

# National Agromet Advisory Bulletin

Thursday, 10<sup>th</sup> May, 2012  
(For the period 10<sup>th</sup> to 14<sup>th</sup> May, 2012)



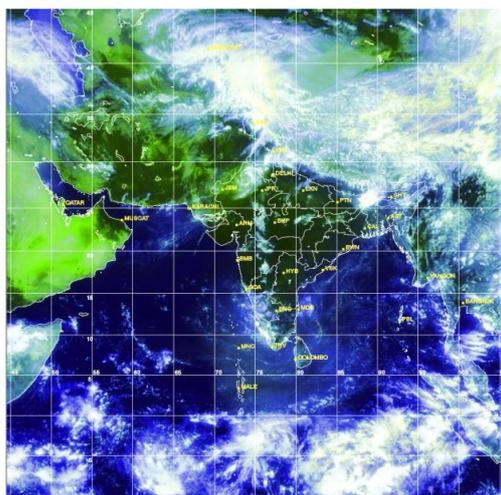
Due to hailstorm and thunderstorm, damage in maize, jute, bitter gourd and pointed gourd in Jalpaiguri and Coochbehar districts of West Bengal, homestead gardens at Soigaon and Boko Somosti of Kamrup district and Senga Somosti of Barpeta district of Assam and minor crop damages in Manipur were reported. Mango, banana, papaya and drumstick crops have been damaged due to unseasonal rain in Krishna district of Andhra Pradesh. Farmers in these regions are advised to arrange for mechanical support for vegetables and young plants in orchards.

As significant rainfall occurred over few districts in Arunachal Pradesh, Assam, Orissa, West Bengal, Sikkim, South Interior Karnataka, Tamil Nadu, Coastal Andhra Pradesh and Kerala during last week, farmers in these districts are advised to postpone irrigation. As rain / thundershowers would occur at a few places over Jammu & Kashmir during next 24 hours and increase thereafter and at a few places during 48 hours over Assam, Meghalaya and Arunachal Pradesh and increase thereafter, Farmers in these regions are advised to postpone irrigation to the crops. As there was no significant rain over most of the remaining parts of the country and no significant rain is likely to occur during next three days, farmers are advised to provide irrigation to the standing summer crops and undertake harvesting of matured *rabi* crops.

Duststorms / thunder storms would occur at one or two places over Punjab, Haryana, Delhi, Rajasthan and West Uttar Pradesh during next 48 hours with increase in thunderstorm activity thereafter. Thundersqualls with wind speed reaching 50-60 kmph would also occur at one or two places over Assam, Meghalaya, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan and west Uttar Pradesh. Farmers in these States are advised to transport the harvested produce to safer places, arrange for mechanical support for vegetables and young plants in orchards and postpone application of fertilizers and pesticides.

Due to favourable weather, farmers are advised to undertake sowing of cowpea, planting of turmeric, sugarcane and ginger and transplanting of *ahu* rice in Assam, sowing of groundnut and soybean in Manipur, jute and marigold in West Bengal, groundnut in Punjab, maize in Uttarakhand, rice, ginger, spinach, carrot, beet root, coriander and Fenugreek in Jammu & Kashmir, cucumber, pumpkin, bitter guard and other cucurbitaceous vegetables in Himachal Pradesh and ginger in Orissa with assured irrigation.

*Satellite image 0600 UTC dated 11<sup>th</sup> May, 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

There are some reports of crop damages due to unseasonal rainfall and hailstorm in the country. Due to hailstorm in Jalpaiguri and Coochbehar districts of West Bengal, maize, jute, bitter gourd and pointed gourd have been damaged. Homestead gardens have been damaged due to hailstorm with very high wind speed at Soigaon and Boko Somosti of Kamrup district and Senga Somosti of Barpeta district of Assam. Minor crop damages due to thunderstorm and hailstorm in Manipur was also reported. Mango, banana, papaya and drumstick crops have been damaged due to unseasonal rain in Krishna district of Andhra Pradesh. Farmers in these regions are advised to arrange for mechanical support for vegetables and young plants in orchards. However, rains would be beneficial to the standing crops.

Maximum temperatures were 2 to 4°C above normal over most parts of Sikkim, Arunachal Pradesh, Assam, Nagaland, Manipur, some parts of Sub-Himalayan West Bengal and Tamil Nadu. Maximum temperatures were near normal over rest parts of the country.

Significant rainfall occurred over few districts in Arunachal Pradesh, Assam, Orissa, West Bengal, Sikkim, South Interior Karnataka, Tamil Nadu, Coastal Andhra Pradesh 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. Rain/thundershowers would occur at a few places over Jammu & Kashmir during next 24 hours and increase thereafter, at a few places during 48 hours over Assam, Meghalaya and Arunachal Pradesh and increase thereafter. Farmers in these regions are advised to postpone irrigation to the crops. As there was no significant rain over most of the remaining parts of the country and no significant rain is likely to occur during next three days, farmers are advised to provide irrigation to the standing summer crops and undertake harvesting of matured *rabi* crops.

Duststorms / thunder storms would occur at one or two places over Punjab, Haryana, Delhi, Rajasthan and West Uttar Pradesh during next 48 hours with increase in thunderstorm activity thereafter. Thundersqualls with wind speed reaching 50-60 kmph would also occur at one or two places over Assam, Meghalaya, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan and west Uttar Pradesh. Farmers in these States are advised to transport the harvested produce to safer places, arrange for mechanical support for vegetables and young plants in orchards and postpone application of fertilizers and pesticides.

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, sugarcane and ginger and transplanting of *ahu* rice.

**Manipur:** sowing of groundnut and soybean.

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

**Punjab:** sowing of groundnut.

**Uttarakhand:** sowing of maize.

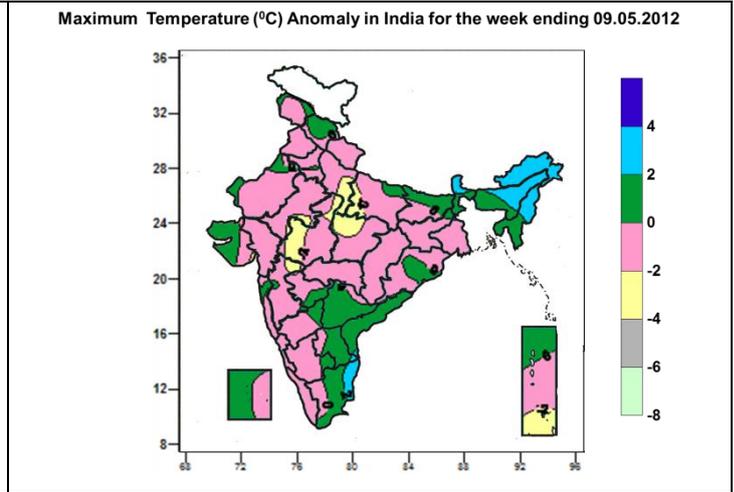
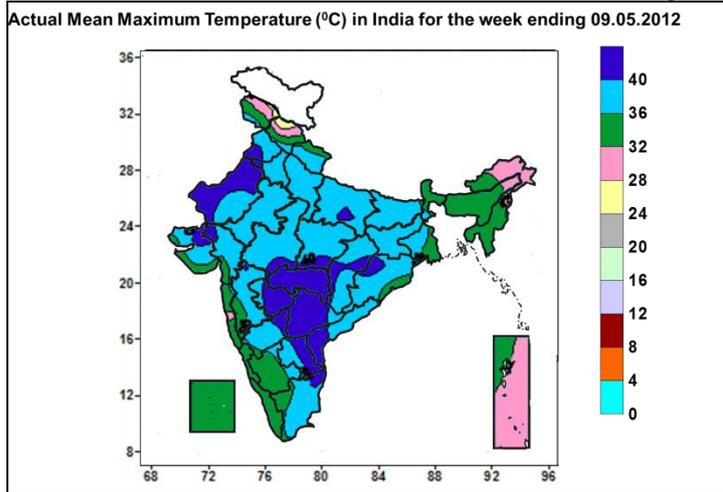
**Jammu & Kashmir:** sowing of rice, ginger, spinach, carrot, beet root, coriander and Fenugreek.

