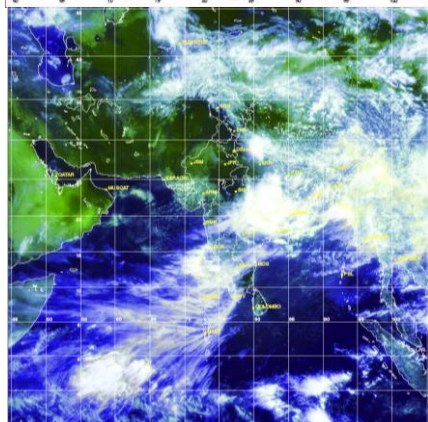
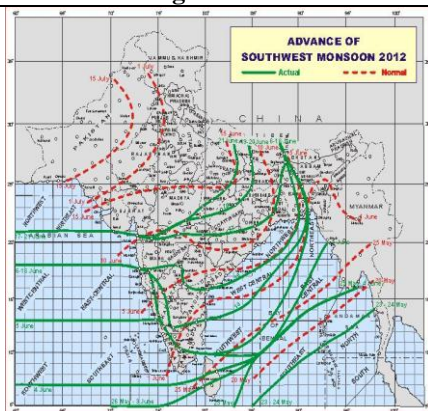


- The Northern Limit of Monsoon (NLM) passed through Lat 21.0°N/ Long. 60.0° E, Lat 21.0°N/ Long. 65.0°E, Veraval, Navsari, Malegaon, Betul, Jabalpur, Siddhi, Varanasi, Gorakhpur and Lat 28.0°N/ Long. 83.0°E.



Satellite image 0600 UTC dated 22<sup>nd</sup> June, 2012

The southwest Monsoon has further advanced into some more parts of east Madhya Pradesh, remaining parts of Chattisgarh, Jharkhand, Bihar and some parts of east Uttar Pradesh. The southwest Monsoon has been vigorous over Orissa and Chattisgarh and active over Gangetic West Bengal.

### Status of sowing of kharif crops

#### Southern region

**Kerala:** Continue sowing of direct seeded rice and nursery sowing / transplanting of Virippu rice. Also continue new plantation of coconut seedlings.

**Karnataka:** Continue nursery sowing of rice in Coastal Karnataka and sowing of green gram, black gram, jowar and soyabean in North Interior Karnataka. Undertake sowing of ginger, turmeric and drill sown paddy in Uttar Kannada district. Take up sowing of cotton, nursery sowing of rice, sowing of hybrid jowar, maize, ragi, sugarcane, sunflower, groundnut, red gram and horticultural crops in South Interior Karnataka.

**Tamil Nadu:** Nursery Preparation and transplanting of Kuruvai rice.

**Andhra Pradesh:** Start sowing of kharif crops like cotton, jowar, maize, castor, groundnut and pulses.

#### Northeastern region

**Assam:** Continue sowing of *sali* rice.

**Arunachal Pradesh:** Sowing/ transplanting of Jhum and WRC rice, sowing of soybean, black gram, green gram.

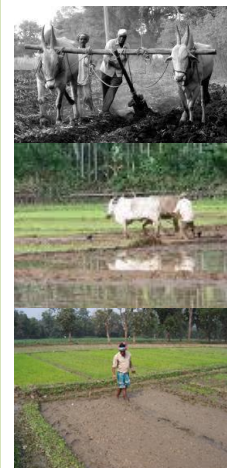
**Manipur:** Sowing/ transplanting of kharif rice, sowing of soybean and groundnut.

**Mizoram:** Sowing of groundnut and soyabean and nursery preparation of rice

**Meghalaya:** Sowing and transplanting of *sali* rice in low and medium altitude areas.

**Nagaland:** Nursery sowing of rice.

**Tripura:** Nursery sowing of aman rice.



#### Western region

**Maharashtra:** Nursery sowing of rice and nagli in Konkan region and Sub Montane zone. Direct sowing of kharif rice and sowing of soyabean in Kolhapur, Sangli and Satara districts. Land preparation for sowing of jowar, groundnut and red gram in other regions.

**Gujarat:** Field preparation for sowing of bajra, maize, pigeon pea and green gram and procurement of farm inputs is in progress. Preparation for nursery of kharif rice is undertaken.

#### Eastern region

**West Bengal:** Undertake direct sowing and transplanting of aus rice and nursery sowing of aman rice with the help of realized rainfall.

**Sikkim:** Continue nursery sowing of rice.

**Orissa:** Farmers are advised for direct seeding of rice. Sowing of maize, cotton arhar and pulses is advised.

**Bihar:** Start for sowing of rice, kharif maize.

**Jharkhand:** Start sowing of rice and soyabean, maize, urad, arhar and *kharif* vegetables like bhindi, bean, French bean, tomato, cauliflower, cabbage etc.

#### Central region

**Madhya Pradesh:** Start sowing of *kharif* crops like rice, soyabean and pulses in southern parts of M.P.

**Chhattisgarh:** Start sowing of rice and soyabean, maize, jowar, groundnut and urad.

#### Northwestern region

Farmers are advised to undertake land preparation and sowing of following *kharif* crops as soon as monsoon is arrived:

**Jammu & Kashmir :** Nursery sowing of rice and *kharif* pulses.

**Uttarakhand:** Nursery sowing of rice, sowing of sugarcane, finger millet, urad, moong, soyabean and pulses.

**Uttar Pradesh :** Nursery sowing of rice, sowing of cotton, soyabean and urad, sunflower, jowar and bajra

**Rajasthan :** Nursery sowing of rice, sowing of pulses, groundnut, maize, cotton and planting of sugarcane.

**Himachal Pradesh:** Nursery sowing of rice and maize.

**Delhi :** Sowing of *Kharif* paddy, pulses, bajra and maize.

**Punjab and Haryana :** Sowing of Desi and American cotton and nursery sowing for *kharif* paddy and also sowing of maize.

Issued by

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Agricultural Meteorology Division

India Meteorological Department, Shivajinagar, Pune.

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

## Executive Summary

The southwest Monsoon has further advanced into some more parts of east Madhya Pradesh, remaining parts of Chattisgarh, Jharkhand, Bihar and some parts of east Uttar Pradesh. The southwest Monsoon has been vigorous over Orissa and Chattisgarh and active over Gangetic West Bengal.

Rainfall occurred over many districts in Assam, Arunachal Pradesh, Orissa, Chhattisgarh, Vidarbha, Konkan & Goa, Telanagana, Coastal Karnataka and West Bengal and Sikkim and over a no. of districts in Kerala, Coastal Andhra Pradesh, Marathwada, Bihar, Jharkhand and East Madhya Pradesh. Rainfall is likely to occur at many places over Kerala, Coastal Karnataka, Konkan and Goa, Orissa, Chhattisgarh, West Bengal and Sikkim and North Eastern States during next three days along with heavy rainfall at one or two places over Jharkhand, Chhattisgarh, Orissa and coastal Karnataka during next 48 hours. Farmers are advised to postpone intercultural operation, irrigation, fertilizer and pesticide application. In view of occurrence of heavy rainfall, arrange for adequate drainage in crop fields in Jharkhand, Chhattisgarh, Orissa and coastal Karnataka. Rainfall for the States of Assam, Arunachal Pradesh, Orissa, Chhattisgarh, Maharashtra, Andhra Pradesh, Karnataka and West Bengal and Sikkim during last week is given in Annexure – I. Weather forecast map is provided in Annexure – II.

### Status of sowing of *kharif* crops

#### Southern region

**Kerala:** Continue sowing of direct seeded rice and nursery sowing / transplanting of Virippu rice. Also continue new plantation of coconut seedlings.

**Karnataka:** Continue nursery sowing of rice in Coastal Karnataka and sowing of green gram, black gram, jowar and soyabean in North Interior Karnataka. Undertake sowing of ginger, turmeric and drill sown paddy in Uttar Kannada district. Take up sowing of cotton, nursery sowing of rice, sowing of hybrid jowar, maize, ragi, sugarcane, sunflower, groundnut, red gram and horticultural crops in South Interior Karnataka.

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**Assam:** Continue sowing of *sali* rice.

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### **Central region**

**Madhya Pradesh:** Start sowing of *kharif* crops like rice, soyabean and pulses in southern parts of M.P.

**Chhattisgarh:** Start sowing of rice and soyabean, maize, jowar, groundnut and urad.

### **Northwestern region**

Farmers are advised to undertake land preparation and sowing of following *kharif* crops as soon as monsoon is arrived:

**Jammu & Kashmir :** Nursery sowing of rice and *kharif* pulses.

**Uttarakhand:** Nursery sowing of rice, sowing of sugarcane, finger millet, urad, moong, soyabean and pulses.

**Uttar Pradesh :** Nursery sowing of rice, sowing of cotton, soyabean and urad, sunflower, jowar and bajra

**Rajasthan :** Nursery sowing of rice, sowing of pulses, groundnut, maize, cotton and planting of sugarcane.

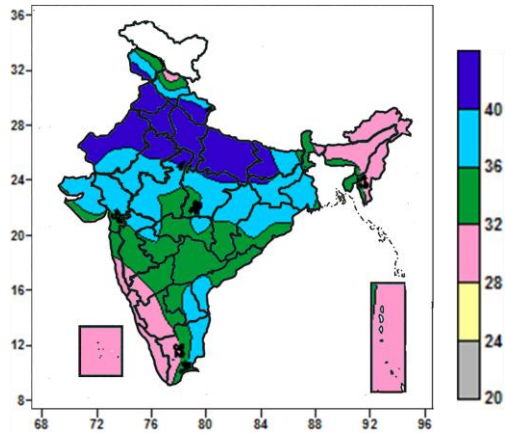
**Himachal Pradesh:** Nursery sowing of rice and maize.

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**Punjab and Haryana :** Sowing of Desi and American cotton and nursery sowing for *kharif* paddy and also sowing of maize.

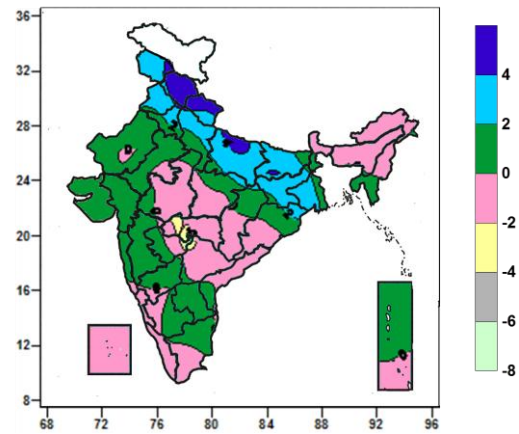
## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 20.06.2012

**Actual Mean Maximum Temperature (°C) in India for the week ending 20.06.2012**



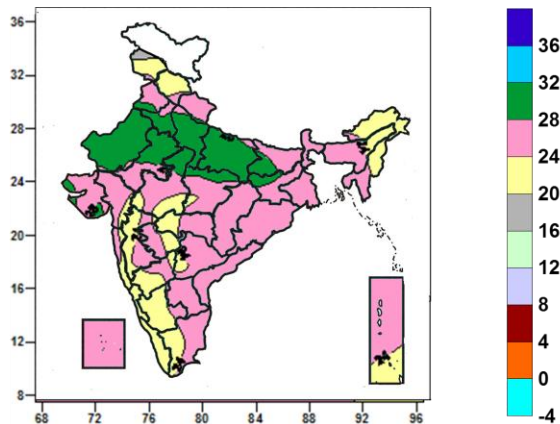
Actual Mean Maximum temperature ranged  $40^{\circ}\text{C}$  and above over most parts of Northwest India except (Jammu & Kashmir, Himachal Pradesh, South Rajasthan), Bihar, some parts of Jharkhand,  $28$  to  $32^{\circ}\text{C}$  over most parts of Northeast India (except Tripura), West coast, Lakshdweep, Andaman & Nicobar Islands, many parts of Interior Karnataka, Tamil Nadu and  $32$  to  $40^{\circ}\text{C}$  over remaining parts of the country.

