

National Agromet Advisory Bulletin

Thursday, 25th June, 2009 (For the period 25th to 29th June, 2009)



Monsoon & Sowing of crops

- Monsoon rain arrived earlier this year, hitting the Kerala coast on 23rd May, ahead of the usual date on 1st June and it covered most parts of Karnataka, coastal AP, Rayalaseema, most parts of West Bengal and north-eastern States by the first week of June.
- But the progress of monsoon was slowed down afterwards. The monsoon had stagnated over southern peninsular region for more than two weeks and delayed for 7 to 10 days in central India and parts of north India.
- With the onset of monsoon, normal sowing operations were carried out in Kerala, Karnataka (except north Interior Karnataka).
- Further delay in the monsoon may affect the sowing of kharif crops in most parts of the country (Maharashtra, Gujarat, Andhra Pradesh, Orissa, Bihar, Chattisgarh, Jharkhand and Uttar Pradesh).
- As of now, the sowing of the rice crop is in progress, despite the two-week delay in the monsoon in peninsular and central India.
- But there is some concern on sowing of pulses and oilseeds and planting of sugarcane. Pulses and oilseeds are grown primarily in rain-fed regions, which have experienced deficient rainfall so far. It is expected that there may be marginal decline in the sowing of oilseeds (particularly groundnut and moong).
- Maize is another crop whose sowing is being delayed because of the delay of the onset of monsoon. Deficit rain in north Interior Karnataka (major contributor of the kharif season) and Maharashtra may reduce the area and alternate crops may be sown.
- Moderate delay for a good oilseed crop, rain should come by 25th June to central India and (at the) latest by 30th June to northern India, may cause marginal reduction in sowing area of oilseed crop.
- The delay in planting as well as insufficient soil moisture could impact the sugarcane crop in major growing states such as Maharashtra and Uttar Pradesh.
- In Peninsular India cotton sowing has been delayed by about 15 days in some regions.
- Due to delay in monsoon sowing of groundnut may be postponed by a week in the largest oilseed producing state of Gujarat. The sowing of groundnut in the Kharif season normally begins from June 20.
- Although farmers in Uttar Pradesh enjoy the benefits of irrigation cover, deficient rain may impact the prospects of the sugarcane, rice crops in Uttar Pradesh, especially the central and eastern districts due to delay in onset of monsoon.
- Sowing in the fertile Godavari delta, known as the rice bowl of the state, may be hit by the delay in rain.
- Delay in rain and heat wave condition may cause reduction sown area of cotton in Vidharba.
- In Madhya Pradesh already sown soyabean, may be affected by deficient rain.
- But it is too early to assess impact of delay in onset of monsoon on the crop.
- In order to cope up with the situation of delay in onset of monsoon, Departments of Agriculture in different states are considering launching contingency plans.

Agromet Advisories for Farmers

Sub-Divisions

Kerala, South Konkan, Coastal and South Interior Karnataka, Rayalaseema, South Coastal Andhra Pradesh, West Bengal and North-eastern States

- As good amount of rainfall was received in the last week and rainfall is expected in the next five days in the above mentioned sub-divisions, farmers are advised to continue land preparation and sowing/transplanting of *kharif* crops.
- *Kharif* crops to be taken for sowing/transplanting in these subdivisions are as follows:
 - Rice in Kerala, rice and ragi in South Konkan, rice in coastal Karnataka, jowar, bajra and groundnut in south interior Karnataka and Rayalaseema, rice and groundnut in south coastal Andhra Pradesh and *ahu* and *sal* rice in Assam.
- However, in West Bengal life saving irrigation should be given to already sown *aus* and *aman* rice, jute etc. showing symptoms of water stress condition.

Sub-Divisions

North Konkan, South Madhya Maharashtra, South Gujarat, South saurashtra, North Interior Karnataka and South Telangana

- With the recent advance of monsoon followed by good amount of rain, farmers in these sub-divisions are advised to undertake:
 - Sowing of maize, tur, sunflower, cotton and soybean in north interior Karnataka.
 - Sowing of rice, jowar, bajra, groundnut, tur and soybean in south Madhya Maharashtra (Sangli, Satara and Solapur) and also in Pune district.
 - Sowing of jowar, black gram, green gram in south Telangana (Megbubnagar, Nalgonda, Hyderabad and Rangareddy districts).
 - Sowing of groundnut in South Gujarat and South Saurashtra region.

Sub-Divisions

North Gujarat, North Madhya Maharashtra, Orissa, North Telangana, South Chhattisgarh, Bihar, Jharkhand

- As the condition is favourable for advance of monsoon in north Gujarat and fairly wide spread rainfall activity over west coast, east India, Chhattisgarh, north Andhra Pradesh from 28th to 30th June, in the above sub-divisions, farmers are advised to undertake sowing of *kharif* crops on receipt of rain.
 - Rice, jowar, tur, cotton and groundnut in Gujarat.
 - Bajra, groundnut, tur and sunflower in North Madhya Maharashtra (Ahmednagar, Nasik, Jalgaon, Dhule and Nandurbar districts).
 - Rice, maize and cotton in Orissa, jowar, green gram and sunflower in North Telangana (Adilabad, Warangal, Medak, Nizamabad) and
 - Rice in south Chhattisgarh,
 - Nursery sowing of rice in Bihar and Jharkhand.
- Farmers in Orissa are advised to provide life saving irrigation to the nurseries and main fields and not to apply fertilizer in the nursery or main field until rain starts. Farmers are also advised to raise community nursery of rice for transplanting at a reliable water source to save time avoiding further delay.

Advisories for delay in monsoon

- As it is expected that the monsoon will advance shortly, farmers in Marathwada, Vidarbha and Madhya Pradesh are advised to undertake field preparation with the pre-monsoon showers and wait for undertaking sowing operation till onset of monsoon in these areas. They are also advised to keep the inputs ready to undertake sowing of *kharif* crops.

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.org>) of the Division

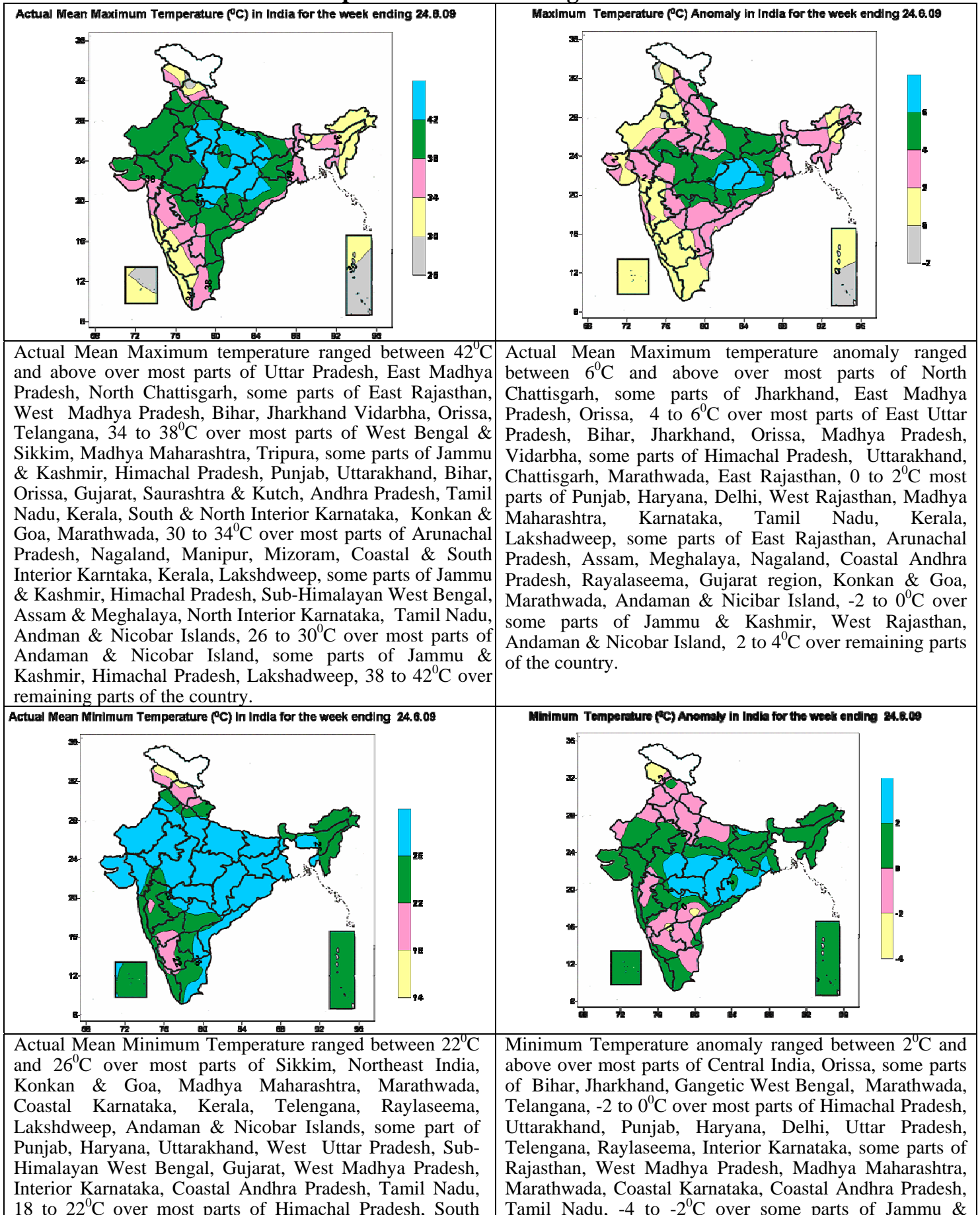
Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks

Sub-division	Cumulative Rainfall for the period									
	27 th May		3 rd June		10 th June		17 th June		24 th June	
	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.
A & N Islands	117.7	14	121.1	-3	136.6	-11	100.3	117	108.4	80
Arunachal Pradesh	61.2	-16	87.2	-50	98.6	-38	121.9	-29	128.9	-61
Assam and Meghalaya	88.6	-31	101.5	-63	128.3	-62	143.6	-30	142.1	-67
NMMT	49.2	59	66.2	-36	85.6	-9	100.1	-77	82.1	-50
SH West Bengal & Sikkim	67.2	158	76.5	-46	88.3	-36	124.2	-22	138.0	-42
Gangetic West Bengal	21.0	507	30.6	8	46.6	-78	52.3	-78	59.5	-92
Orissa	12.2	184	20.0	-11	31.0	2	43.8	-70	58.9	-90
Jharkhand	9.8	91	14.9	9	29.1	-81	45.3	-52	50.3	-99
Bihar	12.5	54	17.5	120	27.3	-55	41.6	-82	45.3	-78
East Uttar Pradesh	3.4	228	7.2	111	14.0	-67	18.2	-99	26.6	-100
West Uttar Pradesh	2.6	182	5.5	1	9.2	-68	11.8	-97	15.1	-100
Uttarakhand	11.8	-59	18.8	54	23.1	-67	31.2	-90	47.1	-99
Haryana, Chandigarh & Delhi	3.3	-31	3.3	116	6.8	-99	8.1	-42	10.7	-100
Punjab	3.2	-79	3.1	8	5.6	-92	8.7	-67	9.5	-100
Himachal Pradesh	12.6	-64	12.6	-29	13.7	-43	18.5	-17	22.1	-93
J & K	18.2	-51	11.7	-79	12.0	91	15.7	72	11.2	-67
West Rajasthan	3.1	-93	3.8	18	3.1	-100	5.0	91	6.4	-50
East Rajasthan	3.0	-90	5.1	-86	6.6	-100	10.9	-7	15.1	-61
West M. P.	1.8	-60	5.9	-81	11.1	-99	19.8	-90	30.4	-94
East M. P.	1.7	-70	6.4	-55	14.9	-80	21.1	-89	41.3	-99
Gujarat region	2.0	-100	5.6	-100	14.6	-100	22.3	-90	33.9	-79
Saurashtra & Kutch	0.5	-100	2.4	-100	7.7	-100	13.0	-100	27.9	-32
Konkan and Goa	14.0	-73	35.0	-95	88.7	-14	152.2	-90	198.1	-67
Madhya Maharashtra	10.6	-72	11.3	-97	25.1	-38	29.7	-92	33.5	0
Marathwada	8.0	-88	11.9	-84	25.1	-78	32.8	-87	41.4	-43
Vidarbha	2.4	248	7.5	-68	17.7	-40	31.9	-94	51.5	-85
Chhattisgarh	3.5	-52	9.1	-37	22.0	-95	35.2	-89	56.3	-99
Coastal A. P.	15.4	-14	14.9	-5	17.6	-56	22.3	-31	24.1	-68
Telangana	7.3	35	11.2	-10	20.6	-22	28.9	-60	38.2	-78
Rayalseema	16.7	100	15.5	55	15.4	-77	13.5	119	12.8	8
TamilNadu & Pondicherry	14.0	-1	12.7	21	9.8	-19	9.3	34	9.5	-56
Coastal Karnataka	52.8	-13	78.7	-56	168.8	31	218.5	-77	249.0	-58
N. I. Karnataka	18.0	11	17.1	-77	22.2	13	24.0	43	21.5	52
S. I. Karnataka	26.0	-18	22.7	-7	25.9	-19	27.9	13	31.6	-58
Kerala	78.7	23	102.0	-78	151.8	17	150.8	-69	161.0	-41
Lakshadweep	61.1	28	79.3	-31	88.7	3	67.4	-15	80.6	49