**Himachal Pradesh:** sowing of cucumber, pumpkin, bitter guard and other cucurbitaceous vegetables.

**Orissa:** sowing of ginger.

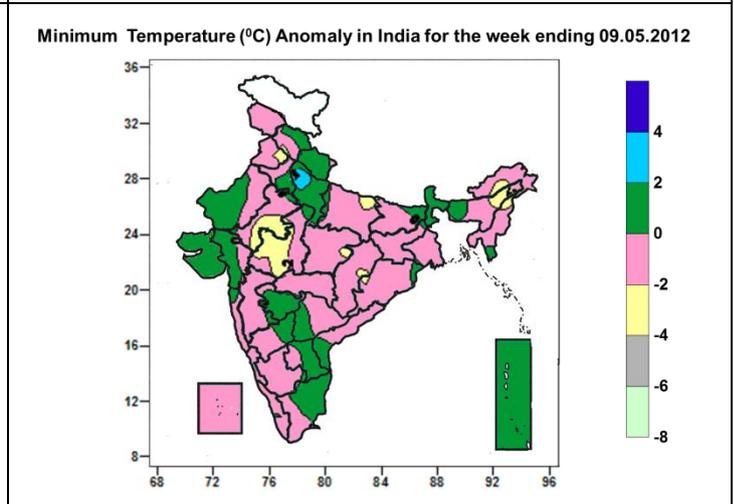
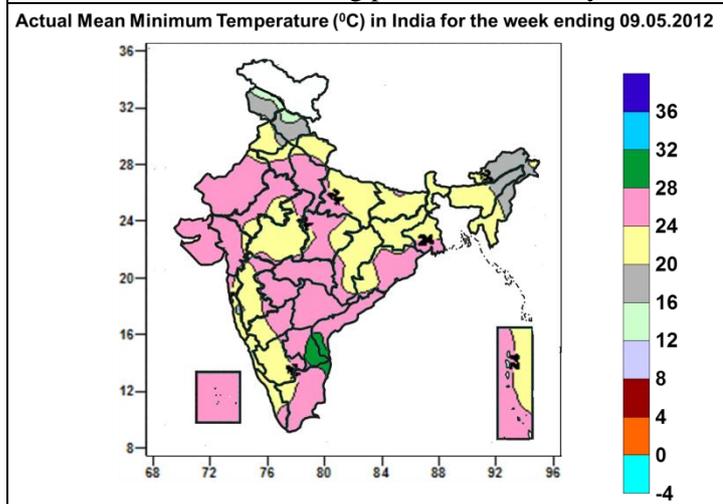
Due to favourable weather conditions, incidences of rice bug in *boro* rice in Assam, leaf folder in rice in Orissa, boll worm in cotton in Tamil Nadu and mites in jasmine, early shoot borer in sugarcane and thrips, mites and blight in chillies in Andhra Pradesh are noticed below economic threshold level (ETL). Farmers are advised to undertake appropriate plant protection measures to control the pests and diseases, if their population goes beyond ETL.

## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 09.05.2012



Actual Mean Maximum temperature ranged between 24 to 28°C over some parts of Jammu & Kashmir, Himachal Pradesh, 28 to 32°C over most parts of Arunachal Pradesh, Nagaland, some parts of Jammu & Kashmir, Himachal Pradesh, Assam & Meghalaya, Manipur, 32 to 36°C over many parts of West Bengal, Assam & Meghalaya, Manipur, Mizoram, Tripura, Coastal & South Interior Karnataka, Kerala, Lakshadweep, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Coastal Orissa, adjoining part of Tamil Nadu, Andaman & Nicobar Islands and between 36 to 40°C over remaining parts of the country

Actual Mean Maximum temperature anomaly ranged between 2 to 4°C and above over most parts Sikkim, Arunachal Pradesh, Assam, Nagaland, Manipur, some parts of Sub-Himalayan West Bengal, Tamil Nadu, 0 to 2°C most parts of Andhra Pradesh, Uttarakhand, Tripura, Lakshadweep Islands, some parts of Jammu & Kashmir, East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Assam, Mizoram, Orissa, Tamil Nadu, Konkan, Saurashtra & Kutch, Andaman & Nicobar Islands, below 0°C upto -4°C over rest of the country.



Actual Mean Minimum Temperature ranged between 12 to 16°C over some parts Jammu & Kashmir, Himachal Pradesh, 16 to 20°C over most parts of Jammu & Kashmir, Himachal Pradesh, Arunachal Pradesh, Nagaland, Manipur, some parts of Punjab, Assam, 28 to 32°C over some parts of Coastal Andhra Pradesh, Telangana, between 20 to 28°C over remaining parts of the country.

Minimum Temperature anomaly ranged between 2 to 4°C over some parts West Uttar Pradesh, 0 to 2°C over most parts of Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Gangetic West Bengal & Sikkim, Saurashtra & Kutch, Madhya Maharashtra, Raylaseema, Andaman & Nicobar Islands, some parts of Bihar, Assam, Tripura, Orissa, Coastal Andhra Pradesh, Telangana, Tamil Nadu, -4 to 0°C over remaining parts of the country.

**Distribution of rainfall of the country during week ending on 09.05.2012**

State/Districts	Actual (mm)	(% Dep.)						
<b>Arunachal Pradesh</b>			Dungarpur	0.0	-100	Cooch Behar	36.9	-33
East Kameng	5.3	-89	Jaipur	0.1	-94	Darjeeling	25.3	-51
East Siang	8.2	-87	Jhalawar	9.3	1450	East Sikkim	22.7	-67
Lohit	2.2	-97	Jhunjhunu	0.0	-100	Jalpaiguri	50.4	-14
Lower Subansiri	10.0	-78	Karauli	0.0	-100	Malda	0	-100
Papumpara	3.2	-97	Kota	21.9	10850	North Dinajpur	0	-100
Tawang	21.0	-65	Pratapgarh	0.0	-100	North Sikkim	18.6	-75
Tirap	20.9	-67	Rajsamand	22.4	1218	South Dinajpur	0	-100
Upper Dibang Valley	1.0	-97	Sawai Madhopur	0.9	-31	South Sikkim	13.3	-80
Upper Siang	3.9	-92	Sikar	0.2	-93	West Sikkim	10	-87
Upper Subansiri	0.0	-100	Sirohi	0.0	-100	<b>Karnataka</b>		
West Kameng	0.0	-100	Tonk	3.2	357	<b>Coastal Karnataka</b>		
West Siang	0.0	-100	Udaipur	9.7	708	Dakshin Kannada	0.0*	-99
<b>Assam</b>			<b>Orissa</b>			Udupi	0.0	-100
Baksa	10.5	-87	Angul	11	29	Uttar Kannada	0.0	-100
Barpeta	20.4	-74	Balasore	1.4	-94	<b>North Interior Karnataka</b>		
Bongaigaon	19.4	-82	Bargarh	8	78	Bagalkote	1.5	-83
Cachar	13.2	-85	Bhadrak	11.8	-44	Belgaum	0.6	-96
Chirang	19.2	-82	Bolangir	3.3	-40	Bidar	0.0	-100
Dhemaji	16.0	-74	Boudh	0	-100	Bijapur	0.7	-87
Dhubri	29.9	-60	Cuttack	9.3	-33	Dharwad	3.5	-78
Dibrugarh	21.2	-69	Deogarh	0	-100	Gadag	12.2	18
East Garo Hills	0.0	-100	Dhenkanal	12	-24	Gulbarga	2.4	-48
East Khasi Hills	9.1	-94	Gajapati	2.3	-92	Haveri	0.0	-100
Goalpara	26.6	-67	Ganjam	17.1	17	Koppal	0.1	-99
Golghat	26.0	-60	Jagatsingpur	10.8	-12	Raichur	2.4	-35
Hailakandi	2.9	-97	Jajpur	4.5	-65	Yadgir	2.1	-21
Jaintia Hills	47.0	-67	Jharsuguda	0.2	-98	<b>South Interior Karnataka</b>		
Jorhat	13.8	-77	Kalahandi	4	-48	Bangalore Rural	3.3	-80
Kamrup(Metro)	14.7	-76	Kandhamal	0.3	-98	Bangalore Urban	12.4	-31
Kamrup	29.7	-52	Kendrapara	17.2	7	Bellary	2.7	-66
Karbi Analog	4.2	-86	Keonjhar	6.6	-69	Chamarajnaragar	25.4	3
Karimganj	6.0	-95	Khurda	2.5	-75	Chichballapur	1.8	-83
Kokrajhar	34.7	-67	Koraput	6.5	-72	Chickmagalur	2.4	-86
Lakhimpur	12.6	-80	Malkangiri	12	82	Chitradurga	9.6	11
Morigaon	4.4	-89	Mayurbhanj	5	-73	Davangere	0.0	-100
N.C.Hills	0.0	-100	Nawapara	0	-100	Hassan	10.0	-49
Nowgong	7.1	-81	Nawarangpur	8	-52	Kodagu	10.2	-61
Nalbari	22.4	-72	Nayagarh	20.9	237	Kolar	2.1	-79
Ribhoi	7.0	-90	Puri	4.4	-58	Mandya	5.1	-71
Sonitpur	30.4	-50	Rayagada	15.2	-20	Mysore	11.3	-52
Sibsagar	21.5	-62	Sambalpur	3	-40	Ramnagara	5.7	-75
South Garo Hills	0.0	-100	Sonepur	0	-100	Shimoga	0.3	-98
Tinsukia	8.7	-85	Sundargarh	0	-100	Tumkur	1.9	-85
Udalgiri	29.2	-61	<b>West Bengal</b>			<b>Kerala</b>		
West Garo Hills	9.4	-87	<b>GWB</b>			Alappuzha	93.4	100
West Khasi Hills	3.0	-95	Bankura	4.9	-63	Kannur	0.0	-100
<b>East Rajasthan</b>			Birbhum	22.8	71	Ernakulam	13.3	-62
Ajmer	8.5	1114	Burdwan	7.5	-39	Idukki	23.0	-30
Alwar	0.0	-100	East Midnapore	22.1	0	Kasaragod	0.0	-100
Banswara	0.1	-89	Hooghly	24.7	11	Kollam	76.6	65
Baran	13.8	3350	Howrah	17	-2	Kottayam	22.9	-47
Bharatpur	0.0	-100	Kolkata	51.8	127	Kozhikode	15.5	-45
Bhilwara	14.9	1763	Murshidabad	14	-5	Malappuram	0.3	-99
Bundi	8.3	1560	Nadia	61.7	291	Palakkad	0.8	-97
Chittorgarh	17.2	1620	24 Pargana (N)	42.1	63	Pathanamthitta	39.5	-30
Dausa	0.0	-100	Purulia	16.4	74	Thiruvananthapuram	27.9	-22
Dholpur	0.0	-100	24 Pargana (S)	29.7	41	Thrissur	11.3	-70
			West Midnapore	25	27	Wyanad	7.0	-70
			<b>SHWB</b>					

