

# National Agromet Advisory Bulletin

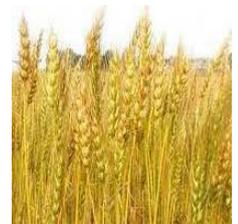
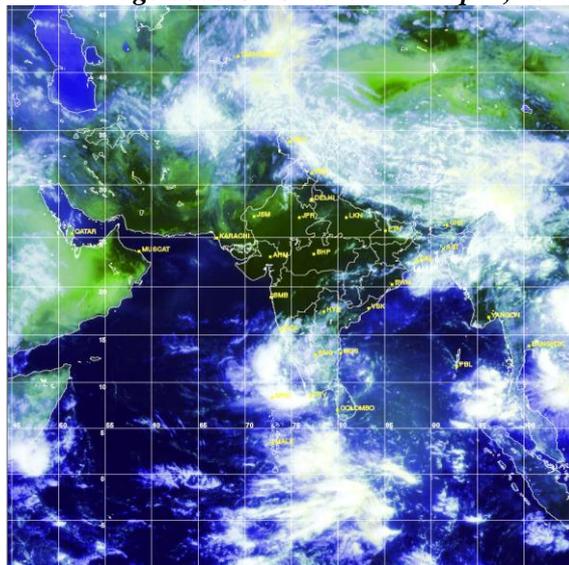
Thursday, 26<sup>th</sup> April, 2012  
(For the period 26<sup>th</sup> to 30<sup>th</sup> April, 2012)



## IMD's long range forecasts for the 2012 south-west monsoon season (June to September)

- Southwest monsoon seasonal rainfall for the country as a whole is most likely to be Normal (96-104% of Long Period Average (LPA)) with the probability of 47%. The probability (24%) of season rainfall to be below normal (90-96% of LPA) is also higher than its climatological value. However, the probability of season rainfall to be deficient (below 90% of LPA) or excess (above 110% of LPA) is relatively low (less than 10%).
- Quantitatively, monsoon season rainfall is likely to be 99% of the LPA with a model error of  $\pm 5\%$ . The LPA of the season rainfall over the country as a whole for the period 1951-2000 is 89 cm.

Satellite image 0600 UTC dated 27<sup>th</sup> April, 2012



*Issued by*

*National Agrometeorological Advisory Service Centre  
Agricultural Meteorology Division*

*India Meteorological Department, Shivajinagar, Pune.*

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

## Executive summary

Maximum temperatures were 4-6<sup>0</sup>C above normal over most parts of West Rajasthan and parts of Gujarat region, 2-4<sup>0</sup> C above normal over parts of East Rajasthan, Saurashtra & Kutch, Madhya Maharashtra, Punjab, Haryana, West Madhya Pradesh and West Uttar Pradesh and near normal over rest parts of the country. As there was no significant rainfall during last week and no rainfall is likely in the above mentioned States, farmers are advised to apply light irrigation to the crops to protect from high temperature. Thundersqualls would occur at one or two places over Assam & Meghalaya, Jharkhand, Gangetic West Bengal, Orissa and Chhattisgarh during next 48 hours. Farmers in these States are advised to undertake harvesting of matured wheat immediately and also arrange for mechanical support for vegetables and young plants in orchards.

There are reports of crop damage due to unseasonal rainfall at isolated places in Sangli district in Maharashtra. Standing mango crops and harvested wheat, gram, soybean and black gram in storage were damaged. Widespread damage to rubber, plantation trees, tapioca, coconut, vegetables and various other agricultural crops in Southern Zone and plantation crops, vegetables, cassava, rubber trees, areca nut and coconut palms in High Altitude Zone was reported due to heavy wind and rain in Kerala during last week. Damage to rice and banana crops due to heavy wind and rain in Dakshin Kannada, Udupi, Kodagu and Chikmagalur districts in South Interior Karnataka and tomato, chilli, onion, banana, mango, coconut, arecanut, pepper, cardamom and betel vine crops in Haveri, Belgaum, Bagalkot, Dharwad and Gadag districts in North Interior Karnataka were reported. Hailstorm with very high wind speed at Legeri Mouza of Tingkhang district, Somosti, Tengakhat and Chabua circle of Dibrugarh district and Panitula circle of Tinsukia district in Assam resulting in damages of areca nut, mango, jackfruits, banana, betel vine and various crops were reported. Farmers in these regions are advised to arrange for mechanical support for vegetables and young plants in orchards.

Significant rainfall occurred over most of the districts in Arunachal Pradesh, Assam and few districts over Himachal Pradesh, Jammu & Kashmir, Uttarakhand, Orissa, West Rajasthan, Sikkim, Karnataka, Tamil Nadu and Kerala during last week. Realised rainfall in these districts is beneficial for the standing summer crops. Farmers in these districts are advised to postpone irrigation. As there was no significant rain over most of the remaining parts of the country and no significant rain is likely to occur except over Tamil Nadu and Kerala, farmers are advised to provide irrigation to the standing summer crops and undertake harvesting of matured *rabi* crops. Postpone irrigation to standing crops in Tamil Nadu and Kerala as rain / thundershowers is likely to occur at many places during next three days.

Due to favourable weather conditions, incidences of fruit and shoot borer in brinjal, early stem borer in sugarcane and cut worm in summer pulses in Orissa, jassids and pod borer in ladies finger in West Bengal, red mites in cucurbitaceous vegetables in Jharkhand, Tomato Spotted Wilt Virus (TSWV) disease in tomato, aphids in cabbage and cauliflower, thrips, mites and *Chaenophora* blight in chillies, downy mildew in gourds, thrips, mites and canker in sweet orange in Andhra Pradesh and thrips, mites, hoppers and white flies in cotton in Tamil Nadu are noticed below economic threshold level (ETL). Farmers are advised to undertake appropriate plant protection measures to control the pests and diseases, if their population goes beyond ETL.

Due to favourable weather, farmers are advised to undertake sowing of summer crops with assured irrigation. Sowing of the crops in different States of the country is mentioned below:

**Assam:** sowing of cowpea, planting of turmeric and ginger and transplanting of early *ahu* rice.

**Manipur:** sowing of cow pea, ginger, turmeric, French bean and bhindi, transplanting of chilli.

**Mizoram:** sowing of maize and planting of turmeric and ginger.

**West Bengal:** sowing of jute and marigold.

**Punjab:** sowing of cotton.

**Delhi:** sowing of summer moong.

**Rajasthan:** sowing of cotton.

**Uttarakhand:** sowing of chaitee dhan.

**Himachal Pradesh:** sowing of sunflower, bhindi and French bean.

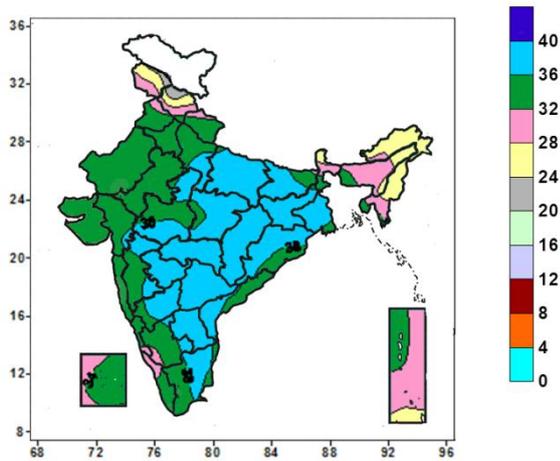
**Orissa:** sowing of jute and okra.

**Maharashtra:** sowing of cotton.

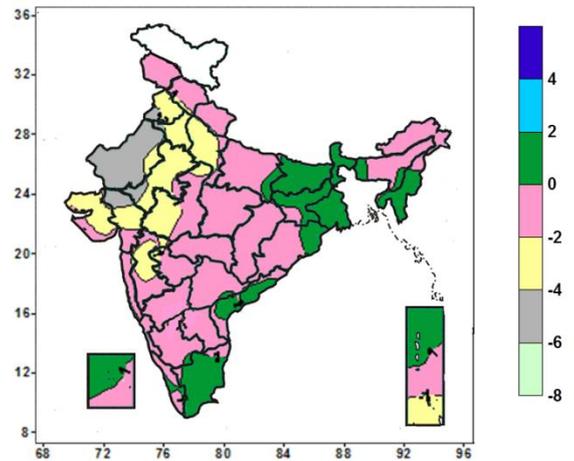
**Tamil Nadu:** sowing of black gram and planting of ginger.

## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 25.04.2012

**Actual Mean Maximum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 25.04.2012**



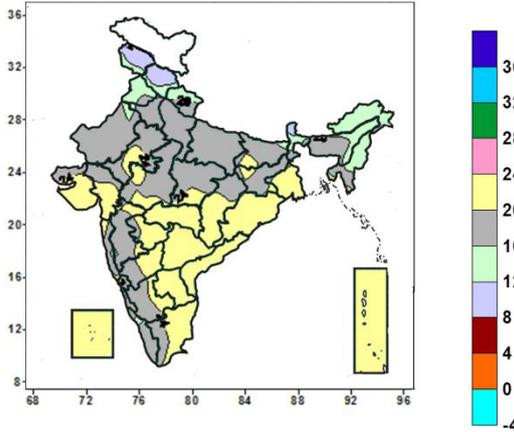
**Maximum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 25.04.2012**



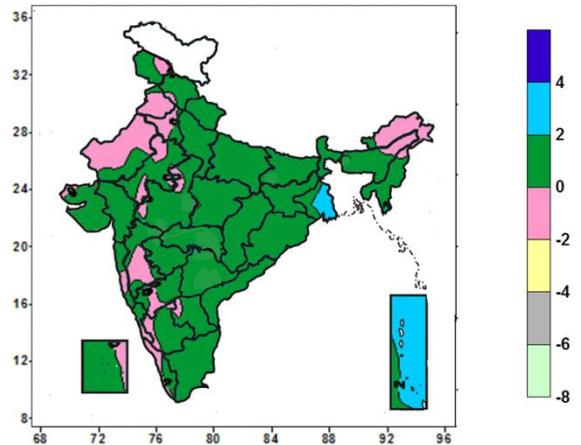
Actual Mean Maximum temperature ranged between  $20$  to  $24^{\circ}\text{C}$  over some parts of Jammu & Kashmir, Himachal Pradesh,  $24$  to  $28^{\circ}\text{C}$  over most parts of Sikkim, Arunachal Pradesh, Nagaland, Manipur,  $28$  to  $32$  over many parts of Sub-Himalayan West Bengal, Assam & Meghalaya, Mizoram, Andaman & Nicobar Islands and between  $32$  to  $40^{\circ}\text{C}$  over remaining parts of the country

Actual Mean Maximum temperature anomaly ranged between  $0$  to  $2^{\circ}\text{C}$  and above over most parts Bihar, Jharkhand, West Bengal, Sikkim, Manipur, Mizoram Tripura, North coastal Andhra Pradesh, Tamil Nadu, Lakshdweep, Andaman & Nicobar Islands and below  $0^{\circ}\text{C}$  upto  $-6^{\circ}\text{C}$  over rest of the country.

