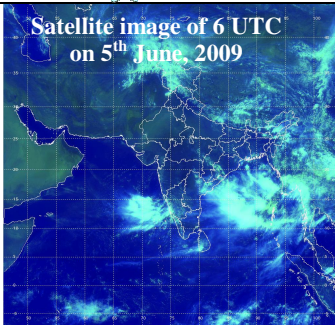




# National Agromet Advisory Bulletin

Thursday, 4<sup>th</sup> June, 2009 (For the period 4<sup>th</sup> June to 8<sup>th</sup> June, 2009)



Satellite image of 6 UTC  
on 5<sup>th</sup> June, 2009

## Chief Synoptic Feature (Based on 1430 hours IST observations of 4<sup>th</sup> June 2009)

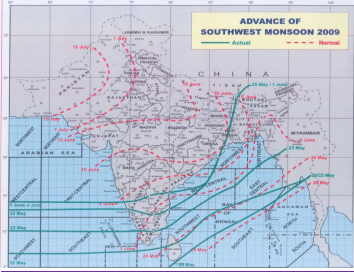
Morning's cyclonic circulation over Jharkhand and adjoining areas now lies over Gangetic west Bengal and neighbourhood. It extends up to 5.8 Km above mean sea level. Under its influence a low pressure area is likely to form over north Bay of Bengal during next 48 hours.

A Western disturbance is likely to cause isolated to scattered rain/thundershowers over western Himalayan region during next 2-3 days.

Heat wave conditions are prevailing over coastal areas of south Orissa and north Andhra Pradesh. It is likely to abate during next 24 hours.

Current meteorological analysis suggests that heat wave conditions may develop over parts of plains of northwest India during next 2 days.

## Advance of southwest monsoon



In view of strong southwesterly winds along the west coast, establishment of an off shore trough extending from Karnataka to Kerala coasts, presence of shear line nearly along latitude 14.0 °N and fairly widespread rainfall activity, Southwest monsoon has further advanced into some more parts of central Arabian Sea, some more parts of coastal and south interior Karnataka, some parts of Rayalaseema & south coastal Andhra Pradesh and some more parts of west central Bay of Bengal.

## Salient Advisories

### Advisories for Cyclone

- Heavy rainfall associated with storm due to passage of cyclone AILA over West Bengal during last week damaged standing crops extensively in East Midnapore, Howrah, Hooghly, Burdwan, South 24 Parganas. Some parts of South 24-Parganas district were flooded by saline water. Farmers are advised to drain out the saline water from the fields followed by reclamation of saline soils before *kharif* rice cultivation.

### Advisories for sowing

- In Orissa farmers are advised to undertake land preparation and sowing of *kharif* crops like maize, cowpea, arhar, black gram, ragi, groundnut, sesame, rice bean, castor, pumpkin and sweet potato in rainfed uplands utilizing the monsoon showers received during last week.
- In Karnataka, farmers in Bijapur district are advised to undertake sowing of *kharif* crops like green gram, red gram, bajra, sesamum, groundnut and jowar and farmers in Shimoga district are advised to undertake sowing of groundnut, maize, cotton and red gram as there was sufficient rainfall during last week over the State. Farmers in Bidar, Raichur and Gulbarga are advised to arrange seeds and other inputs to undertake sowing of *kharif* crops like green gram, red gram, bajra, cowpea, cotton, groundnut and jowar as soon as monsoon arrives over these regions.
- Farmers in Assam, West Bengal and Sikkim are advised to continue land preparation and sowing of rice in the nursery utilizing the monsoon showers and start transplanting the seedlings when ready.
- Farmers in Tamil Nadu are advised to undertake land preparation and complete nursery sowing of *kuruvai* rice in Cauvery deltaic areas by utilizing the monsoon showers at the earliest and start land preparation for transplanting of rice.
- Farmers in Kerala are advised to continue transplanting of *virippu* rice by utilizing monsoon showers. Farmers in Thiruvananthapuram and Kollam districts are advised to continue transplanting after draining out excess water from the fields due to heavy rainfall received during last week.
- Farmers in Rayalaseema and South Coastal Andhra Pradesh are advised to undertake sowing of *kharif* crops by utilizing the monsoon showers. Farmers in rest of the State are advised to arrange seeds and other inputs to undertake sowing of *kharif* crops as monsoon is approaching over the rest of the region.

### Advisories for irrigation

- As there was sufficient rainfall during last two weeks in Orissa and West Bengal farmers are advised to postpone irrigation to crops.
- As rain/thundershowers at many places along with heavy rainfall is likely to occur during next 24 hours over coastal Karnataka, postpone irrigation to the crops.
- As there was no significant rain in most of the remaining States of the country during last week and no significant rain is likely to occur for the next five days, farmers are advised to apply irrigation to the crops as and when required.

### Advisories for pest and disease




- Weather conditions are favourable for the incidence of pests and diseases in the following States:
  - Fruit borer in tomato and chilli in Uttarakhand.
  - Jassid in cotton in Punjab.
  - Powdery mildew in bhindi and guar in Maharashtra.
  - Fruit rot disease in pointed gourd in West Bengal.
- Monitor the crops for the pest and disease incidences and undertake plant protection measures, as and when required.

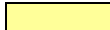


Issued by National Agrometeorological Advisory Service Centre,  
Agricultural Meteorology Division, India Meteorological Department, Shivajinagar, Pune.  
The bulletin is also displayed in the website (<http://www.imdagrimet.org>) of the Division