**Maximum Temperature (°C) Anomaly in India for the week ending 20.06.2012**



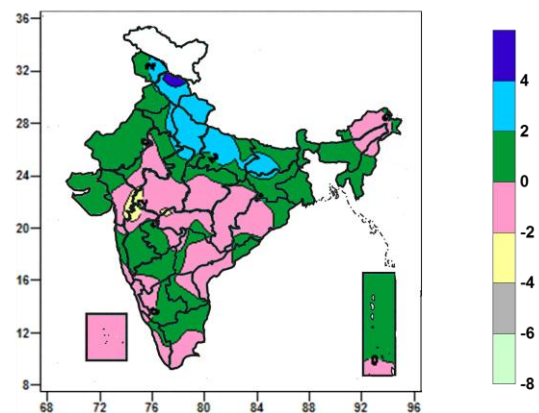
Actual Mean Maximum temperature anomaly ranged between  $4^{\circ}\text{C}$  and above over most parts of Himachal Pradesh, Uttarakhand, some parts of Jammu & Kashmir, East Uttar Pradesh, Bihar,  $2$  to  $4^{\circ}\text{C}$  over most parts of Jammu & Kashmir, Punjab, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, some parts of Haryana, Delhi, Uttarakhand, Orissa  $-4$  to  $0^{\circ}\text{C}$  over rest of the country.

**Actual Mean Minimum Temperature (°C) in India for the week ending 20.06.2012**



Actual Mean Minimum Temperature ranged between  $28$  to  $32^{\circ}\text{C}$  over most parts of Haryana, Delhi, Uttar Pradesh, Rajasthan, some parts of Punjab, Bihar, Jharkhand, Madhya Pradesh, Saurashtra & Kutch and between  $16$  to  $28^{\circ}\text{C}$  over remaining parts of the country.

**Minimum Temperature (°C) Anomaly in India for the week ending 20.06.2012**



Minimum Temperature anomaly ranged between  $2$  to  $4^{\circ}\text{C}$  and above over many parts of Himachal Pradesh, Uttarakhand, Uttar Pradesh, some parts of Jammu & Kashmir, Haryana, Delhi, Bihar, Jharkhand, West Madhya Pradesh,  $-4$  to  $2^{\circ}\text{C}$  over remaining parts of the country.

**Distribution of rainfall of the country during week ending on 20.06.2012**

State/Districts	Actual (mm)	(% Dep.)
<b>Arunachal Pradesh</b>		
Anjaw	**	**
Changlang	54.0	-48
East Kameng	19.0	-79
East Siang	32.0	-69
Kurung Kumey	182.2	-6
Lohit	**	**
Lower Dibang Valley	96.7	3
Lower Subansiri	**	**
Papumpara	22.0	-69
Tawang	112.6	-10
Tirap	47.0	-71
Upper Dibang Valley	54.0	-65
Upper Siang	64.0	-70
Upper Subansiri	**	**
West Kameng	104.2	-35
West Siang	75.0	-34
<b>Assam</b>		
Baksa	194.8	12
Barpeta	372.8	115
Bongaigaon	261.1	56
Cachar	155.8	32
Chirang	510.0	205
Darrang	47.0	-64
Dhemaji	73.0	-43
Dhubri	358.6	109
Dibrugarh	118.6	35
East Garo Hills	142.0	-25
East Khasi Hills	164.1	-57
Goalpara	139.1	-13
Golghat	36.2	-47
Hailakandi	94.4	-15
Jaintia Hills	93.0	-79
Jorhat	16.2	-77
Kamrup(Metro)	96.3	2
Kamrup	43.8	-54
Karbi Analog	50.3	-28
Karimganj	191.2	17
Kokrajhar	509.5	125
Lakhimpur	78.9	-38
Morigaon	16.4	-80
N.C.Hills	**	**
Nowgong	36.5	-50
Nalbari	203.2	35
Ribhoi	12.0	-86
Sonitpur	87.3	-1
Sibsagar	51.9	-12
South Garo Hills	138.0	1
Tinsukia	141.0	63
Udalgiri	**	**
West Garo Hills	97.4	-29
West Khasi Hills	57.0	-67
<b>East Madhya Pradesh</b>		
Anuppur	31.2	-20
Balaghat	59.3	60
Chhatarpur	7.5	-60
Chindwara	88.3	146
Damoh	26.4	-1
Dindori	55.9	16
Jabalpur	88.5	209

Katni	80.0	254
Mandla	71.3	135
Narsingpur	34.5	24
Panna	6.6	-62
Rewa	0.0	-100
Sagar	43.8	41
Satna	0.5	-98
Seoni	83.8	89
Shahdol	0.0	-100
Sidhi	9.6	-55
Singrauli	10.0	-55
Tikamgarh	13.0	-30
Umaria	29.1	52
<b>West Madhya Pradesh</b>		
Alirajpur	0.0	-100
Asoknagar	1.3	-93
Badwani	0.0	-100
Betul	151.6	361
Bhind	0.0	-100
Bhopal	6.1	-81
Burhanpur	34.8	5
Datia	1.2	-89
Dewas	0.8	-97
Dhar	0.0	-100
Guna	8.3	-53
Gwalior	15.2	10
Harda	47.5	51
Hosangabad	90.4	188
Indore	3.0	-91
Jhabua	0.3	-99
Khandwa	0.8	-97
Khargone	0.0	-100
Mandsaur	1.8	-91
Morena	0.0	-100
Neemuch	0.0	-100
Raisen	36.8	24
Rajgarh	32.7	53
Ratlam	2.4	-90
Sehore	13.4	-55
Shajapur	2.0	-91
Sheopur Kalani	17.5	28
Shivpuri	60.8	262
Ujjain	0.0	-100
Vidisha	19.6	-17
<b>Chattisgarh</b>		
Bastar	28.6	-44
Bijapur	24.4	-61
Bilaspur	81.4	99
Dantewara	96.8	89
Dhamtari	46.2	26
Durg	56.9	55
Janjgir	83.7	88
Jashpurnagar	103.1	88
Kanker	16.8	-64
Korba	73.6	61
Koriya	12.7	-67
Kawardha	60.0	65
Mahasumund	61.0	26
Narayanpur	21.9	-55
Raigarh	0.0	-100
Raipur	71.9	80
Rajandgaon	29.8	-33

Surguja	21.0	-54
<b>East Uttar Pradesh</b>		
Allahabad	18.8	28
Ambedkar Nagar	0.0	-100
Azamgarh	53.8	204
Bahraich	2.6	-92
Ballia	3.1	-90
Balrampur	2.6	-94
Banda	0.0	-100
Barabanki	0.0	-100
Basti	0.5	-98
Chandauli	20.2	11
Deoria	0.0	-100
Faizabad	11.2	-58
Farrukhabad	0.0	-100
Fatehpur	0.0	-100
Gazipur	73.9	197
Gonda	0.0	-100
Gorakhpur	3.4	-91
Hardoi	0.0	-100
Jaunpur	15.1	-8
Kannauj	0.0	-100
Kanpur City	0.0	-100
Kanpur Dehat	0.0	-100
Kaushambi	0.0	-100
Kheri	0.0	-100
Kushi nagar	0.0	-100
Lucknow	0.0	-100
Maharajganj	0.0	-100
Mau	0.0	-100
Mirzapur	5.0	-71
Pratapgarh	46.0	215
RaiBareilly	0.8	-93
Sahuji Maharajnagar	0.0	-100
Sant Kabirnagar	10.0	-70
Sant Ravidas Nagar	0.0	-100
Shrawasti	0.0	-100
Sidharthnagar	1.0	-97
Sitapur	0.0	-100
Sonbhadra	0.3	-99
Sultanpur	0.4	-97
Unnao	2.0	-87
Varanasi	10.0	-40
<b>Bihar</b>		
Araria	0.0	-100
Arwal	71.5	180
Aurangabad	16.7	-34
Banka	5.4	-85
Begusarai	14.0	-68
Bhabua	78.0	204
Bhagalpur	47.7	-8
Bhojpur	1.5	-95
Buxar	26.0	-11
Darbhanga	5.0	-86
East Champaran	0.3	-99
Gaya	29.8	12
Gopalganj	0.0	-100
Jahanabad	4.5	-83
Jamui	0.0	-100
Kathihar	20.0	-70
Khagadia	25.1	-53
Kishanganj	223.5	123

Lakhisarai	0.0	-100
Madhepura	99.4	77
Madhubani	10.6	-79
Monghyar	150.4	256
Muzaffarpur	8.6	-79
Nalanda	10.3	-64
Nawada	0.0	-100
Patna	10.1	-69
Purnea	7.0	-90
Rohtas	71.9	172
Samstipur	23.7	-49
Saran	22.0	-37
Sheikpura	0.0	-100
Sheohar	3.5	-92
Sitamarhi	6.7	-85
Siwan	3.5	-90
Supaul	2.5	-95
Vaishali	7.3	-80
West Champaran	0.0	-100
<b>Jharkhand</b>		
Bokaro	14.3	-67
Chatra	2.5	-93
Deoghar	10.7	-75
Dhanbad	18.9	-56
Dumka	28.9	-44
East Singbhum	47.9	-1
Garhwa	1.0	-96
Giridih	48.5	4
Godda	6.7	-83
Gumla	60.7	22
Hazaribagh	4.6	-89
Jamtara	34.7	-38
Khunti	86.5	121
Koderna	0.0	-100
Latehar	0.0	-100
Lohardagga	7.3	-81
Pakur	15.7	-70
Palamau	3.8	-86
Ramgarh	30.6	-29
Ranchi	18.6	-53
Simdega	34.1	-26
West Singbhum	44.9	-10
<b>East Rajasthan</b>		
Ajmer	8.6	14
Alwar	10.2	41
Banswara	13.5	-41
Baran	36.4	115
Bharatpur	12.1	40
Bhilwara	10.7	-5
Bundi	5.6	-59
Chittorgarh	6.3	-47
Dausa	13.2	61
Dholpur	1.4	-89
Dungarpur	4.5	-75
Jaipur	1.3	-85
Jhalawar	14.3	-27
Jhunjhunu	2.8	-75
Karauli	6.1	-27
Kota	8.9	-47
Pratapgarh	9.8	-51
Rajsamand	9.6	-18
Sawai Madhopur	2.9	-72







Sikar	1.9	-77
Sirohi	1.5	-87
Tonk	7.5	-38
daipur	16.9	22
<b>Gujarat Region</b>		
Ahmedabad	12.5	-26
Anand	6.9	-71
Banaskantha	21.8	113
Baroda	7.4	-72
Broach	19.8	-37
Dahod	4.0	-84
Dangs	55.7	-29
Gandhinagar	15.5	-7
Kheda	18.9	-14
Mehsana	23.2	61
Narmada	6.9	-84
Navsari	33.6	-57
Panchmahal	8.0	-66
Patan	12.2	-1
Sabarkantha	6.2	-66
Surat	15.4	-69
Tapi	14.8	-76
Valsad	48.3	-49
<b>Saurashtra, Kutch &amp; Diu region</b>		
Amreli	6.2	-73
Bhavnagar	12.4	-55
Jamnagar	14.8	-5
Junagarh	11.6	-71
Kutch	3.0	-45
Porbandar	4.7	-88
Rajkot	30.6	44
Surendranagar	14.1	-27
<b>Maharashtra</b>		
<b>Konkan &amp; Goa</b>		
Goa	420.5	64
Mumbai	54.0	-67
Raigad	200.6	15
Ratnagiri	383.4	72
Sindhudurg	376.4	50
Thane	105.3	-4
<b>Madhya Maharashtra</b>		
Ahmednagar	25.6	-7
Dhule	16.5	-45
Jalgaon	13.9	-59
Kolhapur	80.8	-8
Nandurbar	16.2	-53
Nasik	39.1	-1
Pune	21.3	-35
Sangli	24.4	-16
Satara	34.7	-3
Solapur	22.9	-13
<b>Marathwada</b>		
Aurangabad	23.8	-35
Beed	11.1	-68
Hingoli	38.9	-31
Jalna	23.8	-44
Latur	59.4	53
Nanded	72.5	67
Usmanabad	22.2	-36
Parbhani	72.9	50
<b>Vidarbha</b>		