**Actual Mean Minimum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 25.04.2012**



**Minimum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 25.04.2012**



Actual Mean Minimum Temperature ranged between  $8$  to  $12^{\circ}\text{C}$  over many parts Jammu & Kashmir, Himachal Pradesh,  $12$  to  $16^{\circ}\text{C}$  over most parts of Punjab, Arunachal Pradesh, Nagaland, Manipur, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West Rajasthan, Sub-Himalayan West Bengal, Assam & Meghalaya and between  $16$  to  $24^{\circ}\text{C}$  over remaining parts of the country.

Minimum Temperature anomaly ranged between  $2$  and above over most parts of Gangetic West Bengal, Andaman & Nicobar Islands,  $-2$  to  $0^{\circ}\text{C}$  over most parts of parts of Punjab, Haryana, West Rajasthan, Arunachal Pradesh, some parts of Jammu & Kashmir, Himachal Pradesh, East Rajasthan, Assam, Nagaland, West Madhya Pradesh, Konkan, Madhya Maharashtra, Karnataka, Rayalaseema, Kerala, Lakshdweep Islands,  $0$  to  $2^{\circ}\text{C}$  over remaining parts of the country.

**Distribution of rainfall of the country during week ending on 25.04.2012**

State/Districts	Actual (mm)	% Dep.
<b>Arunachal Pradesh</b>		
Anjaw	**	**
Changlang	**	**
East Kameng	6.9	-82
East Siang	57.9	10
Kurung Kumey	**	**
Lohit	145.9	98
Lower Dibang Valley	**	**
Lower Subansiri	32.0	-56
Papumpara	76.8	-3
Tawang	111.0	190
Tirap	117.6	73
Upper Dibang Valley	114.0	80
Upper Siang	71.6	-14
Upper Subansiri	23.0	0
West Kameng	28.7	-25
West Siang	5.0	-89
<b>Assam</b>		
Baksa	43.8	-3
Barpeta	64.1	42
Bongaigaon	77.7	41
Cachar	161.0	168
Chirang	75.8	38
Darrang	**	**
Dhemaji	14.0	-68
Dhubri	12.1	-73
Dibrugarh	132.0	116
East Garo Hills	1.0	-99
East Khasi Hills	133.6	93
Goalpara	25.7	-52
Golghat	42.0	32
Hailakandi	103.5	82
Jaintia Hills	1.0	-98
Jorhat	88.6	106
Kamrup(Metro)	19.0	-51
Kamrup	65.3	69
Karbi Analog	4.8	-84
Karimganj	109.8	57
Kokrajhar	54.1	-20
Lakhimpur	77.8	75
Morigaon	26.0	-14
N.C.Hills	23.3	-57
Nowgong	16.4	-51
Nalbari	53.3	54
Ribhoi	6.3	-82
Sonitpur	42.8	25
Sibsagar	117.2	262
South Garo Hills	1.0	-98
Tinsukia	157.0	196
Udalgiri	61.0	69
West Garo Hills	3.8	-92
West Khasi Hills	32.0	-10
<b>Himachal Pradesh</b>		
Bilaspur	1.9	-49
Chamba	18.2	16
Hamirpur	8.8	49
Kangra	7.8	30
Kinnaur	14.5	34
Kullu	34.7	281

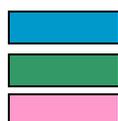
Lahaul and Spiti	7.3	-65
Mandi	29.3	337
Shimla	17.4	98
Sirmaur	0.0	-100
Solan	6.5	19
Una	0.4	-86
<b>Jammu &amp; Kashmir</b>		
Anantnag	30.0	37
Badgam	13.9	-19
Bandipore	**	**
Baramula	48.4	120
Doda	28.2	37
Ganderwal	70.8	289
Jammu	1.3	-63
Kargil	0.0	-100
Kathua	10.1	304
Kistwar	**	**
Kulgam	35.8	64
Kupwara	39.7	36
Ladakh(Leh)	0.0	-100
Poonch	55.0	293
Pulwama	17.3	-10
Rajouri	16.4	264
Ramban	42.0	104
Reasi	6.5	-27
Samba	1.3	-64
Shopian	0.0	-100
Srinagar	14.3	-22
Udhampur	7.7	-13
<b>Chattisgarh</b>		
Bastar	1.4	-85
Bijapur	0.0	-100
Bilaspur	2.0	-46
Dantewara	1.0	-81
Dhamtari	13.4	605
Durg	1.2	-20
Janjgir	2.3	50
Jashpurnagar	14.0	133
Kanker	0.0	-100
Korba	2.0	-13
Koriya	0.0	-100
Kawardha	0.0	-100
Mahasumund	2.0	67
Narayanpur	24.0	253
Raigarh	0.0	-100
Raipur	6.1	205
Rajandgaon	4.8	243
Surguja	1.7	13
<b>Orissa</b>		
Angul	0.0	-100
Balasore	20.2	27
Bargarh	0.0	-100
Bhadrak	12.3	-11
Bolangir	0.7	-87
Boudh	0.0	-100
Cuttack	3.6	-61
Deogarh	0.0	-100
Dhenkanal	0.0	-100
Gajapati	23.6	-23
Ganjam	3.4	-68
Jagatsingpur	0.0	-100

Jajpur	20.3	48
Jharsuguda	24.3	311
Kalahandi	2.3	-65
Kandhamal	0.8	-89
Kendrapara	0.0	-100
Keonjhar	1.3	-88
Khurda	0.3	-93
Koraput	11.6	-25
Malkangiri	0.0	-100
Mayurbhanj	4.2	-73
Nawapara	8.0	43
Nawarangpur	25.5	2
Nayagarh	30.3	183
Puri	0.0	-100
Rayagada	2.4	-83
Sambalpur	3.8	6
Sonepur	0.0	-100
Sundargarh	3.6	6
<b>West Bengal</b>		
<b>GWB</b>		
Bankura	1.2	-90
Birbhum	0.0	-100
Burdwan	0.0	-100
East Midnapore	2.0	-81
Hooghly	4.2	-75
Howrah	5.8	-59
Kolkata	28.5	82
Murshidabad	0.0	-100
Nadia	0.0	-100
24 Pargana (N)	7.8	-56
Purulia	6.2	-43
24 Pargana (S)	0.6	-94
West Midnapore	18.6	-6
<b>SHWB</b>		
Cooch Behar	0.8	-98
Darjeeling	8.5	-77
East Sikkim	94.2	107
Jalpaiguri	10.9	-68
Malda	0.8	-92
North Dinajpur	0.0	-100
North Sikkim	110.4	94
South Dinajpur	4.0	-74
South Sikkim	27.6	-39
West Sikkim	46.0	-19
<b>Karnataka</b>		
<b>Coastal Karnataka</b>		
Dakshin Kannada	60.9	464
Udupi	11.9	36
Uttar Kannada	22.8	339
<b>North Interior Karnataka</b>		
Bagalkote	11.4	87
Belgaum	12.2	87
Bidar	16.9	219
Bijapur	4.9	0
Dharwad	19.3	39
Gadag	14.7	68
Gulbarga	15.9	218
Haveri	39.5	192
Koppal	17.8	264
Raichur	11.3	91

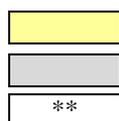
Yadgir	14.0	129
<b>South Interior Karnataka</b>		
Bangalore Rural	4.5	-64
Bangalore Urban	3.1	-76
Bellary	33.4	284
Chamarajnaragar	25.9	23
Chichballapur	3.2	-60
Chickmagalur	42.2	151
Chitradurga	41.0	486
Davangere	30.4	192
Hassan	29.8	59
Kodagu	62.2	139
Kolar	0.0	-100
Mandya	17.3	25
Mysore	44.8	126
Ramnagara	10.9	-20
Shimoga	25.2	129
Tumkur	36.4	222
<b>Kerala</b>		
Alappuzha	84.5	154
Kannur	16.8	19
Ernakulam	97.9	260
Idukki	73.3	77

Kasaragod	32.4	107
Kollam	116.2	170
Kottayam	81.7	218
Kozhikode	75.4	181
Malappuram	58.0	175
Palakkad	63.4	126
Pathanamthitta	107.1	111
Thiruvananthapuram	46.8	67
Thrissur	54.8	146
Wyanad	37.0	50
<b>Tamil Nadu</b>		
Ariyalur	0.0	-100
Chennai	0.0	-100
Coimbatore	36.3	102
Cuddalore	11.5	70
Dharmapuri	6.5	-51
Dindigul	39.2	109
Erode	29.4	104
Kanchipuram	0.0	-100
Kanyakumari	41.4	72
Karikal	10.0	163
Karur	34.2	178
Krishnagiri	7.5	-45

Madurai	17.0	-1
Nagapattinam	3.9	-60
Namakkal	21.2	38
Nilgiris	33.7	38
Perambalur	31.0	150
Puducherry	3.2	10
Pudukottai	9.1	-18
Ramanathapuram	15.8	-2
Salem	14.5	-1
Sivaganga	12.0	-13
Thanjavur	5.2	-53
Theni	33.5	62
Tirunelveli	30.9	100
Tirupur	24.8	35
Tiruvallur	0.0	-100
Tiruvannamalai	2.9	-60
Tiruvarur	4.0	-69
Toothukudi	18.6	49
Trichy	20.3	85
Vellore	0.7	-91
Villupuram	0.1	-99
Virudhunagar	36.6	101