<b>Tamil Nadu</b>								
Ariyalur	15.5	22	Salem	19.6	14	Sirkakulam	18	24
Chennai	0	-100	Sivaganga	18.5	32	Visakhapatnam	12.7	-43
Coimbatore	4.4	-79	Thanjavur	1.5	-88	Vizianagram	29.2	41
Cuddalore	0.8	-93	Theni	9.3	-41	West Godavari	15.2	76
Dharmapuri	12.2	-29	Tirunelveli	0	-100	<b>Telangana</b>		
Dindigul	19.6	3	Tirupur	5.2	-65	Adilabad	0	-100
Erode	9.1	-41	Tiruvallur	2.5	-76	Hyderabad	0.5	-90
Kanchipuram	0	-100	Tiruvannamalai	2.4	-80	Karimnagar	0	-100
Kanyakumari	2.4	-91	Tiruvarur	9.9	-9	Khammam	6.3	-16
Karikal	0	-100	Toothukudi	4.8	-56	Mehabubnagar	1.7	-56
Karur	6.3	-51	Trichy	9.6	-24	Medak	0	-100
Krishnagiri	15.6	-8	Vellore	9.6	-26	Nalgonda	0.3	-93
Madurai	19.7	27	Villupuram	1.1	-88	Nizamabad	0.1	-97
Nagapattinam	3	-63	Virudhunagar	27.8	47	Rangareddy	1.1	-80
Namakkal	11.7	-33	<b>Andhra Pradesh</b>			Warangal	2.2	-42
Nilgiris	13.5	-35	<b>Coastal Andhra Pradesh</b>			<b>Rayalaseema</b>		
Perambalur	4.8	-64	East Godavari	9.8	-39	Anantapur	6.1	-23
Puducherry	0	-100	Guntur	8.9	-8	Chittoor	2.8	-75
Pudukottai	15.7	77	Krishna	37.7	539	Cuddapah	1.5	-76
Ramanathapuram	0.2	-98	Nellore	0	-100	Kurnool	2.9	-63
			Prakasam	2.5	-74			

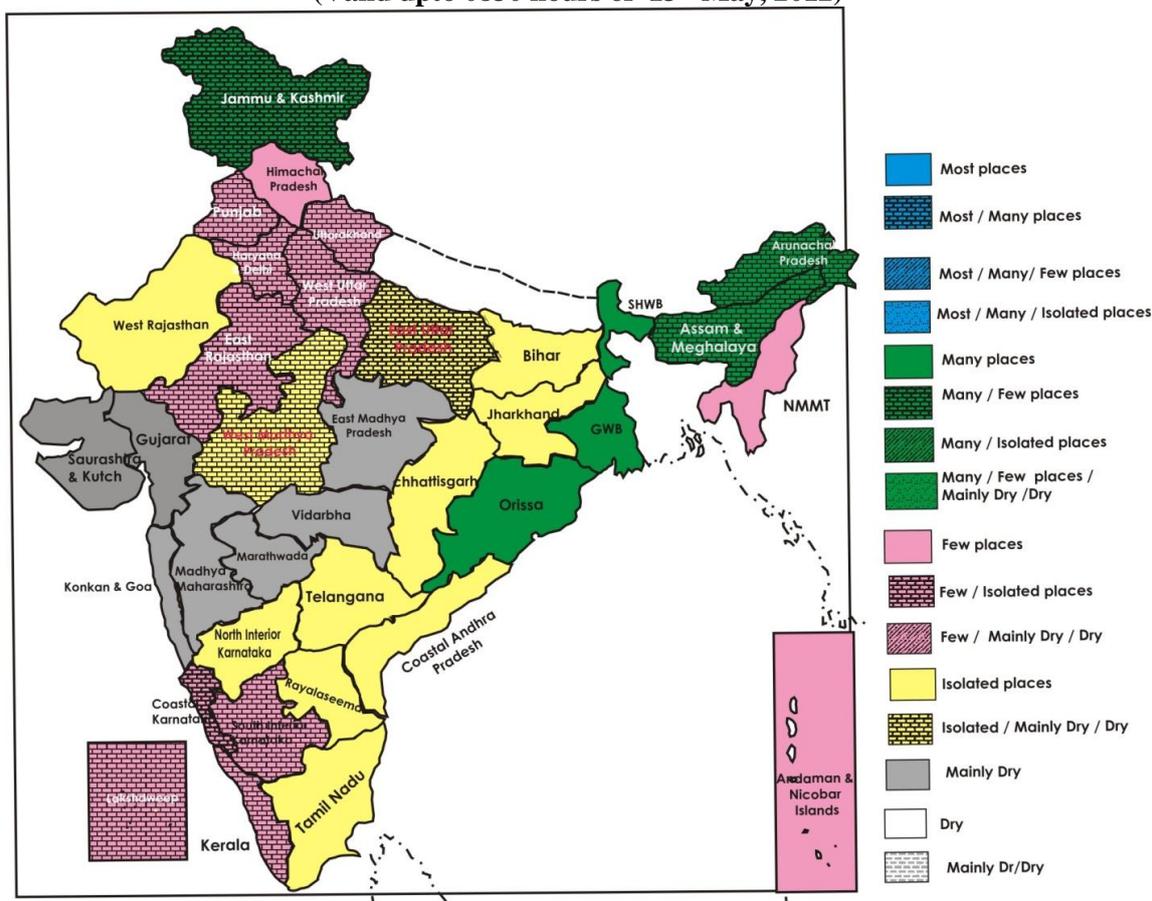


(20% or more) excess rainfall  
(-19 to +19%) normal rainfall  
(-20 to -59%) deficient rainfall



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

## Weather Forecast (Valid upto 0830 hours of 13<sup>th</sup> May, 2012)



### Major Feature of Weather Forecast up to 0830 hours IST of 13<sup>th</sup> May, 2012

- Rain/thundershowers would occur at a few places over Jammu & Kashmir and Himachal Pradesh during next 24 hours and at many places thereafter over Jammu & Kashmir.
- Rain/thundershowers would occur at one or two places over Uttarakhand during next 48 hours and at a few places thereafter.
- Duststorms / thunderstorms would occur at one or two places over Punjab, Haryana, Delhi, Rajasthan and West Uttar Pradesh during next 24 hours with increase in thunderstorm activity thereafter.
- Rain/thundershowers would occur at a few places over Orissa, West Bengal & Sikkim and northeastern states.
- Rain/thundershowers would occur at one or two places over Bihar, Jharkhand and Chhattisgarh.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands and at one or two places over south peninsular India with increase in rainfall activity over Kerala, south interior Karnataka and Lakshadweep from tomorrow.
- Fall in maximum temperature by 2 - 4°C over northwest and adjoining central India during 11<sup>th</sup> & 12<sup>th</sup> May.
- Weather would be mainly dry over remaining parts of the country.

### Weather Warning

- Thundersqualls with wind speed reaching 50-60 kmph would occur at one or two places over Assam & Meghalaya, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan and west Uttar Pradesh during next 48 hours.

### Weather Outlook up to 0830 hours IST of 15<sup>th</sup> May, 2012

- Rain/Thundershowers activity would increase over northeastern states.
- Decrease in rainfall activity over western Himalayan region and south peninsular India.
- Increase in maximum temperature over northwest and adjoining central India.

## Zonewise Agromet Advisories

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

- **Realised Rainfall:** No significant rainfall occurred in most of the districts of Arunachal Pradesh and Assam except Jaintia Hills and Kokrajhar districts in Assam.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places during next 48 hours and increase thereafter over Assam, Arunachal Pradesh and Meghalaya. Rain / thundershowers would occur at a few places during next 48 hours over the remaining States of the region. Thundersqualls with wind speed reaching 50-60 kmph would occur at one or two places over Assam & Meghalaya during next 48 hours.
- **Advisories:**
  - The hailstorm with very high wind speed at Kamrup district and Barpeta district, lots of economically important plants of the homestead garden of the villagers with neighbouring areas were damaged by the storm. Minor crop damages due thunderstorm and hailstorm in Manipur was occurred during last week. Farmers in these regions are advised to arrange for mechanical support for young plants in orchards. Thundersqualls with wind speed reaching 50-60 kmph would also occur at one or two places over Assam & Meghalaya during next 48 hours. Farmers in these regions are advised to arrange for mechanical support for young plants in orchards.
  - As rain / thundershowers would occur at a few places during next 48 hours and increase thereafter over Assam, Arunachal Pradesh and Meghalaya, farmers of these States are advised to postpone irrigation, intercultural operation and application of fertilizer and plant protection measures. As there was no significant rainfall in most of the districts of the remaining States of the region, farmers are advised to apply irrigation to the standing crops.
  - Farmers in the Hill Zone of Assam are advised to continue sowing of okra, ginger, cucurbitaceous crops, black gram and green gram.
  - Farmers in Central Bramhaputra Valley Zone of Assam are advised to continue land preparation and sowing of *Bao* rice, *Capsularis* jute, summer vegetables, summer pulses and planting of sugarcane, ginger and turmeric.
  - Farmers of Lower Bramhaputra Valley Zone of Assam are advised to continue sowing of cow pea, transplanting of *ahu* rice, planting of banana, ginger and turmeric.
  - Farmers in the Upper Bramhaputra Valley Zone of Assam are advised to continue sowing of green gram, black gram, jute, summer vegetables and planting of banana, sugarcane, ginger and turmeric.
  - 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 are advised to give the first top dressing of urea in *ahu* crop. Before top dressing remove all the weeds from the field.
  - Farmers in North Bank Plain Zone of Assam 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 and nursery preparation for early sown WRC crop. Farmers are also advised to continue sowing of maize and summer vegetables.
  - Farmers in Mild Tropical Plain Zone of Tripura are advised to complete sowing of *aus* rice, maize and continue land preparation for sesame, arhar, groundnut and summer vegetables like ridge gourd, cucumber and ash gourd.
  - 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, cauliflower, cabbage etc. and prepare nursery for brinjal.
  - Farmers of Sub tropical Plain Zone of Manipur are advised to continue land preparation and sowing of *kharif* maize, cow pea, ginger, turmeric, French bean and bhindi and transplanting of chilli. Farmers are also advised to undertake 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 advised to undertake sowing of maize, groundnut and soyabean and nursery preparation for sowing of rice.
  - In Mild Tropical Hill Zone of Nagaland, farmers are advised to complete land preparation and planting of turmeric and ginger. Continue nursery preparation for sowing of rice. Provide mechanical support to Rajma plants by bamboo sticks at 15-20 days after sowing as it increases pod yield as well as seed quality.

- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Due to congenial weather conditions there is chance of attack blast disease in *ahu* rice in Upper Brahmaputra Valley Zone of Assam; farmers are advised to monitor *ahu* rice and spray Bavistin @ 1 g per litre of water, if infestation is noticed above ETL.
- *Ghandi* bug infested some late planted *boro* rice fields at milk / dough stage in North Bank Plain Zone, Lower Brahmaputra Valley Zone and Central Brahmaputra Valley Zone of Assam; farmers are advised for dusting of Malathion 5% powder after current spells of rain.
- 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 (FMD).
  - 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.
  - Farmers in Nagaland are advised to vaccinate poultry against bird flu and pigs / piglets against swine flu. Control flies, mosquitoes and external parasites by regularly applying bleaching powder and insecticides like Butox or copper sulphate solution.
  - Farmers in Manipur are advised to vaccinate poultry against Ranikhet / Gumboro disease. Vaccinate and deworm cattle and buffalo against Black Quarter (BQ) & Haemorrhagic Septicaemia and pig and goat against swine fever and Haemorrhagic Septicaemia (HS). Deworm buffalo and goat against *Fasciola* spp. using Oxyclozanide.
  - 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. Vaccinate cattle against Anthrax, Black Quarter (BQ) & Haemorrhagic Septicaemia and pig against Swine Fever.
  - In Mild Tropical Hill Zone of Mizoram, farmers are advised to vaccinate poultry against FMD, Brucellosis, Haemorrhagic Septicaemia and Anthrax. In Mild Tropical Hill Zone of Mizoram, farmers are advised to spray the sheds / barn and animals regularly with Butox liquid @ 2 ml per liter of water to prevent tick infestation in cattle. Due to favourable weather conditions in Mild Tropical Hill Zone of Mizoram, poultry farmers are advised to maintain clean sanitary conditions of poultry sheds and equipment and provide balanced feed, fresh clean water as these are essential to prevent viral diseases.
- **Pishiculture**
  - 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 into 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.
  - Farmers of Barak Valley Zone of Assam are advised to release prawn in their fisheries.

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

- **Realised Rainfall:** Significant rainfall occurred in Nadia, Kolkata and North 24 Parganas districts in Gangetic West Bengal and Cooch Behar and Jalpaiguri districts in Sub Himalayan West Bengal and no significant rainfall occurred in remaining districts of the States of the region.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over Orissa, West Bengal & Sikkim during the period. Rain / thundershowers would occur at one or two places over remaining States of the region.
- **Advisories:**
  - Due to hailstorm in Jalpaiguri and Coochbehar districts of West Bengal, crop damage in maize, jute, bitter gourd and pointed gourd occurred during last week. Farmers in these regions are advised to arrange for mechanical support for young plants in orchards.
  - As significant rainfall occurred in Nadia and North 24 Parganas districts in Gangetic West Bengal and Cooch behar and Jalpaiguri districts in Sub Himalayan West Bengal, farmers in these districts are advised to postpone irrigation to the crops. 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.

- Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to undertake sowing of jute, okra, yam and ginger and also non-paddy crops such as pulses, oilseeds, cotton, sunflower and vegetables either as sole or as mixed cropping in rainfed uplands.
- Farmers in North Central Plateau Zone of Orissa are advised to undertake planting of ginger and provide irrigation to sunflower.
- In South Bihar Alluvial Zone, undertake threshing and drying of wheat and keep it in safe place and continue sowing of elephant foot yam. In view of less rainfall, apply irrigation to maize, moong and vegetable crops in North Bihar Alluvial Zone and maize, lobia, sorghum, bajra and moong in South Bihar Alluvial Zone.
- Prepare the field and arrange the seeds for sowing of ginger and turmeric in Western Plateau Zone of Jharkhand.
- Farmers in New Alluvial Zone of West Bengal are advised to undertake harvesting of early sown *boro* crops immediately. Undertake intercultural operation in jute at three-week stage.
- Farmers in Terai Zone of West Bengal are advised to undertake transplanting of the seedlings of marigold for rainy season flowering, if it reaches the age of 25 days utilizing recent rain.
- Farmers in Coastal Saline Zone of West Bengal are advised to start harvesting of green gram by picking the pods.
- In Laterite and Red Soil Zone of West Bengal, farmers are advised to harvest early sown *boro* rice crops.
- Farmers in Old Alluvial Zone of West Bengal are advised to undertake intercultural operation in jute at three week stage.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- In East and South Eastern Coastal Plain Zone of Orissa, leaf folder has been noticed in late sown summer rice; spray 20 g Streptocycline along with 400 g Copper Oxychloride in 200 litres of water per acre.
- Due to prevailing weather condition in Laterite and Red soil zone and old Alluvial Zone of West Bengal, gundhi bug may attack the *boro* rice during the grain filling stage; apply Carbaril 50% or Dichlorovos 76% to protect the crop. As the present weather conditions are favourable for attack of mites in litchi, apply Dichophol @ 2 ml or Sulfer @ 3 g.
- Due to prevailing weather condition in Terai Zone of West Bengal, white fly may attack lady's finger; apply Chlorothianidin 50% WDG @ 3 g / 16 litres of water.
- Due to increase in temperature, there may be attack of mites in chilli in New Alluvial Zone of West Bengal, apply Dicofol or Kelthane @ 2 ml / litre of water. There is also chance in increase of attack of stem rot in pointed gourd. Apply Bavistin or Benlate @ 1 g / litre of water to control the disease.
- 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 high, provide sufficient water and rice water to the animals before leaving them for grazing. Restrict grazing after 11 am and before 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 should not be allowed to be exposed in sunlight during noon and may be provided with plenty of water for drinking.
- **Pisciculture**
  - In North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa, as the temperature is high, 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.
  - In North Central Plateau Zone and North Eastern Coastal Plane Zone of Orissa maintain average water depth at 5ft level in the pond. Feed fishes with oil cake (bran mixture at 2% of their body weight) daily. Start partial harvesting of fishes above body weight of 750g.

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

- **Realised Rainfall:** Mainly dry weather prevailed over all States of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over Jammu & Kashmir during next 24 hours and increase thereafter. Scattered rainfall is likely over Himachal Pradesh during next three days. Isolated rainfall is likely during next 48 hours over Uttarakhand, during next 24 hours over Punjab, Haryana and West Uttar Pradesh and increase thereafter. Isolated rainfall is likely over West Rajasthan and East Uttar

Pradesh during next three days. Isolated rainfall is likely during next 24 hours, at a few places during next 48 hours and at isolated places thereafter.

