity / harvesting), autumn sugarcane (vegetative / elongation)



- As no significant rainfall occurred during last week and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops in the region.

### East India

#### Major crops

- Wheat (dough / grain maturity) and potato (tuber maturity / harvesting).
- As rain / thundershowers would occur at a few places over Sikkim and Sub-Himalayan West Bengal during next 24 hours, farmers are advised to postpone irrigation to the standing crops in these areas. As mainly dry weather prevailed over the remaining districts of the States during last week and no significant rainfall is likely during the period, farmers are advised to apply irrigation to the standing crops.
- As thundersquall would occur at one or two places over Odisha, West Bengal & Sikkim during next 24 hours, farmers are advised to arrange propping up in sugarcane and staking of vegetables to prevent the crops from lodging due to strong winds.

### Northeast India

#### Major crops

- Boro rice (flowering / grain formation / grain maturity), early *ahu* rice (seedling / transplanting), wheat (dough stage / grain maturity / harvesting), rapeseed, mustard (capsule maturity / harvesting), summer vegetables (sowing / transplanting / flowering / fruiting).
- As significant rainfall is likely to occur over the States of the region, postpone irrigation, intercultural operation and application of fertiliser and plant protection measures to the standing crops in these states.
- As Thundersquall would occur at one or two places over Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during next 24 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.

### West India

#### Major crops

- New *suru* sugarcane (early tillering), summer groundnut (flowering / pegging / pod formation), summer bajra (ear head emergence / flowering), wheat (grain maturity / harvesting).
- As dry weather prevailed during last few weeks and mainly dry weather is likely to prevail over Gujarat State during the period, farmers are advised to apply irrigation in standing crops. Carry out mulching with the help of crop residues to minimize the rate of evaporation.
- As dry weather prevailed over the Maharashtra State during last few weeks and dry or mainly dry weather is expected during the period, farmers are advised to apply irrigation to summer bajra (Pune and Nasik region), sugarcane and vegetables in morning hours or in the evening to avoid excessive evaporation.

### South India

#### Major crops

- Sunflower (flowering / seed formation), rice fallow pulses (vegetative), *puncha* rice (maturity / harvesting), sugarcane (ratooning / planting), summer sorghum, maize and cotton (vegetative).
- Significant rainfall occurred over Kollam district in Kerala during last week and mainly dry weather prevailed over remaining parts of the region and no significant rainfall is likely to occur, farmers are advised to apply irrigation to the standing crops. Postpone irrigation to the crops in Kollam district in Kerala, as there was significant rainfall.

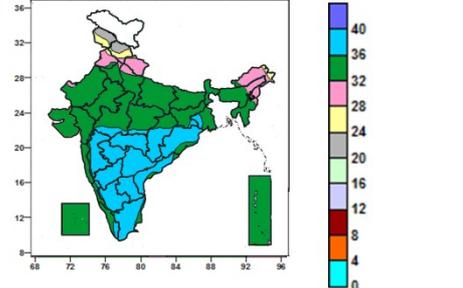
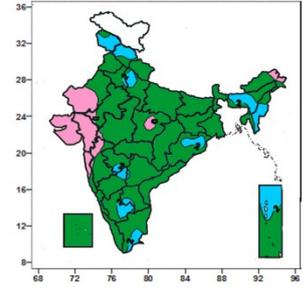
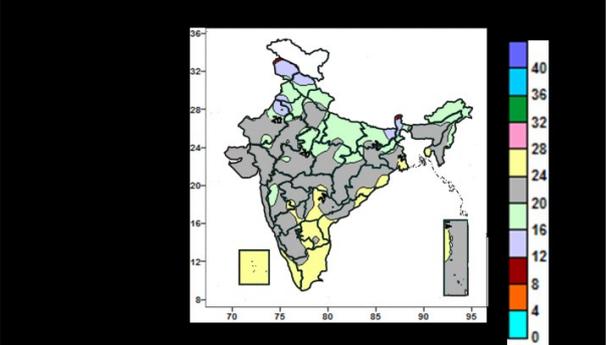
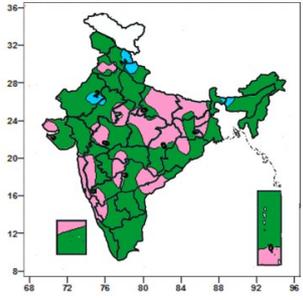
(Detailed regionwise summary is given in page no.2)

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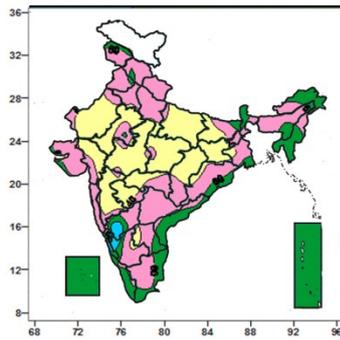
National Agrometeorological Advisory Service Centre, Agricultural Meteorology Division,  
India Meteorological Department, Shivajinagar, Pune.

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

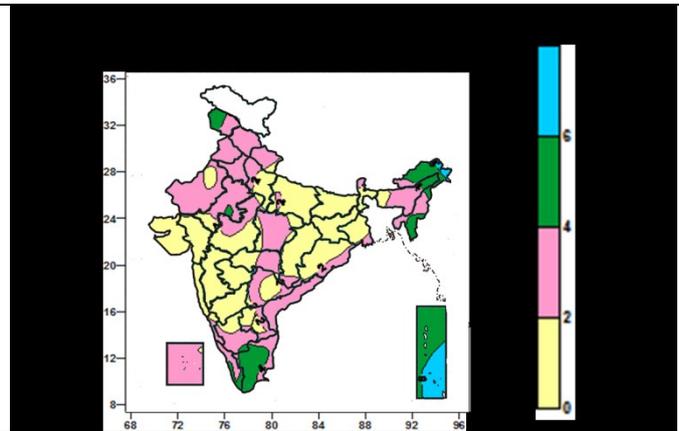
## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 10.04.2013