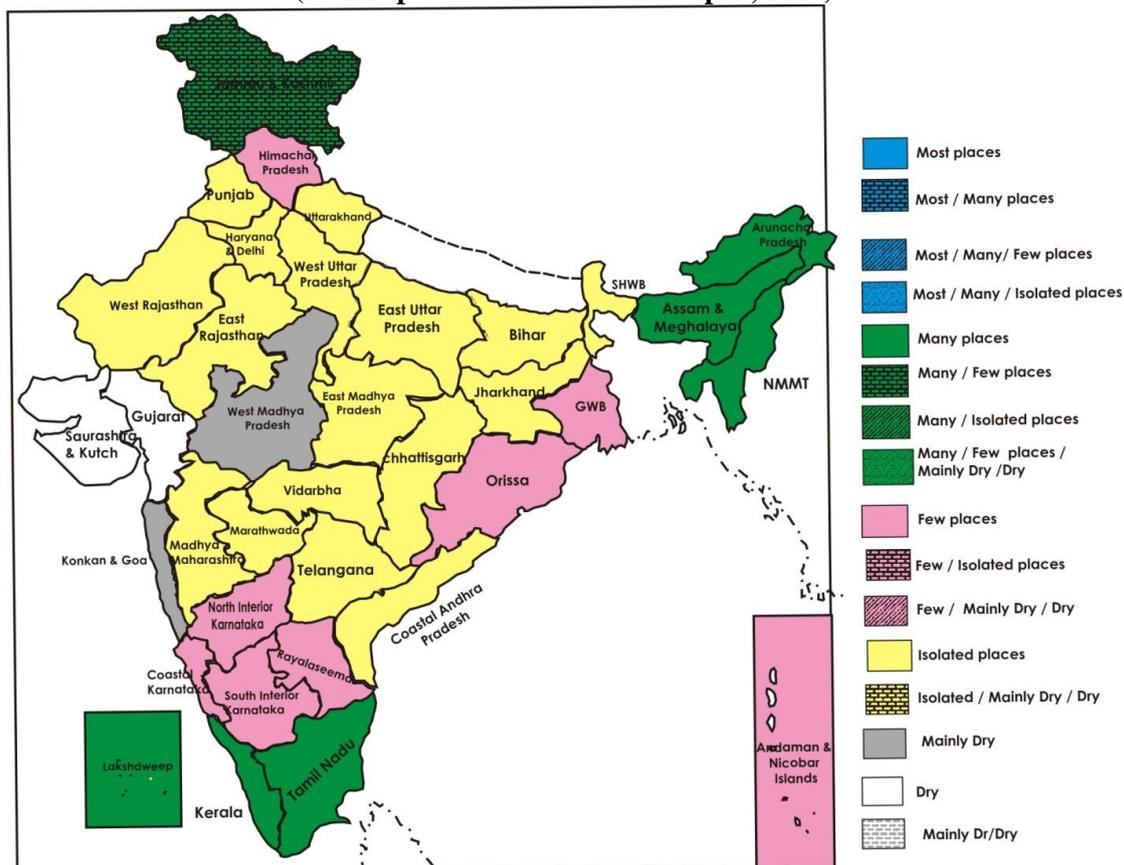


(20% or more) excess rainfall  
(-19 to +19%) normal rainfall  
(-20 to -59%) deficient rainfall



(-60 to -99 %) scanty rainfall  
(-100%) no rainfall  
\*\* Data not available

## Weather Forecast (Valid upto 0830 hours of 29<sup>th</sup> April, 2012)



### Major Feature of Weather Forecast up to 0830 hours IST of 29<sup>th</sup> April, 2012

- Rain/thundershowers would occur at many places over Jammu & Kashmir, at a few places over Himachal Pradesh and at one or two places over Uttarakhand and east Uttar Pradesh.
- Duststorms/thunderstorms would occur at one or two places over Punjab, Haryana, Delhi, Rajasthan and west Uttar Pradesh.
- Rain/thundershowers would occur at many places over north-eastern states, at a few places over Gangetic West Bengal and Orissa, at one or two places over Bihar, Jharkhand and Sub-Himalayan West Bengal & Sikkim.
- Rain/thundershowers would occur at one or two places over Chhattisgarh, east Madhya Pradesh, Marathwada, Madhya Maharashtra and Vidarbha.
- Rain/thundershowers would occur at many places over Kerala, Tamilnadu and Lakshadweep, at a few places over Karnataka, Andaman & Nicobar Islands and Rayalaseema and at one or two places over coastal Andhra Pradesh, Telengana.
- Weather would be mainly dry over remaining parts of the country.

### Weather Warning

- Thunder squalls would occur at one or two places over Assam & Meghalaya, Jharkhand, Gangetic West Bengal, Orissa and Chhattisgarh during next 48 hours.

### Weather Outlook up to 0830 hours IST of 1<sup>st</sup> May, 2012

- Rain/thundershowers would occur at many places over north eastern states at a few places over West Bengal & Sikkim and at one or two places over western Himalayan region, Chhattisgarh, Jharkhand and Orissa.
- Rain/thundershowers would occur at a few places over Kerala, Tamilnadu, south Karnataka and south Andhra Pradesh and at one or two places over rest south peninsular India.

## Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of Arunachal Pradesh and many districts of Assam.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over northeastern States.
- **Warning:** Thunder squalls would occur at one or two places over Assam & Meghalaya during next 48 hours.
- **Advisories:**
  - Hailstorm with very high wind speed at Legeri Mouza of Tingkhang district, Somosti, Tengakhat and Chabua circle of Dibrugarh district, Panitula circle of Tinsukia district in Assam which resulted severe damages of arecanut plants, mango, jackfruits, banana, betel vine and various crops. Tea gardens are mainly damaged in Tengakhat, Bhekulajan, Lengrai, Borhula, Gandhia, Pakhorijonia, Aamguri, Rongsongi, Maut. Farmers in these regions are advised to arrange for mechanical support for vegetables and young plants in orchards
  - As thunder squalls would occur at one or two places over Assam & Meghalaya during next 48 hours, farmers in these States are advised to undertake harvesting of matured crops immediately and also arrange for mechanical support for vegetables and young plants in orchards.
  - As significant rainfall occurred in most of the districts of the States of the region and rain / thundershowers would occur at many places over the region during next three days, farmers are advised to postpone irrigation to the standing crops in the region.
  - Farmers in the Hill Zone of Assam are advised to prepare land for transplanting of *ahu* rice and continue sowing of okra, ginger and cucurbitaceous crops. Continue land preparation and sowing of black gram and green gram.
  - Farmers in Central Bramhaputra Valley Zone of Assam are advised to continue land preparation and sowing of *Capsularis* jute, summer vegetables, summer pulses and planting of spring sugarcane. Sowing of regular direct seeded *ahu* rice should be completed within this month. Undertake land preparation and planting of ginger and turmeric.
  - Farmers of Lower Bramhaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice and cow pea and planting of banana. Undertake land preparation and planting of ginger and turmeric.
  - Farmers in the Upper Bramhaputra Valley Zone of Assam are advised to continue sowing of summer green gram, black gram, jute, summer vegetables and planting of banana, sugarcane, ginger and turmeric. Farmers are also advised to complete sowing of direct seeded *ahu* rice within this month. Farmers of Barak Valley Zone of Assam are advised to complete sowing of black gram, green gram, ladies finger, ridge gourd, sponge gourd and jute.
  - Farmers in North Bank Plain Zone of Assam are advised to complete sowing of direct seeded *ahu* rice. Farmers are advised to undertake planting of banana, sugarcane, ginger and turmeric and sowing of summer vegetables like pumpkin and cow pea.
  - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to continue sowing of *Jhum* rice. Farmers are also advised to undertake sowing of maize and summer vegetables.
  - Farmers in Mild Tropical Plain Zone of Tripura are advised to continue land preparation and sowing of *aus* rice, maize, sesame, arhar, summer vegetables like ridge gourd, cucumber, ash gourd etc.
  - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue sowing of maize, jute and vegetables like ladies finger, pumpkin, French bean, bottle gourd, ash gourd etc. Prepare nursery for brinjal. Also undertake sowing of cauliflower and cabbage.
  - Farmers of Sub tropical Plain Zone of Manipur are advised to continue land preparation and sowing of cow pea, ginger, turmeric, French bean and bhindi. Farmers are also advised to undertake transplanting of chilli and harvesting of onion.
  - In Mild Tropical Hill Zone of Mizoram, farmers are advised to continue land preparation and sowing of ginger, turmeric, maize, urad and moong. Avoid water logging in low land area / terrace cultivation. With the help of received rainfall, farmers are requested to sow maize with treated seed to prevent any seed borne infestation.

- In Mild Tropical Hill Zone of Nagaland, farmers are advised to continue land preparation and planting of turmeric and ginger. Continue nursery preparation for rice. Provide mechanical support with bamboo to banana to prevent the breaking of heavy bunches.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- In Lower Brahmaputra Valley Zone and North Bank Plain Zone of Assam, weather is congenial for attack of blast in transplanted *ahu* rice. Farmers are advised to spray Bavistin @ 1 g per litre of water.
- Weather is congenial for infestation of leaf miner in khasi mandarin in Mild Tropical Hill Zone of Mizoram; farmers are advised to monitor khasi mandarin crop for taking appropriate plant protection measures.
- Due to congenial weather there is chance of occurrence of mosaic disease in moong and black gram. Farmers in Mild Tropical Plain Zone of Tripura are advised to control the disease by destroying the affected plant or application of Bioneem or Neembasal or Neemgold @ 1.5 ml per liter of water.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to vaccinate cattle, goat and pigs against the Foot and mouth disease.
  - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to deworm and vaccinate cattle for FMD. Deworm pig and apply preventive measures to goat against diarrhea and provide dry bedding.
  - The farmers in Nagaland are advised to vaccinate poultry against bird flu and pigs / piglets against swine flu.
  - The farmers in Manipur are advised to vaccinate poultry against Ranikhet, IBD / Gumboro disease. Vaccinate and deworm cattle and buffalo against Black Quarter (BQ) & Haemorrhagic Septicaemia and pig and goat against swine fever and Haemorrhagic Septicaemia (H.S.). Deworm cattle and buffalo against *Fasciola* spp. using Oxyclozide.
  - Farmers in Mild Tropical Plain Zone of Tripura are advised to deworm calves with consultation with veterinary practitioner. Farmers are also advised to vaccinate poultry against Ranikhet disease with R2B @ 0.50 ml through eye drop route. Vaccinate cattle against Anthrax, Black Quarter (BQ) & Haemorrhagic Septicaemia.
  - In Mild Tropical Hill Zone of Mizoram, farmers are advised to vaccinate poultry against FMD, Brucellosis, Haemorrhagic Septicaemia and Anthrax. To prevent tick infestation in cattle, spray the sheds / barn and animal regularly with Butox liquid @ 2 ml per liter of water.
- **Pishiculture**
  - The farmers in Nagaland are advised to raise ducks in fish ponds so that much of their manure will go into the water. This will help the fish to grow. At the same time, the ducks will feed on the unwanted plants that grow in the ponds and help to keep the ponds free of plants, weeds and snails. Chickens or pigs can be raised near the ponds. Build the chicken houses and pig pens on the banks or over the ponds, to sweep the manure in to the ponds. If farmers have built fish ponds side by side, they are advised to build a chicken house or pig pen on top of the bank between two ponds and sweep the manure into both ponds.