The subdivisions like Assam & Meghalaya, Madhya Pradesh, Gujarat, Saurashtra & Kutch, Marathwada and Chhattisgarh received scanty / deficient rain in all the 5 weeks; Arunachal Pradesh, Sub Himalayan West Bengal & Sikkim, Uttarakhand, Haryana, Chandigarh & Delhi, Punjab, Himachal Pradesh, East Rajasthan, Konkan & Goa, Madhya Maharashtra and Vidarbha received scanty / deficient rain in 4 out of last 5 weeks; Nagaland, Manipur, Mizoram, Tripura, Gangetic West Bengal, Jharkhand, Bihar, Uttar Pradesh, Jammu & Kashmir, West Rajasthan, Coastal Andhra Pradesh, Telangana, Coastal Karnataka and Kerala received scanty / deficient rain in 3 out of last 5 weeks. Remaining States received normal / excess rain in 2 or more weeks during last 5 weeks.



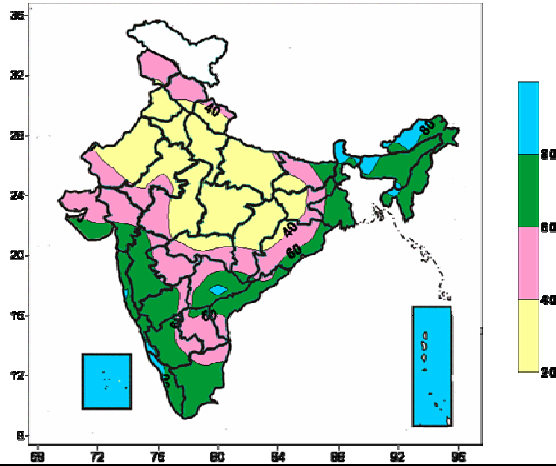
Contour maps for the week ending 24.06.09



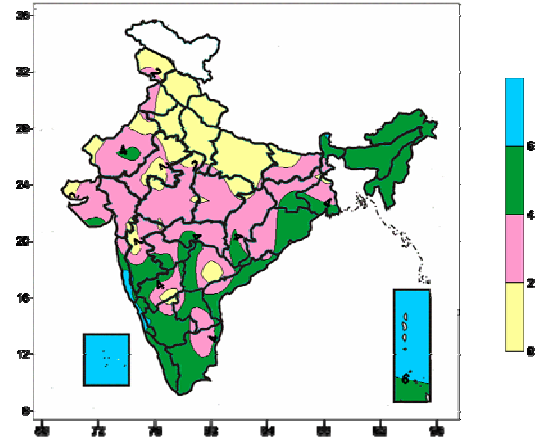
Interior Karnataka, some parts of Jammu & Kashmir, Uttarakhand, West Uttar Pradesh, Madhya Maharashtra, North Interior Karnataka, Kerala, Tamil Nadu, 14 to 18°C over some parts of Jammu & Kashmir, Himachal Pradesh, 26°C and above over remaining parts of country.

Kashmir, Telangana, Interior Karnataka, 0 to 2°C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 24.6.09



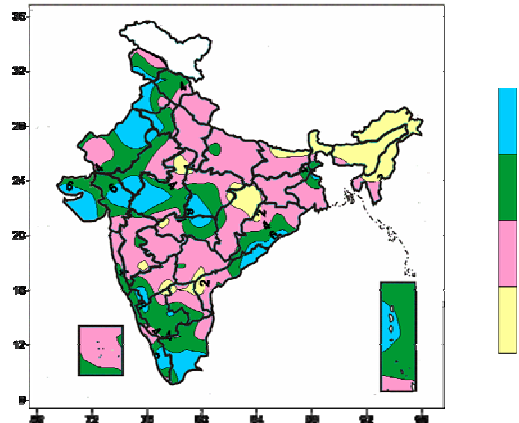
Cloud amount (okta) over India for the week ending 24.6.09



Relative humidity more than 80% over most parts of Sikkim, Lakshadweep, Andaman & Nicobar Islands some parts of Sub Himalayan West Bengal, Arunachal Pradesh, Assam & Meghalaya, Tripura, Telengana, Konkan & Goa, Coastal Karnataka, Kerala, 60 to 80% over most parts of West Bengal, Northeast India, Konkan & Goa, Madhya Maharashtra, Karnataka, Tamil Nadu, Kerala, some parts of Bihar, Jharkhand, Coastal Orissa, Andhra Pradesh, South Gujarat region, 20 to 40% over most parts of Punjab, Haryana, Delhi, Uttarakhand, Uttar Pradesh, East Madhya Pradesh, West Rajasthan, some parts of Jammu & Kashmir, Himachal Pradesh, East Rajasthan, Bihar, Jharkhand, West Madhya Pradesh, Vidarbha, Chhattisgarh, Orissa, 40 to 60 % over remaining parts of the country.

Cloud amount ranged from 6 to 8 okta over most parts of Andaman & Nicobar Islands, Lakshadweep, some parts of Konkan & Goa, Coastal Karnataka, South Interior Karnataka, 4 to 6 okta over most parts of Sikkim, Northeast India, Orissa, South Madhya Maharashtra, Coastal Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, some parts of West Rajasthan, Jharkhand, West Bengal, Saurashtra & Kutch, Chhattisgarh, Konkan, Marathwada, Vidarbha, Telengana, Rayalaseema, Andaman & Nicobar Islands, 0 to 2 okta over most parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Uttarakhand, Uttar Pradesh, some parts of Rajasthan, Bihar, Jharkhand, Gangetic West Bengal, Gujarat, Saurashtra & Kutch, Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Telengana, Interior Karnataka, 2 to 4 okta over remaining parts of the country.

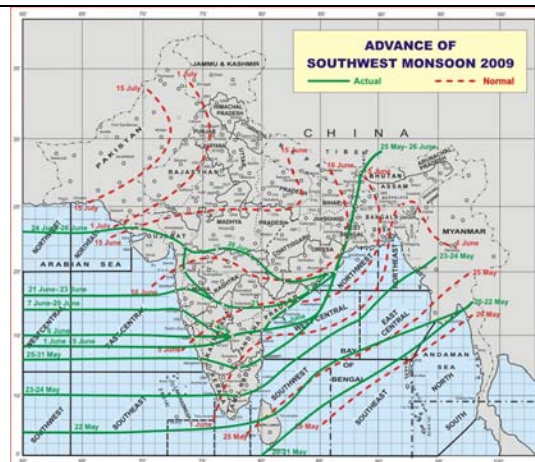
Wind speed (knots) over India for the week ending 24.6.09



Wind speed ranged between 6 knots and above over most parts of Saurashtra & Kutch, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan, Gangetic West Bengal, Orissa, Gujarat, Vidarbha, Madhya Pradesh, Coastal Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Andaman & Nicobar Islands, 4 to 6 knots over most parts of the Himachal Pradesh, Gujarat, Goa, Coastal Karnataka, South Interior Karnataka, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Haryana, Rajasthan, East Uttar Pradesh, Jharkhand, West Bengal, Orissa, Saurashtra & Kutch, Konkan, Madhya Maharashtra, Central India, Andhra Pradesh, North Interior Karnataka, Kerala, Tamil Nadu, Lakshadweep Islands, 0 to 2 knots over most parts of Sikkim, Northeast India, some parts of Bihar, Sub-Himalayan West Bengal, Orissa, Central India, Madhya Maharashtra, Andhra Pradesh, Interior Karnataka, 2 to 4 knots over remaining parts of the country.

Monsoon Watch

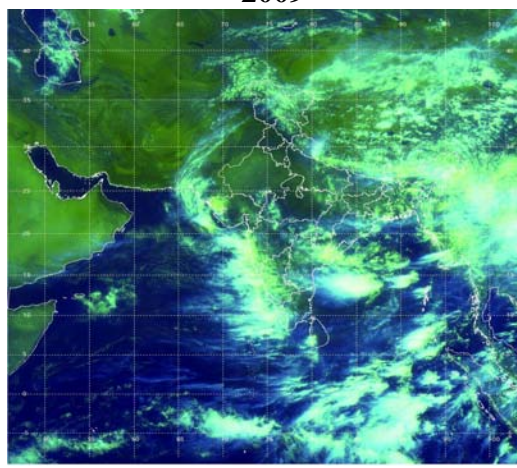
- The southwest monsoon has further advanced into entire Madhya Maharashtra, Maradwada, most parts of Vidarbha, remaining parts of Talengana, Some parts of South Chhattisgarh and south Orissa. The northern limit of monsoon passes through Lat. 23.0°N / Long. 60.0°E and Lat. 23.0°N / Long. 65.0°E, Bhuj, Baroda, Khandawa, Nagpur, Jagdalpur, Paradip, Balasore, Bankura and Gangtok.
- Conditions are favourable for further advance of southwest monsoon over some more parts of Bihar, Jharkhand and some more parts of Madhya Pradesh, Chhattisgarh and remaining parts of Maharashtra and west Bengal & Sikkim and some more parts of Orissa during next 2-3 days.



Chief Synoptic Feature (Based on 1430 hours IST observations of 25th June, 2009)

- Morning's well marked low pressure area has concentrated into a depression over northeast Arabian sea and lay centred at 1430 hrs IST of today, the 25 June 2009 about 50 km west-northwest of Dwarka. The system is likely to intensify further and move in a northwesterly direction away from the Indian coast.
- KALPANA – 1 cloud imagery at 1430 hours IST shows convective clouds over northeast, parts of south & eastcentral Arabian Sea, west central & south Bay of Bengal, Andaman Sea. Low/medium clouds are seen over Jammu & Kashmir, Gujarat, south Chhattisgarh, Orissa, Peninsular India, Sub-Himalayan west Bengal & Sikkim and northeastern States.

Satellite image of 6 UTC on 26th June, 2009



Zone-wise Forecast (Forecast valid upto 1430 hours IST of 28th June, 2009)

NORTHWEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, EAST UP, WEST UP, RAJASTHAN]

- Isolated rain/thundershowers over Jammu & Kashmir and Himachal Pradesh
- Isolated duststorm/thunderstorm over Rajasthan
- Isolated rain/thundershowers over Uttar Pradesh during next 48 hours and increase thereafter.
- Mainly dry weather over the rest region.

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

- Rain/thundershowers at many places over Sub-Himalayan West Bengal & Sikkim.
- Rain/thundershowers at a few places over the rest region during next 48 hours and increase thereafter.

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

- Rain/thundershowers at many places over the region.

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

- Rain/thundershowers at many places over Coastal Karnataka, Kerala, Lakshadweep and Andaman &

Nicobar Islands.

- Rain/thundershowers at a few places over Interior Karnataka, coastal Andhra Pradesh and Talengana during next 24 hours and increase thereafter.
- Isolated rain/thundershowers over the rest region.

WEST INDIA [GOA, MAHARASHTRA (OTHER THAN VIDARBHA), GUJARAT REGION, SAURASHTRA & KUTCH]

- Rain/thundershowers at most places over Saurashtra & Kutch during next 24 hours and decrease thereafter.
- Rain/thundershowers at many places over Konkan and Goa.
- Rain/thundershowers at a few places over the rest region.