Akola	102.7	158
Amraoti	121.9	218
Bhandara	106.2	178
Buldhana	89.6	140
Chandrapur	59.3	30
Gadchiroli	59.3	0
Gondia	69.8	74
Nagpur	34.1	-3
Wardha	70.4	67
Washim	121.9	153
Yeotmal	121.9	160
<b>Orissa</b>		
Angul	44.8	-25
Balasore	49.5	-31
Bargarh	111.8	89
Bhadrak	77.0	32
Bolangir	85.9	55
Boudh	38.1	-32
Cuttack	135.6	114
Deogarh	28.5	-51
Dhenkanal	90.1	56
Gajapati	11.9	-79
Ganjam	31.1	-34
Jagatsingpur	79.1	9
Jajpur	39.1	-46
Jharsuguda	72.3	10
Kalahandi	81.0	46
Kandhamal	49.4	-11
Kendrapara	75.7	31
Keonjhar	93.0	46
Khurda	96.2	78
Koraput	8.9	-83
Malkangiri	131.0	154
Mayurbhanj	70.1	3
Nawapara	27.5	-47
Nawarangpur	39.4	-39
Nayagarh	65.4	3
Puri	107.4	105
Rayagada	15.3	-71
Sambalpur	60.0	4
Sonepur	58.2	6
Sundargarh	64.9	1
<b>West Bengal</b>		
<b>GWB</b>		
Bankura	56.3	18
Birbhum	44.1	-12
Burdwan	55.9	24
East Midnapore	35.5	-44
Hooghly	61	35
Howrah	119.3	96
Kolkata	38.7	-40
Murshidabad	12.5	-71
Nadia	4.5	-93
24 Pargana (N)	53.4	-13
Purulia	56.2	18
24 Pargana (S)	31.4	-61
West Midnapore	33.5	-43
<b>SHWB</b>		
Cooch Behar	452.9	113
Darjeeling	189.8	45
East Sikkim	180.6	46
Jalpaiguri	409.4	123

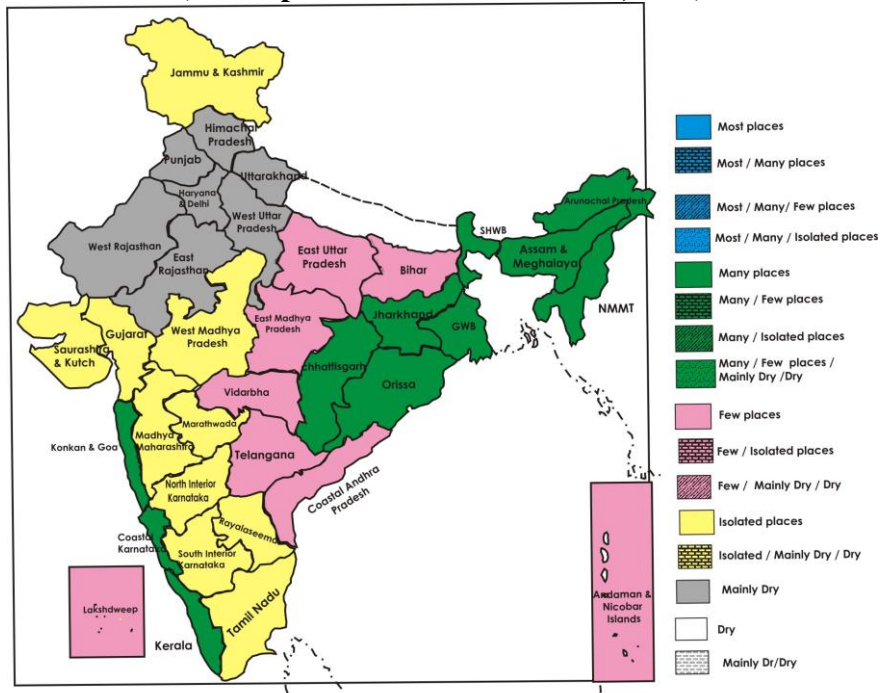
Malda	17.2	-70
North Dinajpur	1	-99
North Sikkim	160.4	27
South Dinajpur	33.5	-61
South Sikkim	119.4	-4
West Sikkim	199	57
<b>Karnataka</b>		
<b>Coastal Karnataka</b>		
Dakshin Kannada	275.9	9
Udupi	401.3	42
Uttar Kannada	239.8	19
<b>North Interior Karnataka</b>		
Bagalkote	5.9	-71
Belgaum	27.2	-6
Bidar	120.1	234
Bijapur	14.1	-36
Dharwad	18.9	-29
Gadag	5.6	-67
Gulbarga	44.6	44
Haveri	17.8	-31
Koppal	3.4	-79
Raichur	7.0	-63
Yadgir	19.3	-32
<b>South Interior Karnataka</b>		
Bangalore Rural	2.8	-79
Bangalore Urban	4.3	-71
Bellary	6.8	-61
Chamarajnar	8.4	-42
Chichballapur	11.2	-15
Chickmagalur	65.3	-31
Chitradurga	3.6	-70
Davangere	9.2	-44
Hassan	18.7	-41
Kodagu	157.8	14
Kolar	17.2	29
Mandya	8.8	-18
Mysore	21.9	20
Ramnagara	5.4	-63
Shimoga	104.9	25
Tumkur	2.8	-78

<b>Kerala</b>		
Alappuzha	3.7	-77
Kannur	29.3	-7
Ernakulam	38.8	122
Idukki	45.7	132
Kasaragod	19.5	-45
Kollam	7.7	-8
Kottayam	11.8	-19
Kozhikode	35.7	27
Malappuram	22.5	-5
Palakkad	32.1	110
Pathanamthitta	2.5	-83
Thiruvananthapuram	1.5	-73
Thrissur	85.1	334
Wyanad	13.1	-46
<b>Tamil Nadu</b>		
Ariyalur	5.5	-56
Chennai	0.0	-100
Coimbatore	19.4	159
Cuddalore	0.3	-97
Dharmapuri	16.8	65
Dindigul	13.6	61
Erode	10.7	94
Kanchipuram	0.1	-99
Kanyakumari	8.3	-77
Karikal	48.9	599
Karur	3.1	-28
Krishnagiri	4.6	-58
Madurai	0.0	-99
Nagapattinam	5.8	-33
Namakkal	0.0	-100
Nilgiris	90.5	119
Perambalur	2.1	-67
Puducherry	2.0	-82
Pudukottai	6.0	-46
Ramanathapuram	0.0	-100
Salem	21.9	45
Sivaganga	2.3	-78
Thanjavur	7.6	-24
Theni	18.9	371

Tirunelveli	0.7	-90
Tirupur	0.0	-100
Tiruvallur	6.7	-66
Tiruvannamalai	17.7	22
Tiruvarur	9.1	0
Toothukudi	0.0	-100
Trichy	22.9	232
Vellore	17.3	13
Villupuram	9.3	-22
Virudhunagar	0.1	-98
<b>Andhra Pradesh</b>		
<b>Coastal Andhra Pradesh</b>		
East Godavari	24.5	-33
Guntur	71.7	235
Krishna	87.9	207
Nellore	11.0	-24
Prakasam	43.9	203
Sirkakulam	2.9	-93
Visakhapatnam	1.5	-96
Vizianagram	3.2	-92
West Godavari	58.8	53
<b>Telangana</b>		
Adilabad	57.8	9
Hyderabad	100.3	230
Karimnagar	40.4	-10
Khammam	106.9	149
Mehabubnagar	46.1	132
Medak	111.0	206
Nalgonda	70.8	179
Nizamabad	86.2	85
Rangareddy	93.6	234
Warangal	99.2	143
<b>Rayalaseema</b>		
Anantapur	4.7	-64
Chittoor	18.3	10
Cuddapah	23.6	40
Kurnool	17.0	-10

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

## Weather Forecast (Valid upto 0830 hours of 23<sup>rd</sup> June, 2012)



### Major Feature of Weather Forecast up to 0830 hours IST of 24<sup>th</sup> June, 2012

- Rain/thundershowers would occur at many places along west coast and over northeastern states, West Bengal & Sikkim, Jharkhand, Chhattisgarh and Orissa.
- Rain/thundershowers would occur at a few places over east Uttar Pradesh, Bihar, east Madhya Pradesh, Vidarbha, north Andhra Pradesh, Lakshadweep and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at one or two places over Gujarat region, Madhya Maharashtra, Marathwada, west Madhya Pradesh and interior south peninsular India.
- Weather will be mainly dry over rest of the country.
- Maximum temperature would rise by about 2° C over northwest India during next 3 days.

### Weather Warning

- Heavy rainfall would occur at one or two places over Jharkhand, Chhattisgarh, Orissa and coastal Karnataka during next 48 hours.

### Weather Outlook up to 0830 hours IST of 28<sup>th</sup> June, 2012

- Rain/thundershowers would occur at many places along west coast and over east India and northeastern states.
- Rain/thundershowers may occur at a few places over central and interior 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 the States of the region.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over the states of the region.
- **Advisories:**
  - As significant rainfall occurred over the States of the region during last week and rain / thundershowers are likely to occur at many places during the period, farmers are advised to postpone irrigation, intercultural operation and application of pesticides and fertilizers to the standing crops.
  - Farmers of Assam are advised to continue land preparation and nursery sowing of *sali* rice utilizing realized monsoon rainfall.
  - Farmers in the Central Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of arhar.
  - Farmers in the Upper Brahmaputra Valley Zone of Assam are advised to continue sowing of vegetables utilizing realized rainfall.
  - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to continue transplanting of rice and sowing of black gram and green gram, soybean utilizing realized monsoon rainfall.
  - Farmers in Mild Tropical Hill Zone of Mizoram are advised to continue nursery preparation of rice and sowing of pigeon pea, soybean utilizing realized monsoon rainfall.
  - Farmers in Mild Tropical Plain Zone of Tripura are advised to continue land preparation and nursery sowing of *aman* rice utilizing realized monsoon rainfall. Complete sowing of groundnut at the earliest.
  - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to complete sowing and continue transplanting of *sali* rice in low and medium altitude areas. Continue sowing of *sali* rice in high altitude areas and transplanting of *ahu* rice in low lying areas and sowing of soybean in high and low altitude region utilizing realized monsoon rainfall.
  - Farmers of Sub tropical Plain Zone of Manipur are advised to continue land preparation and sowing of *kharif* rice and complete sowing of soybean and groundnut.
  - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
  - Due to congenial weather conditions, there is chance of attack of 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.
  - Due to prevailing weather conditions there is chance of attack of leaf miner on *kharif* maize, French bean, rice bean and moong in Mild Tropical Hill Zone of Mizoram; farmers are advised to spray neem oil - garlic mixture.
  - As the prevailing weather is congenial for occurrence of powdery mildew in Cucurbits at flowering and fruiting stage, farmers in Manipur are advised to spray Bayleton @ 7 g / 10 litres of water.
  - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to deworm goat / sheep against Fascioliasis and deworm pig and poultry.
  - In North Bank Plain Zone of Assam, farmers are advised to vaccinate cattle & buffaloes against FMD, HS and BQ, pigs against swine fever.
  - Due to prevailing weather conditions, as there is possibility of infection with number of common diseases in livestock, farmers of Lower Brahmaputra Valley Zone of Assam are advised to immunize livestock.
  - Farmers in Manipur are advised to deworm cattle, buffalo against *Fasciola spp.*; deworm and vaccinate poultry against Ranikhet / Coccidiosis disease; deworm and vaccinate pig against swine fever. Deworm goat against Fascioliasis.
  - In Mild Tropical Hill Zone of Mizoram, due to congenial weather, there is chance of coccidial infection disease in poultry. Farmers are advised to maintain proper sanitary conditions of poultry sheds.
  - In Mild Tropical Hill Zone of Nagaland, farmers are advised to deworm and vaccinate all the livestock against infectious diseases particularly 'Foot and Mouth disease'.

- **Pisciculture**

- Farmers of Upper Brahmaputra Valley Zone, Lower Brahmaputra Valley Zone and Central Brahmaputra Valley Zone of Assam are advised to release prawn in their fisheries. Clean up the pond well before releasing prawn. Cow dung at the rate of 500 gm per sq m. may be added at least 15 days ahead of releasing fingerlings into the ponds.
- Farmers in Sub Tropical Hill Zone of Arunachal Pradesh and in Manipur are advised to keep pond free from unwanted vegetation and insects. During heavy shower, water should not drain directly into the pond. It should be passed through a bed of sand before draining.