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

Sub-division	Cumulative Rainfall for the period									
	6 <sup>th</sup> May		13 <sup>th</sup> May		20 <sup>th</sup> May		27 <sup>th</sup> May		3 <sup>rd</sup> June	
	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.
A & N Islands	56	-45	57	-84	90	-47	117.7	14	121.1	-3
Arunachal Pradesh	61	-61	52	-41	70	-59	61.2	-16	87.2	-50
Assam and Meghalaya	86	-9	84	-43	89	-83	88.6	-31	101.5	-63
NMMT	53	-27	50	-75	47	18	49.2	59	66.2	-36
SH West Bengal & Sikkim	53	-19	50	-11	58	-69	67.2	158	76.5	-46
Gangetic West Bengal	18	-28	23	62	18	137	21.0	507	30.6	8
Orissa	11	-53	14	-54	14	-3	12.2	184	20.0	-11
Jharkhand	8	-14	12	-5	9	-1	9.8	91	14.9	9
Bihar	10	-51	13	48	11	-49	12.5	54	17.5	120
East Uttar Pradesh	3	48	4	12	4	8	3.4	228	7.2	111
West Uttar Pradesh	2	-89	3	-74	3	-51	2.6	182	5.5	1
Uttarakhand	10	-18	16	-73	16	-91	11.8	-59	18.8	54
Haryana, Chandigarh & Delhi	2	-8	4	-97	3	-95	3.3	-31	3.3	116
Punjab	2	-14	5	-99	4	-88	3.2	-79	3.1	8
Himachal Pradesh	14	75	18	-30	16	-76	12.6	-64	12.6	-29
J & K	17	61	22	-52	16	-50	18.2	-51	11.7	-79
West Rajasthan	1	-65	2	-100	22	-100	3.1	-93	3.8	18
East Rajasthan	1	-96	2	-83	22	-66	3.0	-90	5.1	-86
West M. P.	1	179	1	-79	21	154	1.8	-60	5.9	-81
East M. P.	1	-99	1	-100	12	-11	1.7	-70	6.4	-55
Gujarat region	**	-100	1	-100	1	-100	2.0	-100	5.6	-100
Saurashtra & Kutch	**	-100	1	-100	1	-100	0.5	-100	2.4	-100
Konkan and Goa	3	-100	1	-100	5	-99	14.0	-73	35.0	-95
Madhya Maharashtra	5	-100	3	-91	6	38	10.6	-72	11.3	-97
Marathwada	2	-100	2	-96	4	-4	8.0	-88	11.9	-84
Vidarbha	2	-100	2	-100	2	102	2.4	248	7.5	-68
Chhattisgarh	5	-84	5	-100	55	-46	3.5	-52	9.1	-37
Coastal A. P.	8	120	17	-94	14	-68	15.4	-14	14.9	-5
Telangana	4	-16	6	-95	8	6	7.3	35	11.2	-10
Rayalseema	7	-50	7	-66	16	-23	16.7	100	15.5	55
TamilNadu & Pondicherry	12	-49	14	-41	20	15	14.0	-1	12.7	21
Coastal Karnataka	17	-77	11	-16	30	3	52.8	-13	78.7	-56
N. I. Karnataka	9	-74	8	-88	14	81	18.0	11	17.1	-77
S. I. Karnataka	19	-46	16	-74	27	87	26.0	-18	22.7	-7
Kerala	39	-51	36	-29	67	-40	78.7	23	102.0	-78
Lakshadweep	18	-78	19	-61	36	65	61.1	28	79.3	-31

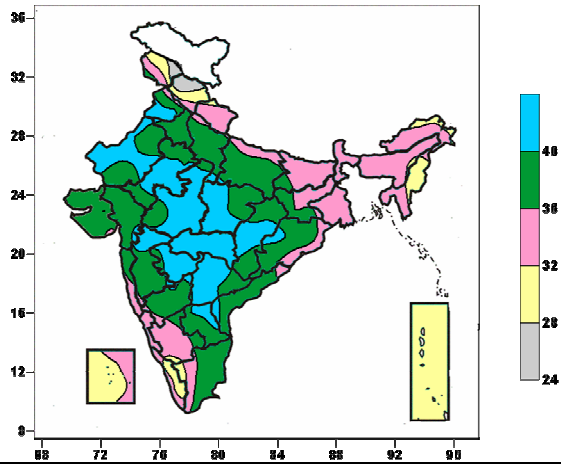
The subdivisions like East Rajasthan, Gujarat, Saurashtra & Kutch, Konkan & Goa, Chhattisgarh, received scanty / deficient rain in all the 5 weeks; Arunachal Pradesh, Assam & Meghalaya, Himachal Pradesh, Jammu & Kashmir, West Rajasthan, East Madhya Pradesh, Madhya Maharashtra, Marathwada and Kerala received scanty / deficient rain in 4 out of last 5 weeks; Andaman & Nicobar Island, Nagaland-Manipur-Mizoram-Tripura, West Uttar Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Punjab, West Madhya Pradesh, Vidarbha, Rayalaseema, North Interior Karnataka, and Lakshdweep Islands 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.

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

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

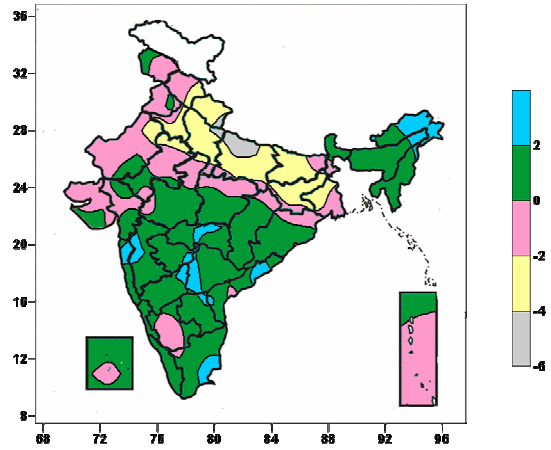
## Contour maps for the week ending 3.06.09

**Actual Mean Maximum Temperature (°C) in India for the week ending 03.06.09**



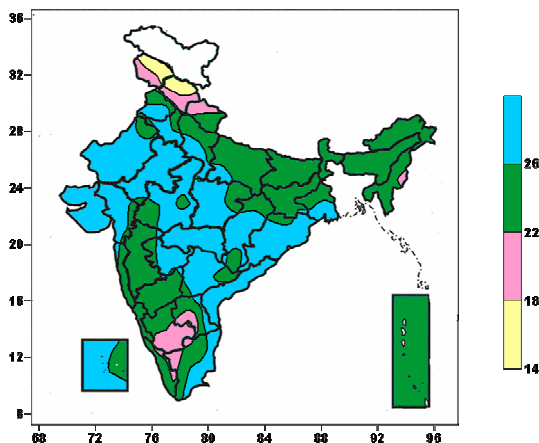
Actual Mean Maximum temperature ranged between 40°C and above over most parts of Rajasthan, Madhya Pradesh, Marathwada, Vidarbha, Telangana, some parts of Punjab, Madhya Maharashtra, Chattisgarh, Orissa, Coastal Andhra Pradesh, Rayalaseema, Gujarat, North Interior Karnataka, 32 to 36°C over most parts of Uttarakhand, Bihar, West Bengal, Sikkim, North East India, South Konkan & Goa, Coastal Karnataka, South Interior Karnataka, some parts of Jammu & Kashmir, Punjab, Himachal Pradesh, Uttar Pradesh, Jharkhand, Orissa, Saurashtra & Kutch, North Interior Karnataka, Coastal Andhra Pradesh, Kerala, Tamil Nadu, Lakshdweep, 28 to 32°C over most parts of Andaman Nicobar Islands, Lakshdweep, some parts of Jammu & Kashmir, Himachal Pradesh, Arunachal Pradesh, Nagaland, Manipur, South Interior Karnataka, Tamil Nadu, Kerala, 24 to 28°C over some parts of Jammu & Kashmir, Himachal Pradesh, 36 to 40°C over remaining parts of the country.