Actual Mean Maximum Temperature (°C) in India for the week ending 10.04.2013	Mean Maximum Temperature (°C) Anomaly In India for the week ending 10.04.2013
 <ul style="list-style-type: none"> <li>• 36 to 40<sup>0</sup>C over many parts of Orissa, Chattisgarh, Vidarbha, Madhya Maharashtra, Marathwada, Andhra Pradesh, North &amp; South Interior Karnataka, Tamil Nadu, some parts of Jharkhand, Gangetic West Bengal, Madhya Pradesh, Kerala.</li> <li>• 32 to 36<sup>0</sup>C over many parts of Haryana, Delhi, Rajasthan, Uttar Pradesh, East India, Assam &amp; Meghalaya, Mizoram, Tripura, Madhya Pradesh, Gujarat, Saurashtra &amp; Kutch, Konkan &amp; Goa, Coastal Karnataka, Kerala, Lakshadweep, Andaman &amp; Nicobar Islands some parts of Punjab, Madhya Maharashtra, Arunachal Pradesh, Manipur, Coastal Orissa, Coastal Andhra Pradesh, Coastal Tamil Nadu.</li> <li>• 28 to 32<sup>0</sup>C over many parts of Uttarakhand, Punjab, Arunachal Pradesh, Nagaland, some parts of Himachal Pradesh, West Rajasthan, West Uttar Pradesh, Assam.</li> <li>• 24 to 28<sup>0</sup>C over some parts of Jammu &amp; Kashmir, Himachal Pradesh, Punjab.</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>• 2 to 4<sup>0</sup>C over many parts of Jammu &amp; Kashmir, Himachal Pradesh, Assam &amp; Meghalaya, Manipur, Mizoram, some parts of Haryana, Delhi, West Uttar Pradesh, Orissa, Marathwada, North &amp; South Interior Karnataka, Telengana, Rayalaseema, Tamil Nadu, Andaman &amp; Nicobar Islands.</li> <li>• 0 to 2<sup>0</sup>C all over country except Gujarat, Saurashtra &amp; Kutch, West Rajasthan, Konkan &amp; Goa.</li> <li>• -2 to 0<sup>0</sup>C over many parts of Gujarat, Saurashtra &amp; Kutch, West Rajasthan, Konkan &amp; Goa, some parts of Arunachal Pradesh, East Rajasthan, Madhya Maharashtra, Madhya Pradesh.</li> </ul>
 <ul style="list-style-type: none"> <li>• 24 to 28<sup>0</sup>C over many parts of Andhra Pradesh, Tamil Nadu, Kerala, Lakshadweep Islands, some parts of Tripura, Gangetic West Bengal, Orissa, Vidarbha, Marathwada, Madhya Maharashtra, Andaman &amp; Nicobar Islands.</li> <li>• 20 to 24<sup>0</sup>C over many parts of West Uttar Pradesh, Rajasthan, Jharkhand, Gangetic West Bengal, Assam &amp; Meghalaya, Manipur, Mizoram Tripura, Orissa, Central India, West India, Karnataka, Andaman &amp; Nicobar Islands, some parts of Uttarakhand, East Uttar Pradesh, Bihar, Nagaland, Andhra Pradesh, Tamil Nadu.</li> <li>• 16 to 20<sup>0</sup>C over many parts of Himachal Pradesh, Uttarakhand, Punjab, Haryana, East Uttar Pradesh, Bihar, Arunachal Pradesh, some parts of Rajasthan, West Uttar Pradesh, Central India, Sub-Himalayan West Bengal, Assam &amp; Meghalaya, Nagaland, Manipur, Madhya Maharashtra.</li> <li>• 12 to 16<sup>0</sup>C over many parts of Jammu &amp; Kashmir, Himachal Pradesh, Sub-Himalayan West Bengal &amp; Sikkim, some parts of Punjab, Haryana, West Rajasthan, Bihar.</li> </ul>	 <ul style="list-style-type: none"> <li>• 2 to 4<sup>0</sup>C over some parts of Himachal Pradesh, Uttarakhand, Rajasthan, Sub-Himalayan West Bengal, Assam.</li> <li>• 0 to 2<sup>0</sup>C many parts of North India (except Punjab, East Uttar Pradesh), North East India, West Bengal &amp; Sikkim, Orissa, Gujarat, Saurashtra &amp; Kutch, South India (except Coastal Karnataka), some parts of Punjab, Central India, Madhya Maharashtra, Marathwada, North &amp; South Karnataka.</li> <li>• -2 to 0<sup>0</sup>C over many parts of East Uttar Pradesh, Bihar, East Madhya Pradesh, Konkan &amp; Goa, Coastal Karnataka, Jharkhand, some parts of Punjab, Orissa, East Rajasthan, Gangetic West Bengal, Central India, Kutch, Maharashtra (except Konkan &amp; Goa), Coastal Andhra Pradesh (except Raylaseema), Lakshadweep Andaman &amp; Nicobar Islands.</li> </ul>

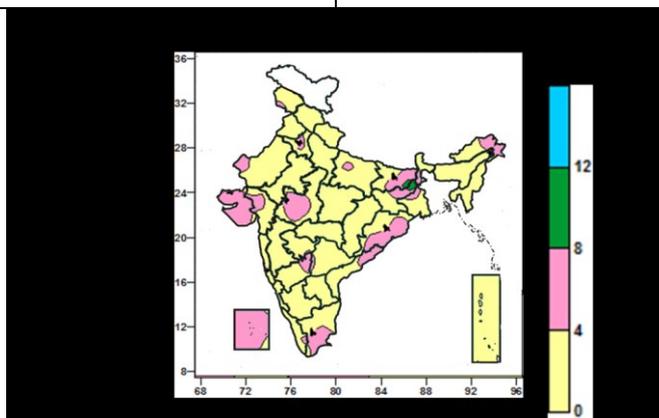
**Relative Humidity (%) over India for the week ending 10.04.2013**