- **Warning:** Thundersqualls with wind speed reaching 50-60 kmph would occur at one or two places over Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan and west Uttar Pradesh during next 48 hours.
- **Advisory:**
  - 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. Thundersqualls with wind speed reaching to 50 – 60 kmph is likely at one or two places over Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan and west Uttar Pradesh during next 48 hours.
  - Duststorms / thunderstorms would occur at one or two places over Punjab, Haryana, Delhi, Rajasthan and West Uttar Pradesh during next 48 hours with increase in thunderstorm activity thereafter. Farmers are advised to arrange to transport the harvested produce to safer places and also arrange for mechanical support for vegetables and young plants in orchards.
  - Present weather conditions are highly conducive for nursery, farmers are advised to undertake field preparation for early cauliflower. Optimum moisture level should be maintained in cucurbitaceous crops by light and frequent irrigation as dry conditions may lead to poor pollination and thus drop in yield of the crop. Farmers are advised to cover harvested grains. Undertake sowing of guar, maize, bajra, cluster bean as fodder crops during this week.
  - 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 deep ploughing in hot summer to destroy soil borne pests. Prepare nursery for rice and citrus fruits. Continue land preparation and sowing of cotton (Desi kapas, B.T. kapas and Narma kapas). Also undertake ( jowar / bajra mixed with guar, Sudan grass, oats, maize, sorghum etc.) for green fodder. Due to increase in temperature, apply light and frequent irrigations to avoid damage to horticultural crops. Cover the tree sapling with thatching material to protect against heat and ensure proper aeration.
  - In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to complete transplanting of tomato, onion, brinjal, chilli crop and undertake new nursery sowing of brinjal, chillies. Continue sowing of maize and go for nursery sowing of rice. Also undertake sowing of dhaincha crop in fallow field for green manuring in order to maintain the soil fertility. Continue the sowing of summer fodder (maize + cowpea + jowar) in order to meet the fodder requirement in summer months. Farmers are also advised to go for deep ploughing with soil turning plough in order to expose the soil and killing of larvae of insects during these days.
  - In Intermediate zone (Pahalgam) of Jammu & Kashmir, farmers are advised to sow ginger and knolkkhol and harvest berseem raised for seed purpose.
  - In Cold Arid Zone of Leh in Jammu & Kashmir, farmers are advised to transplant cruciferous crops and onion in the main field in lower and middle belts, transplant rare vegetables like celery, parsley and leek in the main field, tomato, capsicum and chilli in the lower belts of the districts under open and under open protected structures in the middle belts. Undertake direct sowing of cucurbits under greenhouses, trenches and low tunnels and also of spinach, carrot, beet root, coriander and fenugreek.
  - In Valley Temperate zone of Jammu & Kashmir, farmers are advised to undertake field preparation for sowing of rice, maize and *kharif* pulses. Drain out rain water from oilseed and pulse crops till maturity. Continue transplanting of seedlings of solanaceous vegetables produced under open conditions and also seed sowing of cucurbits, kale, knol khol, bhindi and beans. Grow chillies on raised beds or on ridges.
  - Farmers in Mid Hills Sub-Humid Zone of Himachal Pradesh are advised to nursery bed s for brinjal and chilli etc. Direct planting of cucumber, pumpkin, bitter guard and other cucurbitaceous vegetables may be undertaken during the week. Harvesting of peas and cauliflowers may be undertaken.
  - Farmers in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh are advised to sow Chari, bajra and maize in low hills for green fodder. It is time for sowing of bhindi, khira, summer squash, bitter gourd, tori, brinjal, shimla mirch, pepper and tomato in polyhouses.
  - In Uttarakhand, farmers are advised to continue for sowing of Chaitee Dhan in nursery, Frenchbean and also crops like sunhemp, maize, jowar and cowpea for green manuring. Farmers are advised to prepare land for sowing of maize under optimum soil moisture, okra, ginger and irrigated rice. Also undertake sowing of Farmers (at 1500 m msl height) are advised to go for sowing of seeds of bottle gourd, bitter gourd, ginger and turmeric etc. during this week.
  - In Bhabar and Tarai Zone of Uttarakhand, farmers are advised to go for sowing of maize and lobia in fields under optimum soil moisture. Litchi fruits are now partially turning to yellow in colour, hence in

order to protect them from high temperature conditions, farmers are advised to spray cold water during morning hours for better fruit development.

- Farmers in Punjab and Haryana are advised to complete sowing of recommended varieties / hybrid varieties of cotton / desi cotton including Bt cotton during this period as it ensures better yield. Irrigate the standing vegetable crops once a week regularly. To avoid the adverse effect of hot weather on fruit trees apply whitewash on the trunk of trees, if not done earlier. Due to prevailing hot weather conditions, irrigate sugarcane crop at 8 to 10 days interval. As temperature is increasing, give need based irrigation to the pulses.
- In Bhabar and Tarai Zone of Uttarakhand, due to rise in temperature conditions, there are chances of fruit borer to damage fruits of litchi, hence if these insects are seen on fruits, then farmers are advised to spray Endosulphan @ 1.5 ml per liter of water.
- Farmers in Uttar Pradesh are advised to irrigate moong crop sown before 25 to 30 days and cucurbits crops at an interval of 4 to 5 days. Undertake sowing of urad, maize, sunflower and vegetables like okra, cucumber, pumpkin etc. After harvesting of berseem and jai, start sowing of maize, lobia etc., Sanai and Dhaincha also for green fodder purpose. 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.
- In Flood Prone Eastern Plain Zone (Bharatpur), there are chances of spread of leaf curl and mosaic disease on chilli crop. Farmers are advised to uproot and burn affected plants to check the spread of disease and spray Dimethoate 30EC @ 1.0 ml per litre water.
- In Irrigated Northwestern Plain Zone of Sriganganagar in Rajasthan, attack of green hairy caterpillar is seen in standing crop at some places. Hence, farmers are advised to monitor their fields and if attack is seen then spray Indoxacarb 14.5 A.C. 1 ml per liter or Spinosed 45 AC 0.33 ml per litre water on crop, for its control.
- Late blight in potato is expected in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, spray Dithane M-45, 25 gram in 10litres of water and repeat the spray at 10-15 days interval. On Mango plant hopper may attack, for control spray Nuvan 1 ml per litres of water. In pomegranate fruit is in flowering stage and anar butter fly is the major problem in this weather, to control spray cypermethrin 10Ec@ 1 ml per litre of water at 15 days interval.
- Farmers in Delhi are advised to monitor lady finger crop against attack of mite, jassid and hoper, spray Phosmite @ 1.5 - 2 ml/ litre of water to control mite if symptoms observed. Also monitor cucurbitaceous crops against attack of powdery mildew, spray Mencozeb @ 2 gram per litre of water in the evening if symptoms observed.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - In Punjab and Haryana provide cool and fresh water to birds. Provide sufficient water to avoid excess movement of birds. Proper vaccination schedule must be followed. Vaccinate the chicks of 6-8 weeks with Ranikhet disease vaccine and fowl pox vaccine at 8-10 weeks of age. Gal Ghotu, Black Quarter (Pat Soja) can cause heavy loss of animal life in unvaccinated animals. If it is not already done, get your animals vaccinated immediately against the disease.
  - In Bhabar and Tarai Zone of Uttarakhand, due to expected dry weather and rise in temperature conditions, farmers are advised to feed Urea treated husk to animals of more than 6 month old age. Keep all types of animals under the shed & give them fresh and cold water. Vaccinate the animals for various diseases as they are more prone to diseases in this weather. For the control of cough use piperazine citrate @50-30 ml/animal.
  - In Sub-Tropical Zone of Jammu in Jammu & Kashmir, prevailing temperature may cause tick problems in pet animals which can be eradicate regularly.
  - In valley temperate zone of Srinagar in Jammu & Kashmir, allow to out during day time for grazing. They should be balanced feeds during night time. The sheds should cover properly during the days when winds will be blowing. Proper arrangements should be made poultry shed with respect to providing war math during cold days. Avoid cold drought within the brooding sheds.
  - It is high time for vaccination of animals against FMD as animals are shifting from plain to higher reaches in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh. Weather is conducive for ticks and mites attack on animals. For control spray Butox @ 2.0 ml per litres of water.
- **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 Pahalgam (Rajouri), farmers are advised to continue planting of tuberose bulbs and the seedlings of summer annuals can be transplanted in beds when they attain four-leaf stage. Continue harvesting of gladiolus spikes.
- It is time for raising nursery of summer flowers viz. China aster, glardia, rudevekia, Kochia, African marigold, French marigold, partulaca, Tithinia, Torinia and cleome in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh.
- **Apiculture**
  - In Intermediate Zone (Pahalgam / Rajouri), it is advised to provide adequate space to the colonies for brood rearing and storage of nectar. Maximum number of comb foundation sheets be got raised by inserting newly fixed sheets in between the two drawn frames. Provide supers well in time to avoid congestion and proper storage of honey. Keep colonies in shade or cover with wet gunny bags. Division of bees can be taken during the month.
  - Shift the bee colonies near citrus, litchi, shisham, Eucalyptus, vegetables and berseem crop in order to availability of pollen and nectors. 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.
  - In Sub\_Tropical Zone of Jammu, farmers are advised to keep the bee colonies in shade or cover with wet gunny bags. Provide supers well in time to avoid congestion and proper storage of honey. Prevent swarming by providing ample space and drawn combs.

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

- **Realised Rainfall:** Alapuzzha, Kollam, Thiruvananthapuram and Pathanamthitta in Kerala, Coimbatore and Virudunagar in Tamil Nadu, Krishna and Vizianagaram in Coastal Andhra Pradesh and Chamarajnar 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 one or two places over south peninsular India with increase in rainfall activity over Kerala, coastal and South Interior Karnataka from tomorrow.
- **Advisories:**
  - As Alapuzzha, Kollam, Kottayam, Pathanamthitta and Thiruvananthapuram in Kerala, Coimbatore and Virudunagar in Tamil Nadu, Krishna and Vizianagaram in Coastal Andhra Pradesh and Chamarajnar 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.
  - Farmers in the North Coastal Zone of Andhra Pradesh are advised to take care while harvesting paddy and take up summer ploughings by utilizing the pre-monsoon rainfall.
  - Farmers in the Eastern Dry Zone of Karnataka are advised to plough the land in the areas where rainfall has been received and it should be taken up across the slope, as it improves not only infiltration and conservation of rain water but also avoids soil erosion and checking of the weeds, since there is possibility of light showers after two days. Farmers are also advised to test soil mineral content in crop lands and prepare required dosage of fertilizers for next sowing season.
  - 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, if sufficient rains have been received, maintain sufficient moisture in the vermi-compost pits, take up the repairs of bunds and check dams, so as to reduce the run off for avoiding soil erosion.
  - Farmers in the North Dry Zone of Karnataka are advised to continue summer pruning in grapes, take up summer ploughing and remove the roots of Hariyali and Cyperus to facilitate not only conservation of water during summer rains but also to expose the pupa of insects present in the soil to the sun and get destroyed, control the weed, practice soil and water conservation and maintain sufficient moisture in the vermi-compost pits. The left over crop residue should not be burnt. They should be used for making compost or vermi-compost or they should be incorporated in the soil at the time of ploughing the land.
  - 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 North Transition Zone of Karnataka are advised to take up harvesting and threshing of chickpea, maize, sorghum, chilli, and wheat as early as possible.