**Maximum Temperature (°C) Anomaly in India for the week ending 03.06.09**



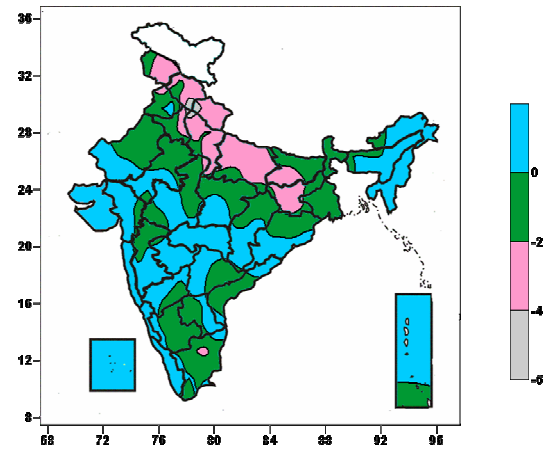
Actual Mean Maximum temperature anomaly ranged between 2°C and above some parts of Arunachal Pradesh, Assam, Maharashtra, Andhra Pradesh, Tamil Nadu, -2 to 0°C over most parts of Punjab, Himachal Pradesh, Rajasthan, North Gujarat, Saurashtra Kutch, Andaman Nicobar Islands, some parts of Jammu & Kashmir, Haryana, Madhya Pradesh, Chattisgarh, Orissa, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Coastal Andhra Pradesh, South Interior Karnataka, Tamil Nadu, Lakshdweep, -4 to -2°C over most parts of Uttarakhand, Uttar Pradesh, Haryana, Bihar, Jharkhand, some parts of Rajasthan, West Madhya Pradesh, Gangetic West Bengal, -6 to -4°C over some parts of Uttarakhand, Uttar Pradesh, 0 to 2°C over remaining parts of the country.

**Actual Mean Minimum Temperature (°C) in India for the week ending 03.06.09**



Actual Mean Minimum Temperature ranged between 26°C and above over most parts of Rajasthan, Gujarat, Saurashtra & Kutch, Marathwada, Vidarbha, Madhya Pradesh, Chhattisgarh, Orissa, Telangana, Coastal Andhra Pradesh, Coastal Tamil Nadu, Lakshdweep, some part of Punjab, Haryana, Uttar Pradesh, Jharkhand, Gangetic West Bengal, Konkan & Goa, North Interior Karnataka, Rayalaseema, 18 to 22 °C some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand,

**Minimum Temperature (°C) Anomaly in India for the week ending 03.06.09**

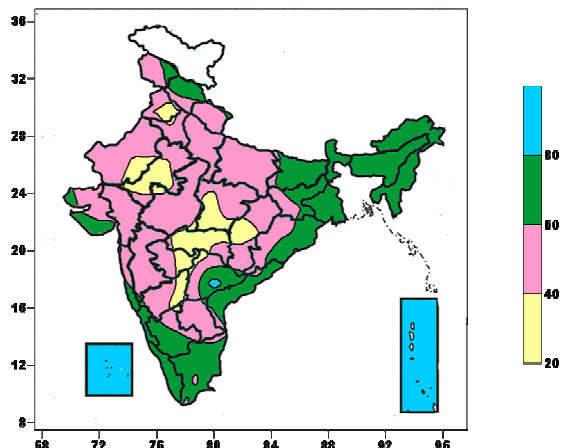


Minimum Temperature anomaly ranged between 0°C and above over most parts of Gujarat, Saurashtra & Kutch, Maharashtra, Coastal Karnataka, Kerala, North East India, Lakshdweep, Andaman & Nicobar Islands, some parts of Punjab, Rajasthan, Madhya Pradesh, Chhattisgarh, Orissa, Andhra Pradesh, Interior Karnataka, Tamil Nadu, -4 to -2°C over most parts of Himachal Pradesh, Uttarakhand, Uttar Pradesh, Jharkhand, some parts of Punjab, Haryana, Delhi, Bihar, West Madhya Pradesh, Tamil Nadu, -6 to -

Manipur, South Interior Karnataka, Rayalseema, Tamil Nadu, Kerala, 14 to 18°C over some parts of Jammu & Kashmir, Himachal Pradesh, 22 to 26°C over remaining parts of country.

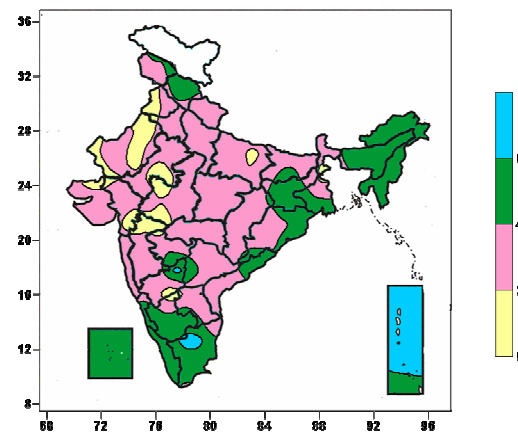
4°C over some parts of Himchal Pradesh, Uttarakhand, West Uttar Pradesh, -2 to 0°C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 03.06.09



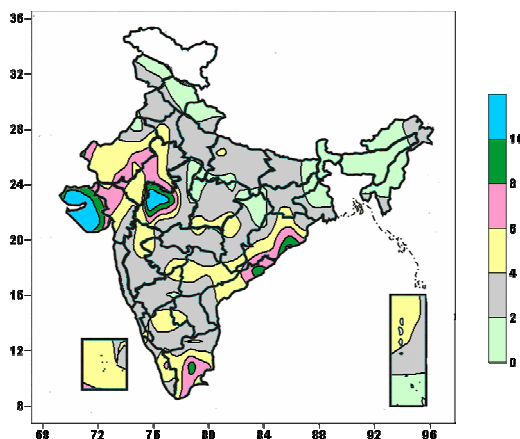
Relative humidity more than 80% over most parts of Lakshdweep, Andaman & Nicobar Islands, some parts of Telengana, 60 to 80% over most parts of Bihar, Jharkhand, West Bengal, Sikkim, Northeast India, Coastal Orissa, South Saurashtra & Kutch, Coastal Karnataka & South Interior Karnataka, Coastal Andhra Pradesh, Telengana, Kerala, Tamil Nadu, some parts of Jammu & Kashmir, Himachal Pradesh, Chhattisgarh, Konkan & Goa, Madhya Maharashtra, Rayalaseema, 20 to 40% over most parts of Vidarbha, some parts of Punjab, Haryana, Rajasthan, Madhya Pradesh, Chhattisgarh, Marathwada, Interior Karnataka, Telangana, 40 to 60 % over remaining parts of the country.