- 80% and above over some parts of North & South Karnataka.
- 60 to 80% over many parts of Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Manipur, Mizoram, Tripura, Coastal Andhra Pradesh, Coastal Karnataka, Coastal Tamil Nadu, Kerala, Lakshdweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Bihar, Jharkhand, Coastal Orissa, Assam & Meghalaya, Nagaland, Saurashtra & Kutch, Raylaseema, North & South Karnataka.
- 40 to 60% over many parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, West Uttar Pradesh, Bihar, West Bengal, Assam & Meghalaya, Nagaland, Orissa, Telangana, Raylaseema, Tamil Nadu, South & North Interior Karnataka, Konkan & Goa, Saurashtra & Kutch, some parts of Rajasthan, East Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal, Arunachal Pradesh, Central India, West India (except Konkan & Goa), Gujarat.
- 20 to 40 % over many parts of East Uttar Pradesh, Rajasthan, Bihar, Jharkhand, Central India, Gujarat, Madhya Maharashtra, Marathwada, some parts of Haryana, Gangetic West Bengal, Orissa, Raylaseema, South Interior Karnataka, Vidarbha.



- 6 okta and above over many parts of Andaman & Nicobar Islands.
- 4 to 6 okta over many parts of Jammu & Kashmir, Arunachal Pradesh, Mizoram, Tamil Nadu, Andaman & Nicobar Islands, some parts of East Rajasthan, Assam, Nagaland, Manipur, Kerala.
- 2 to 4 okta over many parts of North India (except Uttar Pradesh), Assam & Meghalaya, Manipur, Tripura, Madhya Pradesh, Andhra Pradesh, Kerala, Coastal & South Interior Karnataka, Lakshadweep Islands, some parts of Uttar Pradesh, West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Orissa, Chattisgarh.
- 0 to 2 okta over many parts of Uttar Pradesh, East India, Chattisgarh, West India, West Madhya Pradesh, North Interior Karnataka, some parts of Uttarakhand, Rajasthan, Assam, Telangana, Raylaseema, Coastal & South Interior Karnataka,



- 8 to 12 knots over some parts of Bihar, Jharkhand.
- 4 to 8 knots over many parts of Saurashtra, West Madhya Pradesh, Bihar, Jharkhand, Orissa, Lakshdweep Islands, some parts of Jammu & Kashmir, Haryana, East Uttar Pradesh, West Rajasthan, West Bengal, Coastal Andhra Pradesh, Telangana, Gujarat, North Interior Karnataka, Tamil Nadu, Kerala.
- 0 to 4 knots over all the parts of country (except Saurashtra, West Madhya Pradesh, Bihar, Jharkhand, Lakshdweep Islands).

### Significant weather and realized rainfall during last week

Significant rainfall received in Dibang Valley, East Siang, Lohit, Lower Dibang Valley, Tawang, Tirap, Upper Siang, West Siang districts of Arunachal Pradesh; Dibrugarh, N.C.Hills, Sibsagar, Tinsukia districts of Assam; Bishnupur, Imphal east, Thoubal districts of Manipur; Ganderwal district of Jammu & Kashmir; East Sikkim, North Sikkim districts of Sikkim; Kollam district in Kerala; Mainly dry weather prevailed over rest parts of the country.

### Distribution of rainfall of the country during week ending on 10.04.2013

State/Districts	Actual (mm)	% Dep.
<b>Arunachal Pradesh</b>		
Anjaw	**	**
Changlang	18.8	-87
Dibang Valley	67.0	-33
East Kameng	0.0	-100
East Siang	31.5	-29
Kurung Kumey	**	**
Lohit	45.8	-59
Lower Dibang Valley	27.0	-73
Lower Subansari	**	**
Papumpara	18.5	-56
Tawang	82.0	439
Tirap	46.4	-37
Upper Siang	55.8	-57
Upper Subansari	3.4	-81
West Kameng	4.4	-71
West Siang	24.0	-25
<b>Assam</b>		
Baksa	10.0	-64
Barpeta	0.0	-100
Bongaigaon	0.0	-100
Cachar	0.1	-99
Chirang	0.0	-100
Darrang	1.0	-97
Dhemaji	4.0	-88
Dhubri	0.0	-100
Dibrugarh	25.2	-46
Goalpara	0.0	-100
Golghat	9.1	-67
Hailakandi	0.0	-100
Jorhat	16.5	-63
Kamrup(Rural)	7.4	-68
Kamrup(Metro)	0.0	-100

Karbi Anglong	0.0	-100
Karimganj	0.0	-100
Kokrajhar	0.0	-100
Lakhimpur	9.2	-72
Morigaon	2.4	-88
N.C.Hills	36.5	-3
Nowgong	0.7	-97
Nalbari	7.6	-79
Sonitpur	11.6	-59
Sibsagar	22.3	-23
Tinsukia	44.7	-13
Udalgiri	14.6	-52
<b>Manipur</b>		
Bishnupur	24.0	-13
Chandel	0.0	-100
Churachandpur	**	**
Imphal east	41.1	0
Imphal west	**	**
Tamenglong	**	**
Thoubal	42.0	54
Senapati	**	**
Ukhrul	5.0	-66
<b>Jammu &amp; Kashmir</b>		
Anantnag	14.2	-54
Badgam	7.0	-57
Bandipore	**	**
Baramula	3.9	-90
Doda	7.8	-71
Ganderwal	21.6	9
Jammu	0.3	-96
Kargil	0.0	-100
Kathua	2.8	-69
Kistwar	**	**
Kulgam	9.3	-70
Kupwara	3.2	-91
Ladakh(Leh)	0.0	-100