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

- Isolated rain/thundershowers over the region during next 24 hours and increase thereafter.
WARNING: (For next 48 hours)
- Heat wave to severe heat wave conditions is likely over west Uttar Pradesh, Madhya Pradesh, Delhi, Haryana, Uttarakhand and north Rajasthan during next 48 hours.
- Heavy to very heavy rainfall at isolated places is likely over Saurashtra & Kutch and Diu during next 24 hours.
- Isolated heavy rainfall is also likely over Assam & Meghalaya and Andaman & Nicobar Islands during next 48 hours.
- Squally winds speed reaching 45-55 kmph gusting to 65 kmph are likely along and off Saurashtra & Kutch coasts during next 24 hours. Sea conditions will be rough to very rough along and off these coasts. Fishermen are advised not to venture into the sea along and off these coasts.

Weather Outlook from 1430 IST of 28th June, 2009 to 1430 IST of 30th June, 2009 (Based on numerical weather products):

- Advance of monsoon likely over central India.

Week by Week rainfall for selected Sub-Divisions

State/Districts	Actual	27.05.09	Actual	04.06.09	Actual	11.06.09	Actual	17.06.09	Actual	24.06.09
Arunachal Pradesh										
Changlang	1.7	-99	12.0	-88	**	**	18.4	-88	1.0	-99
Dibang Valley	**	**	**	**	**	**	**	**	**	**
East Kameng	70.6	102	31.0	-39	**	**	17.9	-84	5.6	-95
East Slang	18.2	-77	39.3	-66	**	**	53.4	-72	18.2	-91
Lohit	20.0	-62	11.3	-89	**	**	35.6	-66	68.3	-42
Lower Subansiri	37.8	-31	0.0	-100	**	**	43.6	-42	1.4	-98
Papumpara	75.3	37	64.3	-2	**	**	133.6	77	112.6	45
Tawang	39.4	13	5.8	-89	**	**	13.4	-88	22.2	-78
Tirap	68.4	-40	38.6	-63	**	**	191.0	21	305.2	78
Upper Siang	**	**	**	**	**	**	**	**	**	**
Upper Subansiri	80.6	47	46.8	-29	**	**	33.0	-56	121.2	56
West Kameng	85.6	145	158.2	212	**	**	246.4	119	39.7	61
West Siang	**	**	67.1	-41	**	**	174.8	-7	9.5	-95
Assam										
Barpeta	119.1	47	68.7	6	**	**	247.3	213	47.1	-54
Bongaigaon	94.8	-40	42.2	-64	**	**	236.9	41	101	-37
Cachar	31.1	-63	63.5	-49	**	**	83.3	-50	77.6	-49
Darrang	51.2	-4	32.2	-62	**	**	134.3	19	00.0	-100
Dhubri	62.8	-40	31.3	-77	**	**	283.9	97	124.3	-25
Dibrugarh	14.7	-78	36.2	-51	**	**	70.6	-28	58.3	-47
East Garo Hills	93.4	-11	15.6	-88	**	**	78.1	-44	4.4	-97
East Khasi Hills	251.8	76	72.2	-59	**	**	141.2	-53	120.3	-59
Goalpara	155.0	35	15.2	-87	**	**	202.0	49	31.2	-80
Golghat	24.0	-49	16.6	-63	**	**	36.2	-49	41.3	-17
Hailakandi	60.5	-38	6.7	-94	**	**	35.8	-61	2.1	-98
Jaintia Hills	**	**	**	**	**	**	**	**	**	**
Jorhat	38.6	-44	26.3	-60	**	**	31.0	-38	8.3	-90
Kamrup	49.4	-20	14.0	-82	**	**	111.4	20	12.3	-89
Karbi Analog	40.8	67	12.6	-39	**	**	1.2	-98	232.2	-48
Karimganj	0.0	-100	98.5	-47	**	**	362.2	78	72.8	-53
Kokrajhar	164.4	4	44.4	-62	**	**	143.2	-15	95.8	-40
Lakhimpur	30.4	-77	51.7	-61	**	**	93.3	-45	31.6	-80
Morigaon	62.8	38	76.0	27	**	**	3.0	-96	11.6	-87
N.C.Hills	**	**	**	**	**	**	**	**		
Nalbari	38.2	-38	5.8	-92	**	**	103.8	11	49.8	-54
Nowgong	23.6	-48	5.2	-91	**	**	6.9	-91	14.7	-83
Sibsagar	16.0	-77	18.2	-77	**	**	80.9	-17	89.1	11
Sonitpur	67.6	11	107.7	47	**	**	124.7	51	29.1	-66
Tinsukia	12.7	-74	30.0	-49	**	**	21.5	-76	96.1	-5
Chattisgarh										
Bastar	3.3	-41	19.6	60	1.2	-96	2.5	-60	0.8	-99
Bilaspur	2.7	-13	25.4	248	2.0	-89	0.0	-92	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100	38.2	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100	0.0	12	0.4	-99
Durg	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	5.0	-18	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kowardna	0.0	-100	0.0	-100	0.0	-100	0.3	-90	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Raigarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raipur	4.8	72	0.1	-98	6.0	-71	3.6	-89	0.7	-99
Rajandgaon	1.2	-50	0.0	-100	0.0	-100	0.0	-100	1.6	-97
Surguja	2.5	27	2.0	-74	1.4	-94	1.6	-95	0.0	-100
Gujarat Region										
Ahmedabad	0.0	-100	0.0	-100	0.0	-100	0.1	-99	2.6	-87
Anand	0.0	-100	0.0	-100	0.0	-100	0.4	-98	0.2	-99
Banaskantha	0.0	-100	0.0	-100	0.0	-100	5.8	-38	1.4	-92
Baroda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	12.6	-55
Broach	0.0	-100	0.0	-100	0.0	-100	0.0	-100	11.3	-73
Dahod	0.0	-100	0.0	-100	0.0	-100	7.4	-68	6.6	-73
Dangs,	0.0	-100	0.0	-100	0.0	-100	0.0	-100	32	-49
DNH & Daman	0.0	-100	0.0	-100	0.0	-100	0.0	-100	54.2	-51
Gandhinagar	0.0	-100	0.0	-100	0.0	-100	0.3	-98	0.8	-97
Kheda	0.0	-100	0.0	-100	0.0	-100	0.6	-97	1.8	-92
Mehsana	0.0	-100	0.0	-100	0.0	-100	1.2	-89	0	-100
Narmada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	7.2	-80
Navsari	0.0	-100	0.0	-100	0.0	-100	0.2	-99	4.4	-95
Panchmahal	0.0	-100	0.0	-100	0.0	-100	6.0	-70	7.8	-69
Patan	0.0	-100	0.0	-100	0.0	-100	3.2	-66	0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100	5.0	-71	7.6	-65
Surat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	4.4	-93
Valsad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	48.3	-56
Saurashtra, Kutch & Diu region										
Amreli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	34.8	-4
Bhavnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	13.2	-55
Diu	0.0	-100	0.0	-100	0.0	-100	0.0	-100	16	-70
Jamnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	27.7	-75
Junagarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	86.5	23
Kutch	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.5	-78
Porbandara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	84.4	8
Rajkot	0.0	-100	0.0	-100	0.0	-100	0.0	-100	5.1	-83
Surendranagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	11.9	-36
Maharashtra										
Konkan & Goa										
Goa	3.6	-90	7.4	-88	233.2	45	93.2	-59	100.1	-59
Mumbai	1.3	-71	0.0	-100	2.6	-95	0.0	-100	20.6	-88
Raigad	0.1	-99	0.0	-100	24.7	-60	0.3	-99	53.1	-72
Ratnagiri	0.3	-98	0.7	-98	75.2	-28	1.5	-99	61.2	-72
Sindhudurg	21.3	-13	5.9	-89	188.0	37	29.9	-85	97.2	-60
Thane	0.0	-100	0.0	-100	0.0	-100	0.0	-100	48.0	-66
Madhya Maharashtra										
Ahmednagar	0.0	-100	0.0	-100	22.1	-9	0.4	-99	52.2	114
Dhule	0.0	-100	0.0	-100	0.0	-100	0.0	-100	38	13
Jalgaon	0.4	-87	0.0	-100	0.0	-100	0.2	-99	25.4	-34
Kolhapur	1.2	-94	3.4	-82	25.1	-31	5.2	-90	19.4	-72
Nandurbar	0.0	-100	0.0	-100	0.1	-99	0.0	-100	20.5	-24
Nasik	14.6	128	0.0	-100	2.5	-88	0.0	-100	31.2	15
Pune	0.1	-99	0.0	-100	30.5	3	0.0	-100	27.5	-30
Sangli	4.8	-76	0.0	-100	21.1	-8	11.0	-53	11.7	-53
Satara	3.5	-79	0.7	-95	32.4	13	0.5	-98	28.3	-27
Solapur	0.6	-95	0.0	-100	9.5	-66	7.8	-72	50.3	108
Marathwada										
Aurangabad	0.1	-99	0.0	-100	3.8	-84	0.0	-100	14.3	-62
Beed	0.0	-100	0.0	-100	10.5	-60	7.2	-79	43.8	17
Jalna	0.0	-100	0.0	-100	0.5	-98	0.0	-100	10.8	-74
Latur	0.0	-100	3.0	-76	3.7	-86	14.3	-51	21.8	-56

Nanded	0.0	-100	0.0	-100	7.5	-68	5.8	-83	11.6	-72
Usmanabad	5.3	-54	1.5	-91	9.0	-72	1.2	-97	37.5	-3
Parbhani	2.6	-53	12.2	13	0.2	-99	2.1	-94	26.5	-45
Vidarbha										
Akola	7.4	76	0.0	-100	0.0	-100	0.0	-100	3.4	-92
Amraoti	6.0	200	4.0	-39	0.5	-97	0.0	-100	2.5	-94
Bhandara	**	**	19.8	305	17.0	0	0.9	-96	0.0	-100
Buldhana	**	**	0.0	-100	0.5	-97	0.0	-100	28.4	-38
Chandrapur	12.9	435	1.2	-82	23.7	53	6.0	-81	0.5	-99
Gadchiroli	**	**	1.4	-79	26.6	56	1.7	-95	6.0	-90
Gondia	0.0	-100	0.0	-100	5.3	-61	1.6	-95	4.6	-90
Nagpur	17.4	544	7.3	-8	22.2	8	1.6	-95	4.2	-92
Wardha	16.0	627	0.0	-100	6.1	-66	2.3	-92	3.3	-94
Washim	0.0	-100	0.0	-100	4.0	-82	0.0	-100	28.6	-47
Yeotmal	6.6	187	0.0	-100	0.2	-99	2.9	-92	5.7	-90
West Bengal										
GWB										
Bankura	106.1	555	63.3	200	10.9	-74	6.9	-86	0.0	-100
Birbhum	147.6	631	34.8	37	0.0	-99	16.2	-68	4.0	-94
Burdwan	162.3	1209	9.9	-51	0.0	-100	17.4	-62	0.0	-100
Hooghly	125.9	483	34.4	4	0.0	-100	3.2	-94	3.1	-91
Howrah	118.6	308	30.2	-8	0.0	-100	18.6	-58	10.3	-84
Midnapore	170.3	598	34.5	-15	19.8	-57	0.5	-99	5.9	-91
Murshidabad	115.2	419	33.0	22	0.0	-100	20.0	-63	0.2	-99
Nadia	115.0	351	7.2	-75	48.8	32	21.9	-58	6.2	-89
24 Pargana (N)	133.0	398	50.4	9	16.3	-71	0.5	-99	13.0	-80
Purulia	56.4	303	24.7	51	3.9	-92	25.6	-45	0.0	-100
24 Pargana (S)	102.1	324	35.0	-6	4.5	-92	10.7	-82	10.9	-83
SHWB										
Coochbehar	174.2	52	49.5	-62	32.8	-75	206.1	22	11.2	-42
Darjeeling	296.0	567	31.4	-46	35.0	-58	92.8	-25	85.3	-37
Jalpaiguri	166.9	100	62.0	-33	42.4	-61	127.4	-16	163.9	-6
Malda	158.0	515	20.6	-35	0.9	-97	6.7	-87	0.0	-100
Dinajpur (N)	**	**	**	**	**	**	**	**	**	**
Dinajpur (S)	12.0	-73	3.5	-93	0.0	-100	0.0	-34	96.5	-67
Sikkim	183.5	129	45.7	-50	135.5	35	96.7	-100	56.5	-67
Karnataka										
Coastal Karnataka										
Dakshin Kannada	59.4	5	51.5	-48	236.0	32	46.5	-79	79.5	-71
Udupi	53.6	-19	50.9	-47	293.8	36	70.7	-73	74.4	-76
Uttar Kannada	37.4	-19	21.0	-67	189.2	28	44.6	-78	125.4	-42
North Interior Karnataka										
Bagalkote	22.5	10	0.0	-100	28.8	54	61.7	246	33.2	134
Belgaum	33.4	40	5.0	-76	37.9	80	25.4	32	31.5	56
Bidar	4.1	-46	10.5	-32	34.8	17	16.7	-48	24.8	-41
Bijapur	35.7	110	0.1	-99	23.1	-8	69.9	238	29.3	50
Dharwad	9.3	-64	18.9	-18	29.8	22	45.1	94	18.6	-15
Gadag	8.2	-67	9.6	-53	33.5	41	31.4	90	6.2	-55
Gulbarga	13.0	6	0.7	-95	21.9	-6	16.7	-56	55.7	108
Haveri	11.0	-58	9.7	-45	20.7	-6	29.9	67	4.3	-80
Koppal	21.9	39	1.0	-94	14.9	-17	28.9	71	41.1	221
Raichur	6.7	-53	0.0	-100	2.7	-84	29.7	33	27.8	35
South Interior Karnataka										
Bangalore Rural	18.7	-38	34.6	24	5.4	-71	49.6	242	2.9	-75
Bangalore Urban	35.6	82	61.7	121	4.2	-77	61.4	245	0.3	-93
Bellary	23.4	20	3.0	-83	12.5	-31	32.1	91	6.6	-54
Chamarajnagar	1.0	-97	30.3	34	17.3	40	14.4	10	5.6	-45