Cloud amount (okta) over India for the week ending 03.06.09



Cloud amount ranged from 6 to 8 okta over most parts of Andaman & Nicobar Islands, some parts of North Interior Karnataka, Tamil Nadu, 4 to 6 okta over most parts of Himachal Pradesh, Jharkhand, South Gangetic West Bengal, Northeast India, Coastal Orissa, Coastal Karnataka, South Interior Karnataka, Kerala, Tamil Nadu, Lakshdweep Islands, some parts of Jammu & Kashmir, Bihar, Chhattisgarh, Madhya Maharashtra, Marathwada, Andhra Pradesh, North Interior Karnataka, Andaman & Nicobar Islands, 0 to 2 okta over some parts of Punjab, Haryana, East Uttar Pradesh, Rajasthan, Sub-Himalayan West Bengal, Gujarat, Saurashtra & Kutch, West Madhya Pradesh, Madhya Maharashtra, Marathwada, Interior Karnataka, 2 to 4 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 03.06.09



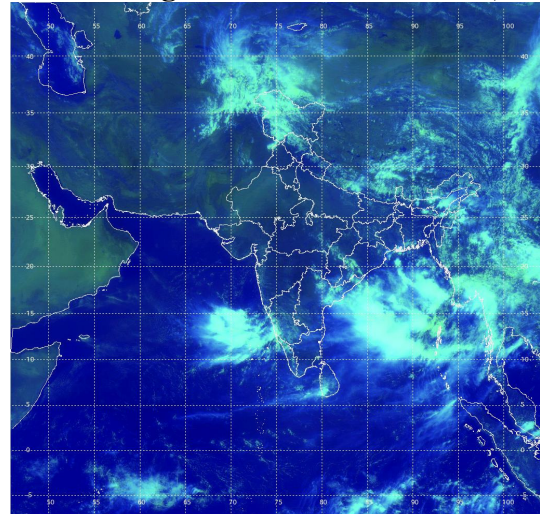
Wind speed ranged between 10 knots and above over most parts of Saurashtra & Kutch, some parts of West Madhya Pradesh, 8 to 10 knots over some parts of Saurashtra & Kutch, West Madhya Pradesh, Orissa, Coastal Andhra Pradesh, Tamil Nadu, 6 to 8 knots over some parts of Rajasthan, Gujarat, Saurashtra & Kutch, West Madhya Pradesh, Orissa, Coastal Andhra Pradesh, Kerala, Tamil Nadu, 4 to 6 knots over most parts of West Rajasthan, Lakshdweep Islands, some parts of Haryana, East Uttar Pradesh, East Rajasthan, Jharkhand, Orissa, Gujarat, Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Marathwada, Vidarbha, Karnataka, Andhra Pradesh, Kerala, Tamil Nadu, Andaman & Nicobar Islands, 0 to 2 knots over most parts of the Himachal Pradesh, Uttarakhand, West Bengal, Sikkim, Northeast India, some parts of Jammu & Kashmir, Uttar Pradesh, West Rajasthan, Bihar, Jharkhand, Orissa, Madhya Pradesh, Chhattisgarh, North Interior Karnataka, Andaman & Nicobar Islands, 2 to 4 knots over remaining parts of the country.



**Chief Synoptic Feature (Based on 1430 hours IST observations of 4<sup>th</sup> June, 2009)**

- Morning's cyclonic circulation over Jharkhand and adjoining areas now lies over Gangetic west Bengal and neighbourhood. It extends up to 5.8 Km above mean sea level. Under its influence a low pressure area is likely to form over north Bay of Bengal during next 48 hours.
- A Western disturbance is likely to cause isolated scattered rain/thundershowers over western Himalayan region during next 2-3 days.
- Heat wave conditions are prevailing over coastal areas of south Orissa and north Andhra Pradesh. It is likely to abate during next 24 hours.
- Current meteorological analysis suggests that heat wave conditions may develop over parts of plains of northwest India during next 2 days.

**Satellite image of 6 UTC on 5<sup>th</sup> June, 2009**



**Zone-wise Forecast (Forecast valid upto 1430 hours IST of 7<sup>th</sup> June, 2009)**

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

- Isolated rain/thundershowers over Jammu & Kashmir during next 24 hours and increase thereafter.
- Isolated rain/thundershowers over Himachal Pradesh and Uttarakhand from tomorrow onwards.
- Isolated rain/thundershowers over east Uttar Pradesh.
- Mainly dry weather over the rest region.

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

- Rain/thundershowers at a few places over Orissa during next 24 hours and increase thereafter.
- Rain/thundershowers at a few places over the rest region.

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

- Rain/thundershowers at a few places over the region.

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

- Rain/thundershowers at many places over Andaman & Nicobar Islands and coastal Karnataka.
- Rain/thundershowers at a few places over Kerala, south interior Karnataka and Lakshadweep 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]**

- Isolated rain/thundershowers over Konkan & Goa and Madhya Maharashtra during next 24 hours and increase thereafter.
- Mainly dry weather over the rest region.

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

- Isolated rain/thundershowers over east Madhya Pradesh, Chhattisgarh and Vidarbha.
- Mainly dry weather over the rest region.

**WARNING: (For next 48 hours)**

- Isolated heavy rainfall over Andaman & Nicobar Islands and coastal Karnataka during next 48 hours.

**Weather Outlook from 1430 IST of 7<sup>th</sup> June, 2009 to 1430 IST of 9<sup>th</sup> June, 2009 (Based on numerical weather products):**

- Scattered to fairly wide spread rainfall activity over west coast of India and northeastern states.