Poonch	**	**
Pulwama	12.2	-45
Rajouri	0.0	-100
Ramban	1.6	-94
Reasi	1.1	-93
Samba	0.7	-90
Shopian	6.0	-73
Srinagar	10.7	-46
Udhampur	0.0	-100
<b>West Bengal</b>		
<b>SHWB</b>		
Cooch Behar	0.0	-100
Darjeeling	0.3	-98
East Sikkim	21.5	-53
Jalpaiguri	0.0	-100
Malda	0.0	-100
North Dinajpur	0.0	-100
North Sikkim	25.6	-67
South Dinajpur	0.0	-100
South Sikkim	11.0	-76
West Sikkim	4.0	-95
<b>Kerala</b>		
Alappuzha	11.3	-65
Kannur	0.1	-99
Ernakulam	9.3	-53
Idukki	12.3	-63
Kasaragod	0.0	-100
Kollam	28.7	-12
Kottayam	16.0	-55
Kozhikode	0.7	-95
Malappuram	0.0	-100
Palakkad	1.1	-95
Pathanamthitta	5.0	-87
Thiruvananthapuram	14.4	-46
Thrissur	0.0	-100
Wyanad	5.9	-61

### 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 15<sup>th</sup> April, 2013

- Rain/thundershowers would occur at a few places over Sikkim, Assam & Meghalaya, Arunachal Pradesh and at one or two places over Nagaland, Manipur, Mizoram and Tripura during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at one or two places over south interior Karnataka, Tamilnadu, Kerala and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at one or two places over Chhattisgarh, Jharkhand, Odisha and Gangetic West Bengal.
- Maximum temperature would rise by 2-3°C over of northwest, central and adjoining east India.
- Mainly dry weather would prevail over rest parts of the country.

### Weather Warning during next 3 days

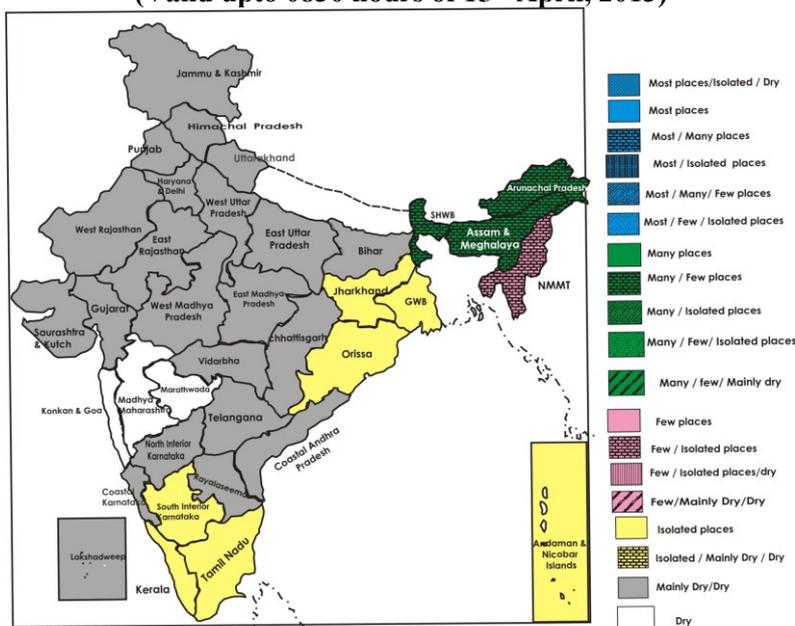
- Thundersquall would occur at one or two places over Odisha, West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during next 24 hours.

### Weather Outlook for subsequent 4 days from 15<sup>th</sup> to 19<sup>th</sup> April, 2013

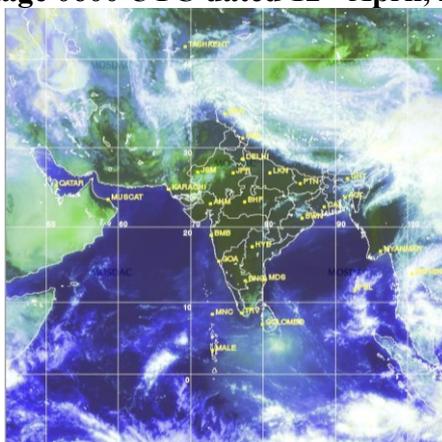
- Rain/thundershowers would occur at many places over Sikkim and northeastern states.
- Rain/thundershowers would occur at one or two places over Chhattisgarh, Odisha and Gangetic West Bengal.
- A fresh western disturbance would affect western Himalayan region from 15<sup>th</sup> April.
- Weather would be mainly dry over rest parts of the country.

## Weather Forecast

(Valid upto 0830 hours of 15<sup>th</sup> April, 2013)