- 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 utilising 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. Build moisture conservation structures across the slope, remove the perennial weed shrubs which are on the bunds to avoid further spread of weeds and take up summer ploughing to keep the fields free from weeds and insect pest's pupa. Since relative humidity forecast is on the lower side, farmers are advised to continue paddy harvesting (with combined harvester) till 8.00 pm night (extend the period of harvest beyond 11 hours), thereby covering more area in a single day. Temporary protection should also be made to summer vegetables to reduce the damage due to increasing temperature.
- Farmers in the Central Dry Zone of Karnataka are advised to clean all drainage channels before the commencement of monsoon, transfer the strong and better areca nut seedlings from primary seed bed to secondary seed bed and continue raising and multiplication of seedlings of black pepper.
- Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to undertake summer ploughing to control weeds and larva of insects and raise of green manure crops like daincha, sunhemp and kolingi utilizing the summer rainfall received during the last week.
- Farmers in the South Zone of Tamil Nadu are advised to avoid operations like spraying, irrigation etc., as moderate rainfall is expected during coming days.
- Farmers in the Western Zone of Tamil Nadu are advised to destroy the weeds that grow as a result of the rainfall received during the last week, by ploughing in order to minimize the weed inoculum. As heavy winds are expected during the coming days, farmers are advised to provide stacking for banana and propping for sugarcane, undertake earthing up on 45th day after planting of sugarcane and avoid irrigation and spraying, since light rainfall is expected during the coming days.
- Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to undertake spraying of chemicals, undertake sowing of vegetables like potato, beans, radish, beetroot, turnip, knol khol and exotic vegetables and ensure good field sanitation and drainage to prevent diseases. As there is forecast for rather heavy rainfall, spraying of chemicals may be scheduled accordingly after the showers.
- Farmers in the High Altitude Zone of Kerala are advised to harvest the matured paddy crops as early as possible.
- 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, plough the harvested field and inundate water to maintain soil property and prevent drying and apply fertilizers. They are also advised to undertake planting of ginger and turmeric cultivation after receipt of pre-monsoon showers.(varieties of ginger and turmeric are given in Annexure I).
- Farmers in the Southern Zone of Kerala are advised to stop irrigation in coconut and banana and start tapping of rubber after few good showers of rain. In areas where harvesting has started, farmers should be cautious about the storage of grains, raise healthy seedlings in seed beds for transplanting and adopt wet or dry method for raising them. They are also advised to undertake new planting of tapioca, earthing up for already planted tapioca and planting of tissue culture banana only after rain. In areas where harvesting have started farmers should be cautious about the storage of grains. Prepare nursery for *virippu* crop. Plough the fields properly after the receipt of good rains. Since rain is expected, open the basins after a few good showers and apply organic manures and chemical fertilizers in case of coconut. This helps to reduce the acidity and increase the uptake of nutrients. Preparations can be started to fit tapping shades and planting of brinjal and chilli.
- Incidences of bollworm are noticed in summer irrigated cotton and in rice fallow cotton in the Cauvery Delta Zone of Tamil Nadu due to the prevailing hot weather. Farmers are advised to spray Profenophos at 2 ml/lit of water can be sprayed during morning or evening hours to control them.
- Farmers in the Western Zone of Tamil Nadu are advised to undertake plant protection measures against shoot borer attack in brinjal and mealybug incidence in groundnut.
- Wild rice / weedy rice (*varinellu*) infestation was noticed during the preceding additional crop season in the Problem Area Zone of Kerala, farmers are advised to adopt stale seed bed technique in areas where burning of rice straw followed by dry ploughing is undertaken. This should be followed by flooding for 20 days and sowing must be done without disturbing the field immediately after draining the field.
- 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.
- Due to increase in day temperature (37° to 39°C) in poultry farm, there is probability of drop in feed intake. Hence, farmers in the North East Transition Zone of Karnataka are advised to maintain optimum temperature by applying 4-6 inch thick hay thatch as a roofing material, use water for spraying the floor and roof of shelter, periodically during peak hot hours to lower the temperature in poultry and make cool water available to the birds because of peak hot temperature.
- Farmers in the North Dry Zone of Karnataka are advised to vaccinate (ET vaccine) sheep and goats against enterotoxemia and the animals against Foot and mouth disease (FMD vaccination), BC vaccination against Black Quarter and cow, buffalo and bullock against Haemorrhagic Septicaemia, before onset of monsoon.
- Rainfall last week may bring about increase in relative humidity and temperature which will affect the broiler birds adversely and lead to heat stroke and mortality. Farmers in the North Eastern Zone of Tamil Nadu are advised to provide adequate ventilation by providing fans, allow cross ventilation and other cooling systems.
- Farmers in the North Western Zone of Tamil Nadu are advised to vaccinate all the desi birds with RD vaccine immediately, since there is a chance of outbreak of Rainkhet disease due to reduced resistance and summer regains its hotness after a spells of rain.

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

- **Realised Rainfall:** Mainly dry weather prevailed over Maharashtra and Gujarat State during last week.
- **Rainfall Forecast:** Weather would be mainly dry in Maharashtra and Gujarat State.
- **Advisories:**
  - As dry weather prevailed during last few weeks in the States of the region and mainly dry weather is likely to prevail during the period, farmers are advised to apply irrigation to the standing crops.
  - Farmers in East Vidarbha region of Maharashtra are advised to maintain 10 cm water level in rice field at flowering / grain formation stage. Undertake sowing of jowar for fodder to animals.
  - Farmers of Sindhudurg district are advised to continue harvesting of already matured summer rice, groundnut and sunflower in the morning hours. Harvest the mature mango fruits at 80 to 85% maturity. Keep the harvested fruits in shade and cover them to prevent incidence of spongy tissue disease.
  - 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 in Konkan region are advised to prepare nursery bed for *kharif* rice and nagali. There may be increase in wind speed in South Konkan during the week; farmers are advised to provide support to newly planted grafts and proper shade to the grafts.
  - Farmers of North Madhya Maharashtra are advised to apply irrigation to cotton to avoid wilting.
  - As day temperature is high in Marathwada and Vidarbha, farmers are advised to apply mulches of trash in rows to minimize rate of evaporation. Reduce the duration between two irrigations.
  - Farmers in Middle Gujarat Zone are advised to apply irrigation to summer crops. Harvest premature mangoes for pickles. Apply wheat or mustard straw mulch under mango tree to reduce impact of injury and spongy tissue.
  - Farmers in Bhal and Coastal Zone of Gujarat are advised to irrigate vegetable and fodder crops at 7 to 9 days interval. Taking the advantage of dry weather, spray 1 liter of glyphosate or gramoxen in 500 liter of water per acre to control weeds in fallow land. Undertake deep ploughing of fields.
  - Farmers in North West Zone of Gujarat are advised to irrigate groundnut, bajra and vegetable crops. Undertake intercultural operation in summer bajra. The field may be deep ploughed across slope and kept ready for *kharif* crops.
  - Farmers in South Saurashtra Zone of Gujarat are advised to apply irrigation in peanut, bajra and fruit crops.
  - Due to high temperature, farmers in South Gujarat Heavy Rainfall Zone are advised to irrigate fruit crops, vegetables and groundnut during morning hours. Cover papaya fruits using gunny bags to avoid scorching. Apply wheat or mustard straw mulch under mango tree to reduce impact injury and spongy tissue. Dig out

dried castor plants at the earliest and deep plough the field for soil solarization to kill fungal spores and other pathogens.

- In view of high temperature, farmers in South Gujarat Zone are advised to irrigate vegetables regularly. To control evapotranspiration from sugarcane field, mulching with dry leaves of sugarcane in between two rows of sugarcane may be done. In mango, spray 10 ppm Gibberellic acid and 2% urea solution for good vegetative growth.
- Due to prevailing high temperature, farmers in North Saurashtra Zone are advised to apply irrigation to onion, garlic and groundnut at 8-10 days interval and keep the groundnut fields free of weeds.
- Due to high temperature and high intensity of solar radiation, farmers in North Gujarat Zone are advised to apply regular irrigation in summer crops. Carry out deep ploughing in harvested fields for destruction of soil pests and fungus in high intensity of solar radiation. Top dressing of 2nd split dose of Nitrogen fertilizer @ 25kg / ha at 55 to 60 days after sowing in sorghum may be done. Protect grains of bajra against bird's damage. Regularly pluck matured fruits and vegetables. Cover papaya fruits using gunny bags and provide support to heavy fruiting plants. Irrigate pomegranate, sapota, lemon and papaya orchards.
- Suitable varieties of the crops for sowing are mentioned in Annexure II.
- Prevailing cloudy weather conditions are favourable for infestation of powdery mildew in okra, guar in Madhya Maharashtra; spray Sulphur WS 80% @ 2 g per litre of water.
- Due to water stress and high temperature, there may be attack of white fly in sugarcane in Ahmednagar district; release larvae of *Crysoperla Carnea* predator @ 1000 / ha or 2000 eggs / ha. For chemical control spray Methyl Demeton 25 % @ 32 ml or Dimethoate 30% @ 26 ml in 10 litres of water.
- Due to partial cloudy conditions in the current week, there may be infestation of mango fruit fly on mango in Sindhudurg district; install Rakshak traps @ 4 traps per ha. To avoid further spread of the pest, farmers are advised to collect and destroy fallen infested mango fruits in the orchard.
- Due to variable sky prevailed during last week in South Gujarat Heavy Rainfall Zone, there are chances of sucking pest infestation in vegetables. Farmers are advised to spray 0.1% solution of Dimethoate 35 EC to manage the pest.
- Stages of major crops are mentioned in Annexure-I.
- **Animal Husbandry:**
  - Make arrangement of shade and fresh drinking water for cattle. Put curtain on west direction in poultry to protect against hot wind and spray water on them during noon hours to avoid heat stress in Middle Gujarat Zone and North Gujarat Zone.
  - Due to high temperature forecast in South Gujarat Heavy Rainfall Zone, keep animals under shade during daytime and provide adlib clean drinking water. Vaccinate animals against FMD and BQ to avoid disease outbreak during ensuing monsoon season. Avoid transportation of poultry birds during noon time. Put curtains on west side of poultry house and sprinkle water on curtains during noon time.
  - Give Anthrax vaccination and tablets for controlling Karamia in cattle in North Saurashtra Zone.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the region.
- **Rainfall Forecast:** Mainly dry weather is likely over East Madhya Pradesh and West Madhya Pradesh during next 48 hours and isolated rainfall in West Madhya Pradesh after 48 hours. Isolated rainfall is likely over Chhattisgarh during next three days.
- **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.
  - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to keep tied harvested crop for protection from strong wind. As transpiration rate and temperatures are higher, farmers are advised to give frequent irrigation to summer crops like moong, urad cucurbitaceous crops, okra, cowpea, and other vegetables. Weeding and intercultural practices is also recommended. They are also advised to complete harvesting and threshing of wheat crop.
  - Farmers of Gird Zone of Madhya Pradesh are advised to give irrigation during evening to urad, moong, chilli, okhra, tomato and fodder crop as per requirement.
  - Farmers in Nimar valley Zone of Madhya Pradesh are advised to irrigate moong, urad and vegetables. Farmers are also advised to sow maize for green fodder during June and July month also irrigate summer fodder crop after an interval of 10-12 days.