## 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 (sprouting / early vegetative / vegetative), cabbage, cauliflower and broccoli (head formation), pea (pod formation / early maturity / maturity), leafy vegetables like lettuce, methi, palak, dhania etc. (vegetative), apricot, peach, pear and plum (fruit development).
- As there was no significant rain in most of the districts during last week over the State and no significant rain is likely to occur for next five days, apply irrigation to the standing crops. Apply mulch in the orchards for conservation of moisture.
- In areas of High Hill Temperate Dry Zone where snow has melted from the apple orchards, basin forming operation should be carried out and required fertilizers should be added in the basin.
- 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 liliu 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 as there is forecast of light showers which help in establishment of seedlings.
- 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 *agei* bhindi and raddish 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 time for sowing of nursery in areas where summer vegetables like brinjal, shimla mirch, pepper and tomato are taken as rainfed crop during rainy season. The nursery is ready by June 15th and can be successfully transplanted during second fortnight of June before onset of monsoon. It is also time for sowing of ginger, *arbi*, amaranthus and turmeric.
- To have green fodder in summer, it is optimum time for sowing of chari, bajra and maize in low hills of Mid Hills Sub Humid zone. Also sow maize for green cobs. Complete sowing of rice nursery. Treat seeds of rice with bavistin @ 2 g / kg of seeds to avoid fungal diseases.
- It is optimum time for raising nursery of summer flowers like china aster, glardia, rudevekia, kochia, african marigold, french marigold, partulaca, tithinia, torinia and cleome etc. in Mid Hills Sub Humid zone.
- 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.

#### **Poultry**

- Replace the poultry houses with fresh litter to avoid wetting. Give clean water to birds. For precautionary measures spray formaline 40% @ one litre in 9 litres of water outside or surrounding the farm.
- Also do not allow human and birds from outside. This will help in protection from bird flu.

#### **Animal husbandry**

- It is high time for vaccination of animals against FMD as animals are shifting from plain to higher reaches.
- 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.

#### **Uttarakhand**

- **Major Standing Crops:** Sugarcane ratoon (early vegetative), cabbage, garlic, tomato (vegetative), onion (maturity), summer sunflower, moong, urd (vegetative / flowering), maize, french bean (early vegetative).
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as soon as monsoon arrives over the State.
- Farmers are advised to undertake sowing of rice, ragi and bhindi in Nainital district, maize in Uttam singh nagar district and sowing of rice in the nursery in Pauri district.
- Farmers in Dehra Dun are advised to undertake planting of sugarcane.
- As there was no significant rainfall during last week in most of the districts in the State and no significant rainfall is likely to occur for next five days, apply irrigation to the crops.
- Undertake weeding, intercultural operations and top dressing in ratoon sugarcane, early sown rice, maize, french bean and vegetable crops.
- **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.
- army worm in sugarcane, if the damage is more than 10%, farmers are advised to submerge the field with 4 inch water, if still insects are seen, then spray Endosulphan 36 EC @ 1 ml per litre of water in the evening after 4 pm for effective control.

#### **Punjab**

- **Major Standing Crops:** Spring sugarcane (early vegetative/vegetative), vegetable crops like chilli, tomato, brinjal, bhindi and onion (vegetative), summer pulses (pod formation / maturity), sunflower (head formation / maturity), groundnut (seedling), cotton and berseem (early vegetative).
- As there was no significant rain during last few weeks and mainly dry weather with heat wave conditions are likely to develop over parts of the State during next 2 days, apply light and frequent irrigation to save the crops from high temperature.
- Continue preparation of the land and nursery sowing of rice. For the nursery sown during middle of May, apply second dose of nitrogen to get the seedlings ready for transplanting. If seedlings in nursery show the yellowing of leaf tips, spray three times with 0.5-1 percent ferrous sulphate solution at weekly intervals. Start transplanting of rice seedlings after 10<sup>th</sup> June only with irrigation facilities. Details of crop varieties are mentioned in Annexure I.
- Undertake weeding, intercultural operations in sugarcane. 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. For getting good growth of fodders, provide irrigation at regular interval.
- Start sowing of bhindi and use resistant varieties to yellow vein mosaic virus.
- As rise in temperature is expected in coming days, young and tender plants of citrus, mango, litchi, papaya may be covered with huts and thatches of sarkanda or date leaves.
- To protect the fruit trees from scorching effect, lower portion of the exposed trunks should be white washed.
- 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. In case of high rise of temperature, get dairy animals blood tested for protozoan diseases from district laboratories.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- mite in sugarcane, spray the crop with 400 ml of malathion 50 EC in 100 litres of water per acre.
- fruit borer in bhindi. Apply Sevin 500g or Hexavin or Sumicidin 100 ml per acre in 100-125 litres of water.
- jassid incidence in cotton, spray 40 ml Confidor 200 SL or 20 g Pride 20 SP or 40 g Actara 25 WG in 100 litres of water per acre.

### Haryana

- **Major Standing Crops:** Spring sugarcane (early vegetative / vegetative), vegetable crops (vegetative), summer pulses (pod formation), sunflower (head formation), cotton (early vegetative) and berseem (vegetative).
- As there was no significant rain during last few weeks and mainly dry weather with heat wave conditions are likely to develop over parts of the State during next 2 days, apply light and frequent irrigation to save the crops from high temperature.
- Continue preparation of the land and nursery sowing of rice.
- Farmers are advised to prepare the land by utilizing the rainfall during last week and arrange the certified seeds for sowing of guar and pearl millet.
- Undertake hoeing and weeding and conserve soil moisture by application of mulches in sugarcane. Apply the remaining dose of nitrogen fertilizer to the crop.
- Farmers are advised to complete sowing of cotton with assured irrigation facilities. Details of crop varieties are mentioned in Annexure I.
- Undertake intercultural operations in tomato, onion and chilli.
- As temperature is high, the farmers are advised to whitewash the trunks of fruit trees, provide shelter to young trees and give frequent irrigation to protect fruit trees.
- Farmers are advised to vaccinate animals for protecting them against foot and mouth, galghontu disease and rinderpest by nearest veterinary hospital at fortnightly interval so that this disease may not appear during rainy season.
- **Plant Protection:** Weather conditions are favourable for mild incidences of jassids and spotted bollworm in bhindi, spray 300 to 500 ml Malathion 50 EC in 200 to 300 liters water per acre.

### Delhi

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), pigeon pea, beans, maize, cluster bean, ladies finger (sowing) and rice (nursery sowing).
- Taking advantage of rain, farmers are advised to start preparing nurseries for rice. For one hectare of crop field 800-1000 square metre nursery is sufficient.
- Present weather conditions with low temperature and recent rain are highly favourable for sowing of *kharif* maize. Farmers are advised to procure quality seeds and start sowing.
- Under present temperature and humidity condition, farmers are advised for sowing of pigeon pea, beans, cluster bean and *kharif* ladies finger.
- Present weather conditions are highly conducive for seed bed and field preparation for early cauliflower.
- Details of crop varieties are mentioned in Annexure I.



- Solarization of fallow fields should be taken up to kill insect pests and destruction of weed seeds beneath the soil. Deep ploughing / discing in fallow lands is advised after harvesting of *rabi* crop.