### Satellite image 0600 UTC dated 12<sup>th</sup> April, 2013



## Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in Ganderwal district of Jammu & Kashmir. Weather remained mainly dry over rest parts of the region.
- **Weather Forecast:** Mainly dry weather would prevail over the region. Maximum temperature would rise by 2-3°C over the region.
- **Advisory:**
  - As there was no significant rainfall during last week in the region except in Ganderwal district of Jammu & Kashmir and mainly dry weather is likely to prevail over the region, farmers are advised to apply irrigation to the standing crops in the region. Postpone irrigation to the standing crops in Ganderwal district of Jammu & Kashmir as there was sufficient rainfall during last few weeks.
  - Farmers in Flood Prone Eastern Plain Zone of Rajasthan are advised to give light and frequent irrigation to the tree saplings and cover with thatching material to protect against heat injury.
  - Farmers in Delhi are advised to undertake sowing of *Amaranthus*, vegetable lobia, lady's finger, bottle gourd, cucumber and ridge gourd as present temperature is suitable for germination of seeds. Undertake deep ploughing of field after harvesting of *rabi* crops so that eggs and pupae of insects and weed seeds are exposed and destroyed.
  - Due to present 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 10 litres of water.
  - Due to increase in temperature in Arid Western Plain and Semi-Arid Eastern Plain Zones of Rajasthan, there are chances of attack of thrips in garlic and onion. Farmers are advised to spray Methyl Demetan 25 E.C. or Melathion 50 E.C. @ 1 ml per litre of water.
  - Other advisories are mentioned in Annexure I.
  - Stages of major crops are mentioned in Annexure II.
  - Suitable varieties of crops are mentioned in Annexure III.
- **Animal Husbandry**
  - As temperature is rising above 25°C in Low Hills, Sub-humid and Subtropical Zone of Himachal Pradesh, farmers are advised to ensure proper ventilation in poultry houses. Replace the poultry houses with fresh litter and keep the houses clean and ensure clean drinking water to the birds.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the region.
- **Weather forecast:** Rain/thundershowers would occur at one or two places over Chhattisgarh. Mainly dry weather would prevail over the region. Maximum temperature would rise by 2-3° C over the region.
- **Advisories:**
  - As no significant rainfall occurred during last week and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops in the region.
  - In Chhattisgarh Plain Zone, farmers are advised to apply irrigation to banana crops in view of the prevailing high temperature.
  - Due to prevailing dry weather conditions along with high temperature in Malwa Plateau Zone of Madhya Pradesh, there are chances of occurrence of malformation in mango. Farmers are advised to spray Bavistin @ 1 gm per litre of water as preventive measure.
  - Due to prevailing dry weather conditions in Northern Hill Zone of Chhattisgarh there are chances of stem borer in sugarcane, hence farmer are advised to apply Carbofuran 3 G in soil with irrigation.
  - Other advisories are mentioned in Annexure – I.
  - Stages of major crops are mentioned in Annexure II.
- **ANIMAL HUSBANDRY & POULTRY**
  - Farmers in Kymore Plateu Zone of Madhya Pradesh are advised to keep the animals in shady and cool places in view of the prevailing high temperature.

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

- **Realised Rainfall:** Significant rainfall occurred in north and east Sikkim and mainly dry weather prevailed over rest parts of the region during last week.
- **Weather Forecast:** Rain / thundershowers would occur at a few places over Sikkim and Sub-Himalayan West Bengal during next 24 hours and increase thereafter. Rain / thundershowers would occur at one or two places over Jharkhand, Odisha and Gangetic West Bengal and mainly dry weather would prevail over Bihar.
- **Weather Warning:** Thundersquall would occur at one or two places over Odisha, West Bengal & Sikkim during next 24 hours.
- **Outlook:** Rain / thundershowers would occur at many places over Sikkim.
- **Advisories:**
  - As rain / thundershowers would occur at a few places over Sikkim and Sub-Himalayan West Bengal during next 24 hours, farmers are advised to postpone irrigation to the standing crops in these areas. As mainly dry weather prevailed over the remaining districts of the States during last week and no significant rainfall is likely during the period, farmers are advised to apply irrigation to the standing crops.
  - As thundersquall would occur at one or two places over Odisha, West Bengal & Sikkim, farmers are advised to arrange propping up in sugarcane and staking of vegetables to prevent the crops from lodging due to strong winds.
  - In view of prevailing mainly dry weather condition, farmers in North West Alluvial Plain Zone of Bihar are advised to give irrigation to summer maize, sugarcane and summer vegetable crops during night time.
  - Farmers of Western Undulating Zone of Odisha are advised to apply irrigation to vegetable crops, *rabi* crops and paddy.
  - Prevailing day and night temperature favours the infestation of blast in rice in East and South Eastern Coastal Plain Zone of Odisha. Farmers are advised to spray 0.6 g Tricyclazole or 1 ml Ediponphos in per litre of water.
  - High temperature increases the water requirement of the crop. The farmers of North Central Plateau Zone of Odisha are advised to irrigate the maize crop observing the moisture condition of soil. Wheat is at grain filling to grain maturity stage apply irrigation for better grain filling.
  - As mainly dry weather is prevailing, farmers in Laterite and Red soil Zone and Old alluvial Zone of West Bengal are advised to give irrigation to *boro rice* and maintain 5-7 cm standing water in the field.
  - In view of prevailing mainly dry weather condition, farmers of Jharkhand are advised to give irrigation to summer maize, moong and summer vegetable crops.
  - Under the prevailing weather situation in Laterite and Red Soil Zone and New Alluvial Zone of West Bengal, there is a possibility of spread of blast disease in *boro rice*; to prevent it, apply Hinosan or Kitazin at recommended dose.
  - Due to increase in maximum temperature, there is possibility of downey mildew in bittergourd and red mite in chilli in Terai Zone of West Bengal. To manage downey mildew spray Mancozeb @ 2 g / litre or Metalaxyl 8% and Mancozeb 64% @ 1-1.5 g / litre of water and to manage red mite in chilli, spray Dicofol 2 ml / litre of water or sulphur dust 2 g / litre of water.
  - Stages of major crops are mentioned in Annexure I.
  - List of Varieties are mentioned in Annexure II.
- **Poultry:**
  - In Jharkhand, due to rise in temperature, 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.

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

- **Realised Rainfall:** Significant rainfall occurred in Dibang Valley, East Siang, Lohit, Lower Dibang Valley, Tawang, Tirap, Upper Siang and West Siang districts in Arunachal Pradesh, Dibrugarh, N. C. Hills, Sibsagar and Tinsukia districts in Assam and Bishnupur, East Imphal and Thoubal districts in Manipur. No significant rainfall occurred over the remaining districts of the States of the region during last week.