Chickmagalur	34.6	35	17.9	-29	68.6	42	18.8	-69	28.3	-64
Chitradurga	39.7	79	31.7	98	2.4	-80	32.5	157	10.5	32
Davangere	23.2	-13	37.5	93	10.5	-34	28.2	94	12.5	-9
Hassan	16.9	-26	9.2	-60	10.4	-67	3.3	-92	11	-80
Kodagu	9.8	-74	8.3	-78	92.7	29	30.5	-64	45	-57
Kolar	8.9	-59	24.2	17	0.7	-95	50.8	271	17.3	86
Mandya	13.1	-59	13.1	-34	7.5	-43	26.1	169	6.7	-23
Mysore	4.5	-87	21.2	-3	13.9	-17	8.0	-38	1	-93
Shimoga	23.5	0	18.7	-28	62.2	5	7.3	-89	28.7	-72
Tumkur	33.2	38	15.4	-32	3.2	-82	73.8	416	8.5	-13
Kerala										
Alappuzha,	156.4	67	48.7	-57	184.6	16	113.4	-21	106.7	-26
Kannur	109.4	49	27.7	-76	277.5	48	17.4	-80	150.6	-30
Ernakulam	172.6	60	27.0	-81	213.4	27	93.9	-48	122.3	-30
Idukki	101.5	17	26.3	-75	196.5	27	60.1	-62	60.9	-64
Kasaragod	44.9	-42	35.1	-71	177.3	-18	55.9	-77	159.4	-40
Kollam	103.9	30	3.3	-96	86.9	-33	19.4	-83	87.1	-18
Kottayam	110.1	20	32.7	-75	185.2	26	61.5	-59	111.2	-22
Kozhikode	105.3	28	9.3	-93	281.7	39	41.6	-80	64.5	-71
Malappuram	61.5	-15	8.7	-91	126.6	-12	31.5	-78	75.9	-52
Palakkad	41.1	-29	30.0	-56	126.8	16	17.1	-84	64.0	-50
Pathanamthitta	81.6	13	18.4	-80	164.3	19	36.1	-71	48.4	-27
Thiruvananthapuram	187.2	201	5.8	-93	59.3	-45	20.7	-76	73.2	3
Thrissur	129.0	31	47.2	-59	238.0	45	45.3	-72	179.2	4
Wyanad	23.1	-61	0.0	-100	169.9	26	81.5	-42	39.3	-77
Tamil Nadu										
Chennai	0.4	-98	0.0	-100	4.4	-55	0.5	-96	5.2	-76
Coimbatore	6.3	-62	25.9	151	45.2	432	0.0	-100	13.7	-50
Cuddalore	9.1	1	1.4	-85	0.0	-100	15.5	125	1.5	-84
Dharmapuri	15.0	-33	78.1	214	16.0	24	18.1	35	0.0	-100
Dindigul	17.7	13	10.4	-32	1.4	-83	41.5	367	0.0	-100
Erode	7.1	-58	5.7	-60	1.9	-72	6.3	25	0.2	-94
Kanchipuram	13.2	23	11.3	26	0.4	-96	0.0	-100	2.1	-89
Kanyakumari	102.2	411	0.3	-99	59.7	45	12.1	6	50.4	79
Karur	8.2	-4	6.8	-16	0.0	-100	11.6	-50	0.6	-75
Krishnagiri	20.1	-21	55.7	133	6.4	-53	0.0	-100	2.6	-71
Madurai	25.8	120	12.8	6	0.0	-100	18.8	88	0.0	-100
Nagapattinam	6.1	-34	0.0	-100	0.0	-100	13.6	68	0.0	-100
Namakkal	14.7	-24	41.2	159	2.9	-70	0.0	-100	0.4	-93
Nilgiris	5.8	-84	24.1	-23	58.0	31	4.2	-63	30.1	-49
Perambalur	23.8	67	31.0	115	0.0	-100	50.1	17	9.8	23
Pondicherry	16.0	281	0.0	-100	0.0	-100	14.3	22	1.0	-89
Pudukottai	19.2	70	10.3	-21	0.0	-100	11.2	-13	2.3	-77
Ramanathapuram	9.5	46	0.1	-98	0.0	-100	0.4	-89	0.0	-100
Salem	14.1	-22	59.2	218	13.3	12	32.7	179	6.3	-40
Sivaganga	17.7	81	8.2	-41	0.0	-100	4.2	-49	0.0	-100
Thanjavur	2.5	-80	8.9	-16	0.0	-100	5.6	-34	0.0	-100
Theni	7.1	-45	2.7	-77	27.5	555	3.1	-20	3.1	2
Tirunelveli	13.5	182	0.0	-100	14.4	156	0.0	-100	0.5	-89
Tiruvallur	1.6	-89	3.4	-71	10.8	-8	2.2	-84	20.6	15
Tiruvannamalai	20.3	20	5.2	-72	0.0	-100	12.3	-12	0.0	-100
Tiruvarur	2.3	-79	0.8	-88	0.0	-100	3.2	-57	0.0	-100
Trichy	5.7	-54	4.7	-66	0.0	-100	10.2	53	6.8	107
Tuticorin	5.5	44	0.2	-95	0.7	-67	0.3	-78	0.0	-100
Vellore	13.3	-33	22.5	5	0.1	-99	26.3	114	8.1	-39
Villupuram	11.4	32	0.0	-100	6.5	-38	33.4	190	1.4	-90
Virudhunagar	20.3	76	1.2	-89	0.5	8	0.0	-100	0.0	-100
Andhra Pradesh										
Coastal Andhra										

Pradesh										
East Godavari	10.2	-39	2.4	-80	5.2	-77	7.5	-72	1.1	-96
Guntur	19.9	28	1.6	-81	12.8	-33	1.3	-36	2.6	-88
Krishna	30.4	179	1.1	-88	2.0	-90	21.3	-15	0.4	-99
Nellore	10.4	-36	0.3	-93	2.9	-65	18.5	95	11.4	-7
Prakasam	12.0	-30	10.3	59	7.5	-35	20.6	26	10.6	-24
Sirkakulam	0.0	-100	0.0	-100	6.8	-66	16.6	-52	15.6	-59
Visakhapatnam	3.9	-77	5.0	-48	12.5	-46	15.8	-41	8.4	-73
Vizianagram	2.1	-88	4.4	-66	20.9	-14	17.8	-42	22.5	-36
West Godavari	30.2	205	4.7	-43	1.9	-90	2.5	-91	1.7	-94
Telangana										
Adilabad	1.6	-58	2.5	-51	8.9	-59	0.7	-98	8.2	-85
Hyderabad	8.9	-24	5.2	18	28.5	68	23.5	6	4.1	-87
Karimnagar	5.7	2	4.8	-30	11.5	-51	4.0	-87	19.2	-56
Khammam	30.3	186	19.5	150	2.8	-87	5.3	-84	4.6	-89
Mehabubnagar	15.3	46	15.2	120	18.6	4	20.2	-10	4.0	-82
Medak	7.7	10	0.0	-100	21.3	-16	8.6	-70	18.4	-59
Nalgonda	0.0	-100	0.4	-94	25.2	33	22.8	-12	3.6	-86
Nizamabad	9.5	121	5.1	-20	24.6	8	8.3	-74	6.8	-86
Rangareddy	11.3	14	0.0	-100	41.7	148	19.3	-26	18.9	-38
Warangal	2.8	-45	0.4	-95	8.7	-58	14.2	-57	2.4	-94
Rayalaseema										
Anantapur	34.8	98	14.7	119	4.0	-73	26.8	10.5	4.6	-50
Chittoor	25.9	55	5.8	-21	1.4	-89	27.2	13	19.7	71
Cuddapah	42.4	185	7.8	-5	0.0	-100	19.8	13.1	12.0	-11
Kurnool	30.1	75	19.0	138	8.2	-56	42.8	17.5	20.1	17

Zonewise Agromet Advisories

NORTH WEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, WEST UP]

Himachal Pradesh

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), potato (vegetative), *kharif* vegetables (sowing / transplanting / early vegetative / vegetative), apricot, peach, pear and plum (fruit development).
- As there was no rain in most of the districts during last week over the State and no significant rain is likely for next five days, apply irrigation to the standing crops. Apply mulch in the orchards for conservation of moisture.
- As the weather is opening up & snow is almost gone in Hill Temperate Dry Zone, the sowing season is about to commence. Therefore, plough the fields and leave them as such for control of soil borne pests by sun exposure. It will mitigate the losses by soil borne pests at later stages.
- Complete sowing / transplanting of french bean, tomato and capsicum and also sowing of ladies finger in sub-mountain low hills sub tropical zone.
- Provide mulch in the tree basins (apricot, peach, pear and plum) with straw or UV Sheet in sub-mountain low hills sub tropical zone to reduce evaporation and moisture conservation. Harvest the ripened fruits of early varieties of peach and apricot as there is forecast of high wind speed in the coming 5 days.
- As temperature increases, the marigold and carnation flowers are at first bud development stage (after 20-25 days of transplanting) in sub-mountain low hills sub tropical zone. Pinch the first bud from the top. Cut the liliium flower at the complete bud stage as temperature is sufficiently high to open the flower in 1-2 days. Complete transplanting of chrysanthemum in this week.
- Plucking of tea leaves may be continued at 7-8 days interval in Mid Hills Sub Humid zone.
- It is time for transplanting of summer vegetables like tomato, brinjal, capsicum and chillies in Mid Hills Sub Humid zone. It is time for sowing of *ageeti* bhindi and pole type French bean, asparagus French bean and cowpea for vegetable in the field. It is time for direct sowing of Khira, bitter

gourd, *tori* in fields. The nursery of cucurbits having 2-4 leaf stage can be successfully transplanted in fields. It is also time for sowing of ginger, *arbi*, amaranthus and turmeric.

- Sowing of rice nursery and maize and also soybean and cowpeas as intercrop with maize in the fields in Mid Hills Sub Humid zone should be completed. Treat the rice seeds with bavistin @ 2 gram per kg of seed before sowing.
- Details of crop varieties are mentioned in Annexure I.

Plant protection

- Weather is favourable for attack of peach leaf curl disease in peach and pear fruit plants in Mid Hills Sub Humid zone where fruit bearing has started, spray Nuvan 1 ml + 3 g Blitox per litre of water.
- There is report of infestation of mealy bug in tea in Mid Hills Sub Humid zone and there is also chance of increase of infestation, for control spray Deltamethrin (Decis 2.8 EC) @ 1340 ml in 750 litres of water for one hectare.
- Fruit fly attack is reported in the cucurbits in Mid Hills Sub Humid zone and there is chance of increase in infestation, for control spray malathion @ 1ml / litre or carbaryl @ 2 g / litre of water.
- Weather is conducive for appearance of aphids in rose in Mid Hills Sub Humid zone, for control spray rogor @ 1 ml per litre of water.