### **Plant protection**

- Present weather with high humidity and low temperature are highly favourable for spread of viral disease through insects in vegetable crops. Farmers are advised to spray Rogor or Endosulfan solution @ 2 ml per litre of water.
- High humidity and low temperature are highly favourable for growth and development of insect pests and diseases in vegetable crops. Farmers are advised to spray Rogor or Endosulfan solution @ 2 ml per litre of water.
- Present weather conditions are highly favourable for incidence of soil borne disease in nurseries. Farmers are advised to make proper drainage and start drenching of nurseries.

### **Uttar Pradesh**

- **Major Standing crops:** Summer sugarcane (vegetative) and vegetables (vegetative / fruiting), mango (fruit setting), *zaid* maize (maturity), urd, moong (maturity).
- Undertake harvesting of matured crops like maize, urd, moong and vegetables.
- 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 sowing of nursery of early and medium varieties of rice in irrigated areas.
- Undertake field preparation for sowing of maize and vegetables utilizing the realized rainfall during last week.
- Undertake weeding, intercultural operations and application of fertilizers in the standing crops like sugarcane and mentha.
- Continue field preparation and planting of turmeric and ginger.
- Undertake sowing of dhaincha as green manure crop.
- 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. 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 sowing of rice in the nursery and maize and transplanting of solanaceous 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.
- Undertake sowing of rice in the nursery and maize in the main field in Jammu, Kathua, Kashmir, Rajouri, Udampur, Kathua, Doda and Srinagar divisions.
- Details of varieties are given in Annexure I.
- Start transplanting brinjal in the main field in Jammu and Kathua regions when the seedlings are ready.
- 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 and Rajouri divisions on a non rainy day.
- **Plant Protection:** Weather conditions are congenial for mild incidences of fruit fly in vegetables in Jammu division. Undertake plant protection measures.
- 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%.

- mango hopper in mango in Jammu, Kathua and Kashmir, spray the crop with Dimethoate 30 EC @ 0.03% in 500 litres of waters.
- downy mildew in onion in Srinagar region, spray Metalaxyl @ 0.2% solution.
- Undertake plant protection measures on a non rainy day.

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

### Bihar

- **Major Standing Crops:** Sugarcane (vegetative/grand growth), summer moong, urd (maturity/harvest), sunflower, sesame (seed development/maturity), summer maize (maturity), summer vegetables (vegetative/flowering), fodder maize, jowar, lobia and sudan grass (vegetative).
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as soon as monsoon arrives over the State.
- As there was no significant rain during last few weeks in most of the districts and no significant rainfall is likely for next five days over the State, apply irrigation to the crops. Postpone irrigation in Bhgalpur and Purnea districts as there was excess rainfall during last week.
- Harvest the matured crops of maize, sesame urd and moong as dry weather is likely for the next five days.
- Undertake field preparation for sowing *kharif* rice in nursery and maize utilizing the rainfall realized during last week. Details of crop varieties are mentioned in Annexure I.
- Undertake intercultural operations, application of fertilizers and pesticides in summer vegetables, like tomato, brinjal, cauliflower, cabbage and sugarcane as dry weather is likely for the next five days.
- Farmers are advised to prepare the nursery for flower cultivation in *kharif* season.
- **Plant Protection:** Weather conditions are favourable for mild incidences of top borer in sugarcane. Spray Endosulphan 35 EC @ 1.5-2.0 ml per litre of water.

### Jharkhand

- **Major Standing Crops:** Sugarcane (vegetative/grand growth), summer maize (cob formation/maturity), moong (maturity/harvest), summer vegetables (vegetative/flowering).
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as soon as monsoon arrives over the State.
- As there was no significant rain during last few weeks and no significant rainfall is likely over the State for the next five days, apply irrigation to the crops.
- Farmers are advised to undertake sowing of flower crops like rose, ixora, gulfrena, balsam, amaranthus, cosmos, torenia and zenea and bulbous flower plants like achemenus, glory lily, ukeres, jacobian lily, japhranthus lily and terin lily etc. Spread 3 inches layer of well rotten farm yard manure or plant waste materials in furrows to conserve soil moisture.
- Farmers are advised to undertake weeding, intercultural operations in sugarcane and vegetables.
- Site selection of new orchard and digging of pit for mango, jackfruit, litch), guav), papaya and banan) may be undertaken.
- Undertake planting of turmeric and ginger.
- Rinderpest disease is common in goat during summer season. 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) and summer sunflower (maturity), summer sesame (pod formation), pulses like cowpea (pod formation), summer green gram (maturity), summer maize (cob formation) and summer groundnut (maturity), jute (early vegetative).
- As there was sufficient rainfall received during last two weeks and significant rainfall is likely for the next five days, farmers are advised to postpone irrigation to the crops.

- Harvest the matured crops of summer groundnut and green gram in bright sunny days.
- Digging of pits may be done before onset of monsoon to undertake planting of fruit trees on receipt of rain.
- Undertake nursery preparation and sowing of rice in low lands of coastal areas as these areas are receiving good amount of rainfall. Complete direct sowing in June 1<sup>st</sup> week in low land.
- Farmers are advised to undertake land preparation utilizing the rainfall received during last two weeks and undertake sowing of arhar, groundnut and cotton.
- Undertake land preparation and sowing of *kharif* crops utilizing the rainfall received during last week. Some of the promising crops for rainfed uplands are maize, cowpea, arhar, blackgram, ragi, groundnut, sesame, rice bean, castor, pumpkin and sweet potato. Arrange good quality certified seeds. Details of crop varieties are mentioned in Annexure I.
- 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.
- **Plant Protection:** Weather conditions are favourable for mild incidence of –
- leaf spot in bhindi. Spray Blitox 50 @ 2.5gms/litre of water on a non rainy day.
- mealy bug in sugarcane. Apply phorate 10 G in leaf whorls or spray Monocrotophos @ 2 ml/l on a non rainy day.
- red spider mite infestation in late transplanted brinjal. Apply Kesthane @ 3 ml/l or Omite @ 2 ml/l on a non rainy day. Repeat application after 10 days.

#### West Bengal

- **Major Standing Crops:** Sugarcane (vegetative), sesame (maturity / harvesting), green gram (maturity / harvesting), groundnut (maturity / harvesting), jute (seedling / early vegetative / vegetative) and *aus* rice (direct sowing / nursery sowing).
- As there were excess rain during last two weeks in most of the districts of the State, postpone irrigation to the crops.
- Harvest already matured crops of sesame, groundnut and green gram on bright sunny days and undertake land preparation of the harvested lands for *kharif* crops.
- Due to the cyclonic storm “AYLA”, some of the parts of South 24-Parganas district were flooded by saline water. It is required to drain out the saline water from the fields followed by reclamation of saline soils before *kharif* rice cultivation.
- Prepare land and undertake sowing of turmeric in Coastal Saline zone. Adopt spacing of 45-60 cm between the ridges and 15-25 cm between the plants. The seed rate (rhizome or finger) may vary from 250-350 kg per bigha.
- Complete intercultural operations followed by top dressing of fertilizer in jute in New Alluvial zone. For crops of three-week stage, apply 6 to 7 Kg Urea (per bigha) as first top dressing and for crops of six-week stage apply the same amount of fertilizer as second top-dressing.
- With the help of recent rainfall 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. For transplanted *aus* rice, complete seed bed preparation as early as possible.