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

- **Realised Rainfall:** Significant rainfall occurred in Nayagarh district in Orissa and most of the districts of Sikkim. No significant rainfall occurred in remaining districts of the region.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over Gangetic West Bengal and Orissa and at one or two places over remaining parts of the region.
- **Warning:** Thundersqualls would occur at one or two places over Jharkhand, Gangetic West Bengal and Orissa during next 48 hours.
- **Advisories:**
  - As significant rainfall occurred in Nayagarh district in Orissa and most of the districts of Sikkim, farmers are advised to postpone irrigation to the standing crops in these districts. As there was no significant rain in remaining districts of the region and no significant rain is likely to occur, apply irrigation to the standing crops. Thundersqualls would occur at one or two places over Jharkhand, Gangetic West Bengal and Orissa during next 48 hours. Farmers in these States are advised to

undertake harvesting of matured wheat immediately and also arrange for mechanical support for vegetables and young plants in orchards.

- Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to undertake sowing of jute and okra.
  - Farmers in North Western Plateau Zone of Orissa are advised to undertake planting of ginger and provide irrigation to sunflower.
  - In South Bihar Alluvial Zone, undertake harvesting, threshing and drying of wheat, gram and oilseeds and keep it in safe place and irrigate summer maize and in North Bihar Alluvial Zone; continue sowing of elephant foot yam.
  - In South Bihar Alluvial Zone, farmers are advised to undertake sowing of fodder crops such as maize, lobia, sorghum and bajra.
  - In Central and North Eastern Plateau Zone of Jharkhand, undertake harvesting of matured crop of wheat and undertake harvesting and threshing and drying of gram.
  - Farmers in New Alluvial Zone of West Bengal are advised to continue sowing of jute. Farmers are also advised to irrigate sesame and vegetable crops.
  - Farmers in Terai Zone of West Bengal are advised to undertake sowing of jute. It is the optimum time for sowing of marigold for the summer and rainy season flowering. Farmers are advised to sow the seeds immediately.
  - Farmers in Hill Zone of West Bengal are advised to undertake land preparation and planting of gladiolus. Farmers are also advised to complete sowing of okra.
  - Farmers in Coastal Zone of West Bengal are advised to start harvesting of green gram by picking the pods.
  - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
  - In East and South Eastern Coastal plain zone of Orissa, fruit and shoot borer in brinjal has been found. To control it, install pheromone trap and spray 4 g Sevin WP or 2 ml Malathion in 1 litre water alternatively. Also thrips in chilli has been found. Spray 300 ml Ethion or 400 ml Carbosulphan or Chloropyriphos in 200 litres of water / acre. Early stem borer infestation has also been found in sugarcane. If it crosses the ETL level (5% dead heart) go for hoeing, weeding and apply 4 kg phorate or 12 kg Carbofuran or 10 kg Cartap followed by earthing up. In Ganjam district, infestation of thrips occurred in groundnut. Spray 2 ml Endosulphan in 1 litre water.
  - Due to prevailing weather condition in Laterite and Red soil zone of West Bengal, Gandhi bug may attack the *boro* crop during the grain filling stage; apply Carbaril or Fenvalarate to protect the crop.
  - Jassids and pod borer may infest ladies finger in Coastal Saline Zone of West Bengal. For controlling jassids, apply Thiamethoxon @ 1 g / 10 liters of water. For controlling pod borer, apply Propenophos @ 1.5 ml / liter of water.
  - Different cucurbitaceous vegetables are attacked by red mites in Western Plateau Zone of Jharkhand; spray neem based insecticides like Achook, Neemerin, Neemetin or Neemesidin @ 5 ml per litre of water.
  - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
    - In North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa, as the temperature is increasing, apply sufficient water and rice water to the animals before leaving them to grazing. Restrict to grazing before 11 am and after 4 pm due to chances of sunstroke.
    - There is possibility of attack of heat stroke in animals due to prevailing high day temperature in Western Plateau Zone of Jharkhand. Hence, animals should be protected against intense heat and do not allow animals to expose in sunlight during noon and give plenty of water for drinking.
- **Pisciculture**
    - In North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa, now as the temperature is rising which may reduce the oxygen content of water in the fish ponds, stir the pond water early in the morning from a corner for better oxygen supply. For proper growth of fish, feeds like rice bran and groundnut oil cake (each of 5 kg per day per acre area of pond) may be given.

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

- **Realised Rainfall:** Significant rainfall occurred in Kullu and Mandi districts of Himachal Pradesh, Anantnag, Baramulla, Doda, Ganderwal, Kulgam, Kupwara, Poonch, Ramban districts of Jammu & Kashmir. Mainly dry weather prevailed over the rest region.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Jammu & Kashmir during next 48 hours and decrease thereafter. Rain/thundershowers would occur at a few places in Himachal Pradesh. Isolated rainfall is likely over remaining parts of the region.
- **Advisory:**
  - As significant rainfall occurred in Chamba and Kullu districts of Himachal Pradesh, Nawashahar district in Punjab, Anantnag, Ganderwal, Kupwara districts of Jammu & Kashmir, Dehradun and Uttarakasi district in Uttarakhand, farmers are advised to postpone irrigation to the crops. As there was no significant rain over the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing *rabi* crops.
  - Farmers in Delhi are advised to undertake sowing of guar, maize, bajra, cluster bean as fodder crops during this week. Adequate moisture should be maintained for maximum germination of seeds. Also undertake sowing of green gram, cluster bean, senai, etc. for green manure during this week. Sowing of summer green gram is advised where harvesting of *rabi* crop is over. Sowing of radish of the varieties given below may be done for quick harvest. In present weather conditions, light irrigation is advised for onion crop. To prevent fruit drop in citrus crops spraying of 10 ppm solution of 2,4-D is advised. Fruit drop in mango may be prevented by spraying 15 ppm solution of NAA when sky is clear.
  - In Rajasthan, due to rise in temperature farmers are advised to irrigate summer vegetables, young fruit plants and other standing crops as per need. Undertake harvesting of matured wheat, barley, gram, mustard, cumin, fenugreek, coriander followed by deep ploughing in hot summer to destroy soil borne pests. Continue land preparation and sowing of cotton (Desi kapas, B.T. kapas and Narma kapas), jowar / bajra mixed with guar for green fodder. Increase in temperature may cause damage to horticultural crop. Give frequent and light irrigations. Cover the tree sapling with thatching material to protect against heat and ensure proper aeration.
  - Farmers in Punjab and Haryana are advised to undertake sowing of summer moong and mash. Field preparation for cotton and transplanting of chilli, brinjal and okra may be undertaken. Sow the nursery of *kharif* onion to produce bulbs. Undertake last cutting of berseem. Apply preventive measures to save fruit trees from drought, windstorm and sun injury. Whitewash the trunk, provide shelter to young trees and give frequent irrigation.
  - In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to complete transplanting of tomato, onion, brinjal, chilli crop and sowing of bhindi, beans and cucurbits without any further delay. Also undertake sowing of dhaincha crop in fallow field for green manuring in order to maintain the soil fertility. Suspend the cutting of berseem crop in order to take quality production of berseem seeds.
  - In Valley Temperate zone of Jammu & Kashmir, farmers are advised to undertake field preparation for rice and maize and continue harvesting of oats. Sow bush type beans preferably on ridges.
  - Farmers in Mid Hills Sub-Humid Zone of Himachal Pradesh farmers are advised to complete planting of apple and stone fruits plants. In high hills planting can be done after melting of snow. In lower plain areas complete sowing of sunflower. Start sowing of zaid moong and mash in irrigated areas and ageti bhindi, French bean. Also undertake sowing of nursery of khira, summer squash, bitter gourd, tori and transplanting and nursery sowing of brinjal, Shimla mirch, pepper and tomato in polyhouses.
  - Farmers in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh are advised to apply irrigation to potato in higher hills. Earthing up can be done in the potato crop if sown earlier. Harvest peas and cauliflowers.
  - In high hills on apple plants use anti hail nets to protect from hail.
  - In Uttarakhand, farmers are advised to undertake harvesting of matured crops viz. wheat, barley, gram, pea etc. during this week. Farmers are advised to continue for sowing of Chaitee Dhan, Pant Dhincha-1 in nursery and also crops like sunhemp and cowpea for green manuring. Farmers (at 1500 m msl height) are advised to go for sowing of seeds of bottle gourd, bitter gourd, ginger, turmeric etc. during this week.