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts in Orissa, West Bengal, Sikkim and Arwal, Bhabua, Bhagalpur, Kishanganj, Madhepura and Monghyar districts in Bihar and East Singbhum, Giridih, Gumla, Jamtara, Ramgarh, Simdega and West Singbhum district in Jharkhand.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over West Bengal & Sikkim, Orissa and Jharkhand and at a few places over Bihar during the period.
- **Warning:** Heavy rainfall would occur at one or two places over Jharkhand and Orissa during next 48 hours.
- **Advisories:**
  - As significant rainfall occurred in most of the districts of West Bengal & Sikkim, Orissa and East Singbhum, Giridih, Gumla, Jamtara, Ramgarh, Simdega and West Singbhum district in Jharkhand and Rain / thundershowers would occur at many places over West Bengal & Sikkim, Orissa and Jharkhand, farmers are advised to postpone irrigation, intercultural operation and application of fertilizers and plant protection measures to the standing crops in these districts. As rain has also occurred in Arwal, Bhabua, Bhagalpur, Kishanganj, Madhepura and Monghyar districts in Bihar, farmers are also advised to postpone irrigation to the standing crops in these districts.
  - Farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to undertake sowing of maize, groundnut, arhar, ragi, yam, cotton, direct seeded rice and nursery sowing of rice and commercial cultivation of fruit crops.
  - The farmers of Western Undulating Zone of Orissa are advised for sowing of *kharif* crops like cotton, maize and arhar. The farmers are also advised to complete the sowing of rice in rainfed medium and uplands immediately as rain is expected for next five days.
  - As the weather is optimum, the farmers in North Central Plateau Zone of Orissa are advised to undertake sowing of maize for green cob, planting of ginger and turmeric and nursery sowing of onion.
  - Farmers of North Eastern Plateau Zone of Orissa are advised to undertake planting of ginger and turmeric, sowing of rainy season vegetables like bhindi, French bean, tomato, cauliflower, cabbage etc.
  - Farmers in North Eastern Coastal Plain Zone of Orissa are advised to undertake sowing of direct seeded rice, maize, arhar and nursery sowing for rice.
  - Farmers in North West Alluvial Zone of Bihar are advised to prepare the nursery for sowing of long duration rice varieties and undertake sowing of *kharif* maize and also sowing of sorghum, bajra and maize as fodder. Intercropping of meth, lobia and rice bean with these crops will enhance the quality of the fodder.
  - Farmers in North East Alluvial Zone of Bihar are advised to undertake nursery preparation for *kharif* rice and sowing of *kharif* arhar, til, sunflower, groundnut, castor and *kharif* fodder crops like jowar, bajra, methi, maize, kalai, boda and dinanath grass.
  - In Central and North Eastern Plateau Zone of Jharkhand, farmers are advised to complete sowing of upland rice till 30<sup>th</sup> June and undertake short duration varieties of arhar, groundnut, rice, urad, turmeric, jowar, soybean and okra for inter cropping.
  - Farmers in Western Plateau Zone of Jharkhand are advised to undertake sowing of rainy season vegetables like bhindi, Bean, French bean, Tomato, Cauliflower, Cabbage etc.
  - Farmers in Coastal Saline Zone of West Bengal are advised to undertake sowing of long duration direct seeded rice. Farmers are also advised to prepare seedlings for okra and cucurbits.
  - Farmers in New Alluvial Zone, Old Alluvial Zone, Terai Zone and Red Laterite Zone of West Bengal are advised to undertake nursery sowing of *aman* rice.

- Farmers in Terai Zone of West Bengal are advised to prepare seedbed for early cauliflower selecting the high temperature tolerant varieties and also transplant the seedling of marigold (3-4 weeks of age and six leaf stage) into the main field utilizing the recent rain.
- Farmers in Hill Zone of West Bengal are advised to prepare seedbed for sowing of rice, radish and chirota.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Under prevailing weather situation, occurrence of foot rot or stem rot may be seen in betel vine in New Alluvial Zone of West Bengal. To control, spray a mixture of Carboxin 37.5% WP and Thiram 37.5% @ 2 g / litre of water.
- Under the present weather situation, attack of hairy caterpillar and mites may be enhanced in New Alluvial and Old Alluvial Zone of West Bengal. To control mite attack, farmers are advised to apply Dicofol @ 2 ml / litre of water.
- Weather is congenial for the attack of mites in chilli in Terai zone of West Bengal. To control, spray Phenazaquine 10 EC @ 1.5 ml per litre of water. Irregular brown spot with prominent yellow halo may be found in leaves of Betel vine. Mix *Trichoderma* sp. and *Pseudomonas fluorescence* @ 5 g per kg of cowdung and cake and incubate for 2 days and apply this organic matter at 15 days interval along the row or spray 1% Bordeaux mixture.
- In the Hill zone of West Bengal infestation of sucking pests like jassids may occur in okra. For their control, the crop should be sprayed either with Monocrotophos @ 1.5 ml / litre or Imidacloprid @ 1 ml / 7.5 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, harvest all the cultured fish from the pond and drain out water from it for complete drying. In perennial ponds where water draining is impossible, apply Mahua Oil Cake @ 1 t / acre to kill all the predatory and weed fishes. Clear the aquatic weeds from the pond and strengthen the embankments in view of likely onset of monsoon.

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

- **Realised Rainfall:** No significant rainfall occurred in the region except Azamgarh and Ghazipur districts in East Uttar Pradesh and Baran district in East Rajasthan.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over East Uttar Pradesh and either isolated rainfall or mainly dry weather is likely to prevail over rest of the region.
- **Advisory:**
  - As there was no significant rainfall occurred in the region except Azamgarh and Ghazipur districts in East Uttar Pradesh and Baran district in East Rajasthan and no significant rainfall is likely during next three days with increase in maximum temperature by about 2° C , farmers are advised to apply irrigation to the standing crops. Farmers in the above mentioned districts are advised to postpone irrigation to the crops.
  - Farmers in East Rajasthan are advised for sowing of *kharif* crops like pearl millet, maize, cluster bean, jowar, soybean, moong, til, urd, arhar, moth (matki) etc. utilizing the rainfall realized during last week. Farmers are also advised to undertake sowing of groundnut due to favourable weather for sowing of groundnut. Undertake field preparation for sowing of rice nursery and sowing can be done upto 3<sup>rd</sup> week of July. Farmers in West Rajasthan are advised to arrange farm inputs in advance so that timely sowing of these crops can be done at the onset of monsoon.
  - Farmers in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan are advised to complete sowing of groundnut and continue sowing of maize, castor, cucurbits like bitter gourd, water melon, pumpkin, cucumber, round gourd, ridged gourd and bottle gourd etc.
  - In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to complete transplanting of early varieties of brinjal, chilli and cauliflower crop. Farmers are advised to continue sowing of direct seeded rice crop and due to chances of light rainfall, farmers can go for land preparation for sowing of maize crop in irrigated as well as rainfed condition.

- In Cold Arid Zone of Jammu & Kashmir, farmers are advised to harvest Pakchoi, Chinese cabbage, kale, lettuce, broccoli, coriander, Methi, turnip, radish and mints etc. utilising relatively dry weather likely during next three days.
- In Intermediate zone of Jammu & Kashmir, farmers are advised to undertake nursery sowing of bhindi, pumpkin, bittergourd, bottlegourd and sponge gourd. It is also advised to sow radish, carrot, turnip, spinach, beans, methi, knol-khol and cabbage and to start transplanting of brinjal, Knolkhol, chillies, cabbage, cauliflower in Intermediate Higher Zone. Undertake nursery sowing of rice and maize in Sub-tropical and Intermediate Lower Zone.
- In Valley Temperate zone of Jammu & Kashmir, farmers are advised to continue field preparation for sowing of rice, *kharif* pulses and maintain nursery water level of 5 cm during night hours. Continue sowing of vegetables like cucurbits, kale, knol khol, bhindi and beans.
- Farmers in Uttar Pradesh are advised to irrigate moong, banana, sugarcane and cucurbits crops. Farmers in East Uttar Pradesh are advised to prepare field utilizing realized rainfall during last week and undertake sowing of urad, maize, soyabean, cotton, sunflower, jowar, bajra and vegetables like okra, cucumber, pumpkin, tomato, cabbage, chilly, bhendi etc. After harvesting of berseem and jai, start sowing of maize, lobia, Sanai and Dhaincha also for green fodder purpose. Also start land preparation and nursery sowing of rice and onion. Apply top dressing, weeding, hoeing may be done in sugarcane on a non rainy day in East Uttar Pradesh. Farmers in West Uttar Pradesh are advised to prepare field utilizing realized rainfall during last week and arrange inputs like seed, fertilizer and fertilizer to take up sowing of *kharif* crops on onset of monsoon.
- In High Hill Temperate Dry Zone of Himachal Pradesh, farmers may continue sowing of peas, potato, vegetables only in valley (cauliflower / cabbage / lettuce), capsicum / tomato planting in polyhouse and also advised to irrigate daily or at least in alternate day.
- In Himachal Pradesh, farmers are advised for sowing of rice nursery and maize with available irrigation facilities. Direct sowing of rice and maize, soybean as an intercrop with maize in the fields may be completed. In high hill dry temperate zones improved grasses and legumes may be planted and also peas, potato, french bean, turnip, radish, carrot, sugar beet, palak, opla and phafra sowing may be completed and also undertake sowing of rajmash, ragi, phafra and amaranthus. Hybrid chari may also be planted in lower region. It is time for transplanting of vegetables like tomato, brinjal, capsicum, chillies and sowing of bhindi, khira, bitter gourd, tori and pepper.
- Farmers are advised to undertake weeding in early sown garlic, cucurbits and okra crop and apply irrigation as no rainfall is expected during this week. However, if irrigation facilities are not available, then put straw mulch in between rows for moisture conservation in Sub humid sub tropic of Uttarakhand.
- In Bhabar and Tarai Zone of Uttarakhand, farmers are advised to continue transplanting of rice seedlings during this week with irrigation facilities. There has been sufficient soil moisture due to rainfall in previous weeks, hence farmers may go for sowing of soybean, sorghum, millets, groundnut, pigeon pea, urad, moong, soyabean, rajma and arhar. The temperature conditions will remain favorable for sowing of okra under optimum soil moisture. Remove weeds from early sown crops. Also, advised to start sowing of maize and ginger in Hill Zone of Uttarakhand.
- Farmers in Delhi are advised to conserve rain water in the field by proper bund making. Farmers are advised for sowing of rice seeds in nurseries. Also prepare nursery of early cauliflower and brinjal. Prepare field preparation for sowing of guar, bajra, maize, cluster bean, spinach, amaranthus and ladyfinger. In the rice nursery, if upper leaves of the seedlings become yellow and lower leaves remain green, it indicates the iron deficiency, spraying of ferrous sulphate @ 0.5 % with 0.25% lime solution is recommended to overcome this problem. Sowing of baby corn and sweet corn may be done in this week.
- In view of present weather, farmers in Punjab and Haryana are advised to start transplanting of rice. Sowing of *kharif* fodders at regular intervals may be continued for continuous supply of sufficient green fodder. Irrigate the fodder crops regularly. Irrigate the standing vegetable crops once in a week regularly, however, in light soils, the interval may be reduced to 4 to 5 days. Mulching with straw, grasses etc. may be done in widely spaced cultivated vegetable crops. As the weather is expected to be dry during next few days, farmers are advised to irrigate the sugarcane crop at 7-10 days interval. Start

sowing maize and okra. As the weather is expected to be hot and dry, farmers are advised to give need based irrigation to the moong crop.

- In Himachal Pradesh, wine drying in cucurbits due to wilt disease is observed, farmers advised to undertake spraying of carbaryl (sevin) 2g per litres of water at the interval of 15 days. Also due to prevailing weather, red pumpkin beetle and fruit fly may be appearing in the cucurbits crops. There are chances of attack of peach leaf curl disease in peach and pear where fruit bearing has started, for control spray Nuvan 1 ml +3 g Blitox per litres of water.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
  - In Sub humid sub tropic of Uttarakhand, it is advised to 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 Valley Temperate Zone of Jammu & Kashmir, it is advised to provide cool and fresh drinking water to the livestock as there is increase in the day temperature, ventilation within the shed should be improved. Low energy diets should be provided to animals.
  - In Sub Humid Southern Plain and Aravali Hill Zone, it is advised that the poultry and animals should be protected from high temperature and vaccination should be done in animals before onset of monsoon.
  - In Himachal Pradesh, it is high time for vaccination of animals against FMD as animals are shifting from plain to higher reaches. Weather is conducive for ticks and mites attack on animals for control spray Butox @ 2.0 ml per litres of water. Sprinkle water on animals to reduce the heat stress and ensure proper drinking water.
- **Floriculture :**
  - In valley temperate zone of Srinagar in Jammu & Kashmir, farmers are advised to complete transplanting of summer and autumn blooming. Start harvesting of flowers of tulip and other spring flowering bulbs. Propagate chrysanthemum and dahlia by stem cuttings and also remove growing tips to encourage side growth. Continue mowing and keep the lawn edges in trim. House plants should be watered liberally.
  - In Mid-Hills Sub-Humid Zone of Himachal Pradesh, apply mulching in the crops planted in open fields like marigold, chrysanthemum and gladiolus. Irrigate the fields thoroughly in the evening.
- **Apiculture :**
  - In Sub Tropical (Chatha) and Intermediate (Pahalgam) Zone of Jammu & Kashmir, it is advised to provide clean water during these days due to increase in temperature. Keep bee colonies in shade or cover with wet gunny bags. Provide ventilation by placing a small stock in between brood chamber. Kill wasps with a wooden flapper and also by dusting or spraying with insecticides. Keep hives on stands to avoid ant attack.