- 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 as per requirement.
- In view of moderate wind of an average speed of (09-17km/hr) and light rainfall at few places during next five days farmers in Bundelkhand region of Madhya Pradesh are advised advised to thresh their crops, and store properly at safe place. They may start summer deep ploughing (20-25cm) in their bare field. Those farmers have good irrigation facility they are advised to start sowing of maize or Sesbania for green manure during the week. In view of prevailing maximum temperatures, irrigate vegetable crops, including orchards in the evening or in early morning.
- Farmers in Satpura Plateau of Madhya Pradesh are advised that summer crops like moong, urd, groundnut, maize and fodder crops needs timely irrigation, weeding and intercultural operations and start preparing field for cotton crop.
- Farmers in Vindhyan Plateau region of Madhya Pradesh are advised to store grain and farm machinery properly at safe place.
- Farmers in Jhabua Hills region of Madhya Pradesh are advised to irrigate maize, green gram, black gram and groundnut at proper time (7-10 days interval). Field preparation may be done for spices crops like garlic, termaric and arbi.
- 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 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.
- **Animal Husbandry & Poultry**
  - Farmers in Kymore Plateau and Satpura Hills region, Central Narmada Zone, Malwa Plateau Zone, Jhabua Hills 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.
  - Favorable weather condition may increase the mosquito & flies population in Satpura plateau of Madhya Pradesh hence create neem leaf smoke in cattle shed to protect the cattle from mosquito & flies.

# Annexure I

## Major Crops

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

- Sugarcane (planting / early vegetative), *boro* rice (dough / maturity / harvesting), *ahu* rice (direct seeded) (tillering), *ahu* rice (transplanted) (tillering / panicle initiation / heading), tomato, pumpkin, bottle gourd (vegetative / flowering / fruiting), okra (sowing), black gram, green gram (branching / flowering / pod formation), maize (sowing / early vegetative), *Capsularis* / *Olorius* jute (sowing / seedling / vegetative), summer vegetables (vegetative / flowering / fruiting), cow pea (sowing / seedling), cucurbits (sowing / vegetative / flowering), banana (planting), ginger / turmeric (planting / early vegetative) in Assam.
- *Jhum* and WRC rice (sowing), maize (sowing / vegetative), black gram, green gram (early vegetative / vegetative), okra, beans, cucurbitaceous vegetables (sowing / early vegetative / vegetative) in Arunachal Pradesh.
- Summer rice (vegetative / flowering / grain formation), cucurbits (sowing / transplanting / vegetative / flowering), 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 / vegetative), ginger, turmeric (sowing) in Manipur.
- *Boro* rice (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.
- Rice (nursery preparation), groundnut, soyabean (sowing), *Khasi* mandarin (vegetative / flowering / fruiting), banana (vegetative / fruiting / maturity / harvesting), *kharif* maize (sowing), bean (early vegetative / vegetative), okra, cucurbits (flowering / fruiting / harvesting), ginger / turmeric (planting) and urad, moong (flowering / pod formation / harvesting) in Mizoram.
- Rice (nursery preparation), pea (pod maturity / harvesting), maize (flowering / cob formation), tomato (vegetative / flowering / fruiting / harvesting), ginger, turmeric (planting / vegetative), rajma (sowing / germination / vegetative / flowering), banana (vegetative / fruiting / harvesting), potato (vegetative) in Nagaland.
- *Aus* rice (sowing / transplanting / vegetative), sesame, arhar (sowing), maize (flowering), *boro* rice (grain formation / maturity), cucurbits (sowing / seedling), okra (flowering / fruiting) in Tripura.

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

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

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

- Vegetables (bhindi, cucurbits), potato (sowing / germination), mirch, brinjal (nursery sowing in polyhouses), cucurbits viz. cucumber, summer squash, bitter gourd, bottle gourd (nursery sowing in polytubes 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.

- Chilli, tomato, brinjal and cucurbits (Vegetative and fruiting Stage), French bean, cluster bean, summer radish, summer green gram (Vegetative and fruiting Stage), Ladies finger (Vegetative and fruiting Stage), Gwar, maize, Bajra, cluster bean as fodder crops (sowing) in Delhi.
- Cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative/flowering), onion (transplanting), bhindi, radish, turmeric, ginger, knolkhol (sowing), berseem (harvesting), jowar, summer moong, mash, dhaincha (green manuring), berseem (fodder), summer fodder (maize + cowpea + jowar) (land preparation / sowing), maize (sowing / emergence), turnip, cruciferous crop (viz. cabbage, cauliflower, knolkhol, kale, broccoli), solanaceous crops (tomato, brinjal and chilli, capsicum), (nursery sowing/transplanting), [cruciferous crops, onion, tomato, capsicum, chilli, rare vegetables viz. celery, parsley, leek (transplanting in the main field), cucurbits under greenhouses, trenches, low tunnels, spinach, carrot, beet root, coriander, fenugreek] (direct sowing), Horticultural crops (various stages) viz. [peach, plum & mango (flowering), ber, orange & guava (fruiting)] in Jammu & Kashmir.
- Chilli, capsicum, cauliflower, broccolli (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 (vegetative/flowering), 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), brinjal, potato (vegetative), sunflower (germination), Chaitee dhan, maize, lobia, sunhemp, cowpea, jowar for green fodder (sowing), French bean, ginger, okra, maize (sowing), irrigated rice (land preparation / nursery sowing) in Uttarakhand.
- 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), maize (grain formation), fodder maize, lobia, jowar (sowing), Sanai, Dhaincha (sowing), sugarcane (planting/ initial growth (tillering)), mango (flowering / fruiting) in Uttar Pradesh.
- Spring sugarcane (sprouting / tillering), berseem (vegetative / harvesting), barley (harvesting) radish, carrot, turnip, onion, cauliflower (transplanting / vegetative), tomato, cucurbits, sunflower (sowing), cotton (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) and radish, cotton (sowing), turnip (sowing) in Haryana.
- Sweet potato, chilli and cluster bean (vegetative / pod formation), oats, lucerne, taramira, 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 / seedling), sugarcane (new planting), cotton (Desi kapas, B.T. kapas, Narma kapas, American Cotton) (land preparation / sowing), jowar and bajra mixed with guar, Sudan grass, oats, maize, sorghum etc. for green fodder (land preparation / sowing) in Rajasthan.

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

- Sugarcane (rationing / vegetative), summer groundnut (pegging / harvesting), maize (harvesting), late planted paddy (harvesting), wheat (harvesting), black gram / green gram (harvest), mango (fruiting/harvesting), cotton (boll development/picking), vegetables (fruiting) and horticultural crops (fruiting) in Karnataka.
- *Rabi* groundnut (harvesting), *rabi* paddy (maturity/harvest), *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 (harvest), tomato (fruiting) and bhindi (fruiting), mango (fruiting), fruit crops (flowering to fruiting), water melon (fruiting) and sesasum (harvest) in Andhra Pradesh.
- Pepper & ginger (harvesting/planting), rubber (tapping), irrigated banana (bunching), cardamom (nursery), nutmeg (maturity/harvest), sugarcane (grand growth/elongation), vegetables (nursery/planting), summer vegetables (fruit bearing), *puncha* paddy (tillering), virippu paddy (nursery sowing), coconut (seed nut collection) in Kerala.