- Farmers in Punjab and Haryana are advised to harvest wheat crop but avoid harvesting during dust storms. Undertake sowing of recommended varieties of hybrids cotton or desi cotton including Bt cotton during this month. Complete the sowing of sathi moong and sathi mash during this week. Apply irrigation at 8-10 days interval to sunflower crop. Avoid stress of water at flowering, soft dough and hard dough stages. Transplant the nurseries of chilli, brinjal, onion and take care of nursery of *kharif* onion sown in March and irrigate regularly after 5-7 days intervals depending on rain. Irrigate sugarcane crop at 7-12 days interval for better growth of the crop. Irrigate the tomato crop once a week to encourage maximum fruit setting and development of fruits. Timely sown raya and taramira should be harvested during this week.
- In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, farmers are advised to spray Dithane M-45, 25 gram in 10 litres of water and repeat the spray at 10-15 days interval for the control of late blight on potato.
- In Bhabar and Tarai Zone of Uttarakhand, yellow mosaic disease can damage urd and moong crops which are in flowering and pod formation stage thus declining the yield. Farmers are advised to spray Metasystox @ 400 ml per 400 litres of water per acre crop area.
- Farmers in Uttar Pradesh are advised to undertake harvesting of wheat, rice, sarson, gram and arhar. Irrigate moong crop sown before 25 to 30 days. Irrigate cucurbits crops at an interval of 4 to 5 days. Undertake sowing of Urad, maize sunflower, and vegetables like okra, cucumber, pumpkin etc. Spray superfix plant development hormone (ANAA) when fruits are of pea size to protect fruit dropping in mango orchards and to increase the size of fruits.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - Farmers in Punjab and Haryana are advised to vaccinate all the animals against FMD, if still not, then get them vaccinated immediately, keep their record and repeat after six months.
  - In Transitional Plain Zone of Inland Drainage (Fatehpur), cow, sheep & goats are likely to be affected by blood parasites specially protozoa attack. This disease is spread by external parasites like ticks. Treat affected animals immediately by approaching veterinary doctor.
  - In Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan (Udaipur), farmers are advised to spray of 0.5 % ferrous sulphate or 0.1 % Sulphuric acid for the control of iron chlorosis in summer groundnut.
- **Floriculture :**
  - In Flood Prone Eastern Plain Zone (Bharatpur) of Rajasthan, farmers are advised to raise nursery for summer marigold using 700-800g/ha seed in 15 cm raised beds at 6 cm spacing in rows at 2 cm depth. Irrigate the flowers on need basis.
  - In Intermediate Zone of Pahagam (Rajouri), farmers are advised to continue planting of tuberose bulbs, The seedlings of summer annuals can be transplanted in beds when they attain four-leaf stage. Continue harvesting of gladiolus spikes.
- **Apiculture**
  - In Intermediate Zone (Pahalgam / Rajouri), April is the most ideal for beekeeping. Weather and floral conditions are most conducive for beekeeping activity. Pollen and nectar is available in abundant to bees. For beginners this is the right time to start beekeeping as pollen and nectar are in plenty and bee activity is at its peak with least problems.
  - Artificial feeding of the bee colonies with sugar: water solution 1:1 ratio may be done. Provide ample space for newly mated queen for egg laying is advised in sub tropical zone (Chatha / Jammu) of Jammu & Kashmir. Prevent swarming by providing ample space and drawn combs.

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

- **Realised Rainfall:** Most of the districts in Kerala, Coimbatore, Dindigul, Erode, Kanyakumari, Karur, Namakkal, Nilgiri, Theni, Tirunelveli, Tirupur, Trichy and Virudunagar districts in Tamil Nadu, Dakshin and Uttar Kannada districts in Coastal Karnataka, Haveri in North Interior Karnataka, Bellary, Chickmagalur, Chitradurga, Davangere, Kodagu, Mysore and Tumkur districts in South Interior Karnataka received sufficient rainfall last week. No significant rainfall occurred over remaining parts of the region.

- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Kerala, Tamil Nadu and Lakshadweep, at a few places over Karnataka and Rayalaseema and at one or two places over Coastal Andhra Pradesh and Telangana. Isolated rainfall is likely over remaining parts of the region.
- **Advisories:**
  - As most of the districts in Kerala, Coimbatore, Dindigul, Erode, Kanyakumari, Karur, Namakkal, Nilgiri, Theni, Tirunelveli, Tirupur, Trichy and Virudunagar districts in Tamil Nadu, Dakshin and Uttar Kannada in Coastal Karnataka, Haveri in North Interior Karnataka and most of the districts in South Interior Karnataka received sufficient rainfall last week, postpone irrigation to the crops. Apply irrigation to the standing crops in the remaining parts of the region, since there was no significant rainfall during last week. Postpone irrigation to the crops in Tamil Nadu as rain/thundershowers are likely to occur at many places over Tamil Nadu during next 3 days.
  - Damage to crops and properties was reported after heavy wind and rain lashed the Southern Zone (Pathanamthitta) and surrounding areas in Kerala last week. Extensive damage to rubber, plantain trees, tapioca, coconut, vegetables and various other agriculture crops was reported. In the High Altitude Zone, widespread damage to crops has been reported due to the heavy summer rain and wind and the crops, especially plantain, vegetables, cassava, rubber trees, arecanut and coconut palms were affected.
  - Damage to rice and banana crops were reported after heavy wind and rain lashed the South Interior Karnataka during last week. The worst affected areas were the districts of Dakshin Kannada, Udupi, Kodagu, Chikmagalur and also in North Interior parts of the State comprising districts of Haveri, Belgaum, Bagalkot, Dharwad and Gadag. Potato, tomato, chilli, onion, banana, mango, coconut, arecanut, pepper, cardamom, and betelvine crops have been affected. Farmers in these States are advised to arrange for mechanical support for vegetables and young plants in orchards.
  - Farmers in the North East Transition Zone of Karnataka are advised to take up ploughing of land across the slope, as it improves infiltration and helps to conserve the rain water and avoid soil erosion, as sufficient rains have been received.
  - Farmers in the North Dry Zone of Karnataka are advised to undertake summer pruning in fruit crops. Light to moderate amount of rain has been received at many places in the district during the previous week. Taking advantage of the rainfall, farmers are advised to plough the land and incorporate the crop residue in the soil.
  - Farmers in the Coastal Zone of Karnataka are advised to undertake summer ploughing to expose the soil to bright sunlight in order to absorb the moisture and procure good quality paddy seeds of MO-4 and Champaka variety for raising nursery.
  - Farmers in the Hill Zone of Karnataka are advised to plough the land and incorporate the crop residue in the soil for conservation of water during the pre-monsoon rains and to conserve the soil.
  - Farmers in the North East Dry Zone of Karnataka are advised to take proper care for storage of dry sorghum fodder by covering with paddy straw etc. and build moisture conservation structures across the slope.
  - Farmers in the Central Dry Zone of Karnataka are advised to clean all drainage channels before the commencement of monsoon and utilize the last week rain to sow the green manure seeds like dhaincha, sunhemp etc. in fallow paddy fields.
  - Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to postpone drying of agricultural produce, as rainfall is likely at many places during next five days.
  - Farmers in the South Zone of Tamil Nadu are advised to avoid operations like spraying, irrigation etc. and undertake summer ploughing to conserve the moisture gained with the subsequent rains, as rainfall is expected during the coming days.
  - Farmers in the Northwestern Zone of Tamil Nadu are advised to undertake sowing of black gram and other pulses in this week.
  - Farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake planting of ginger.
  - Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to undertake spraying of chemicals after current spells of rain.
  - Farmers in the Problem Area Zone of Kerala are advised to postpone irrigation of coconut, nutmeg, banana and vegetables and harvesting of paddy. Undertake land preparation and dry seeding of *virippu* and upland rice.
  - Farmers in the Southern Zone of Kerala are advised to stop irrigation in coconut and banana and start tapping of rubber.

- Incidences of thrips, mite, hoppers and white flies are being noticed in rice fallow cotton in the Cauvery Delta Zone of Tamil Nadu.
- Farmers are advised to use yellow trap smeared with castor oil or white grease and spray Azadirachtin 0.03% (3 ml/L) along with sticking agent in the morning or evening using hand sprayer to control them.
- Incidence of Tomato Spotted Wilt Virus (TSWV) disease in tomato, aphids in cabbage and cauliflower, thrips, mites and chaenophora blight in chillies and downy mildew in gourds, thrips, mites and canker in sweet orange is noticed in the Southern Telangana Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures.
- **Animal Husbandry**
- Farmers in the Eastern Dry Zone of Karnataka are advised to take up silkworm and poultry rearing houses to maintain optimum room temperature and take care against the rapid increase in air temperature and decrease in relative humidity.
- Farmers in the North East Transition Zone of Karnataka are advised to give mineral supplements to animals, based on the deficiency in the region, make cool water should be made available to the birds because of peak hot temperature, add electrolytes (KCl, NaCl and Na<sub>2</sub>CO<sub>3</sub>) in the feed as well as in water and spray water on the floor and roof of shelter periodically during peak hot hours to lower the temperature and consequently reduce the heat load on animals.
- Farmers in the Southern Dry Zone of Karnataka are advised not to graze the animal between 12 p.m to 5 p.m, supply adequate quantity of drinking water, sprinkle the water on the animals before milking, keep floor cool and clean and deworm calves during summer months to increase the appetite of the animals due to high day temperature.
- Temperature rise along with high humidity will affect the broiler birds adversely leading to heat stroke and mortality in the North Eastern Zone of Tamil Nadu. Farmers are advised to provide adequate ventilation by way of providing fans, allow cross ventilation and other cooling systems.

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

- **Realised Rainfall:** Mainly dry weather prevailed over Maharashtra and Gujarat State during last week.
- **Rainfall Forecast:** Rain/thunder showers would occur at one or two places in Madhya Maharashtra, Marathwada and Vidarbha. Weather would be mainly dry over remaining parts of the region.
- **Advisories:**
- As mainly dry weather prevailed during last few weeks in most parts of the States of the region and no significant rainfall is likely to occur during next 2-3 days, farmers are advised to apply irrigation to standing crops. There are reports of crop damage due to unseasonal rainfall in isolated places in Sangli district in Maharashtra. Standing mango crops and harvested wheat, gram, soybean and black gram in storage were damaged. Farmers are advised to arrange for mechanical support for young plants in orchards.
- Farmers in North Konkan and East Vidarbha region of Maharashtra are advised to maintain proper water level in rice fields. Farmers in South Konkan region are advised to continue harvesting of already matured summer rice and summer groundnut.
- As maximum temperature is high in Konkan, mango fruits may become scalded, black and dropping may occur. To avoid this, apply water @ 150 to 200 litres per mango tree and mulch with grass near basin of tree to avoid loss of water by evaporation.
- Farmers of East Vidarbha are advised to undertake sowing of jowar for fodder to animals.
- Due to high temperature in Marathwada and Vidarbha; farmers are advised to reduce the duration between two irrigations. Farmers in Marathwada region are advised to apply drip irrigation in banana orchard and cover banana bunch with banana leaves to protect from bright sunshine.
- Farmers in North Madhya Maharashtra are advised to undertake sowing of BT cotton. Complete preparatory tillage and field may be kept ready for planting of turmeric and ginger during last week of April.
- Taking the advantage of dry weather, farmers of Central Vidarbha Zone are advised to spray 20 ppm NAA to avoid mango fruit dropping. Spray 50 ppm NAA on orange at pea stage.
- Farmers in Middle Gujarat Zone are advised to apply 25 kg N / ha as Ammonium Sulphate in rice during evening hours. Apply irrigation to summer crops at regular intervals as per requirement.
- Farmers in Bhal and Coastal Zone of Gujarat are advised to irrigate bajra and green gram in the morning hours.