- **Weather Forecast:** Rain / thundershowers would occur at a few places over Assam & Meghalaya, Arunachal Pradesh during next 24 hours and at many places thereafter. Rain / thundershowers would occur at one or two places over Nagaland, Manipur, Mizoram and Tripura during next 24 hours and at a few places thereafter.
- **Weather warning:** Thundersquall would occur at one or two places over Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during next 48 hours.
- **Outlook:** Rain / thundershowers would occur at many places over the States of the region.
- **Advisories:**
  - As rainfall is likely to occur at many places over the States of the region, postpone irrigation, intercultural operation and application of fertilisers and plant protection measures to the standing crops in these states.
  - As Thundersquall would occur at one or two places over Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during next 24 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.
  - Farmers in Sub-Tropical Hill Zone of Arunachal Pradesh are advised to avoid water stagnation in crop fields and also avoid runoff in the rice fields in the slopes.
  - After current spells of rain in Mild Tropical Plain Zone of Tripura, apply mulch to hold the soil moisture in field of summer pulses.
  - Due to present weather conditions in Sub-Tropical Hill Zone of Arunachal Pradesh, there is chance of attack of collar rot, damping off and wilting in black gram and green gram and damping off in cucurbits; farmers are advised to spray Carbendazim @ 2 g per litre of water or Endofil-M-45 @ 3 g / litre of water, after current spell of rain, to control the attack.
  - Due to prevailing weather conditions in Mild Tropical Plain Zone of Tripura, there is chance of fruit and shoot borer on summer brinjal and tomato; farmers are advised to apply Cypermethrin @ 1.5 ml or Flubendamid @ 0.5ml per liter of water to manage the attack. There is also chance of attack of yellow stem borer on *boro* rice. Attack may be controlled by application of Chlorpyrifos 10 G @ 10 kg per ha. Apply the plant protection measures on non-rainy day.
  - Weather is favourable for incidence of fruit borer in tomato in Mild Tropical Hill Zone of Mizoram; farmers are advised to spray 5% neem seed kernel extract or NPV @ 250-500 LE with 100 ml teepol / ha, on a non-rainy day, for fruit borer.
  - Stages of major crops are mentioned in Annexure I.
  - Suitable varieties of crops are mentioned in Annexure II.
- **Animal Husbandry**
  - In Mild Tropical Plain Zone of Tripura, weather is conducive for swine fever in pig; farmers are advised to undertake vaccination during this period to avoid swine fever in pig.

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

- **Realised Rainfall:** Mainly dry weather prevailed in the States of the region during last week.
- **Weather Forecast:** Dry or mainly dry weather would prevail over the States of the region during the period.
- **Advisories:**
  - As dry weather prevailed during last few weeks and mainly dry weather is likely to prevail over Gujarat State during the period, farmers are advised to apply irrigation in standing crops. Carry out mulching with the help of crop residues to minimize the rate of evaporation.
  - As dry weather prevailed over the Maharashtra State during last few weeks and dry or mainly dry weather is expected during the period, farmers are advised to apply irrigation to summer bajra (Pune and Nasik region), sugarcane and vegetables in morning hours or in the evening to avoid excessive evaporation.
  - Considering high day temperature in Konkan, farmers are advised to apply irrigation at 4-5 days interval to summer rice at grain formation stage. Due to prevailing high temperature in Konkan, farmers are advised to provide 150-200 litres of water per mango tree at 15 days interval upto arecanut size stage. Farmers in Konkan region are advised to use 25 micron thickness black polythene mulch between 2 trenches or beds of the fruit crop nursery to control weeds and for soil water conservation.
  - Due to acute water shortage in the State, farmers in Madhya Maharashtra are advised to apply sprinkle irrigation instead of flood irrigation to groundnut in Konkan. Provide 15 – 20 litres of water for newly

planted mango grafts at an interval of 10-12 days. Apply sprinkle irrigation to sesamum and green gram in Vidarbha.

- Considering prevailing high temperature in Nashik region, farmers are advised to apply frequent drip irrigation to summer tomato. They are also advised mulching with crop residues and other plant waste products in vegetables.
  - Due to prevailing high temperature and dry weather in Marathwada region there may be premature fruit dropping in mango; farmers are advised to spray Planofix 10 ppm. They are also advised to apply irrigation to sugarcane by alternate furrow method or irrigate crop by drip irrigation.
  - Due to prevailing high temperature there will be more evaporation (upto 12mm/day), farmers in Pune region are advised mulching of crop residues and other plant waste products in the orchards and sugarcane trash in sugarcane field to minimize the rate of evaporation. To reduce the rate of transpiration of the plants, farmers are also advised to spray 8 % Kaolin or chalk powder. They are also advised to apply 20 litres water to each banana plant / day by flood irrigation and apply 9-10 litres water / dripper per banana plant.
  - As dry weather and high maximum temperature prevailed during last few weeks and is likely to prevail, provide irrigation to cluster bean, green gram, groundnut and other vegetables at regular intervals in North Gujarat Zone, North West Zone, Bhal and Coastal Zone of Gujarat, South Gujarat Heavy Rainfall Zone, North Saurashtra Zone and to sugarcane, mango and groundnut in South Saurashtra Zone and to groundnut and vegetables in Middle Gujarat Zone to meet the water requirement of the crops.
  - As high temperature is predicted and groundnut is at pegging stage in South Gujarat Heavy Rainfall Zone; apply irrigation in groundnut. Carry out mulching in sugarcane with crop residues to minimize the rate of evaporation.
  - High maximum temperature favours dropping of flowers and may cause poor fruit setting in Sapota in Middle Gujarat Zone. Use mulching to maintain the temperature. Spray 20 ppm Amnethelin Acetic acid and 2 % Urea solution for effective control of fruit dropping in mango orchard in South Gujarat Zone.
  - Due to rise in temperature incidence of white fly, aphids may increase which may cause sigatoka in banana, ring spot in papaya, leaf curl in summer chilli and tomato and rust in okra in Pune division; spray Imidachloprid @ 4 ml or Methyl Dimeton @ 10 ml in 10 litres water.
  - In view of high day temperature, there may be attack of thrips and mites in summer chilli in Western Maharashtra Scarcity zone; spray Methyl Dimeton 25 EC @ 15 ml or Dimethoate 30 EC @ 16 ml plus Sulphur 80 % @ 20 g in 10 litres water.
  - High temperature and cloudy weather is favourable for outbreak of sucking pests in vegetables in Middle Gujarat Zone; spray Phosphomedon 40 SL 10 ml /10 liter of water to control it.
  - Stages of the crops are mentioned in Annexure I.
  - Varieties of the crops are mentioned in Annexure II.
- **Animal Husbandry**
    - Considering high temperature in Konkan and Madhya Maharashtra, it is advised to make arrangement of curtains for poultry house and maintain cool temperature in the poultry shed by sprinkling water on the curtains.
    - As high maximum temperature is persisting and also predicted in North Gujarat Zone, North West Zone of Gujarat, South Gujarat Heavy Rainfall Zone and Bhal and Coastal Zone of Gujarat, keep animals under shade during noon hours and avoid feeding between 11 to 15 hrs. Arrange for fresh and cold drinking water for animals. Make arrangement of curtains for poultry house.
    - To protect cattle from summer heat in North Saurashtra Zone, shower the animals with cold water two to three times a day and increase the green fodder quantity for feeding.