Apiary

- Keep colonies in shade conditions and examine colonies for barroa mites.
- Dust sulphur on sealed brood in the colony and not on larvae to control mites attack on honeybees.

Animal husbandry

- It is high time for vaccination of animals against FMD.
- Keep the animals under shed in sub-mountain low hills sub tropical zone as the day temperature can cause heat strokes. Provide adequate fresh and cold water baths.

Fishery

- Temperature is good for breeding of the minor carp in Mid Hills Sub Humid zone. Monitor the physicochemical parameters and growth rate of cultivable fish in ponds. Supplement the feed @ 2% of the body weight stocked twice a day. The cloudy day or warmer part of day is to be avoided for stocking. Give feed 4% of their body weight up to 15 days and after that reduce to 3% of their body weight.

Forestry

- Do not apply fire to twigs of trees to prevent forest fires as the day temperature has already reached 32°C.

Uttarakhand

- **Major Standing Crops:** Sugarcane ratoon (early vegetative), cabbage, garlic, tomato (vegetative), maize, french bean (early vegetative), rice(nursery seedling/transplanting)
- Farmers are advised to continue nursery sowing of rice, soybean, ragi and bhindi in Nainital district, rice and maize in Uttam singh nagar district and sowing of rice in Haridwar, Dehradun and Pauri districts with irrigation facilities. Continue transplanting of rice in irrigated areas of Nainital and Uttam singh nagar districts, if the seedlings are ready. Ensure shallow water level for few days for better establishment of seedling in the field. Farmers can also go for direct seeding of rice for sowing of recommended varieties.
- As there was no significant rainfall during last week in most of the districts in the State and mainly dry weather is likely to occur for next five days, apply irrigation to the crops.
- Undertake weeding, intercultural operations and top dressing in ratoon sugarcane, maize, french bean and vegetable crops.
- Farmers are advised to feed the animals with balanced diet and give fresh water for drinking.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- fruit borer in tomato, shimla mirchi etc., spray Prophenophos 50 EC @ 1 ml per litre of water.

Punjab

- **Major Standing Crops:** Spring sugarcane (early vegetative/vegetative), vegetable crops like chilli, tomato, brinjal(vegetative), bhindi(early vegetative) and onion (vegetative/bulb formation), *kharif* groundnut and maize (seedling), cotton and berseem (early vegetative), *Kharif* rice(nursery seedling/transplanting)
- As there was no significant rain during last few weeks and mainly dry weather is likely over the State during next five days, apply irrigation to the crops.
- Continue preparation of the main field and transplanting of rice seedlings. If seedlings in nursery show the yellowing of leaf tips, spray three times with 0.5-1 percent ferrous sulphate solution at weekly intervals. Irrigate the nursery bed at regular intervals.
- Undertake weeding, intercultural operations in sugarcane. Due to prevailing hot weather conditions, irrigate the sugarcane crop at 7-10 days interval for getting better growth of the crop. Provide straw mulching in between the rows to conserve the soil moisture.
- Undertake sowing of *kharif* fodder at regular intervals for continuous supply of sufficient green fodder. Provide irrigation at regular interval for getting good growth of fodders.
- Protect young and tender fruit plants from hot weather by giving frequent irrigation. To protect the fruit tress from scorching effect, lower portion of the exposed trunks should be white washed.
- Farmers are advised to apply light and frequent irrigation to vegetable crops mainly to tomato and chillies, bitter guard, watermelon and muskmelon to protect from high temperature. Harvesting of the muskmelon should be completed as high temperature could affect the quality.
- Keep the animals in shade and bath the animals 1-2 times daily. Grazing of dairy animals may be allowed in the morning and evening hours. Due to rise in temperature, get dairy animals blood tested for protozoan diseases from district laboratories.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- jassid in bhindi, spray the crop with Malathion 50 EC @ 560 ml in 100-125 litres of water per acre.
- mite in sugarcane, spray the crop with Malathion 50 EC @ 400 ml in 100 litres of water per acre.
- jassid incidence in cotton, spray Confidor 200 SL @ 40 ml or Pride 20 SP @ 20 g or Actara 25 WG @ 40 g in 100 litres of water per acre.

Haryana

- **Major Standing Crops:** Spring sugarcane (early vegetative/vegetative), vegetable crops (vegetative), cotton(early vegetative) and berseem (vegetative), *Kharif* rice(nursery seedling/transplanting)
- As there was no significant rain during last few weeks, heat wave conditions are likely to continue over some parts of the State and mainly dry weather is likely over the State during next five days, apply light and frequent irrigation to the crops.
- Farmers are advised to postpone the transplanting of rice for some days in view of hot and dry weather. Farmers may transplant the seedlings in the main field with the availability of irrigation water. In the already transplanted crops, provide irrigation to save the crop.
- Farmers are advised to prepare the land by utilizing the rainfall during previous weeks and arrange the certified seeds for sowing of pearl millet and guar. Start sowing of guar and pearl millet after receipt of sufficient rain.
- Undertake hoeing and weeding and conserve soil moisture by application of mulches in sugarcane. Apply the remaining dose of nitrogen fertilizer to the crop, if there is sufficient soil moisture.
- Farmers are advised to undertake weeding and hoeing in cotton and intercultural operations in tomato, onion and chilli as dry weather is likely for the next five days.
- As temperature is likely to increase in the coming days, the farmers are advised to whitewash the trunks of fruit tress, provide shelter to young tree and give frequent irrigation to protect fruit trees. Protect the young fruit plants form heat stress by giving frequent irrigation.
- Farmers are advised to provide the drinking water to animals frequently and sprinkle the water on the animals twice a day for protection against hot and dry winds. Animals should kept in shade and avoid their exposure directly to hot winds. Farmers are also advised to provide 50 to 100 gram good quality minerals mixture per day for better animal productivity.

Delhi

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), beans, maize, cluster bean, ladies finger, leafy and cucurbitaceous vegetables (sowing), chilly, tomato, brinjal, onion and cauliflower (nursery preparation) and rice (nursery sowing / transplanting).
- In view of prevailing hot weather conditions and forecasted hot days ahead, farmers are advised to regularly irrigate their crops twice daily, before 9 am in the morning and after 6 pm in the evening.
- The farmers, who have already transplanted rice, are advised to maintain 2-5 cm of water in the crop. Farmers whose nursery is around 30 days old are advised to discard it and to start preparing a fresh nursery as monsoon is likely to be delayed. Transplanting of seedlings in present nurseries will result in poor tillering.
- In view of delayed monsoon farmers are advised to follow Karnal method of rice nursery preparation. Herein, one and a half inch (1 ½ inch) seedbed has to be prepared with fully decomposed cow dung, without soil. Then, cover the bed with old gunny bags. Broadcast the treated rice seeds in the bed. Again cover the seeds with 1 cm fully decomposed cow dung. Apply water on the side of the bed. The water will be absorbed by the bed. By this method seedlings could be prepared in 15 days. In this method 2½ kg of rice seeds are required for transplanting in one acre of land.
- In view of high temperature and low humidity, farmers are advised to irrigate the transplanted seedlings of cauliflower during morning (before 10am) and evening (after 6pm). They are advised not to allow any water to stand in the field as, in that case, high temperature will cause severe damage to the crop. To protect the seedlings in the nursery, use of 50 percent shade net is advised. Farmers can also use locally available shading matters like *sirki*.
- Due to prevailing hot weather conditions, farmers are advised not to follow the old irrigation method of individual plant irrigation but to follow whole crop field irrigation in gourd, so that weeds also grows. Because, honeybees require weeds to protect themselves from severe heat. In case there is no weed in the crop field, they will avoid the crop and there will be no pollination and ultimately there will be no fruit formation.
- Farmers are advised to irrigate their orchards.
- Irrigation is also advised in cotton, jawar, maize and all vegetable crops.
- In the prevailing weather conditions, farmers are advised to monitor the seedlings against attack of damping off. They are advised to drench with Captop @ 2 g / litre of water.

Uttar Pradesh

- **Major Standing crops:** Sugarcane (vegetative) and vegetables (vegetative/fruiting), mango (fruit setting)
- As there was no significant rain during last few weeks and no significant rainfall is likely for the next five days, apply irrigation to the crops.
- Continue field preparation and nursery sowing of rice and vegetables with irrigation facilities.
- Undertake field preparation for sowing of maize, mung bean, urd, jowar, bajra, til, soybean, groundnut and vegetables utilizing the realized rainfall during previous weeks. Details of crop varieties are mentioned in Annexure I.
- Undertake weeding, intercultural operations and application of fertilizers in the standing crops like sugarcane, vegetables and mentha on a non rainy day.
- Continue field preparation and planting of turmeric and ginger.
- Undertake digging of pits for plantation of new garden of fruit crops.
- To save the mango fruits from falling, spray the solution of Naphthalene acetic acid @15 ppm.
- **Plant Protection:** Weather conditions are favourable for mild incidences of fruit borer in tomato and brinjal, spray the solution of Carbaryl @ 2 g / litre of water on a non rainy day. Monitor the crops for the pests and undertake plant protection measures to control the pests.

J & K

- **Major Standing Crops:** This is proper time for transplanting of rice and transplanting of solanaceous vegetable crops and sowing of maize.
- As there was no significant rain during last week and no significant rainfall is expected during next five days over the State, apply irrigation to the crops.
- Undertake transplanting of seedlings in main field and sowing of maize in the main field in Jammu, Kathua and Rajouri divisions. Due to prevalence of dry spells and further chances of no rainfall in the coming days postpone the early sowing of maize crop in rainfed areas.
- Details of varieties are given in Annexure I.
- Continue transplanting tomato and capsicum in the main field in Leh division with rainfall received during last week.
- Complete transplanting of rice before 20-21st June in Srinagar region. Fodder maize and bajra may be sown up to mid July.
- Undertake intercultural operations, irrigation, application of fertilizers and pesticides in vegetable crops like brinjal, tomato, chilli, capsicum, bhindi, beans, cucurbits and pumpkin in Doda, Udampur, Kathua, Leh and Rajouri divisions.
- **Plant Protection:** Weather conditions are congenial for mild incidences of
- fruit borer in tomato, brinjal and bhindi crop in Jammu, Kathua and Kashmir, spray Endosulphan @ 0.07%, or carbaryl @0.1% or DD Chlorvos @0.03%.
- downy mildew in onion in Srinagar region, spray Metalaxyl @ 0.2% solution.
- scab disease in the apple fruits, spray the fungicide as recommended by University.

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

Bihar

- **Major Standing Crops:** Sugarcane (vegetative/grand growth), summer vegetables (fruiting/harvesting), fodder maize, jowar, lobia and sudan grass (vegetative), *Kharif* rice(nursery seedling).
- Continue field preparation and sowing *kharif* rice in nursery and maize where the irrigation facilities are available. Farmers are advised to undertake field preparation for sowing of *kharif* rice with the realized rainfall during last week. As rainfall is likely during next five days, undertake sowing after receipt of sufficient rainfall. Details of crop varieties are mentioned in Annexure I.
- Due to no rainfall and high temperature 4 to 5 °C above normal for the last 10 to 15 days has severely affected the rice seedlings in whole of north Bihar. As the seedlings are drying up in the nursery, farmers are advised to apply irrigation in the rice nursery.
- Farmers are advised to prepare the field utilizing the realized rainfall during previous weeks for sowing of *kharif* arhar, jowar, bajra, maize, til, groundnut and sunflower. Arrange seeds and other inputs and undertake sowing of *kharif* crops.
- Undertake intercultural operations, application of fertilizers and pesticides in summer vegetables like tomato, brinjal, cauliflower, cabbage and sugarcane on a non rainy day.
- Farmers are advised to prepare the nursery for flower cultivation with irrigation facilities.
- Provide plenty of fresh water to the animals and the animals should be kept under the shade, to protect the animals from high temperature.

Jharkhand

- **Major Standing Crops:** Sugarcane (vegetative/grand growth), summer vegetables (vegetative/flowering).
- Farmers are advised to prepare the field utilizing the realized rainfall during previous weeks and arrange seeds and other inputs to undertake sowing of *kharif* crops like rice, maize and tur as the rainfall is expected in the next five days.
- Farmers are advised to undertake sowing of flower crops with irrigation facilities.
- Farmers are advised to undertake weeding, intercultural operations in sugarcane and vegetables on a non rainy day.