- Farmers in South Saurashtra Zone of Gujarat are advised to apply irrigation in sugarcane, summer pearl millet and peanut at regular intervals.
- Farmers in North Gujarat Zone are advised to irrigate summer pearl millet, green gram, groundnut and vegetable crops. Under the prevailing weather conditions complete harvesting of *rabi* crops followed by threshing.
- Farmers in South Gujarat Heavy Rainfall Zone are advised to cut fully matured spikes of castor regularly and dry under the sun. Carry out harvesting of matured onion and keep at well aerated place. Undertake picking of okra.
- Farmers in South Gujarat Zone are advised to apply irrigation to vegetables at an interval of 3 to 4 days.
- Due to prevailing weather conditions, farmers in North Saurashtra Zone are advised to apply irrigation to groundnut and sesame at 8-10 days interval and keep the fields free of weeds.
- Farmers in South Gujarat Zone and North West Zone are advised to harvest *rabi* crops and then deep plough the field to destroy soil borne insects and diseases. Also carry out sowing of vegetables.
- Suitable varieties of the crops for sowing are mentioned in Annexure II.
- As day temperature is rising there may be infestation of early shoot borer in *suru* sugarcane in Sub Montane Zone of Maharashtra; spray Endosulfan 35 EC @ 15 ml in 10 liters of water.
- Weather is congenial for incidence of downy mildew in summer moong in East Vidarbha; infested plants may be uprooted and destroyed. For control spray Dimethoate 30% WS @ 10 ml or Methyl Demeton @ 8 ml in 10 litres of water. There may also be attack of stem borer in summer rice; spray Quinolphos @ 32 ml in 10 litres of water.
- Stages of major crops are mentioned in Annexure-I.

#### **Animal Husbandry:**

- In North Gujarat Zone, keep animals under shade during noon hours and avoid feeding between 11 a.m to 3 p.m. Make arrangement of curtains for poultry house.
- Put curtains on north-east direction in poultry to protect against hot winds in Middle Gujarat Zone.
- In South Gujarat Heavy Rainfall Zone, give shower with cold water two to three times in a day to cattle, provide fresh and cold water for drinking and increase the green fodder quantity for feeding.
- Give Anthrax vaccination and tablet for controlling karamia in cattle in North Saurashtra Zone.

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

- **Realised Rainfall:** Mainly dry weather prevailed in the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over East Madhya Pradesh and Chhattisgarh. Mainly dry weather is likely in West Madhya Pradesh.
- **Warning:** Thunder squalls would occur at one or two places over Chhattisgarh during next 48 hours.
- **Advisories:**
  - As mainly dry weather prevailed during last week in Chhattisgarh and Madhya Pradesh and no significant rainfall is likely, farmers in these regions are advised to provide irrigation to the standing crops. As thunder squalls would occur at one or two places over Chhattisgarh during next 48 hours, farmers are advised to undertake harvesting of matured crops immediately and also arrange for mechanical support for vegetables and young plants in orchards.
  - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to provide frequent irrigation to summer crops like moong, urad, sunflower, cucurbitaceous crops, lady's finger, cowpea and other vegetable crops as per requirement. Weeding, intercultural operations and top dressing of urea should be carried out in summer vegetables. Undertake sowing of maize, sorghum, cowpea etc. as summer fodder crops.
  - Farmers in Kymore Plateau and Satpura Hills region and Gird Zone of Madhya Pradesh are advised to undertake harvesting of wheat crop.
  - Farmers of Gird Zone of Madhya Pradesh are advised to sow bajra, jowar, maize and lobia for green fodder purpose and give irrigation to okra, chilli, tomato, melon and mango.
  - Farmers in Nimar valley Zone of Madhya Pradesh are advised to undertake planting of sugarcane.
  - Farmers in Nimar valley Zone of Madhya Pradesh are advised to irrigate moong, urad and vegetables. Farmers are also advised to give irrigation and undertake intercultural operation in early planted sugarcane.
  - Farmers in Vindhyan Plateau region of Madhya Pradesh are advised to irrigate sugarcane crop at 12-15 days interval.

- Farmers in Central Narmada Valley Zone of Madhya Pradesh are advised to give irrigation to lobia, cowpea, jowar and cucurbitaceous crops, okra, brinjal, spinach, chilli and ladies finger.
  - Farmers in Satpura Plateau Zone of Madhya Pradesh are advised to give irrigation to summer crops like moong, urad, groundnut, maize, fodder crops and other vegetable crops as per requirement. Weeding, intercultural operations and top dressing of urea may be carried out in summer vegetables.
  - Farmers in Malwa Plateau Zone of Madhya Pradesh are advised to give irrigation to summer crops like moong, urad, fodder crops and other vegetable crops such as chilli, tomato, brinjal and ladies finger as per requirement.
  - In Chhattisgarh Plain Zone, groundnut and sunflower are at flowering / pod formation / grain filling stage. This stage is crucial for moisture; hence it is advised to irrigate the crops frequently.
  - In Chhattisgarh Plain Zone, farmers are advised to complete the harvesting of matured *rabi* crops viz., gram, mustard, wheat etc. followed by threshing and winnowing of produce and store the produce in safe place.
  - In Chhattisgarh Plain Zone, farmers are advised for proper water management in summer vegetables, rice, groundnut as well as sunflower and provide irrigation as per the requirement. The farmers who have drip irrigation system for vegetables and plantation crops should regulate the water discharge rate accordingly to maintain proper soil moisture around root zone. After the harvest of *rabi* crops prepare the fields well pulverized for the sowing of summer maize and try to complete the sowing during this month.
- **Animal Husbandry & Poultry**
    - Farmers in Kymore Plateau and Satpura Hills region and Central Narmada Zone and Gird zone of Madhya Pradesh are advised to provide cold water to cattle three times daily and keep them in airy and shady place as temperature is high during day time. Arrange for vaccination for Foot and Mouth disease in cattle.
    - Farmers in Vindhya Plateau Zone of Madhya Pradesh are advised to vaccinate cattle against FMD.
    - Present weather condition may increase the mosquito & flies population, farmers in Satpura Plateau Zone of Madhya Pradesh are advised to make neem leaf smoke in cattle shed to protect the cattle from mosquito and flies.

## Annexure I Major Crops

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

- Sugarcane (planting), *boro* rice (grain formation / dough), *ahu* rice (direct seeded) (transplanting / tillering), *ahu* rice (transplanted) (transplanting), wheat (maturity / harvesting), tomato, pumpkin, bottle gourd (vegetative / flowering / fruiting), okra, pointed gourd, musk melon, water melon, ridge gourd, sponge gourd (flowering / fruiting), black gram, green gram (vegetative / branching / flowering), maize (sowing / vegetative), summer pulses, *Capsularis* / *Olorius* jute (sowing / seedling / vegetative), summer vegetables (vegetative / fruiting), cow pea (sowing / seedling), cucurbits (sowing / vegetative), banana, ginger / turmeric (planting) in Assam.
- *Jhum* and WRC rice (sowing), maize, black gram, green gram (sowing / early vegetative / vegetative), okra, beans, cucurbitaceous vegetables (sowing / early vegetative / vegetative) in Arunachal Pradesh.
- Summer rice (panicle initiation / flowering), cucurbits (sowing / transplanting / vegetative), tomato, brinjal, chilli (transplanting / vegetative / flowering), cow pea (sowing), cauliflower and cabbage (new) (transplanting), onion (bulb formation / harvesting), okra, French bean, ginger, turmeric (sowing / planting) in Manipur.
- *Boro* rice (flowering / grain formation), cabbage and knol-khol (head maturity / harvesting), okra (sowing / vegetative / flowering), pumpkin, French bean (vegetative / flowering / fruiting / maturity), maize, jute, bottle gourd, ash gourd (sowing) in Meghalaya.
- Khasi mandarin (vegetative / flowering), banana (vegetative / fruiting / maturity / harvesting), *kharif* maize (sowing), bean, cucurbits (early vegetative / vegetative), okra, cucurbits (flowering / fruiting), ginger / turmeric (planting) and urad, moong (flowering / pod formation) in Mizoram.
- Rice (nursery preparation), pea (pod maturity / harvesting), maize (cob formation), tomato (vegetative), ginger, turmeric (planting), rajma (sowing / germination / vegetative), banana (vegetative / fruiting) in Nagaland.
- *Aus* rice (sowing/ transplanting), *boro* rice (panicle initiation / flowering), summer vegetables (sowing), cucurbits (sowing/seedling), arhar, sesame (sowing) in Tripura.

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

- Sugarcane (vegetative), lobia for green fodder (vegetative), mishrikand (vegetative), fruit trees (transplanting / early vegetative), wheat (maturity / harvesting), vegetables (flowering / fruiting / harvesting), maize (grain formation / maturity), sugarcane, onion (planting), *boro* rice (panicle initiation / flowering), moong (pod formation), summer maize (vegetative) in Bihar.
- Turmeric and ginger (rhizome formation), elephant foot yam (tuber elongation), wheat (maturity / harvesting), papaya (transplanting), summer moong (flowering), summer vegetables (transplanting / vegetative / flowering / fruiting), okra, summer maize (vegetative), onion (transplanting) in Jharkhand.
- Summer rice (flowering / grain filling), summer groundnut (flowering / pegging), sunflower (flowering / head formation), sugarcane (new) (tillering), wheat (harvesting), banana (vegetative), tomato (flowering / fruiting / maturity), jute (sowing) in Orissa.
- *Boro* rice (panicle initiation / flowering), wheat (maturity / harvesting), groundnut (flowering / pegging), chilli (flowering / fruiting), mango (flowering), green gram (pod formation / pod maturity), jute (sowing) in West Bengal.
- *Rabi* vegetables (harvesting), orange (harvesting), large cardamom (vegetative), wheat (maturity / harvesting), mustard (seed maturity / harvesting), vegetables (sowing / nursery sowing) in Sikkim.