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

- **Realised Rainfall:** Significant rainfall occurred over Kollam district in Kerala during last week and mainly dry weather prevailed over remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over South Interior Karnataka, Tamil Nadu and Kerala. Mainly dry weather would prevail over rest parts of the country.
- **Advisories:**
  - Significant rainfall occurred over Kollam district in Kerala during last week and mainly dry weather prevailed over remaining parts of the region and no significant rainfall is likely to occur, farmers are advised to apply irrigation to the standing crops. Postpone irrigation to the crops in Kollam district in Kerala, as there was significant rainfall.

- Farmers in the Southern Zone of Kerala are advised to harvest the matured punja rice. Farmers are further advised to apply irrigation in coconut (at an interval of 5- 8days), banana (twice a week) and in vegetables.
- Present weather condition (dry and high temperature condition) congenial for incidence of brown plant hopper (BPH) in rice in the Problem Area Zone of Kerala. Hence, farmers are advised to adopt field surveillance and take appropriate management practices.
- Due to increase in humidity incidence of Pollu beetle and leaf thrips in newly planted pepper may aggravate in High Altitude Zone of Kerala. Farmers are advised undertake appropriate plant protection measures to protect the plants.
- Prevailing fairly high humidity and temperature is congenial for the attack of mealy bugs in coconut in the Southern Zone of Kerala. Mealy bug attack can be seen on the inflorescence (spadix) and tender leaf bases. Farmers are advised to spray Quinalphos (Ekalux) @ 2ml/litre.
- Considering the prevailing dry weather, farmers in the Western Zone of Tamil Nadu are advised to undertake harvesting of rice. Provide irrigation to maize crop in cob development since the maximum temperature and minimum temperature are found to be high.
- Due to increase in night temperature and high humidity, there is a chance of occurrence of neck blast in rice in North Coastal Zone of Andhra Pradesh. Farmers are advised to spray Tricyclozole @ 0.6 g per litre of water.
- High day temperatures are favourable for incidence of fruit borer in Mango in Scarce Rainfall Zone of Andhra Pradesh. Farmers are advised to Chlorpyriphos @2.5 ml or Dichlorovos @1.5 ml or Neem oil @ 3.0 ml + Chlorpyriphos @ 2.5 ml or Fenpropathrin 1.0ml per one litre of water.
- Weather is congenial for incidence of Brown plant hopper in rice in High Altitude Tribal Zone of Andhra Pradesh. Farmers are advised to spray Acephate @ 1.5 g or Monocrotophos @ 2.2 ml per litre of water.
- Since dry weather is likely to prevail during the next five days, farmers in the North Dry Zone of Karnataka are advised to continue raisin making.
- Other advisories are mentioned in Annexure – I.
- Stages of major crops are mentioned in Annexure II.
- Varieties of the crops are mentioned in Annexure III.
- Animal Husbandry:
  - Farmers in the Scarce Rainfall Zone of Andhra Pradesh are advised to deworm the animals with suitable anti-helmentic drug and be checked and treated for ecto-parasites.
  - Prevailing weather conditions are congenial for the occurrence of Foot and mouth disease in cattle, Sheep pox in sheep and Ranikhet disease in poultry in the South Telangana Zone of Andhra Pradesh. Farmers are advised to vaccinate the animals.
  - High day temperature has resulted in heat stroke in birds in the North Western Zone of Tamil Nadu. Farmers are advised to use foggers for extended hours where there is good water source and add good amount of electrolytes and vitamin C in feed and water in addition to refrain from feeding during day time (between 11.00 am to 5 pm ) to avoid heat stroke in the layers.
  - Due to prevailing high day temperature, farmers of North East Transition Zone and Southern Dry Zone of Karnataka are advised to maintain optimum temperature by applying 4-6 inch thick hay thatch as a roofing material and spray water on the floor and roof of shelter periodically during peak hot hours to lower the temperature.
  - As weather conditions are favorable for Black Quarter (BQ), Haemorrhagic Septicemia and foot and mouth disease in animals, farmers of the North East Dry Zone of Karnataka are advised to vaccinate all the animals.