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

- **Realised Rainfall:** Idukki, Kozhikode, Palakkad and Thrissur districts in Kerala, all the districts in Coastal Karnataka, Bidar and Gulbarga districts in North Interior Karnataka, Chickmagalur, Kodagu and Shimoga districts in South Interior Karnataka, West Godavari, Guntur, Krishna and Prakasam districts in Coastal Andhra Pradesh, most of the districts in Telangana, Karaikal and Nilgiris districts in Tamil Nadu received sufficient rainfall. No significant rainfall occurred over the remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Kerala and Coastal Karnataka and at a few places over Telanagana and Coastal Andhra Pradesh. Either isolated rainfall or mainly dry is likely to prevail over rest of the region. Heavy rainfall at one or two places over is likely to occur over Coastal Karnataka during next 48 hours
- **Advisories:**
  - Monsoon has covered the entire southern region. Agromet Advisories in this region are as follows:
    - Kerala: Continue sowing of direct seeded rice and nursery sowing / transplanting of Virippu rice. Also continue new plantation of coconut seedlings.

- Karnataka: Continue nursery sowing of rice in Coastal Karnataka and sowing of green gram, black gram, jowar and soyabean in North Interior Karnataka. Undertake sowing of ginger, turmeric and drill sown paddy in Uttar Kannada district. Take up sowing of cotton, nursery sowing of rice, sowing of hybrid jowar, maize, ragi, sugarcane, sunflower, groundnut, red gram and horticultural crops in South Interior Karnataka.
- Tamil Nadu: Nursery Preparation and transplanting of Kuruvai rice.
- Southwest monsoon has set in over Andhra Pradesh on 16th June and covered entire state on 17th June. Hence, farmers in the Southern Telangana Zone of Andhra Pradesh are advised to procure the seeds and fertilizers for taking up timely sowing of rainfed crops like cotton, jowar, maize, castor, groundnut, pigeonpea, greengram etc., take up sowing of rainfed crops like cotton, jowar, maize, groundnut, pigeonpea, greengram, etc., wherever sufficient rainfall (60-75 mm cumulative rainfall) has been received, take-up sowing of sunhemp and dhaincha as in-situ green manure crop preceding rice, sow green gram as catch crop or green manure preceding rice, command areas where late release of water is expected and suitable fertilizers to all crops as basal application at the time of sowing.
- Farmers in the Eastern Dry Zone of Karnataka are advised to take up intercultural operations in the plantation crops like, coconut, sapota, guava and pomegranate etc.
- Farmers in the Coastal Zone of Karnataka are advised to undertake land preparation for transplanting paddy seedlings, cashew, mango, papaya and coconut and drain out excess of water from SRI transplanted paddy field, since heavy rain has occurred during the last couple of days.
- Farmers in the North Transition Zone of Karnataka are advised to take up the land preparation to harvest the rain water and keep the land ready for sowing, since there will be 7 mm/day rainfall on an average during next five days.
- Farmers in the North East Transition Zone of Karnataka are advised to take up sowing of black gram, green gram, jowar and soybean first and then sowing of pigeon pea and also take up fresh plantation of fruit trees, teak, neem, tamarind, acacia or other trees which are useful to prepare the agricultural implements on the bunds, uncultivated and marginal land and make basins and give chemical fertilizer to the fruit crops.
- Farmers in the Southern Transition Zone of Karnataka are advised to go for transplanting of vegetable crops based on moisture conditions, undertake transplanting of arecanut seedlings with recommended spacing, prepare the land and raise the nursery beds.
- Farmers in the North Dry Zone of Karnataka are advised to complete the sowing of kharif crops like groundnut, maize, sunflower, bajra and greengram.
- As there is a sufficient rainfall last week, farmers in the Central Dry Zone of Karnataka are advised to go for sowing of paddy and maize, clean and repair all drainage channels before the start of the rain, clean up inter drainage channels so that rain water flows easily.
- As light to moderate rainfall is expected during the coming days, farmers in the South Zone of Tamil Nadu are advised to do ploughing across the land slope for conserving the soil moisture.
- As there are no rains recorded so far, since the beginning of monsoon, farmers in the North Western Zone of Tamil Nadu are advised to undertake land preparation for planting of castor (YRTS-1) and red gram (CO-7).
- Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to ensure field sanitation and spray prophylactic fungicidal sprays to prevent spread of diseases on vegetables, as there is forecast for heavy rainfall. Prevention from wind damage may also be done to vegetables, since high wind speed is also forecasted.
- Farmers in the North Coastal Zone of Andhra Pradesh are advised to undertake sowing of green manure crops preceding to paddy and rainfed crops like groundnut and redgram and land preparation for rainfed sugarcane.
- Farmers in the Scarce Rainfall Zone of Andhra Pradesh are advised to undertake inter cropping of groundnut with red gram and cowpea and sowing of castor.
- Farmers in the Northern Telangana Zone of Andhra Pradesh are advised to plough the field to allow the rainwater infiltrates and incorporate green manures, green leaf manures, paddy stubble to decompose, since there is forecast of rainfall.

- Farmers in the Central Zone of Kerala are advised to undertake planting of coconut seedlings, arecanut seedlings, pepper vines, colocasia, yams etc. with the onset of rain and basins may be opened in adult coconut plantations for sowing of green manure seeds. For dry sown rice it is the time for top dressing of chemical fertilizers.
- Since there is a chance of strong winds farmers in the Southern Zone of Kerala do propping for those banana plants in bunched stage and wait for a few good showers to start intercropping in coconut gardens.
- Farmers in the Problem Area Zone of Kerala are advised to undertake sowing of paddy, planting of vegetables, coconut seedlings, ginger and turmeric after assuring adequate drainage, since moderate to heavy rainfall is expected. Farmers are also advised to stop giving irrigation to coconut and vegetables, (varieties of ginger and turmeric are given in Annexure I) and prop up the banana crops as high wind speed is expected.
- Farmers in the Coastal Zone of Karnataka are advised undertake plant protection measures to prevent leaf spot disease incidence in the paddy nursery and koleroga in arecanut, since high relative humidity favours attack of pests.
- Farmers in the South Zone of Tamil Nadu are advised to spray streptomycin 50g and 150g copper oxy chloride/ hectare with hand sprayer and use 500 litre of water to control canker disease in citrus.
- Farmers in the North Coastal Zone of Andhra Pradesh are advised to spray carbendim @ 1g/l to control incidence of top rot in sugarcane.
- Farmers in the Scarce rainfall Zone of Andhra Pradesh are advised to undertake plant protection measures against incidence of leaf miner/ leaf webber in early sown groundnut, pea nut stem necrosis virus in kharif groundnut and Phytopthera blight and Alternaria leaf spot in castor.
- Prevailing weather conditions are favourable for the incidence of red hairy caterpillar in already sown rainfed crops in the Southern Telangana Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures to control it.
- Leaf rot disease is noticed in five year old coconut trees in the Problem Area Zone of Kerala. Farmers are advised to remove the rotten parts from the spear and the two adjacent leaves and spray the crowns and leaves with 1% Bodeaux mixture and undertake plant protection measures.
- Farmers in the Central Zone of Kerala are advised to undertake plant protection measures against incidence of bunchy top and pseudostem weevil in banana, stem and fruit borer in bhindi, brinjal and cow pea spray garlic and fruit fly in cucurbits and mango. Also, apply Fujione at 1.5 ml/l against the blast disease in rice.
- **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 Coastal Zone of Karnataka are advised to vaccinate the cattle's against black quarter and other diseases, since the monsoon has advanced into Coastal Karnataka.
- Farmers in the Problem Area Zone of Kerala are advised to vaccinate animals against Pasteurellosis (Bacterial infection) and undertake precautionary measures against Mastitis.

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

- **Realised Rainfall:** Rain occurred at most places over Konkan and Vidarbha, at many places over Madhya Maharashtra and Marathwada during last week. Significant rain occurred in Dangs, Navsari and Valsad districts of Gujarat region and Rajkot district of Saurashtra and Kutch region.
- **Rainfall Forecast:** Fairly wide spread rain would occur over Konkan, at a few places over Vidarbha and at isolated places over Madhya Maharashtra, Marathwada and Gujarat State.
- **Advisories:**
- As there was heavy rain over Konkan during last week and fairly widespread rain is expected during the period over the region, farmers are advised to drain out excess water from rice nursery and mango garden. Complete first ploughing of fields in rice and finger millet and undertake sowing of mango stone and coconut for raising seedlings to prepare mango grafts after spells of heavy rain.

- Farmers in Kolhapur region are advised to continue sowing of *kharif* groundnut, soyabean, cotton, red gram, green gram and black gram.
- As significant rain occurred in Vidarbha region, farmers are advised to undertake nursery sowing of *kharif* rice in East Vidarbha. Farmers in Vidarbha and Marathwada region are advised to undertake sowing of *kharif* soyabean, red gram and cotton.
- Farmers of North Madhya Maharashtra are advised to complete the preparatory tillage for sowing of *kharif* crops after receiving sufficient monsoon rain.
- Farmers in Middle Gujarat Zone are advised to prepare nursery for early maturing varieties of *kharif* rice with seed rate of 30 kg seeds / ha for bold grains varieties and 20 kg seeds / ha for small grains varieties.
- Farmers in Bhal and Coastal Zone of Gujarat are advised to prepare nursery for medium and late maturing varieties of *kharif* rice with seed rate of 30 kg seeds / ha for bold grain varieties and 20 kg seeds / ha for small grains varieties. Select suitable varieties of *kharif* rice, pearl millet and pigeon pea for sowing. Apply irrigation in mango orchards and other horticultural crops.
- Farmers in North West Zone of Gujarat are advised to harvest summer crops and prepare land and arrange farm inputs for sowing of *kharif* crops like maize, sorghum, lucerne-bajra, cowpea for green fodder after receiving sufficient rain.
- Farmers in South Saurashtra Zone of Gujarat are advised to procure farm inputs for timely sowing of *kharif* crops. Undertake intercultural operation / hand weeding in irrigated groundnut crop.
- Farmers in North Saurashtra Zone of Gujarat are advised to complete the premonsoon sowing of cotton and *kharif* groundnut with irrigation and also select suitable varieties of cotton, bajra, sesame, pulses and pigeon pea etc. and keep inputs ready for sowing.
- As the wind speed is expected to increase beyond 20 km / hr in South Gujarat Zone, staking may be provided for banana and propping may be done for sugarcane to counteract the effect of high wind. Farmers are advised to clean the bund of the field as precautionary measure for control of mealy bug.
- Farmers in South Gujarat Heavy Rainfall Zone are advised to harvest the matured fruits of mango, papaya, sapota, lemon and pomegranate etc. Prepare land for sowing of *kharif* crops. Prepare nursery for selected varieties of *kharif* rice.
- Farmers in North Gujarat Zone are advised to complete harvesting and threshing of pearl millet and sorghum utilizing dry weather conditions. As there is less possibility of rainfall, apply light irrigation and complete the gap filling if required to achieve higher yield in early sown cotton and groundnut crops. Prepare the nursery and dig out the pits for horticultural crops before starting of regular monsoon.
- Varieties of *kharif* crops are mentioned in Annexure II.
- Due to subdued rain during last week, there may be incidence of army worm in rice nursery in Sindhudurg district of Maharashtra; spray 0.07% Cypermethrin @ 3 ml per 10 litres of water after current spells of rain.
- Under prevailing weather conditions there may be infestation of blight and fruit borer in tomato in Western Maharashtra Scarcity Zone; collect infested leaves and fruits and destroy it and for control, spray Chlorothalonil @ 25 g or Mancozeb @ 25 g in 10 litres of water.
- There may be chances of pest / disease infestation in fruit trees due to increase in relative humidity in North Gujarat Zone. Farmers are advised to collect and destroy the infested or dropped fruits from the field for control of fruit fly and apply the poison bait.
- Stages of major crops are mentioned in Annexure-I.

#### **Animal Husbandry:**

- Vaccinate the animals in North Gujarat Zone and in South Gujarat Heavy Rainfall Zone for different diseases before onset of rainy season. Spray phenyl in the animal shed to avoid flies, mosquitoes etc. Dispose the dung, urine, left over the feed properly.