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

- Wheat, barley (field preparation), vegetables (bhindi, cucurbits), potato (sowing/germination), mirch, brinjal (nursery sowing in polyhouses), cucurbits viz. cucumber, summer squash, bitter gourd, bottle gourd (nursery sowing in polutubes inside polyhouse), bush type French bean (Contender), bhindi, surajmukhi (sowing/germination), tur, brinjal, Shimla mirch, and tomato (transplanting/seedling),

apple and other temperate fruits (vegetative), arbi, amaranthus, turmeric, rice, maize, barley, radish, onion, pea, garlic, coriander, cabbage, knolkhol, parsley, lettuce, fennel, cauliflower, broccoli (sowing / planting/germination), in Himachal Pradesh.

- Early sown wheat (harvesting), Normal sown wheat, late sown wheat (maturity), Early sown barley (harvesting), normal sown barley (maturity), very late sown barley (dough), onion (transplanting), cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative/flowering), bhindi, radish, turmeric (sowing), jowar, summer moong, mash, dhaincha, maize, berseem (land preparation / sowing), fodder crops like oats (vegetative (2nd cut)), berseem (reproductive), turnip, cruciferous crop (viz. cabbage, cauliflower, knolkhol, kale, broccoli, solanaceous crops (tomato, brinjal and chilli, capsicum), paprika, onion, cucurbits in polybags (Leh region) (nursery sowing/transplanting), Horticultural crops (various stages) viz. [peach, plum & mango (flowering), ber, orange & guava (fruiting)] in Jammu & Kashmir.
- Chilli, capsicum, cauliflower, broccoli (germination/vegetative), sugarcane (planting), litchi, loquat, peach, citrus (flowering / fruiting/maturity), mango (early varieties) (flowering/fruiting), foxtail millet, okra, bottle gourd, bitter gourd, ginger, turmeric (germination / vegetative/flowering), mustard (pod formation/pod maturity), papaya (planting), sorghum, pigeon pea, chick pea (pod maturity/harvesting), urd and moong (flowering / pod formation), pearl millets (early vegetative/vegetative), onion, garlic (transplanting/germination), wheat (harvesting), brinjal, potato (germination/vegetative), sunflower(germination), chaitee dhan, maize, lobia, sunhemp, cowpea (sowing) in Uttarakhand.
- Wheat (harvesting), winter sugarcane (vegetative growth), sunflower, summer moong, urad (germination/vegetative), vegetables [tomato, brinjal, lady's finger, cucurbits like bottle gourd, bitter gourd, cucumber] (sowing / germination / vegetative / flowering / fruiting), coriander (vegetative/flowering/maturity), onion (vegetative growth), mustard/ sarson (maturity / harvesting), barley (vegetative / tillering), arhar, jai, gram, alsin, maize, masoor, pea, pigeon pea, berseem (vegetative growth), maize (knee high stage), fodder maize, lobia, jowar (sowing), sugarcane (planting/ initial growth(tillering)), mango (flowering / fruiting) in Uttar Pradesh.
- Spring sugarcane (sprouting/tillering), berseem (vegetative / harvesting ), gram, lentil (pod formation), mustard, rape seed (pod formation/maturity), barley (heading) radish, carrot, turnip, onion, cauliflower (transplanting/vegetative), wheat (grain filling / maturity), tomato, cucurbits, sunflower(sowing), okra, chilli, brinjal (sowing / transplanting) in Punjab.
- Sugarcane (spring season) (early vegetative), barseem (vegetative / last cut), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), barley (heading/pre heading), mustard, sarson, raya (vegetative/flowering), radish, turnip (sowing), wheat (maturity / harvesting ) in Haryana.
- Wheat, barley, mustard, fenugreek, coriander, cumin (harvesting), sweet potato, chilli and cluster bean (vegetative/pod formation), oats, lentil, lucerne, taramira, linseed, opium poppy, vegetables (potato, brinjal, radish, chilli, carrot, palak, berseem, isabgol, ajwain, garlic (vegetative growth/flowering), summer tomato (germination/vegetative), cauliflower, cabbage, *rabi* onion (transplanting/germination), summer cucurbits, summer green fodder (sowing/germination), okra, zaid pearl millet fodder, zaid sorghum fodder, zaid green gram, groundnut, sweet corn (sowing), sugarcane (new planting), cotton (Desi kapas, B.T. kapas), Narma kapas (land preparation), jowar and bajra mixed with guar (land preparation / sowing) in Rajasthan.

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

- Sugarcane (vegetative), summer groundnut (pegging), maize (harvesting), late planted paddy (harvesting), wheat (harvesting), black gram/green gram (harvest), mango (fruiting), cotton (picking), vegetables (fruiting) and horticultural crops (fruit development) in Karnataka
- *Rabi* groundnut (harvesting), *rabi* paddy (maturity), *rabi* maize (harvesting), rice fallow maize (grain filling), rice fallow jowar (grain maturity), rice fallow pulses (pod maturity), sunflower (seed formation), sugarcane (tillering/ ratooning), jowar (grain maturity), vegetables (fruiting), chilli (fruiting), green gram & black gram (maturity), tomato (fruiting) and bhindi (various stages), mango (fruiting), fruit crops (flowering to fruit initiation), water melon (fruiting) and sesasum (sowing) in Andhra Pradesh.
- Pepper & ginger (planting), rubber (tapping), irrigated banana (planting/harvesting), cardamom (nursery), nutmeg (maturity), sugarcane (grand growth/elongation), vegetables (harvest), summer

vegetables (fruit bearing), *puncha* paddy (tillering), virippu paddy (nursery sowing), coconut (seednut collection) in Kerala.

- Rice - *Samba* (harvest), *Thaladi* (harvest), rice fallow black gram (maturity), sugarcane (early vegetative), gingelly (vegetative/flowering), tomato (fruiting), summer irrigated cotton (flowering/boll formation), pulses (vegetative/flowering/harvest), cotton (vegetative/flowering), vegetables (harvest), maize (grain formation), pearl millet (vegetative), sorghum (harvesting), irrigated groundnut (harvesting), chilli (fruiting), ginger, sunflower (vegetative) and turmeric (harvesting) in Tamil Nadu.

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

- Sugarcane- new *adsali* (active tillering), sugarcane new pre-seasonal (early tillering / tillering), sugarcane - new *suru* (early vegetative) in Madhya Maharashtra and Marathwada, summer rice (grain maturity / harvesting in South Konkan, flowering / grain formation in North Konkan and panicle initiation / flowering in East Vidarbha), summer groundnut (pod maturity / harvesting in South Konkan and pod formation in Madhya Maharashtra, Marathwada and West Vidarbha), bajra (flowering / grain formation in Pune and Nashik Division) in Maharashtra.
- Summer groundnut (flowering / pegging), sesame (vegetative / flowering / capsule formation), summer rice and summer bajra (tillering), summer moong, urad, cowpea (seedling / early vegetative), wheat (maturity / harvesting), green gram (vegetative / flowering), sugarcane (early vegetative), castor (maturity / harvesting), vegetables (flowering / fruiting / harvesting), cluster bean (sowing / seedling) and cauliflower, cabbage (maturity / harvesting) in Gujarat.

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

- Sugarcane (knee height stage), vegetables (fruiting), mustard (harvesting), moong (early vegetative / vegetative), maize (harvesting), onion, garlic (harvesting), tomato, brinjal (transplanting / seedling), fodder crops (sowing) in Madhya Pradesh.
- Sugarcane (planting), groundnut, sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), pigeon pea (pod filling), linseed (pod maturity stage), tomato, brinjal, chilli, niger, horse gram, ramtil, toria, niger, kulthi (maturity), wheat (harvesting), onion (planting), summer rice (tillering), summer vegetables (vegetative), moong, urad and maize (sowing) in Chhattisgarh.

## **Annexure II**

### **List of Varieties**

#### **Assam**

**Sugarcane:** Kolong, Luhit, Dhansiri, Doris, Co 1148.

**Ahu rice:** Luit, Kopilee, Rasi, Cauvery, Culture-1, Chilarai, Gopinath, Krishne, Kushal, Puthichapali, Nilajee, Hasakumra, Gobind, IR-36, IR 50.