- Digging of pit for mango, jackfruit, litchi, guava, papaya and banana may be undertaken.
- Undertake planting of turmeric and ginger with irrigation facilities.
- Rinderpest disease is common in goat. TPR vaccine @ 1 ml subcutaneous should be vaccinated except for those goats that are less than 3 months of age and are pregnant.

Orissa

- **Major Standing crops:** Sugarcane (early vegetative), vegetables (fruiting / harvesting), onion (vegetative), jute (early vegetative), rice(nursery seedling).
- Continue land preparation and nursery sowing of rice with irrigation facility. Farmers are advised to undertake field preparation and dry sowing of rainfed direct seeded rice in medium and medium - low lands in the west and central Orissa as rainfall is expected in the State in the next five days. Go for dry bed nursery in rainfed medium land and wet bed nursery in irrigated land and in rainfed low land.
- Due to delay in onset of monsoon and less rain, already raised rice nurseries utilizing pre-monsoon showers are drying up in some areas. Farmers in those areas are advised to provide live saving irrigation to the nurseries and main fields just before the next spell of rain and not to apply fertilizer in the nursery or main field until rain starts. Farmers are also advised to raise community nursery of rice for transplanting at a reliable water source to save time avoiding further delay.
- Digging of pits may be done to undertake planting of fruit trees on receipt of rain.
- Farmers are advised to undertake land preparation utilizing the rainfall received during previous weeks and undertake sowing of arhar and maize as rainfall is expected in the next five days.
- Undertake land preparation and sowing of *kharif* cotton utilizing the rainfall received during last week and undertake sowing as rainfall is expected in the next five days.
- Arrange good quality certified seeds. Details of crop varieties are mentioned in Annexure I.
- Farmers are advised to prepare field and undertake sowing of ginger, turmeric, colocasia and elephant foot yam as rainfall is expected in the next five days.
- 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.

West Bengal

- **Major Standing Crops:** Sugarcane (vegetative), jute (vegetative) and *aus* rice (direct sowing / transplanting / early tillering), *aman* rice (nursery sowing), vegetables (sowing).
- As there was no significant rain in most of the districts over the State, life saving irrigation should be given to already sown *aus* and *aman* rice, jute etc. showing symptoms of water stress condition before the next spell of shower as predicted after one or two days.
- Most of the cultivated lands in Coastal saline Zone are ready for dry seed bed preparation. Long duration rice varieties may be selected for sowing in the dry seed-bed in this region. One & half katha seed bed is required for transplanting of one bigha land and the seed-rate is 6-10 kg per bigha. The seedlings obtained from the dry nurseries are generally hardy and establish themselves very fast when transplanted.
- Undertake transplanting of brinjal and chilli in Coastal saline zone. The seedlings should be treated with Diethane M-45 @ 2.5 g / litre of water before transplanting to prevent wilting disease.
- Undertake sowing of cowpea, leafy vegetables like *Amaranthus* and nursery sowing of cauliflower in Terai and Teesta zone.
- Undertake nursery sowing of *aman* rice in Gangetic Alluvial zone, Vindhya Alluvial zone and Undulating Red and Lateritic zone. One and half katha land is required for the transplanting of one bigha land. For this, 7 to 8 Kg seeds are required.
- Prepare nursery bed (3 m x 1m) for early vegetables (cabbage and cauliflower) in New alluvial Zone. Use 500-600 gm seed for one ha land.
- Continue land preparation for pigeon pea in New alluvial zone. For a bigha of land 3 kg seeds are required. Sow treated seeds in rows at a distance of 3ft.

- Complete the sowing operation of *aus* rice in New Alluvial zone as early as possible. Apply 25 Kg SSP and 6.5 Kg MOP per bigha before sowing. Sow 11 to 12 kg of seeds in rows at a distance of 8 inch apart. Undertake transplanting of *aus* rice, if seedlings are ready.

Plant protection

- Rainfall along with high humidity may lead to rhizome rot of ginger and turmeric in Coastal saline Zone. Raise the level of the beds to help the surplus rain water to flow freely; drench the soil around the rhizome with any Copperoxychloride preparation (0.4%) @ 5 litre / sq. m. or spray with Metalaxyl 75 WP @ 1.5 g / litre of water before the appearance of the disease.
- High humidity and temperature may lead to wilting of betel vine plants in coastal saline Zone. Bordeaux mixture as soil drench (1%) or spraying (0.5%) or Blitox-50 or Blue copper @ 4gm/litre of water may be used.
- In this hot and humid condition mite infestation is becoming a serious problem in Coastal saline Zone. Apply Diafenthiuron @ 1.5 ml per litre of water.
- Undertake intercultural operation and application of fertilizer and plant protection measures on a non-rainy day in Gangetic west Bengal and postpone the same in Sub-Himalayan West Bengal.

Sikkim

- **Major standing crops:** (a) **High hills: Off-Season Vegetable crops** Vegetative/Late Vegetative; **Seed Potatoes:** Vegetative/Tuberization; (b) **Medium hills: Orange:** Transplantation of Seedlings /Flowering/Early Fruiting/ Fruiting; (c) **Medium & Low Hills: Paddy:** Transplanting/early tillering; **Kharif Vegetables:** Vegetative/ Late Vegetative; **Maize:** Late Vegetative; **Large Cardamom** Transplanting of Seedlings/ Secondary Flowering/Primary Capsule Formation.
- There was sufficient rainfall during last week. Farmers are advised to continue preparation of land and transplanting of seedlings in the low hills & transplantation of seedlings of paddy in the medium hills.
- 2nd round of weeding of maize crop in middle and low hills may be done after current spells of rain. Earthing up should be done thereafter so that plants do not fall during strong wind. Top dressing with FYM/compost may be continued after current spells of rain.
- Transplanting of orange seedling may be continued. Deshooting/debugging of newly planted to 1 – 4 years old trees upto a basal height of 40 – 50 cm should be done on monthly basis.
- Top dressing of ginger with organic manures and mulching to be done after current spells of rain. on monthly basis. Proper drainage to be maintained and weeding to be done after current spells of rain. As there are chances of scattered thundershowers in high hills, the seedlings of off-season vegetable crops may be protected from onslaught of hail stone showers.
- Planting of suckers of large cardamom may be continued. Trenches of width 30 cm and depth 45 cm with convenient length may be opened with 30 cm interspacing. Trenches to be filled by mixture of FYM and soil. Disease free high yielding grown up shoots with emerging buds may be planted at 45 cm apart in the trenches within June & July. Base may be mulched with forest leaves. Bamboo/wooden support stakes may be provided for the suckers.
- Chirke and Foorkey infected cardamom plants may be destroyed by uprooting and buried in the pits at regular intervals.
- Regular inspection may be carried out to observe caterpillar/shoot borer/shoot fly incidence, if any, and may be hand picked and destroyed mechanically.

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

Assam

- **Major Standing crops:** vegetables (vegetative / flowering / fruiting / harvesting), early *ahu* rice (tillering / panicle initiation), direct seeded regular *ahu* rice (vegetative / tillering), transplanted regular *ahu* rice (transplanting / early tillering), *Capsularis* jute (vegetative / harvesting), *Olitorius* jute (vegetative), maize (vegetative) and sugarcane (vegetative), *sali* rice (nursery sowing).

- As there was rain in most of the districts during earlier weeks and rain is likely to occur at many places over the State for next five days, postpone irrigation to the crops. As maize and jute crops are sensitive to water logging, provide adequate drainage facilities to remove excess water.
- Undertake top dressing in one month old crop of maize with urea @ 30 kg per hectare and also in March planted ginger with urea @ 20 kg per hectare after current spells of rain.
- Undertake earthing up and application of fertilizer in sugarcane after current spells of rain. Apply Urea and MOP in the field @ 26 kg per bigha and 7.5 kg per bigha.
- Farmers are advised to collect the seeds of recommended varieties of *Sali* rice for better production. Prepare nursery beds of dimensions 10 m x 1.25 m x 0.10 m. Separation of two beds should be about 30 cm.
- The farmers, who could not be able to sow the seeds of early varieties of *sali* rice due to insufficient rain, can make arrangement to raise the seedlings of these varieties by adopting 'Mat nursery' technique. Seedlings of such nursery become suitable for transplanting earlier and transplanting becomes easier using Drum Seeder etc. Otherwise, farmers can use late varieties for cultivation.
- Maintain 3-5 cm stagnant water in early *ahu* rice and direct seeded regular *ahu* rice field.
- Undertake land preparation and sowing of arhar and cotton.
- This is proper time for planting of coconut in high land. 1 year old seedlings with 5-6 leaves should be used for planting. Time is also suitable for planting of banana, pineapple, papaya, arecanut etc.
- Harvesting and retting of *Capsularis* jute should be done preferably at pre-flowering stage (120days after sowing) to get better quality fibre. At present the water temperature in the retting tanks is ideal for retting of jute. Early and timely sown *Capsularis* jute may be harvested during this week and kept in the field in standing position for 3-4 days before retting for proper defoliation.
- *Olitorius* jute field should be provided with proper drainage to prevent water logging. As pesticide application is not feasible in rainy weather, so arrangement of Bamboo perch is an effective measure to control the hairy caterpillar and semi-looper in jute through predatory birds.

Plant protection:

- There is chance of attack of fruit fly, red pumpkin beetle and epilachna beetle in summer gourds. Spray endosulphon or malathion 50 EC @ 1 ml per litre of water after current spells of rain.
- Attack of stem borers may be observed in sugarcane. Spray monocrotophos 40 EC @ 150-200 ml per 150 litres of water with hand sprayer in the field after current spells of rain to control attacks.

Animals

- The cattle, goat and pigs should be vaccinated against foot and mouth disease as well as anthrax disease. They should be fed with anti worm drugs.

Fishery

- The beds of ponds for fisheries should be ploughed followed by application of cow dung and lime at recommended dose.

Arunachal Pradesh

- **Major Standing crops:** Maize, millet (vegetative), ginger(vegetative), summer vegetables (vegetative/harvesting), *jhum* rice (tillering/vegetative), WRC rice (tillering/vegetative).
- As there was sufficient rainfall in most of the districts during last week and rain/thundershowers are likely at many places over the State for the next five days, postpone irrigation, weeding and intercultural operations. Provide adequate drainage facilities in Papumpara, Tirap, Upper Subansiri districts to avoid waterlogging due to excess rainfall during last week.
- Farmers are advised to harvest the matured summer vegetables and regularly monitor the crops for pest and diseases.
- Prophylactic measure for protection of seed ginger rhizome from fungal disease may be taken. Water logging in the field must also be avoided.

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

Andhra Pradesh

- **Major Standing Crops:** Sugarcane (cane development), vegetable crops (fruiting/harvesting) and chilli (fruit development/picking).
- Farmers in Rayalaseema are advised to undertake field preparation and start sowing of rice, bajra, groundnut, sunflower in the irrigated areas and continue sowing of *kharif* crops like rice, brinjal, tomato and chillies in the nursery and sowing of bhindi and gourds in the main field in South Coastal Andhra Pradesh by utilizing the monsoon rains. Undertake sowing of jowar, black gram, green gram in south Telangana with the recent monsoon rains. Undertake sowing of rainfed crops wherever cumulative rainfall of 75 to 100 mm occurred. In light soils, sowing of cotton and soybean is not advised.
- Undertake sowing of black gram and green gram in Krishna and Prakasam districts.
- Details of varieties are given in Annexure I.
- As the conditions are favourable for further advance of monsoon over remaining parts of Andhra Pradesh during next 3-4 days, farmers are advised to undertake field preparation with the realized pre-monsoon showers to undertake sowing of *kharif* crops like jowar, green gram and sunflower in North Telangana.
- Foot and mouth disease, Hemorrhagic Septicemia in cattle, sheep pox in sheep and ranikhet disease in poultry may occur under prevailing weather. To prevent the diseases, vaccinate the animals and poultry.

Plant Protection: Weather conditions are favourable for mild incidences of –

- shoot and fruit borer in brinjal; undertake plant protection measures;
- yellow and red spider mites in sugarcane, spray wetttable sulphur @ 3 g per litre of water to cover the under surface of the leaves.
- Undertake plant protection measures on after current spells of rain in Coastal Andhra Pradesh.