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

- **Realised Rainfall:** Significant rainfall occurred at Anuppur, Balaghat, Chhindawara, Damoh, Dindori, Jabalpur, Katni, Mandla, Narsingpur, Sagar, Seoni and Umaria districts in East Madhya Pradesh and Betul, Burhanpur, Harda, Hosangabad, Raisen, Rajgarh and Shivpuri districts in West Madhya Pradesh. Bilaspur, Dantewara, Korba, Dhamtari, Durg, Janjgir, Jashpurnagar, Kawardha, Mahasumund and Raipur districts of Chhattisgarh.



- **Rainfall Forecast:** Rain/thundershowers would occur over many places in Chhattisgarh and at a few places over east Madhya Pradesh. Weather will be remaining mainly dry over west Madhya Pradesh.
- **Warning:** Nil.
- **Advisories:**
  - Farmers are advised to start sowing of *kharif* crops like rice, soyabean and pulses in southern parts of Madhya Pradesh and sowing of rice and soyabean, maize, jowar, groundnut and urad in Chhattisgarh.
  - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised for land preparation for sowing of kharif crops. Also prepare field for direct sowing of rice and raise nursery for paddy in irrigated conditions. Provide irrigation in cucurbitaceous crops, ladies finger, tomato, cowpea and other vegetable crops and top dressing of urea as required. Weeding and intercultural practices is also recommended.
  - Farmers in Gird Zone of Madhya Pradesh are advised to prepare nursery for kharif onion.
  - Farmers in Malwa Plateau of Madhya Pradesh are advised for dry sowing of maize and wait for sowing of other crops unless they receive good rains.
  - Farmers in Jhabua Hills of Madhya Pradesh are advised to prepare nursery for transplanted paddy, kharif onion, tomato and chilli. They are also advised to irrigate and give RDF in summer vegetables i.e. okra, chilli, tomato, brinjal etc at proper time.
  - Farmers in Central Narmada Valley Zone of Madhya Pradesh are advised to irrigate the sugarcane after 18 to 20 days of interval, also provide irrigation in cucurbitaceous crops, okra, cowpea, and other vegetables. Also do intercultural operation in lobia, cowpea, jowar and maize. Farmers are advised for picking of okra and spinach. They are also advised to raise nursery for paddy in irrigated conditions.
  - Farmers in Vindhyan Plateau of Madhya Pradesh are advised to procure improved varieties of seeds for sowing of soyabean, tur and rice.
  - Farmers in Nimar Valley of Madhya Pradesh are advised to prepare nursery for vegetables i.e. onion, brinjal, chilli, tomato and cauliflower etc.
  - Rainfall is received during last week in Bundelkhand Zone of Madhya Pradesh hence farmers are advised to plough their fields, for sowing of *kharif* crops.
  - Farmers in Chhattisgarh Plain Zone are advised for ploughing of fields wherever sufficient soil moisture is available after harvesting of summer rice, green gram, sunflower, groundnut etc. Looking to the higher wind speed in coming days due to pre-monsoon activities, sugarcane growers are advised to provide adequate support to standing sugarcane crops of 5-6 feet height by tying them together.
  - Farmers are advised to prepare land for rice nursery in Chhattisgarh Plain Zone with assured irrigation facility. Sowing of soybean, pigeon pea etc. is recommended under weed free environment in heavy soils (*Bharri khet*) and sowing of groundnut and black gram) is recommended under weed free environment in light soils (*Tikra khet*) of upland area with assured irrigation facilities.
  - Farmers are advised to prepare field for planting of tapioca, ginger, colocasia, Dioscorea and elephant foot yam in Bastar Plateau Zone of Chhattisgarh.
- **Animal Husbandry & Poultry**
  - Farmers in Kymore Plateau and Satpura Hills region, Grid Zone, Central Narmada Zone and Malwa Plateau Zone of Madhya Pradesh are advised to provide plenty of cool potable water and fresh green fodder to the cattle.

## Annexure I

### Major Crops

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

- Sugarcane (vegetative), *ahu* rice (direct seeded) (maturity / harvesting), *ahu* rice (transplanted) (tillering / panicle initiation), *sali* rice (nursery preparation / sowing), okra (flowering / fruiting), black gram, green gram (pod formation / maturity / harvesting), *olitorius* jute (seedling / vegetative), *capsularis* jute (vegetative), summer vegetables (flowering / fruiting), cucurbits (vegetative / flowering / fruiting), ginger / turmeric (planting / vegetative), arhar (sowing), banana (planting) in Assam.
- *Jhum* and WRC rice (transplanting / early tillering), maize (cob formation / harvesting), black gram, green gram (sowing), okra, cucurbitaceous vegetables (fruiting / harvesting), soybean (sowing / early vegetative), sesamum (vegetative), beans (pod formation / harvesting) in Arunachal Pradesh.
- *Kharif* rice (sowing), pre-*kharif* rice (grain formation / maturity), soybean, groundnut (sowing / early vegetative), *kharif* maize (early vegetative / vegetative), cabbage, chilli (new) (transplanting / vegetative), okra, French bean (fruiting / harvesting), ginger, turmeric (planting / vegetative), cow pea (flowering / pod formation), cucurbits (flowering / fruiting), brinjal (sowing), cauliflower (nursery sowing) in Manipur.
- *Sali* rice (nursery sowing), *ahu* rice (sowing / transplanting), *kharif* maize (early vegetative), black gram, green gram (vegetative), brinjal (fruiting / harvesting), soybean (sowing / vegetative), tomato (vegetative / flowering), turmeric, ginger (vegetative), jute (vegetative / branching) and vegetables like bottle gourd, ash gourd, cauliflower, cabbage etc. (flowering / fruiting) in Meghalaya.
- Rice (nursery preparation), groundnut, soybean, pigeon pea (sowing / vegetative), *khasi* mandarin (flowering / fruiting), banana (vegetative / fruiting / maturity / harvesting), *kharif* maize, French Bean, rice bean, moong (vegetative), okra (vegetative), *kharif* cucurbits (vegetative) and ginger / turmeric (planting) in Mizoram.
- Rice (germination / transplanting / vegetative), ginger, turmeric (vegetative), maize (vegetative), brinjal, chilli (vegetative) and banana (fruiting / harvesting) in Nagaland.
- *Aus* rice (tillering), upland *kharif* rice (tillering), *aman* rice (nursery preparation), groundnut (sowing), arhar (vegetative), maize (tasseling / silking), cucurbits (sowing / seedling), okra (flowering / fruiting), summer vegetables like ridge gourd, bitter gourd, sweet gourd, gourd etc. (fruiting) in Tripura.

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

- Sugarcane (vegetative), lobia for green fodder (vegetative), summer vegetables (flowering / fruiting / harvesting), fodder crops like sorghum, bajra, maize, meth, kalai, boda and dinanath grass (sowing), *kharif* rice (nursery sowing), *kharif* maize, *kharif* arhar, til, sunflower, groundnut, castor (sowing) in Bihar.
- Summer vegetables (fruiting / harvesting), Turmeric and ginger (planting), upland rice (sowing), maize, arhar, groundnut, rice, urad, jowar and soybean (sowing), *kharif* vegetables like okra, beans, French bean, tomato, cauliflower, cabbage etc. (sowing) in Jharkhand.
- Sugarcane (tillering), banana (vegetative), summer tomato (fruiting / harvesting), jute (early vegetative / vegetative), maize, groundnut, arhar, ragi, yam, cotton, direct seeded rice, pulses, sunflower (sowing), transplanted *kharif* rice (nursery sowing), ginger and turmeric (planting), onion (nursery sowing), *kharif* vegetables like okra, French bean, tomato, cauliflower, cabbage etc. (sowing) and fruit crops (planting) in Orissa.
- *Aus* rice (sowing / tillering), *aman* rice (nursery sowing), jute (early vegetative / vegetative), summer vegetables (fruiting / harvesting), chilli (fruiting / harvesting), mango, litchi (maturity / harvesting), cauliflower (seedling), okra and cucurbits (sowing) in West Bengal.
- Ginger (germination / early vegetative), orange (flowering / transplanting), large cardamom (vegetative / primary flowering / secondary flowering), vegetables (vegetative) orange (flowering), maize (vegetative / late vegetative), rice (transplanting) in Sikkim.

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

- Vegetables (bhindi, cucurbits), peas (sowing / germination), potato (planting / sprouting), mirch, brinjal (nursery sowing/ transplanting), cucurbits viz. cucumber, summer squash, khira, bitter gourd, bottle gourd (nursery sowing/transplanting), tur, Shimla mirch, and tomato (transplanting / seedling), apple and other temperate fruits (vegetative), radish, arbi, amaranthus, turmeric, maize, dhaincha, chari, bajra, barley, red and white clover, bell pepper, garlic, ginger, coriander, knolkhol, cabbage, cauliflower, lettuce (sowing / planting / germination), soybean (sowing), rice (nursery sowing) in Himachal Pradesh.
- Rice (Nursery sowing), late onion (vegetative), chilli, tomato, brinjal, spinach, tomato and cucurbits (vegetative and fruiting), French bean, cluster bean, summer radish, summer green gram (vegetative and fruiting), ladies finger (fruiting / maturity / harvesting), guar, maize, bajra, cluster bean as fodder crops (sowing), pigeon pea, cotton (sowing) in Delhi.
- Rice (Nursery sowing / direct sowing / early transplanting), summer fodder (maize + cowpea + jowar) (sowing/ vegetative), maize (sowing / emergence / vegetative), turnip, cruciferous crop (viz. cabbage, cauliflower, knolkhol, kale, broccoli), radish, carrot, beet root, coriander and fenugreek (sowing), leafy vegetables like celery, Parsley and Leek, solanaceous crops viz. tomato, onion, brinjal and chilli, capsicum (nursery sowing/transplanting), Pakchoi, Chinese cabbage, Kale, Lettuce, Broccoli, Coriander, Methi, Turnip, Radish and Mints (harvesting in Leh), Horticultural crops (various stages) viz. [peach, plum & mango (flowering/fruiting), ber, orange & guava (fruiting)], *kharif* pulses (sowing), radish, carrot, turnip, spinach, beans, methi and cabbage(sowing), brinjal, Knolkhol, chillies, cabbage, cauliflower (transplanting) in Jammu & Kashmir.
- Chilli, capsicum, cauliflower, broccolli (germination/vegetative), sugarcane (planting), papaya (planting), pearl millet (early vegetative/vegetative), sunflower (germination), Chaitee dhan, maize, lobia, sunhemp, cowpea, jowar for green fodder (early vegetative), garlic, cucurbits, okra(seedling), French bean, maize (seedling), rice (nursery sowing/transplanting), finger millets (sowing), groundnut, sorghum, millets, pigeon pea, urad, moong, soyabean, rajma, arhar, maize and ginger (land preparation/sowing) in Uttarakhand.
- Rice (land preparation / nursery sowing), sugarcane (vegetative growth), sunflower, maize (grain formation), fodder maize, lobia, (sowing / germination), Sanai, Dhaincha (sowing / early vegetative), summer sugarcane (tillering), mango (flowering / fruiting), cotton, soyabean and urd (sowing), sunflower, jowar, bajra (sowing), vegetables [cucumber, pumpkin, tomato, brinjal, lady's finger, chilly](sowing) in Uttar Pradesh.
- Rice (Nursery sowing / transplanting), spring sugarcane (sprouting / tillering), berseem (harvesting), barley (harvesting), radish (sowing), carrot, turnip, cauliflower (transplanting / vegetative), tomato, sunflower (sowing), cotton (sowing / early vegetative), okra, chilli, brinjal (sowing / transplanting) in Punjab.
- Rice (Nursery sowing / transplanting), Sugarcane (spring season) (early vegetative), barseem (vegetative / last cut), fodder ((maize + cowpeas) (vegetative)), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), radish, cotton (sowing), turnip (sowing) in Haryana.
- Cauliflower, cabbage, onion (transplanting / germination), sugarcane (new planting), cotton (Desi kapas, B.T. kapas, Narma kapas, American Cotton) (land preparation / sowing), pearl millet, jowar and bajra mixed with guar, Sudan grass, oats, maize, sorghum etc. for green fodder (land preparation / sowing), mirch, simla mirch, guar, vegetable (tinda, water melon, pumpkin, cucumber, coriander, bhendi, ridge gourd) (sowing), *kharif* onion (nursery planting), *kharif* groundnut, rice (land preparation/sowing) other *kharif* crops (field preparation) in Rajasthan.