- Rice - *Samba* (harvest/ nursery sowing/ transplanting), *Thaladi* (harvest/ nursery sowing/ transplanting), rice fallow black gram (maturity), rice fallow black pulses (pod maturity/harvesting), sugarcane (vegetative/grand growth stage), gingelly (vegetative / flowering), tomato (fruiting), summer irrigated cotton (flowering), pulses (vegetative), cotton (flowering/boll formation), vegetables (harvest), maize (vegetative/tasseling/harvesting), pearl millet (vegetative), sorghum (harvesting), irrigated groundnut (flowering/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, grain formation in North Konkan and East Vidarbha), summer groundnut (pod maturity / harvesting in South Konkan and pod formation / maturity in Madhya Maharashtra, Marathwada and West Vidarbha), bajra (grain formation / grain maturity in Pune and Nashik Division) in Maharashtra.
- Summer groundnut (pegging / pod formation / seed formation), sesame (vegetative / flowering / capsule formation), summer rice (grain formation) and summer bajra (grain formation), summer moong, urad, cowpea (vegetative / flowering / pod formation), sugarcane (early vegetative), vegetables (flowering / fruiting / harvesting) and cluster bean (sowing / seedling) in Gujarat.

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

- Sugarcane (knee height stage), vegetables (fruiting), moong (early vegetative / vegetative), 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 / maturity), cauliflower, tomato, brinjal, chilli(maturity), onion (planting), summer rice (tillering), summer vegetables (land preparation / sowing / vegetative), moong, urad and maize (sowing) in Chhattisgarh.

## **Annexure II**

### **List of Varieties**

#### **Assam**

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

**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.

**Snake gourd :** Long Green, Long White and Extra Long.

**Ridge gourd :** Pusa Nasdar, AAUJ-1, AAUJ-2, AAUC-3.

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

**Maize :** HQPM -1

#### **Meghalaya**

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

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

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

**Bottle gourd:** Pusa Summer, Prolific Long, Prolific Round, Pusa Meghdoot.

**Capsularis jute:** 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.

#### **West Bengal**

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

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

#### **Jharkhand**

**Ginger:** Bardhwan or Nadia.

**Turmeric:** Rajendra Sona.

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

**Elephant foot yam:** Gajendera, Shree Padma, Santragachhi.

### **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.

**Cabbage:** 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

**Bhindi:** P-8, Prabhini kranti, Arka anamika.

### **Jammu & Kashmir**

**Vegetable crop** like **radish** (var. Pusachetki, Japanese white & Pusaresmi), **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), ginger (Local), **Knolkhol** (W. Vienna).

**Brinjal :** PPL, PPC, PPPR, **Chillies :** NP-46A, Pusa jawala

**Jowar :** Ujjain, Swarna-413, M.P.chari & PoineerJowar ,

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

**Maize (unirrigated) :** Super Composite (Mansar), C-6, Vijay, Him-123, Local Tall, [GS-2, Vijay, Mansar, C-5 and C-8 in mid to high altitude area (intermediate region)).

**Rice (Irrigated) :** Var. of dhaincha seed K-84, K-39 having southern aspects, Giza-14 IET-1410,K-39, Ratna, PC-19, Jaya RR-8585,Basmati 370 and Ranbir Basmati

### **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.

**Groundnut:** SG 99 or M 522/SG 84

**Radish:** Pusa, chetki , Punjab Ageti

### **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.

**Groundnut:** SG 99 or M 522/SG 84

**Radish:** Pusa, chetki , Punjab Ageti

### **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, DRS-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.

**Irrigated rice** : Vivek Dhan 85, B.L. Dhan 65, B.L. Dhan 66, Pant Dhan 11

**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, VL-42, Vivek-5, Vivek Sankar Makka-9, **composite var.** V.L. Makka-88, V.L. Makka-41, Navin, Sartaj, V.L. Makka 16.

### **Uttar Pradesh**

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

### **Kerala**

**Ginger:** Wayanad local, Rio-De Janero, Varada, Mahima

**Turmeric:** Suguna, Sobha, Suvarna, Kanthi, Sona.

### **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.

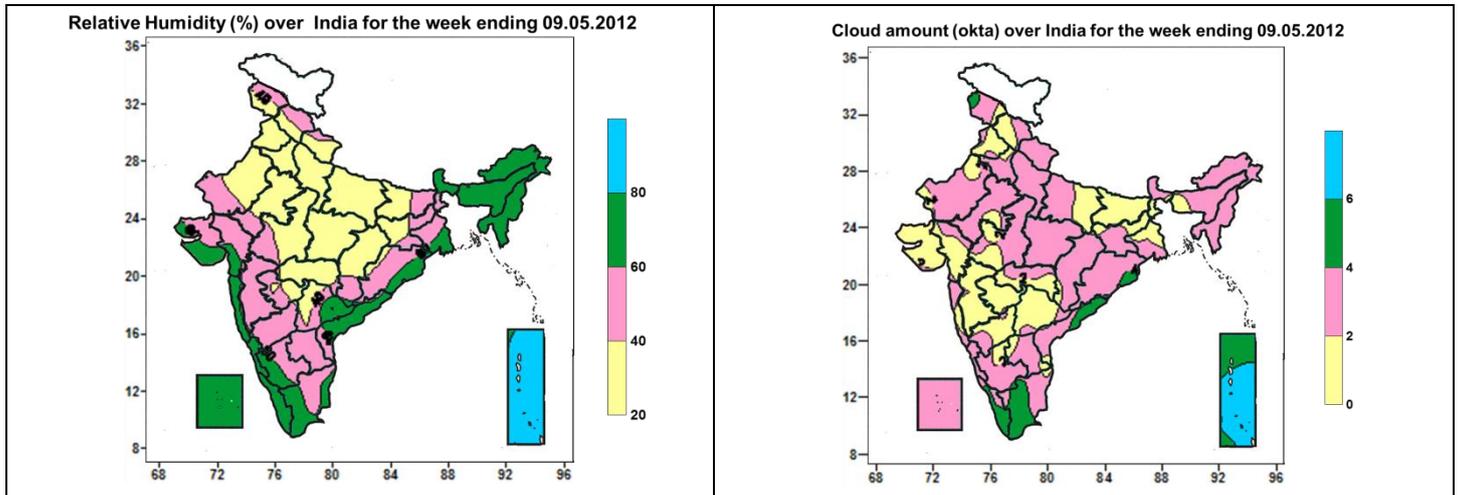
**Irrigated cotton:** Phule-492, NHH-44 (Nanded-44) (Hybrid

### **Madhya Pradesh**

**Sugarcane-** Co 86032, Co 86141

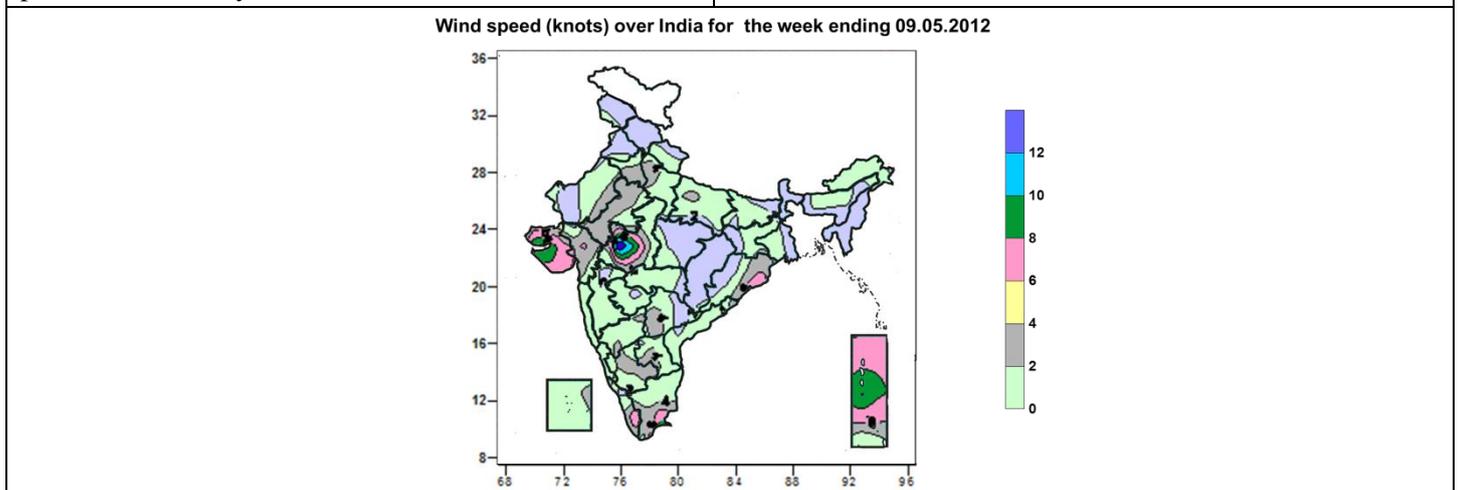
### Annexure III

## Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 09.05.2012



Relative humidity ranged between 80% and above over Andaman & Nicobar Islands, 60 to 80% over most parts of Northeast India, West Bengal, Sikkim, Coastal Orissa, Saurashtra & Kutch, Konkan & Goa, Coastal Andhra Pradesh, Kerala, Coastal Karnataka, South Interior Karnataka, Tamil Nadu, Lakshdweep Islands, some parts of Gujarat, Telengana and 20 to 60 % over remaining parts of the country.

Cloud amount 6 okta and above over most parts of Andaman & Nicobar Islands, 4 to 6 okta over most parts of Kerala, Tamil Nadu, some parts of Orissa, Coastal Andhra Pradesh, Andaman & Nicobar Islands and 0 to 4 okta over remaining parts of the country.



Wind speed ranged between 12 knots and above over most parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, West Bengal & Sikkim, Chhattisgarh, East Madhya Pradesh, some parts of Uttarakhand, West Rajasthan, Bihar, Jharkhand, Orissa, Vidarbha, Telengana, North Coastal Andhra Pradesh, 10 to 12 knots over some parts of West Madhya Pradesh, and below 10 knots over remaining parts of country.