## Annexure I

### Stages of Major Crops

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

- Wheat (dough stage), pea (harvesting), pome and stone fruits (planting), apple (green tip to pink bud), onion (vegetative), cabbage, cauliflower (maturity), capsicum, tomato, brinjal (sowing/transplanting), cucurbits, okra, fodder crops (chari, bajra) (sowing) in Himachal Pradesh.
- Wheat (maturity), *rabi* onion (bulb formation), cluster bean, amaranthus, summer radish, summer green gram, vegetable lobia, lady's finger, bottle gourd, cucumber, ridge gourd (sowing), chilli, tomato, brinjal and cucurbits (seedling / transplanting), in Delhi.
- *Rabi* cereal (wheat - tillering), pulses (pea and lentil) (flowering ), brown sarson (flowering), fodder oat (harvesting), vegetables (sowing / planting / transplanting), rice, maize (field preparation / sowing), fruit crops (nursery bed preparation) in Valley Temperate zone (Srinagar), sunflower (early vegetative / vegetative), garlic, cucurbits, okra (seedling / early vegetative), potato (planting), radish, spinach (sowing), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), mustard (maturity / harvesting), wheat (late sown – ear head emergence, normal / early sown – dough), barley (jointing / flag leaf initiation), pulses (pea, lentil, gram) (pod development), oat, berseem (vegetative), summer moong & mash (sowing), fruit crops (nursery bed preparation) in Jammu & Kashmir.
- Wheat (grain maturity/harvesting), arhar (pod maturity/harvesting), ginger (vegetative), autumn sugarcane (vegetative), barley (grain maturity/harvesting), oat (tillering / ear head emergence), moong, urd, okra (sowing), sugarcane, cucurbits (sowing/planting/seedling) in Uttarakhand.
- Wheat (grain maturity/harvesting), linseed, jai (pod maturity), onion, garlic (vegetative/maturity), maize (grain maturity/harvesting), moong, urad (sowing/ germination), summer vegetables, spring sugarcane (sowing / planting) in Uttar Pradesh.
- Wheat (maturity), sugarcane (harvesting), new sugarcane (planting), maize (sowing / germination), summer pulses (field preparation for sowing), cucurbits (sowing), berseem (vegetative / cutting), fruit (planting) in Punjab.
- Wheat (maturity), sugarcane (harvesting), new sugarcane (planting), barseem (vegetative / cutting), gram (harvesting) in Haryana.
- Zaid crops (moong, groundnut, fodder crops) (field preparation / sowing), sugarcane (maturity / harvesting), new sugarcane (field preparation), maize (maturity), capsicum, guar, vegetables (tinda, water melon, pumpkin, cucumber, coriander, bhindi, ridge gourd) (sowing / germination / seedling), potato (tuber maturity / harvesting), 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 and summer vegetables (sowing/ transplanting), wheat (maturity/harvesting), cotton (land preparation) in Madhya Pradesh.
- Sugarcane (planting/vegetative), pigeon pea, groundnut (pod filling/maturity), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (transplanting/ early vegetative), vegetables (transplanting / vegetative), millet (flowering), wheat (maturity), rice (transplanting), niger, kulthi (vegetative) in Chhattisgarh.

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

- Gram, lentil (harvesting), sunflower (head formation), maize (cob formation), sugarcane (planting), mustard (maturity / harvesting), wheat (harvesting), pigeon pea (flowering / pod formation), summer vegetables (sowing / early vegetative), moong, urad (sowing), yam (sowing) in Bihar.
- Wheat (milk/dough), potato (tuber maturity / harvesting), pigeon pea (pod formation), onion (transplanting), vegetables (vegetative / flowering / fruiting / harvesting), gram, linseed, lentil, pea (pod formation / pod filling / maturity), rapeseed, mustard (harvesting) in Jharkhand.
- Jute (sowing), Summer rice (late tillering/panicle initiation), sugarcane (tillering), banana (vegetative), mustard, *rabi* groundnut (maturity/harvesting), cowpea (pod formation / maturity), fruit crops (planting / seedling), wheat (maturity/harvest), tomato (flowering / fruiting), black gram, green gram (maturity/harvesting), summer vegetables (sowing), sunflower (seed formation/maturity) in Odisha.
- *Boro* rice (panicle initiation/heading stage), wheat (milk / dough / maturity), sesame (sowing/vegetative), maize (flowering to cob formation), summer vegetables (transplanting), potato (tuber maturity / harvesting), mango (flowering /fruiting), tomato (flowering / fruiting), mustard

(capsule maturity / harvesting), pointed gourd, cucumber (flowering), sunflower (flowering), groundnut (flowering to pegging stage), chilli (flowering / fruiting) in West Bengal.

- Ginger (sprouting / early vegetative), large cardamom (primary flowering / secondary flowering), vegetables (vegetative), rice (grain formation / maturity) in Sikkim.

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

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

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

- New *adsali* (tillering / elongation), new pre seasonal (tillering), new *suru* sugarcane (early tillering), wheat (grain maturity / harvesting), summer rice (grain formation / maturity in early variety and flowering / grain formation in medium late and late maturing varieties in South Konkan and panicle initiation / flowering in Western Ghat region and East Vidarbha), summer groundnut (pod development in South Konkan and flowering / 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), summer rice (panicle initiation / flowering / grain formation), summer vegetables (vegetative / flowering / fruiting), wheat (maturity / harvesting), sugarcane (vegetative / elongation / grand growth), jowar (grain maturity / harvesting) in Gujarat.

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

- Rabi groundnut (maturity/harvest), rabi maize (cob maturity), sunflower (flowering / seed formation), rabi rice (flowering/grain formation), summer cotton (early vegetative), Green gram (vegetative), cowpea (pod maturity), rice fallow pulses (pod development/pod maturity), sesame (flowering /capsule formation), sugarcane (tillering), mango (fruit initiation/fruit development) and vegetables (all stages) in Andhra Pradesh.
- Samba rice (maturity/harvesting), rice fallow pulses (maturity/harvesting), rainfed groundnut (harvest), maize (maturity/harvesting), pearl millet (nursery preparation/sowing), red gram (maturity/harvest), summer sorghum, maize (cob development), cotton (squaring), black gram (flowering), rice (grain filling/maturity),vegetables (fruiting) in Tamil Nadu.
- Coconut harvesting, punja rice (harvesting), summer rice (tillering), vegetables (planting/flowering/harvesting), banana (planting/harvesting), pepper and cardamom (new planting) and sugar-cane (tillering) in Kerala.
- Cowpea, black gram and green gram (harvesting), pigeon pea (harvesting), chilli (fruiting), chick pea (pod development /harvesting), grapes (fruit development), jowar (grain formation/harvest), ragi (ear head emergence), maize (cob development/harvesting), groundnut (pod formation/harvesting), mango (fruit development), summer green gram/ black gram (branching), rice (tillering/panicle initiation), sugarcane (tillering) in Karnataka.