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

- Sugarcane (ratooning), paddy (nursery sowing/), maize (sowing), arecanut (flowering/maturity/ new transplanting),vegetables (transplanting), coconut (flowering/maturity), turmeric, ginger, green gram, black gram, tur, cowpea, bajra, sorghum (sowing) and horticultural crops (fruiting) in Karnataka.

- Sugarcane (vegetative / ratooning), vegetables (fruiting), Paddy (Nursery preparation), Cotton (vegetative), maize (sowing/vegetative), castor (sowing), kharif groundnut (sowing) and early sown groundnut (vegetative) in Andhra Pradesh.
- Pepper (flowering/new planting), ginger (planting/vegetative), rubber (tapping), irrigated banana (harvesting/ planting), cardamom (nursery/planting), sugarcane (grand growth), vegetables (nursery/planting), *virippu* paddy (nursery sowing/transplanting), cashew, coconut (new planting) in Kerala.
- Kuruvai rice (nursery sowing/transplanting), sugarcane (maturity), vegetables (flowering/fruiting/harvest) in Tamil Nadu.

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

- Sugarcane new *adsali* (active tillering / elongation), sugarcane new pre-seasonal (active tillering), sugarcane new *suru* (early vegetative in Madhya Maharashtra and Marathwada), *kharif* rice (germination / seedling in Konkan, Kolhapur division and nursery sowing in Pune division & East Vidarbha), cotton (sowing in Marathwada and Vidarbha), soyabean (sowing / germination in Kolhapur division and sowing in Marathwada and Vidarbha), groundnut (sowing / germination in Kolhapur division) in Maharashtra.
- Cotton (sowing), groundnut (sowing), *kharif* rice (nursery sowing), summer bajra, sorghum (harvesting), sugarcane (vegetative / elongation), vegetables (fruiting / harvesting) in Gujarat.

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

- Rice (nursery sowing), summer vegetables (fruiting), kharif vegetables i.e. tomato, brinjal, chilli etc (nursery sowing), fodder crops (sowing), onion (nursery sowing) in Madhya Pradesh.
- Sugarcane (planting/vegetative), groundnut (pod filling), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (planting), vegetables (land preparation / sowing / vegetative), millet (sowing), tapioca, ginger, colocasia, discorea, elephant foot yam (planting) in Chhattisgarh.

## Annexure II List of Varieties

### Assam

**Sali rice:** Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal (for typical lowland rice area), Satya and Basundhara (for medium lowland area).

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

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

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

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

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

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

**Pigeon pea :** T-21.

### Meghalaya

**Soyabean :** Clark-63, Bragg, Hill, Punjab-1, Hardee, Lee

### Mizoram

**Rice :** Buhsakei, Bhusanghar, Biahzin, Khairawal, Wonder Rice, IR 64, Ranjeet, PHB-71, IR 50, RCM-9

### Manipur

**Soybean :** JS 335.

**Groundnut :** ICGS-76.

### Tripura

**Aman rice :** Swarna Masuri, Naveen, Puja, Krishnahamsa.

### Orissa

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

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

#### **Kharif rice:**

**Early maturing varieties:** Parijat, Khandagiri, Vandana, Jogesh, Siddant.

**Medium maturing varieties:** Pratikshya, Manaswini, Tapaswini MAS, Konark, Surendra, Lalata, Kharavela, Naveen, Surendra, MTU-1001, MTU1010, Abhisek.

**Late maturing varieties:** CR-1009, CR-1018, Ranidhan, Mrinalini, Swarna, RGL-2837, Ketakijoha, Moti, Padmini, Kanchana, Mahanadi, Jagabandhu.

**For flash flood areas:** Swarna Sub-1, Barsadhan.

**Hybrid varieties:** CRHR-32, Ajay, Rajalaxmi, BS6444G, JKRH-401, ARIZE 6444G, JKRH-3333.

**Maize:** Navjot, Shakti, Decan-107.

#### **Arhar:**

**Early duration:** Prabhat, Upas-120, ICPL-86012.

**Medium duration:** Asha, Visakha.

#### **Fruit Crops:**

**Mango:** Banganpalli, Totapuri, Subarnarekha, Nilam, Langrah, Dasher, Amrapalli.

**Banana:** Kabuli, Robusta, Patakapura, Champa, Gaja bantala, Batisha bantala.

**Guava:** Allahabad Safed, Lucknow -49, Banarasi Seedless.

**Papaya:** Kurg Honeydew, Coimbatore-1 & 2, Pusa Delicious, Pusa Majesty.

**Coconut:** Eastcoast Tall, Westcoast Tall, Andaman, Lakhsadeep, Java, Fiji.

**Pine apple:** Que, Queen, Simachalan and Maricius.

**Cashew nut:** Vengrulla 1.4, BPP-4.

**Jackfruit:** Kadua, Khajra and Singapor.

**Cotton:** MCU-5 and Sabita.

**Ragi:** Divyasingh, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.

#### **Yam:**

**Local variety:** Shreekirti, Shreerupa, Hatikhoj, Shreeshilpi.

**Small yam:** Shreelata, Shreekala.

**White yam:** Shreesubhra, Shreepriya, Shreedhanya.

**Green gram:** PDM-11 & 54, K-851, Blackgram-PU-19 & 30.

**Groundnut:** TMV-2, TAG 24, Smruti, Devi.

### West Bengal

**Aman rice:** IET-4094, 2233, Ratna, Bikash, Kitish, Sasya-shree, IR-42, Swarna, Mashuri, IET-8002.

### Jharkhand

**Ginger:** Vardhaman, Nadia.

**Turmeric:** Rajendra, Sonia.

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

**Maize:** Birsa Makka-1, Birsa Makka-1, Sawan-1 (Hybrid), HQPM (Hybrid).

**Arhar:** Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671.

### **Bihar**

**Kharif Rice:** Rajshree, Rajendra Sweta, Rajendra Mansuri, Swarna, Satyam, Kishori, BPT-5204, MTU7029, Hybrid, Sita.

**Kharif maize:** Suwan, Deoki, Shaktiman 1, Shaktiman 2, Sunkar makka 3, Ganga 11, Rajendra Mahsuri, DHM-117.

### **Himachal Pradesh :**

**Brinjal:** Arka Nidhi, PPC

**Shimla mirch:** California wonder

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

**Frenchbean:** Contender

**Pepper :** Surjmukhi,

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

**Raddish:** japoni 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 :** Kiyam seedless/243, Matgaura, Maliniseeded

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

**Redcapsicum :** Natasha, Tanvi

**Yellow capsicum :** California wonder, bhara, solan sankar 1, Indira, Orivelle

**Summer squash :** Pusa Alankar Jacuni types.

**Sarson :** KBS3

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

**Soybean :** Shivalik, Lee, Bragg and harit Soya.

**Cowpeas :** Himachal Lobia-1.

### **Jammu & Kashmir**

#### **Vegetable crops**

**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), ginger (Local), **Knolkhol** (W. Vienna).

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

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

#### **Field crops**

**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):** IET-1410, K-39, Ratna, PC-19, Jaya RR-8585, Basmati 370 and Ranbir Basmati,

Hybrid: KRH-2, PHB-71, direct seeded rice crop (var. Jaya, RR-8585, PC-19, IET-1410 & Ratna)

**Bhindi :** Varsha Uphar, Pusa A-4 and Prabhani Kranti), **Pumpkin** (Arka Suryamukhi and Arka Chandan), **Bittergourd** (Pusa Domousami & Pusa Vishesh), **Bottlegourd** (Pusa Summer Prolific Long, Pusa Summer Prolific Round), **Spongegourd** (Pusa Chikni and Pusa Supriya)

**Radish** (var. Japanese white), **Carrot** (var. Nantes), **Turnip** (var. Purple Top White Globe), **Spinach** (var. All green), **Beans** (var. Contender, Pusa Parvati and Arka komal), **Methi** (var. Pusa Early Bunching and Kasuri methi). **Knol-khol** (White Vienna and Purple Vienna) and **Cabbage** (Golden Acre and Pride of India). **Brinjal** (Pusa Purple Long, Pusa Purple Cluster), **Cauliflower** (Pusa Snowball, Pusa Snowball K-I)

**Rice ( var. IET – 1410, K-39, Ratna, China-1039, PC-19, Basmati, Jaya and RR-8585)**

Intermediate higher zone (K-39, K-448, Giza-14, K-78 and K-332), K-84, K-39.

### **Punjab & Harvana**

**Punjab : Paddy :** PR 118, PR 116, PR 114, PR 113, PR 111, PR 115.

**Haryana : Paddy :** PAU 201, PR 120, PR 118, PR 116, PR 114, PR 113, PR 111, PR 115.

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

**Okra:** Pusa Sawani , Punjab Padmini , Punjab 7 or 8.

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

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

**Maize:** PMH 1, Prabhat , sweet corn , PMH 2, JH 3459, Kesri and Pearl Pop Corn.

### **Delhi**

**Paddy**

Hybrid varieties: - K. R. H 2, PHB 71, Pant hybrid Dhan1, Narendra hybrid dhan 1, P R H 10, High yielding varieties- Pusa 44, Pant Dhan-4, Pant Dhan-10, Narendra Dhan-359, Pusa-834, Pusa basmati-1, Pusa improved basmati, Pusa sugandha-5, Pusa sughanda-4 (Pusa 1121), Ranvir basmati and Taravadi basmati.

**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.

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

**Pigeon pea:** Pusa-2001, Pusa-991 and Pusa-992.

**Cotton:** H-777, H-974, H-1098

**Baby corn:** HN-4

### Uttarakhand

**Rice :** Saket-4, Govind, Narendra-80, Pant Dhan-6 & also the Scented Rice varieties like Pant Sugandh Dhan-15, Taravadi Basmati, Pusa Basmati-1, Pusa Basmati-1401, Type-3, Basmati-370 etc, VL-Dhan -154, Vivek Dhan -62, Vivek Dhan-65, VL Dhan-81, Vivek Dhan-82 or VL-Dhan-85, VL-163, 221, Vivek Dhan-154, Pusa-44, Jaya, Serju-52, NDR-359, Pant Dhan-4, PR-113, PR-114, Pant Dhan-18, Pant Dhan-19, Pant Sankar Dhan-1, Pant Sankar Dhan-3, Narendra Sankar Dhan-2 etc. in nursery.

**Millets :** long duration (105 to 110)VL- Mandua-124 and VL-149, short duration (95 to 100 days) varieties like VL- Mandua-204, Pant Mandua-3, PES-176, PES-110, VL- Mandua-146.

**Groundnut:** G-201, Kausal, JL-24.

**Maize:** Him-129, Navin, Sartaj, VL makka 16.

**Urd:** Pant urd-19, 30, 35,

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

**Soyabean :** Brag, PK-262, PK-327, VL Soya-2 and VL Soya-21.

**Okra :** VL Bhindi-1.

**Sorghum grain :** CSV-10, 13, 15, 16, 17 and 19. The main hybrid varieties of sorghum are CSH-09, 10, 13, 18 and 19.

### 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.

### Rajasthan

**Kharif paddy :** P.R.106, B.K.190, Mahi Sugandha (Basmati), Ratna, B.K.79, Jaya Basmati 370, Tarauri, Basmati, P.H.B.-71, Improved Pusa Basmati, Pusa Sugandha-4, 5.

**Kharif onion :** N-53 & Agrifound dark red

**Kharif groundnut :** RG-382, R.S.-1, M-13, RG-141, TG 37-A & Girnar-2, J – 38, TG – 37 – A, Pratap mungphali – 1, Pratap mungphali – 2, etc. are improved varieties

**Guar :** R.G.S- 936, R.G.S- 986, R.G.S- 1002, R.G.S- 1017, H.G- 365, H.G 563, H.G 2 & 20. R.G.C. 1066 (Lathi)

**Pearl millet: Composite:** Raj-171, **Hybrid:** RHB-121, HHB-67 (Improved), RHB-173, RHB-177

**Sorghum:** CSV-15 (105-110 days), CSV-23 (110-115 days), Pratap Chari-1080 (105-120 days)

**Maize:** Mahi Kanchan (75-80 days) & Pratap Makka-5 ( 85-95 days), RMG-62, RMG-268. RMG-492 & RMG-344, SML-668 are improved varieties of green gram. FS-68, RC-19 and RC-101 are improved varieties of cowpea. Him – 129, Aravali Makka, PEHM-1, PEHM- 2, Pratap Makka-1, Pratap Makka-3, etc.