#### Plant protection

- Recent storm and heavy rainfall along with high humidity may lead to fruit rot disease in pointed gourd and other cucurbitaceous crops to a great extent in New Alluvial zone. Remove infected leaves and fruits from the fields and apply blitox @ 4 g per litre of water. Attack of stem rot may also be increased. Apply bavistin or benlate (1 g per litre of water) to control the disease.
- Due to occasional shower and high humidity in Coastal Saline zone, the rotten areas developed on the leaf blade in betlevine may spread very rapidly covering major portion of the leaf within very short time. Spray metalaxyl 75 WP @ 1.5 g / litre of water or Bordeaux mixture (4:4:50) @ 0.5%.

- Undertake intercultural operation and application of fertilizer and plant protection measures on a non-rainy day.

### Sikkim

- **Major standing crops:** (a) **High hills: Off-Season Vegetable crops** Vegetative/Late Vegetative; **Seed Potatoes:** Vegetative/Tuberization; (b) **Medium hills: Orange:** Nursery/ Transplanting of Seedlings/ Flowering/Early Fruiting; (c) **Medium & Low Hills: Paddy:** Nursery Sowing & Land Preparation for Transplanting; **Kharif Vegetables:** Vegetative/Late Vegetative; **Maize:** Knee-High/Late Vegetative; **Large Cardamom** Transplanting of Seedlings/Secondary Flowering/Primary Capsule Formation.
- Farmers are advised to continue nursery sowing and land preparation for transplanting paddy. Nursery should be located at nearby field to avoid transportation and water should be easily available.
- 2nd round of weeding of maize crop in middle and low hills should be done on a non rainy day before initiation of cob. Earthing up should be done thereafter so that plants do not fall during strong wind. Top dressing with FYM/recommended compost may be continued.
- Earthing up and weeding may be continued on a non rainy day when the plants are 15-20 cm high. Second Earthing up should be done 15-20 days thereafter or depending upon the crop condition. FYM/recommended compost should be applied in appropriate doses after the weeding.
- 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 and mulching may be done on a non rainy day on monthly basis.
- Planting of suckers of large cardamom may be continued. 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 filled with forest leaves. Bamboo/ wooden stakes may be provided for the suckers. Overhead pandals may be erected immediately after planting of 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), direct seeded regular *ahu* rice (early vegetative / early tillering), transplanted regular *ahu* rice (transplanting), jute (early vegetative / vegetative), maize (early vegetative / vegetative) and sugarcane (vegetative).
- 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 on a non-rainy day.
- Undertake earthing up in sugarcane on a non-rainy day. Apply Urea and MOP in the field @ 26 kg per bigha and 7.5 kg per bigha prior to earthing up.
- 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.
- Farmers are advised to undertake thinning, intercultural operation and top dressing of fertilizer in jute on a non-rainy day.
- Maintain 3-5 cm stagnant water in early *ahu* rice and direct seeded regular *ahu* rice field.
- Undertake land preparation and sowing of arhar.
- 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.

- There is chance of attack of fruit fly, red pumpkin beetle and epilechna beetle in summer gourds. Spray endosulphon or malathion 50 EC @ 1 ml per litre of water on a non-rainy day in the field to control these insects.

- Details of crop varieties are mentioned in Annexure I.

#### **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**

- Prepare the fingerling rearing tanks and nurseries by cleaning them and applying agricultural lime @ 65-70 gm of basic per sq.m. for raising fingerlings. Apply cow dung @ 500 gm per sq m. at least 15 days ahead of releasing fingerlings into the tanks.

#### **Arunachal Pradesh**

- **Major Standing crops:** Maize, millet (vegetative), ginger, summer vegetables (vegetative), *jhum* rice (vegetative/early tillering), WRC rice (seedling/transplanting)
- Continue transplanting of rice with monsoon showers. Transplanting may be done when seedlings are 20-25 days old at the spacing of 20 x10cm.
- Undertake weeding, intercultural operations in early sown crops on a non rainy day.
- 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).
- South West Monsoon has arrived in over Rayalaseema and South Coastal Andhra Pradesh on 01-06-2009. Farmers in these regions are advised to undertake sowing of *kharif* crops by utilizing the monsoon showers.
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as monsoon is approaching fast over rest of the state.
- Undertake sowing of sunflower in Anantapur area by utilizing the monsoon rains.
- Foot and mouth disease 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 –

- early shoot borer in sugarcane; release parasitic complex *Trichogramma chelonis* @ 20,000 per acre at 30 days after transplantation, 4 times at 10 days interval.
- thrips and mites in chilli in Guntur, Krishna, Prakasam and West Godhavari districts; spray Acephate @ 1.5 g per litre of water for thrips and Phosalone @ 2 ml per litre of water to control the pests.

#### **Karnataka**

- **Major Standing Crops:** Annual sugarcane (cane development/maturity), green gram, black gram and cowpea (pod maturity/harvesting), groundnut (pod development/ maturity).
- Undertake sowing of *kharif* crops like green gram, red gram, bajra, sesamum, groundnut and jowar in Bijapur, groundnut, maize, cotton and red gram in Shimoga as there was sufficient rainfall during last week over the state.
- Postpone irrigation and sowing operations in Coastal Karnataka as isolated heavy rainfall is likely during next 24 hours.