**Tall varieties:** Banglami, Dubaichenga, Rangadaria (115-120 days), Ahujoha (110-120 days).

**Short duration variety:** Dogaranga (85-95days).

**Okra:** Pusa Sawani, Arka Anamika, Parbhani Kranti, Panchasira.

**Capsularis jute:** JRC 321 (Sonali), UPC 94 (Reshma), JRC 212, JRC 7447.

**Olitorius Jute:** JRO 524 (Navin), JRO 785 (Basudev), JRO 632 (Baisakhtissa), Set-2 (Bahagi).

**Cow pea :** Pusa Barsati.

**Ginger :** Nadia, Karkai, Maran, Jorhat, Chaina.

**Turmeric :**Shillong type, CL-24, PTS-38, PCT-13, VK-145.

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

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

**Cucumber :** Chinese Green, Pusa Sanyog.

**Bitter gourd:** Long Green , Extra Long.

**Banana :**Chenichampa, Malbhog, Barjahaji.

#### **Meghlaya**

**Kharif maize:** Vijay, RCM-76, Local white and yellow, DA-61-A and QPM.

**Okra:** Arka Anamika, Pusa Sawani, ParbhaniKranti.

**Brinjal :** Umroi, Mutakesh, Narrow.

**Bottle gourd:** PusaSummer, Prolific Long, Prolific Round, PusaMeghdoot.

**Capsularisjute:** JRE-21, JRC-321, D-154, JRC-7447.

**Olitorious jute:** JRO-632,JRO-514, JRO-7835, JRO-878.

#### **Mizoram**

**Okra:** Pusa Sawani, Pusa Makhmali, Punjab Padmini, Arka Anamika, Arka Abhay.

**Moong:**Jawahr, Pusa Baishakhi, KM

**Urad:**PDU 1, Barkha, Type 1ND U 99-2

#### **Manipur**

**Cabbage:** Rare ball & Golden Acre

**Cauliflower:** Pusa Snow Ball 1, Pusa Snow Ball 2 & Snow Ball

**Cow pea:**Rainy Royal, Long green

#### **Tripura**

**Okra:** Arka Anamika, Parbhani,Kranti

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

**Cucumber:** Japanese long, Straight 8

**Sweet Gourd:** Indigenous

#### **Orissa**

**Okra:** Utkal Gourav, Arka Anamika, Varsha Uphar, Parvani Kranti and all available hybrid varieties.

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

**Ginger:** Suprava, Suruchi and Suravi.

#### **Bihar**

**Summer maize:** Suwan, Deoki, Ganga 11, Shaktiman 1 and 2.

**Moong:** Pusa Baishakhi, T-9.

#### **West Bengal**

**Jute:** Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali.

**Water melon:** Sugar Baby, Ashi Yeamoto.

**Jute:** Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali.

#### **Jharkhand**

**Okra:** Pusa A - 4, Prabhani Kranti, Arka Anamika, Versha Uphar and Hybrid varieties –Sonal and Sarika.

### **Himachal Pradesh :**

**Brinjal:** ArkaNidhi, PPC

**Shimla mirch:** California wonder

**Agetibhindi:** P-8, Prabhnikranti, Arkaanamika,

**Frenchbean:** Contender

**Pepper :** Surjmukhi,

**Rajmash:** Triloki, Jwala, baspa Kailash

**Raddish:** japani white and early mino white,

**Turnip:** PTWG-1.

Himsona Cabbage Varun, Bahar, Bajrang, Green challenge.

**Knolkhol :** White Bina,

**Cauliflower:** Pride of India, Shweta, Madhuri, Himrani.

**Peas:** Angoori, PS1100/Azad1.

Cucumber : Kiyani seedless/243, Matgaura, Maliniseeded

Tomato : Naveen2000plus, Avtar, Solan hybrid 1 and 2,

Redcapsicum : Natasha, Tanvi

Yellow capsicum : California wonder, bharat, solan sankar 1, Indira, Orivelle

Summersquash : Pusa Alankar Jacuni types.

Sarson : KBS3

### **Jammu & Kashmir**

**Vegetable crop** like **radish** (var. Pusachetki, Japanese white & Pusareshmi), **carrot** (var.Pusakesar), **turnip** (var PTWG), **garlic** (var. local, large segmented), **spinach** (prickly seeded) and **methi** (P.E.B.K methi), **Cauliflower** (var. PusaDipali), **knoll khol** (White Vienna), **Broccoli** (Early green),

**Bottle gourd** ( Pusa Summer Prolific Long, Punjab Komal, Punjab Round, Pusa Summer Prolific Round), **Sponge gourd** (Pusa Chikni, Pusa Supriya), **Ridge gourd** (Pusa Nasadar, Swaran Manjari, Pant Tori-I), **Bitter gourd** (Pusa Domousmi, Pusa Vishesh, Coimbatore Long, Pusa Hybrid- Kalyanpur Baramasi), **Cucumber** (Japanese Long, Straight Eight Poinsette), **Pumpkin** (Arka Suryamukhi, Arka Chandan),

**Bhindi** (Hissar Unnat, A-4, Varsha – Uphar, Parbhani Kranti), **Radish** (Pusa Chetki) and **turmeric** (local),

**Jowar :** Ujjain, Swarna-413, M.P.chari & PoineerJowar ,**Summer mash:** Mash Pant, U-19, T-9) and **moong:** PDM-54, PS-16, PS-17, ML-131

**Beans :** Contender, Pusa Parvati, Arka Komal

**Maize (unirigated) :** Super Composite (Mansar), C-6, Vijay, Him-123, Local Tall

**Rice (Irrigated) :** Var. of dhaincha seed K-84, K-39 having southern aspects, Giza-14

### **Punjab**

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

**Summer moong:** SML-668, SML 832

**Summer mash:** Sathi mash, Mash 1008 , Mash-414 ,Mash-218.

**Onion:** Agri Found Dark Red, N 53

**Okra:** PusaSawani , PunjabPadmini ,Punjab 7 or 8.

### **Haryana**

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

**Summer moong:** SML-668, SML 832

**Summer mash:** Sathi mash, Mash 1008 , Mash-414 ,Mash-218.

**Onion:** Agri Found Dark Red, N 53

**Okra:** PusaSawani , PunjabPadmini ,Punjab 7 or 8.

### **Delhi**

**Green gram:** Pusa-9531, PusaVisal, PusaVaisakhi, PDM-11, SML-32, Pusa Ratna, Samrat

**Black gram :** Pant Urd 19, Pant Urd 30, Pant Urd 35, PDU1.

**Maize:** African Tall

**Cluster bean:** PusaKomal, PusaSukomal.

**Baby corn :** HM-4

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

**Radish:** Pusa Chetki and R.R.W.T

## Uttarakhand

**Sunflower:** KBSH-44, PAC-36, PAC-1091, PAC-3776, PAC-6457, DRSH-1.

**Okra:** Pusa Savani, Punjab Padmini, Selection -1, HissarUnnat, Vaishali, Madhu, Parbhani Kranti, VL Bhindi-1 etc.

**Sugarcane :**Co Pant 84211, Co-238, Co-241, Co Pant 3220, COS-8436, COS-88230 etc. and medium to late sown varieties like Co Pant 90223, Co Pant-96219, COS-97222, COS-767, COS-1148 etc.

**Urd :** PU-19, PU-30, Pant Urd-31, Pant Urd-35, Pant Urd-40, Narendra Urd-1 etc.

**Moong :** Pant Moong-2, Pant Moong-4, Narendra Moong-1

**Cucurbits:** Pant Kheera-1 of cucumber, Pant Kakari-1 of Long melon, Pant Karela-1 of Bitter Gourd, Pant Summer Lokee-1,2 of Bottle Gourd and of Water Melon and Musk Melo

**ChiateeDhan :** VL-dhan-206, VL-Dhan-207, VL-Dhan 208, VL - Dhan 209, Pant Majdera-7

**For green manuring :** Pant Dhincha-1.

**Jhangore :** P.R.J.-1, V.L.-172

**Green fodder (Maize) :** Ganga-2, Ganga-7, African Tall

**Green fodder (Lobia) :** Russian Joint, EC-4216, UPC-5286

**Maize (for green cob) :** Sweta or Surya

**Maize :** hybrid var. Him.-129, composite var. Navin, Sartaj, V.L. Makka 16

## Uttar Pradesh

**Sugarcane :** KS-8436, KS-88230, KS-95255

**Sunflower :** K.P.S.H. 1, Divyamukhi, Jwalamukhi

**Moong :** Type-44, Pant Moong-1,2, Narendra Moong-1, PDM-11, MUM-2, MalviyaJagruti, Samrat, PusaVaishakhi K. , K-851, JM-721 etc.

**Urad :** Azad Urd-1,2, Bhokhar-1,2, Type-9, Uttara etc. JT-9, pant u-19, Narendra ;, pant U-35

**Arhar :** U.P.A.S.-120 and T 21.

**Vegetables :** Bitter gourd: KalyanSona, Arka, Harit, Bottle gourd: KalyanpuriHari, Lambi Azad, Nootan, Pusa, Navin, Narendra, NarendraDharidar, NarendraBhankar, Lowki-4, Pumpkin: PusaVishwas, Coimbatore-1,2, Kalyanpur Pumpkin-1, NarendraAgrim, NarendraAmrut, Cucumber: Fine set, China, Japanese, Langreen, Taroi: Pusachikani, PusaNasdar, Satputiya, Punjab, Sadabahar, Lady's Finger: Azad Bhindi-1,2, ParmaniKranti, P-7, Varsha, Uphar, Hissar, Unnat, P-Kanti.

## Rajasthan

**Summer Groundnut :** improved varieties : TAG-24, SB-11, DH-86 and GG-2

**Zaid green gram :** improved varieties K-851 (60-70 days), PDM-11 (60-65 DAYS), PusaBaisakhi (60-80 days), RMG-268 (65-70 days)

**Cotton : (Desi kapas) R.G. -8, R.G.-18, H.D. 123, hybrid Var. : Raj D.H.-9, (B.T. kapas) : M.R.C.H. 6304, M.R.C.H. 6025, R.C.H. 134, R.C.H. 314, J.K.C.H. 1947, M.R.C. 7017 (BG-11), N.E.C.H. 6,**

**Sugarcane :** C.O. 6617, C.O. 7717, C.O.S. 95255, C.O.S. 767

**Cucurbits : Bottle guard :** Pusa Naveen, ArkaBahar, **Pumpkin :**Pusa Vishwas, ArkaChandan, PuasAlankar, ArkaSuryamukhi, **Bitter guard :**Arka Harit Pusa Vishesh, Priya, **Round gourd :** Arkatinda, Bikaneri green, Punjab-48.

**For Green fodder (Jawar) :** Raj Chari-1, Raj Chari -2, MP Chari, SSG 59-3, MSFH-3, MSFH-4 and Hara Sona,

**For Green fodder (Bajra) :** Raj Bajra Chari-2, Co -8, Avika Bajra Chari-19 and Jiant bajra

**For Green fodder (Guar) :** RGC-986, Bundel guar-1, Bundel Guar-2 and Bundel Guar-3

## Gujarat:

**Cluster bean:** Gujarat Guar-2.

## Maharashtra

**Fodder (Madhya Maharashtra)**

**Jowar:** Ruchira, Phule Amruta, Maldandi 35-1, M.P. Chari,

**Bajra:** Giant, **Maize:** African Tall.

**Fodder (East Vidarbha)**

**Jowar:** Pusa Chari, M.P. Chari and SSG 898.

**Irrigated cotton:** Phule-492, NHH-44 (Nanded-44) (Hybrid).

## Madhya Pradesh

**Ladies Finger-** Pusa Makhmali, Pusa Sawani, A-4 or Parbhanikranti

## Chattisgarh

**Sugarcane-** Co 86032, Co 86141

### Annexure III

## Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 25.04.2012