Improved varieties of bottle guard are Pusa Naveen, Arka Bahar for pumpkin - Pusa Vishwas, Arka Chandan, Pusa Alankar, Arka Suryamukhi for bitter guard - Arka Harit Pusa Vishesh, Priya and for round gourd- Arka tinda, Bikaneri green, Punjab-48.

**Bajra :** Raj 171, H.H.B. 67 High yielding varieties : R.H.B.-177, H.H.B. 67-2, I.C.T.P.-8203, R.H.B.-121, R.H.B.-173, R.H.B.-154, G.H.B.-538, H.H.B.-67 (improved).

**Til :** R.T. 46

**Moong (Green gram):** Ganga-1 (Jamnotri), Ganga-8(Gangotri), S.M.L. 668, M.U.M.-2

Improved varieties : RMG-62, RMG-268. RMG-492 & RMG-344, SML-668

**Cowpea :** FS-68, RC-19 and RC-101

**Moth bean:** R.M.O.-40

### Karnataka

**Green gram :** BGS-9, Selection – 4 , PS-16, TAP-7, Pusabisaki, Chinamoong, Sel-4,

**Black gram :** TAU – 1, DU – 1

**Soybean :** JS - 335

**Red gram :** BSMR 736, TS-3R

**Jowar :** DSV – 2

**Bajra :** WCC-75, MH-179, ICTP-8203 (@5Kg/Ha)

**Pigeon pea:** PT-221, GS-1, HCPL-87, WRP-1, TS -3 R, BSMR-76 and Maruti (for wilt prone areas)

**Groundnut:** S-206, KRG-1, R 2001-3, JL-24 (for early sowing), R-8808, R-9251, S-220 (Spreading type)

**Sunflower :** Morden, BSH-1, KBSH-1, RSFH-130

**Sesame :** E-8, TMV-4, DSH-1 or Local

**Cotton:** DCH-32, DHH-11, NHH-44 etc.

**Lowland paddy:** Intan, Abhilash, I.R.-57773 or basmathi variety like I.E.T 13549. Upland paddy: Amrut or Prasanna

### Kerala

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

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

### Tamil Nadu

**Rice:** ADT 36, ADT 43, ADT 45 and ADT 47

### Andra Pradesh

**Castor :** GCH-4, PCH-111, PCH-222

### Gujarat:

**Hybrid cotton:** G. Cot. 4, 6, 8, 10.

**Rice:** GR-101, 102, 103, 104, Masuri, Narmada, IR – 28.

GR-3, 4, 6, 7 and 12 (early maturing varieties).

GR-11, Jaya, IR – 22, Gurjari, Dandi (mid late1 maturing varieties).

**Maize:** Gujarat Maize-4, Ganga Safed-2, Farm Sameri, Ganga-11.

**Groundnut:** GG 2, GG-5, TG-26, TPG-41, TAG 37 for bunch and GG-20 for semi spreading type.

**Sesamum:** GT-2 or GT-3.

**Bajra:** GHB-558, 577, 538, 719, 732, 744, 528, 316, 183.

**Green gram:** GM-3, GM-4, K-851.

**Black gram:** T-9, GU-1.

**Cowpea :** Gujarat cowpea-1, 2, 4, Pusa Falguni.

**Pigeon pea:** GT-1, GT-100, GT-101, T-15-15, BDN-2, IPCL\_87-Pusa Ageti, GTH-1.

### Maharashtra:

#### Kharif crops:

#### Jowar:

**Hybrid variety:** CSH-5, CSH-9, 13, 14, 16,17 ,18,21, 23 and SPH 1567.

**Improved variety:** SPV-462, CSV-13, 15, 17, 20, 23 and PVK-801.

#### Bajra:

**Hybrid variety:** Shraddha, Saburi, Phule Shanti.

**Improved variety:** ICTP 8203, ICMV – 155.

**Groundnut:** SD 11, Phule Pragati, Phule Vyas, Phule Unap, TPG 41, TG 26.

**Sunflower:** EC-68414, SS-56 and Bhanu for Madhya Maharashtra and LSF-8 and LS-11 for Marathwada.

**Soyabean:** JS-335, Phule Kalyani (DS-228), PK 1029, MACS 450 for Madhya Maharashtra and MASU-47, JS-335 and MAUS-71 for Marathwada.

**Rice:** PKVHMT, PKV Khamang, Sindewahi 2001, Sindewahi-5, Sindewahi-75 for nursery swing in East Vidarbha and Ambika, Prabhavati (Parbhani-1), Sugandha, Parbhani Avishkar for drill sowing in Marathwada.

**Black gram:** BDU-1, TAU-1 for Marathwada.

**Red Gram:** ICPL 87, Vipula, BSMR-853, BSMR-736 for Madhya Maharashtra and for Central Vidarbha – ICPL-87119 (Asha), C-11.

**Kharif Cotton:** AKA-5, AKA-7, AKA-8, American improved variety – AKH-081, PKV-Rajat, AKH- 8828 for Central Vidarbha Zone.

### Madhya Pradesh

**Paddy:** a. Medium: IR-36, IR-64, Pusa sugandha-5, MTU-1001

b. Late: Mahsuri, Safari-17, Syamla, Swarna

**Maize:** a. Medium: navjot, Arun, H-216, Jm-13, Sartaj, Daccan 107

b. Late: Ganga-11, Prabhat, Trisulta, Daccan 103, Daccan 105

**Jowar:** JJ-741, JJ-938, JJ-1022, JJ-1041 and CSV-15

**Arhar:** Laxmi, Pragti, Asha, Jagrati, JKM-7 and JKM-189

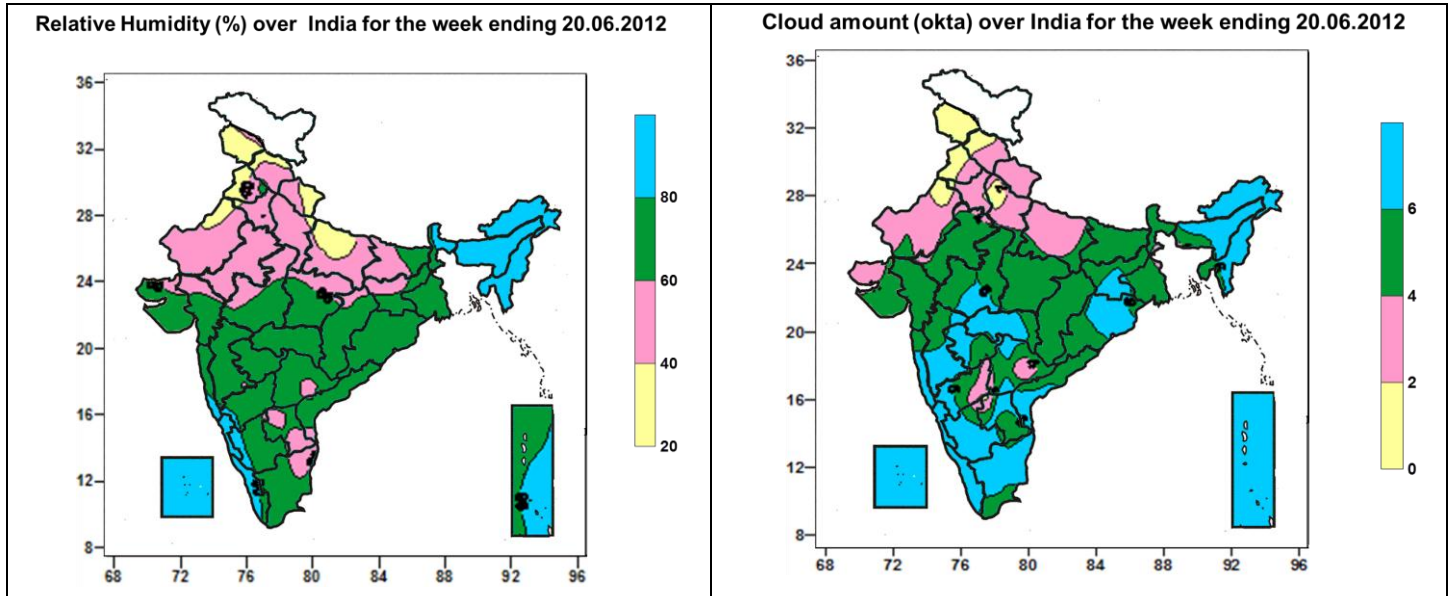
**Soybean:** JS-95-60, JS-93-95, JS-97-52, JS-80-21, JS-335, NRC-37

### Chattisgarh

**Millet:** High Yielding : PR 202, HR 374, VR 708, RAU 08, GPU 45, VC 149 and for kodo millet GPUK-3, RVK-155 and for Kutki JK08.

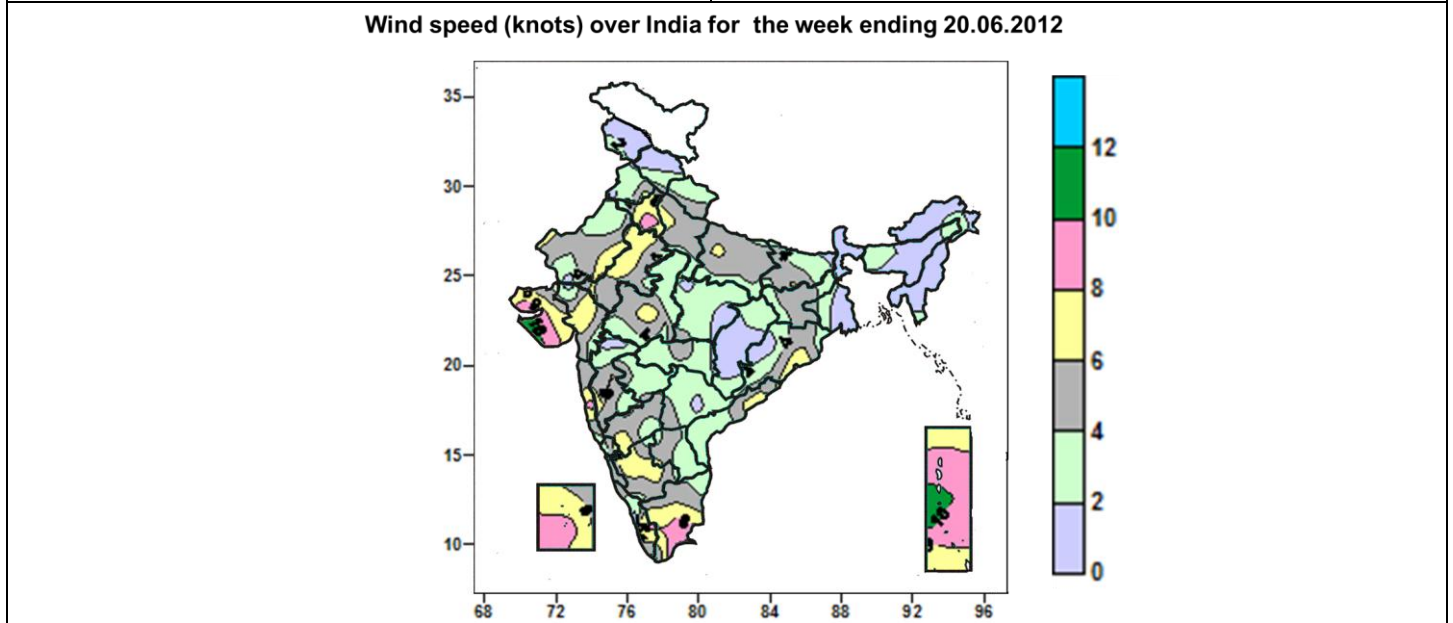


**Annexure III**  
**Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on**  
**20.06.2012**



Relative humidity ranged between 80% and above over most parts of Sikkim, Northeast India, West Coast, Lakshdweep, Andaman & Nicobar Islands, some parts of Interior Karnataka, 20 to 40 % over most parts of Jammu & Kashmir, Punjab, some parts of Himachal Pradesh, Uttarakhand, Uttar Pradesh, West Rajasthan, Haryana and 40 to 80 % over remaining parts of the country.

Cloud amount 6 okta and above over most parts of Northeast India (Except Tripura), Orissa, Maharashtra, South Peninsular India (except North Interior Karnataka, most parts of Andhra Pradesh) and below 6 okta over remaining parts of the country.



Wind speed ranged between 10 to 12 knots and above over some parts of Kutch, Andaman & Nicobar Islands, 8 to 10 knots over most parts of Andaman & Nicobar Islands, some parts of Haryana, Saurashtra & Kutch, Konkan, Tamil Nadu, Lakshdweep Islands and below 8 knots over remaining parts of country.