Karnataka

- **Major Standing Crops:** Annual sugarcane (maturity/harvesting), green gram, black gram and cowpea (pod maturity/harvesting), groundnut (pod development/maturity).
- As rain/thundershowers is likely to occur at many places in coastal Karnataka and also in interior Karnataka during next five days, postpone irrigation to the crops.
- As good amount of rainfall was received in the last week and rainfall is expected in the next five days, continue land preparation and sowing of rice in coastal Karnataka, jowar, bajra and groundnut in south interior Karnataka.
- With the recent advance of monsoon followed by good amount of rain, undertake sowing of maize, tur, sunflower, cotton and soybean in north interior Karnataka. Undertake sowing of green gram, groundnut, direct sown rice and maize and planting of potato in Dharwad. Undertake sowing of tomato, brinjal and chilli in the nursery by utilizing the monsoon showers.
- Undertake sowing of rice in the nursery in Bidar. Farmers are advised to arrange for inputs and undertake sowing as soon as monsoon arrives over the region. Normal sowing dates of important *kharif* crops are as follows
Ground nut, Niger, Sesamum and Blackgram - June end
Greengram, Paddy - June to July first fortnight
Jawar - June end
Soybean - Upto first fortnight of July
Maize - Upto July end
Bajra and Pigeonpea - July end
Horsegram - June to September
- Also undertake ratooning in sugarcane.

- Undertake sowing/planting of rice, sugarcane and pulses in Mysore, Mandya and Chamraj Nagar districts.
 - Undertake sowing of *kharif* crops like green gram, red gram, bajra, cowpea, cotton, groundnut and jowar in Raichur and Gulbarga utilizing the monsoon rains.
 - Continue planting of seed-nuts for coconut and arecanut in nursery in Sirsi region
 - Details of varieties are given in Annexure I.
 - Intercultural operations, application of fertilizers and pesticides may be continued in Coastal Karnataka after spells of rain.
- Plant Protection:** Weather conditions are favourable for mild incidences of –
- bacterial blight in pomegranate and citrus canker in Bijapur and leaf spot in sapota in Dharwad; Undertake plant protection measures after current spells of rain.

Kerala

- **Major Standing Crops:** vegetable (transplanting/vegetative/flowering/fruitletting/harvesting) and plantation crops (coconut, arecanut, pepper and cashew). This is proper time for sowing of rice and vegetable crops in the nursery and transplanting in the main field.
- As rain/thundershowers is likely to occur at many places during next five days, postpone irrigation to the crops.
- Complete nursery sowing of *virippu* rice and continue transplanting by utilizing the monsoon showers.
- Undertake planting of Dioscoria, ginger, turmeric and tapioca in Thrissur, Ernakulam and Palakkad by utilizing the monsoon showers.
- Sowing/transplanting of rice and vegetables may be continued in Kannur, Kasargod, Malappuram and Kozhikode districts.
- Continue planting of coconut, arecanut, pepper and cardamom in Wayanad by utilizing the monsoon rains.
- Continue sowing of *virippu* rice in Kollam and Thiruvananthapuram districts; planting of coconut for seed nuts may also be continued with proper care to prevent the seed bed from soil erosion. Prevent banana from strong winds by providing mechanical support.
- Intercultural operations, application of fertilizers and pesticides may be continued after spells of rain.
- Weather conditions are favourable for the attack of bud rot, red palm weevil and rhinoceros beetle in coconut, mahali in arecanut, quick wilt and pollu beetle in pepper, Sigatoka leaf spot and rhizome weevil in banana, soft rot in ginger, rhizome rot in cardamom and leaf rust in coffee in Wyanad and aphids in cowpea in Kottayam district. Undertake plant protection measures after current spells of rain.

Tamilnadu

- **Major Standing Crops:** Sugarcane (cane maturity) and cotton (picking stage). This is proper time for raising nursery for *kuruvi* rice and vegetable crops.
- As there was no significant rain during last week and no significant rainfall is expected during next five days over the State, apply irrigation to the crops.
- Continue land preparation and transplanting of *kuruvai* rice in the man field in Cauvery deltaic areas.
- Undertake intercultural operations in early transplanted brinjal crop in Namakkal district to keep the field clean.
- Complete land preparation and sowing of crops like cotton in Thirunelveli, Thooththukkudi and Virudhunagar districts.
- Farmers are advised to undertake field preparation utilizing pre-monsoon showers for sowing rainfed crops in Pudukottai, Madurai, Ramanathapuram, Sivaganga, Dindugal districts.
- Undertake sowing of groundnut in Erode district.

- Continue harvesting of maize in Virudunagar district and pulse crops in Thirunelveli district due to favourable weather.
 - Undertake earthing up operations in sugarcane in Thirunelveli district Propping may be undertaken to prevent from lodging due to high winds
 - Undertake transplanting of vegetable crops during monsoon in Kanyakumari district.
- Plant Protection:** Weather conditions are favourable for mild incidences of –
- stem borer in rice in Coimbatore, leaf folder in rice in Erode and leaf spot in banana in Kanyakumari districts; undertake plant protection measures to control the pests.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT, RAJASTHAN]

Maharashtra

- **Major Standing Crops:** *Kharif* rice (sowing / germination in Nashik, Kolhapur and Nagpur divisions and nursery sowing / germination in South Konkan & Kolhapur division), soyabean (sowing / germination in Kolhapur division), cotton (sowing in Nashik, Kolhapur and Amravati divisions).
- As there was rain in most of the districts of Konkan during last week and rainfall is likely to occur at many places over this region during next five days, postpone irrigation to the standing crops.
- Land preparation may be completed for new plantation of fruit crops like mango, cashew, coconut, areca nut, etc. in Konkan. Dig the pit for plantation of mango at the spacing of 10 x 10 m or 5 x 5 m and for cashew at 7 x 7 m.
- Undertake nursery sowing of onion, tomato, brinjal and chilli in the raised beds of suitable size. Sowing of improved varieties may be done.
- Sowing of *kharif* (drill) rice may be carried out in Konkan and Kolhapur utilizing recent monsoon rain and also in Nashik and Nagpur division with irrigation facilities. Before sowing treat rice seeds with 3% brine solution for 5 – 10 minutes and apply fungicide Thiram @ 3 – 5 g per kg of seeds. Also undertake sowing of *kharif* rice in nurseries for rice seedlings in Konkan & Kolhapur division and also in Nasik and Nagpur division with irrigation facilities. Continue sowing of soybean in Kolhapur division with the help of recent rain and optimum soil moisture in the field.
- Apply last dose of 100 kg N, 55 kg P₂O₅ & 55 kg K₂O / ha to sugarcane (*suru*) at the time of final earthing up followed by light irrigation.
- Complete preparatory tillage with the help of pre-monsoon showers. Selection of crops and varieties, arrangement of seeds and fertilizers may be done immediately in view of likely advance of monsoon in North Madhya Maharashtra, Marathwada & Vidarbha. As monsoon has been recently advanced in South Madhya Maharashtra, farmers are advised to continue sowing of *kharif* crops (bajra, jowar, groundnut, *tur*, soyabean, maize, green gram, black gram etc.) in these regions with the help of recent rain.
- Details of crop varieties are mentioned in Annexure I.

Fishery

- Feed management of brackish water shrimps may be followed. Water level in the pond may be maintained at 1.5 m.

Plant protection

- There is possibility of attack of dieback disease on nursery plants of mango in western Maharashtra plain zone. Destroy the affected leaves. For control spray Copper oxychloride @ 25 g per 10 litres of water. Repeat the spraying after 12 to 15 days.
- Due to increase in relative humidity in this week there is chance of infestation of wilt and buck eye rot disease on tomato crop in Madhya Maharashtra. For control support may be given to tomato crop and if infestation occurs, spray Chlorothalonil @ 25 g + Sticker 10 ml per 10 litres of water.
- Apply plant protection measures in Konkan after current spells of rain and South Madhya Maharashtra on a non-rainy day.

Gujarat

- **Major Standing Crops:** Sugarcane (vegetative), vegetables (vegetative / flowering / fruiting / harvesting), *kharif* vegetables (sowing), *kharif* rice (nursery sowing), castor, pigeon pea, cotton, groundnut, bajra, sesamum, pulses etc. (sowing).
- As rain is likely to occur in most parts of Saurashtra and Kutch during next five days due to arrival of monsoon, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures to the standing crops. Perform the same in remaining parts of the State on a non-rainy day.
- Harvest the matured fruits of vegetable crops in the morning hours.
- Prepare rice nurseries utilizing monsoon rain. It is recommended to treat rice seeds with 3 g of saresan or agrosan or emesan fungicide per 1 kg rice seeds before sowing of nursery. Select the desired rice varieties from early maturing cultivars and late maturing cultivars. Adopt seed rate of 25 to 30 kg per hectare.
- Raise seedlings for brinjal, tomato, chilli and other vegetable crops utilizing monsoon shower.
- In view of onset of monsoon, undertake land preparation and sowing of castor at 90 X 45 cm spacing, pigeon pea at spacing of 120 X 45 cm by dibbling method and also cotton and treat pigeon pea seeds with *Rhizobium* @ 25 g / kg seeds.
- As the onset of monsoon is delayed, farmers may sow the crops like bunch groundnut, bajra, sesamum, pulses etc. during *kharif* season.
- There is chance of infestation of stem rot in groundnut. For control of stem rot in groundnut 2.5-3 kg Tricodarma with 500 kg castor cake should be applied at the time of sowing in furrow.
- Details of crop varieties are mentioned in Annexure I.

Rajasthan

- **Major Standing Crops:** vegetable crops (flowering / fruiting / harvesting). Sowing of crops like groundnut and transplanting of chilli is in progress.
- As there was no significant rain during last few weeks and no significant rainfall along with heat wave conditions is expected during next five days over the State, apply light and frequent irrigation to the crops.
- Undertake intercultural operations to conserve moisture in bajra, jowar, sweet gourd, cucumber, pumpkin, bitter gourd, tinda, tomato and ladies finger in Pali, Barmer, Churu, Jalore and Jodhpur.
- Undertake field preparation for sowing of groundnut and cucurbits in Bhiwara, Chittorgarh, Sirohi and Udaipur.
- Complete sowing of groundnut in Bikaner and Jaisalmer, cotton in Sriganganagar and Hanumangarh and transplanting of chilli in Bhiwara, Chittorgarh, Sirohi and Udaipur.
- Undertake sowing of chili and Shimla Mirchi.
- Undertake field preparation utilizing pre-monsoon showers for sowing of *kharif* crops like pearl millet, sorghum, maize & cluster bean etc. in Jaipur region. This is the right time of sowing of irrigated groundnut.
- Details of varieties are given in Annexure I.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- mango hopper in mango tree at flowering stage in Ajmer, Dausa, Jaipur and Tonk districts, spray Malathion 50 EC @ 1.0 ml or Endosulfan 35 EC @ 1.5 ml per litre water.
- powdery mildew in mango and vegetables in Banswara, spray Karathane @ 1 ml or Sulphur Fungicide @ 2.5 g / litre of water.
- fruit borer in tomato, brinjal and bhindi in Banswara, spray Endosulphan @ 2 ml per litre of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Major Standing Crops:** Sugarcane (cane development), cotton (boll development/maturity) and vegetable crops (vegetative).

- As there was no significant rain during last few weeks and no significant rainfall along with heat wave conditions are likely to prevail in the next five days over the State, apply light and frequent irrigation to the crops.
- As advance of monsoon is likely in the State during 28th to 30th June, farmers are advised to undertake field preparation to undertake sowing of *kharif* crops like rice, jowar, sunflower, maize, jowar and soybean . Undertake nursery sowing of rice in irrigated conditions.
- Undertake planting of sugarcane in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- Details of varieties are given in Annexure I.
- Undertake intercultural operations to conserve moisture in early sown sorghum, jowar, sunflower and vegetables like ladies finger, cow-pea, tomato, brinjal, chilli and cucurbitaceous crops in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- **Animal Husbandry:** To control ticks and mite in cattle, sheep and goat, apply butox / deltox @ 4 ml / litre of water on the body in Jhabua and Dhar districts.
- **Plant Protection:** Weather conditions are favourable for-
- fruit fly in okra in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts, spray trizophos crops in open weather conditions @ 1.5 ml per liter.
- fruit fly in bhindi, tomato, beetle guard, cucurbit in Tikamgarh, Chattarpur and Datia, spray Malethyon 50 EC 1 ml or Trijophos 40 EC 1.5 ml per litre of water.

Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative), vegetables (flowering / fruiting / harvesting), irrigated maize (early vegetative / vegetative), *kharif* rice (nursery sowing).
- Even though monsoon is likely to arrive shortly, as there was no significant rain during last few weeks over the State and due to dry conditions, evaporation rate increases up to 14 mm / day, farmers are advised to apply irrigation to the crops before the spell of monsoon shower starts. Farmers, who have drip irrigation system, are also advised to regulate the discharge rate of the system for proper water management.
- In view of delayed onset of monsoon and distribution of rainfall in the month of October over the years, there may be moisture stress for medium and long duration rice varieties at the time of maturity. Therefore, farmers are advised to undertake sowing of relatively early maturing varieties of rice (upto 125 days) in place of medium and late duration varieties under rainfed conditions to avoid drought conditions at the time of maturity. Details of crop varieties are mentioned in Annexure I.
- Sowing of maize varieties and vegetable crops like brinjal, okra, cucurbitaceous crops etc. can be started.
- During June higher wind speed is normally expected due to monsoon activities, hence Sugarcane growers are advised to provide adequate support to standing sugarcane crop of 5-6 feet height by tying them together with the suitable tying material wherever possible.
- Intercultural operation and earthing up and also application of Nitrogen and irrigation in pre-monsoon maize are also advised before start of monsoon.

Annexure I

Crop varieties

Himachal Pradesh

- **Ageti bhindi:** P-8, Prabhini kranti, Arka anamika.
- **French bean:** Kentucky Wonder.
- **Brinjal:** Arka Nidhi, PPC.
- **Capicum:** California Wonder.
- **Ladies finger:** Harbhajan, Pusa Savani and P-8.
- **Soybean:** Sivalik, Lee, Bragg and Hatrit Soya.
- **Cowpea:** Himachal Lobia-1.

Uttarakhand

- **Rice:** Saket-4, Govind, Narendra-80, Pusa 2-21, scented varieties like Pant Sugandh-15, Tarawadi Basmati, Pusa Basmati-1, Type-3, Basmati-370
- **Ragi:** VL- Mandua-124 and VL-149, VL- Mandua-204, Pant Mandua-3, PES-176, PES-110, VL- Mandua-146
- **Maize:** Ganga-2, Ganga-5, Pusa Hybrid-1, Pusa Hybrid-2 and Composite varieties like Gaurav, Amar and Surya.
- **Soybean:** Brag, PK-262, VL Soya-2, VL Soya 21, VL Soya-47 etc.

Punjab

- **Rice:** PAU 201, PR 120, PR 118, PR 116, PR 114, PR 113, PR 111, PR 115, Pb Mehak, Pb Basmati No 2, Pusa Basmati no 1, Pusa 1121, Sperm Basmati
- **Bhindi :** Punjab-8 and Punjab-7

Haryana

- **Cotton:** desi cotton varieties: HD 107, HD 123 and AAH 1, american cotton with varieties: HS6 & H1117.
- **Rice:** PAU 201, PR 120, PR 118, PR 116, PR 114, PR 113, PR 111, PR 115 etc.
- **Guar :** HG 365 and HG 563.

Delhi

- **Cauliflower:** Pusa Megha and Pusa Kranti Sankar.
- **Beans:** Pusa Beans -3.
- **Cluster bean:** Pusa Sadabahar and Pusa Navbahar.
- **Rice:** Pusa Basmati 1, Pusa Sugandh 2 & 3.
- **Jowar:** PC-9

Uttar Pradesh

- **Rice :** Aswani, Manhar, Saket-4, Govind, Narendra-118, Narendra-97
- **Mung :** Upas-120, T-21
- **Maize:** Shaktiman-2, Prakash

J & K

- **Maize:** GS-2, Vijay, Mansar, C-5 and C-8.

Bihar

- **Rice:** Rajshree, Santosh, Kanak, Rajendra Mansuri, Kishori, Nata mansuri, BPT 5204, Satyam Pankas, Nata Mansuri and Swarna (MTU 7029), Turanta, & Pravat
- **Maize :** Suwan, Deoki, Shaktiman 3 and 4, Ganga Safad -2, Ganga-11.

Jharkhand

- **Ginger:** Reo-de-genero, Nadia, China, Samastipur, Suprava, Suruchi
- **Turmeric:** Suravi, Rajendar, Roma

Orissa

- **Jute:** JRC-212, JRC-321, JRC-9442, JRC-4444, KC-1, For up land: JRD-632, JRD-878, JRD-5204
- **Rice:** Early varieties: Parijat, Khandagiri, Vandana, Jogesh, Siddant, Medium varieties: MTU-1001, MTU1010, Pratikshya, Tapaswini, Konark, Surendra, Lalata, Kharavela, Naveen, Surendra, Late varieties: CR-1009, CR-1018, Ranidhan, Swarna, RGL-2837, Ketakijoha, Moti, Padmini, Kanchana, Mahanadi, Jagabandhu.

- **Arhar:** Early duration: Prabhat, Upas-120, ICPL-86012, Medium duration: Asha, Visakha, Late duration – D-11, Pusa-9, Bahar.
- **Ginger :** Suprava, Suravi, Suruchi
- **Turmeric:** Ranga, Rashmi, Rama, Surama
- **Colocasia:** Pallabi, Rashmi, Satamukhi and
- **Elephant foot yam :** Gajendra, M-15, Santaragachhi
- **Maize :** Navjyot, Shakti, Deccan-107, Deccan-10, MRM 3838, MRM 3765, Saktiman-1, Bio 9681, Cargill

West Bengal

- **Aman rice:**
 - **New Alluvial Zone:** IET-4094, 2233, Ratna, Bikash, Kshitish, Sasyashree, IR-42, Swarna, Mashuri, IET-8002 etc.
 - **Long duration varieties for Coastal Saline Zone:** Sabita (NC-492), Sabitri (CR-1009), Dharitri (CR-1097), Lunisri, Gayetri (CR-1018).
- **Pigeon pea:** Sweta, Churni etc.
- **Cabbage:** K.K. cRos.
- **Cauliflower:** Early Patnai.

Assam

- **Transplanted *ahu* rice:** Lachit, Chilarai, Govind, IR-50, Rachi, Jaya etc.
- **Sali rice:** Mahsuri, Ranjit, Bahadur, Vasundhara, Kushal, Piyoli, Moniram, Rangali, Bhogali, Ketkijaha etc.
- **Late Sali rice:** Gitesh, Monohar Sali etc.
- **Arhar:** T-21.
- **Cotton:** J-34, Khaki, MCU-1, MCU-4 etc.
- **Areca nut:** Kahikuchi, Kachar, Sribardhan, Mohin nagar, Sumongala vital-11 etc.

Andhra Pradesh

- **Greengram:** PDM 54, WGG 37, LGG 407, LGG 460, TM 96-2.
- **Greengram (upland):** ML 267, LGG 450, LGG 460, LGG 407, Pusa 105, PDM 54
- **Blackgram:** LBG 20, T 9, LBG 623, WBG 26.

Karnataka

- **Greengram:** Selection-4 (delayed/Non shattering), China Moong
- **Blackgram:** T-9, TAU-1
- **Tur:** Medium to Long Duration: PT-221,GS-1, ICP-8863 (Maruti), ICPL-87119 (Asha) WRP-1 & Short Duration: ICPL-87 (Pragati), Selection-31 (Zone 2 irrigated areas) GCS-11-39 (Zone-2)
- **Cowpea:** C-152
- **Horsegram:** GPM-6 (accepted to release)
- **Groundnut:** R-2001-3, R-2001-2, R-8808, R-9251, S-206, TMV-2
- **Castor:** 48-1, GCH-4
- **Niger:** No-71 (High yielding), RCR-18
- **Sesame:** E-8, DS-1 (White)
- **Bajra:** ICTP-8203
- **Kharif Sorghum Hyb/ Ver:** CSH-14, CSH-5, CSH-16, CSH-18 and DSV-1, SSV-74
- **Fodder Bajra:** DFB-1, DRSB-2 (Short duration around 50 days)
- **Coriander:** DWD-3
- **Mesta:** AS-73-CP-560, HS-2, HC-583, LGG 407, Pusa 105, PDM 54

Maharashtra

- **Kharif rice:** Karjat 1, 2, 3, 184, Ratnagiri 3, 73, 711, Sahyadri, Bhogavati, Phule Radha, Phule Maval, Pusa in Konkan, Madhya Maharashtra and PKV- Khamanga, PKV-HMT, Sindewahi-1, 5, PKV-Ganesh, Sakoli-8 & Karjat -6 in east Vidarbha.
- **Kharif bajra:** Shraddha, Saboori, Shanti, ICTP-8203.
- **Kharif jowar:** C.S.H-14 to 18, C.S.H -23 ,S.S.V-84, Phule Amruta(RSSV).
- **Kharif groundnut:** SB-11, Phule Pragati, TMV-10, M-13, TAG-24, TG-26, Phule Vyas (JL-220).
- **Kharif tur:** I.C.P.L-87, A.K.T-8811, Vipula, B.S.M.R.-853, B.S.M.R-736 for irrigated and Tur No.148. B.D.N.1,2 & Maruri for rainfed crop..
- **Kharif maize:** Ganga-11, Deccan-105, Trisulata, Pro-311, Bio-9681, Samishra, Dhaval, African tall.

- **Kharif Soybean** : MACS-13, 58, 124, 450, JS-335, PK-1029 & Phule Kalyani for Madhya Maharashtra, PKV 1, TAMS 38 for Vidarbha, MACS 47, 61, 61-2 & Samruddhi for Marathwada.
- **Green gram** : Vaibhav, Phule M-2.

Gujarat

- **Kharif rice**:
 - **Early maturing cultivars**: Sukhvel-20, GR-3, 4, 6, 7.
 - **Late maturing cultivars**: GR-101, 102, 103, 104, Narmada and Masuri.
- **Castor**: GCH-4, 5, 6.
- **Pigeon pea**: Guj PP-1, 100, 101 and IPCL – 87.

Rajasthan

- **Groundnut**: TG-37 A, TBG-39, HNG-10, PG-1, GG-20 and Chandra.
- **Narma Cotton**: RS 2013, RS 810, RS 875 and MRT 9.
- **Chilli**: Pusa Jwala, N.P.46-A, PantC-2, Pusa Sadabahar, G-3, G-5 and RCH-1.
- **Shimla Mirch**: Yellow wonder, California wonder, Bulnose and Arka Mohini.
- **Pearl millet**: Composite: RCB-2, WCC-75, Raj-171, ICTP- 8203, Hybrid: RHB-90, RHB-121, ICMH-356, HHB-60, HHB-67
- **Sorghum**: CSH-6 (90-100 days), CSV-10 (100-110 days), CSV-15 (104-140 days)
- **Maize**: Bassi selected (80-85 days), Mahi Kanchan (75-80 days) & Ageti-76 (85-95 days)
- **Green gram**: RMG-62, RMG-268. RMG-492 & RMG-344
- **Cowpea**: FS-68, RC-19 and RC-101

Madhya Pradesh

- **Sugarcane**: Co Jawahar-86141, Co Jawahar-86572, Co Jawahar-86600, Co 86032.
- **Paddy**:
 - Very early**: Kalinga-3, Vandana
 - Early**: JR-201, Poornima, JRH-5, JRH-8 (Hybrid)
 - Medium**: IR-36, IR-64, Pusa sugandha-5, MTU-1001, Pusa basmati-1, Mahamaya, Kranti
 - Late**: Syamla, Swarna
- **Maize**:
 - a. **Early**: JM-8, 12, Kiran, JM-421
 - b. **Medium**: Navjot, Arun, H-216, Sartaj, Daccan 107
 - c. **Late**: Ganga-11, Prabhat, Trisulta, Daccan 103, Daccan 105, HQPM-1
- **Arahar**: Laxmi, Pragti, Asha, Jagrati, JKM-7, JKM-189
- **Jowar**: JJ-741, JJ-938, JJ-1022, JJ-1041 and CSV-15
- **Soybean**: JS-95-60, JS-93-05, JS-97-52, JS-80-21, JS-335, NRC-37

Chattisgarh

- **Kharif rice**
 - **Bhata soil**: Kalinga-3, Aditya, Vanprabha.
 - **Matasi soil**: Poornima, Annanda, Tulsi, Danteshwari.
 - **Dorsa & Kanhar soil**: MTU 1010, IR 36, IR 64, Mahamaya and Karma Masuri etc.