- 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
- Undertake sowing/planting of rice, sugarcane and pulses in Mysore, Mandya and Chamraj Nagar districts.
- Undertake planting of ginger and turmeric and dry sowing of rice in Uttar Kannada.
- Arrange seeds and other inputs to undertake sowing of *kharif* crops like green gram, red gram, bajra, cowpea, cotton, groundnut and jowar in Raichur and Gulbarga as soon as monsoon arrives over the region.
- Continue planting of seed-nuts for coconut and arecanut in nursery in Sirsi region  
**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 spells of rain over Coastal and South Interior Karnataka and on a non rainy day in North Interior Karnataka

#### Kerala

- **Major Standing Crops:** vegetable (vegetative/flowering/fruitletting/harvesting) and plantation crops (coconut, arecanut, pepper and cashew). Summer crops (maturity/harvesting). This is proper time for sowing of rice and vegetable crops in the nursery.
- As there was no significant rain during last week over the State except in Alappuzha, Kasaragod, Kottayam and Thrissur, apply irrigation to plantation crops. Postpone irrigation in the above districts as there was excess rainfall during last week
- Undertake nursery sowing of *virippu* rice. Start transplanting when the seedlings are ready. Also plant tubers 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 pepper and cardamom in Wayanad by utilizing the monsoon rains.
- Undertake wet sowing of rice in *kari* soils in Kottayam. Complete harvesting of first season rice and summer rice.
- 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 and mulching may be continued in plantation crops. Conserve moisture by preventing evaporation due to high temperature.
- Weather conditions are favourable for the attack of leaf rust in coffee in Wyanad and aphids in cowpea in Kottayam district. Undertake plant protection measures on a non rainy day.

#### 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 except in Salem, Namakkal, Krishnagiri and Dharmapuri districts and no significant rainfall is expected during next five days over the State,

apply irrigation to the crops. Postpone irrigation in the above districts as there was excess rainfall during last week

- Complete nursery sowing of *kuruvai* rice in Cauvery deltaic areas at the earliest. Start land preparation for transplanting of rice in the main field.
- Start land preparation and transplanting of brinjal in the main field in Namakkal district.
- Undertake land preparation for sowing of crops like cotton in Thirunelveli, Thooththukkudi and Virudhunagar districts.
- Details of varieties are given in Annexure I.
- Undertake earthing up operations in sugarcane in Thirunelveli district
- Undertake sowing of vegetable crops in nursery for transplanting during monsoon in Kanyakumari district.

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

- leaf spot 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.
- boll worm, mealy bug and stem weevil in irrigated cotton, thrips in chilli and aphids in maize in Thirunelveli, Thooththukkudi and Virudhunagar districts; undertake plant protection measures to control the pests.

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

### Maharashtra

- **Major Standing Crops:** Summer rice (harvesting in Konkan, grain maturity in East Vidarbha), summer groundnut (harvesting), summer maize (cob maturity / harvesting), summer sunflower (harvesting) and summer bajra (harvesting in Pune, Nashik & Aurangabad divisions), *kharif* rice (sowing / nursery sowing / germination in South Konkan & Kolhapur division)
- As there was no significant rain during last week and no significant rainfall is likely to occur in most of the districts of the State during next five days, apply irrigation to the standing crops.
- As dry weather is prevailing, continue harvesting of already matured summer crops & complete the harvesting as early as possible.
- Land preparation may be carried out for new plantation of fruit crops like mango, cashew, coconut, areca nut, etc. in South 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. Pit size should be 1 x 1 x 1 m for mango and 0.6 x 0.6 x 0.6 m for cashew.
- For preparation of seedlings of onion, tomato, brinjal and chilli prepare raised beds of suitable size. Sowing of improved varieties may be done with the help of pre-monsoon showers.
- Sowing of *kharif* (drill) rice should be carried out in Sub Montane zone. Before sowing treat rice seeds with 3% Brine solution for 5 – 10 minutes and apply fungicide Thirum @ 3 – 5 g per kg of seeds. Also prepare nurseries for rice seedlings.
- Complete preparatory tillage with the help of pre-monsoon showers. Planning for *kharif* season i.e. selection of crops & varieties, arrangement of seeds and fertilizers should be done immediately in view of onset of monsoon.
- Details of crop varieties are mentioned in Annexure I.

### Plant protection

- There is possibility of infestation of powdery mildew on bhindi and *guar*. For avoiding damage spray sulphur @ 2 g in 1 liter water. Next spraying should be within 10 to 12 days.
- There is chance of infestation of shoot borer in sugarcane. For the control spray Endosulfan 35 EC @ 15 ml in 10 liters of water.

### Fishery

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

## Gujarat

- Major Standing Crops: Sugarcane (vegetative), vegetables (vegetative / flowering / fruiting / harvesting), groundnut (seed maturity / harvesting), pearl millet (grain maturity / harvesting) and green gram, black gram, cow pea, cluster bean (pod maturity), *kharif* vegetables (sowing), *kharif* rice (nursery sowing).
- As there was no significant rain during last few weeks over the State and mainly dry weather is likely to prevail for next five days, apply irrigation to the standing crops.
- Undertake harvesting of matured crops of groundnut, pearl millet, green gram etc. as prevailing dry condition is favourable for harvesting.
- As there is no possibility of rain, undertake intercultural operation to keep the fields weed free.
- As dry condition is prevailing, farmers are advised to undertake intercultural operation and apply nitrogen fertilizer (87.5 kg nitrogen / ha) followed by earthing up in sugarcane. Provide straw mulching to conserve soil moisture.
- Harvest the matured fruits of vegetable crops in the morning hours.
- Prepare rice nursery with soil having irrigation facility and good fertility level. 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.
- Prepare land and undertake pre monsoon sowing of cotton with assured irrigation facilities.
- Undertake deep ploughing to prepare the land for *kharif* sowing. This will help for natural control of soil borne pathogens and pest.
- As there is chance of infestation of thrips in chilli in North Sourashtra region, to control thrips and associated leaf curling, spray trisophos @ 15 ml / 10 litres of water.

### Animal Husbandry

- Make arrangements for shade with proper ventilation to protect the animals from sunlight and temperature.

### Poultry

- Put curtains on west direction in poultry shed and spray water on them during noon hours to avoid heat stress.

## Rajasthan

- **Major Standing Crops:** vegetable crops (flowering / fruiting).Sowing of crops like groundnut and transplanting of chilli is in progress.
- As there was no significant rain during last few weeks and mainly dry weather is likely to prevail during next five days over the State, apply irrigation to the crops.
- Protect the standing crops by providing mechanical support/hail net as thundersquall with hail is likely over north Rajasthan.
- 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 cotton in Bhiwara, Chittorgarh, Sirohi and Udaipur.
- Undertake 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. Select Varieties are Pusa Jwala, N.P.46-A, Pant C-2, Pusa Sadabahar, G-3, G-5 and RCH-1. Varieties for Shimla Mirch are yellow wonder, California wonder, Bulnose and Arka Mohini.
- 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.
- termite in onion in Ajmer, Dausa, Jaipur and Tonk districts; spray Endosulfan 35 EC or Chlorpyrifos 25 EC @ 4 litre per hectare.
- stem borer in okra in Udaipur, Bhilwara and Chittorgarh districts; spray Endosulfan 35 EC @ 1.5 ml / lit of water.
- mites in cucurbit, brinjal, tomato in Sikar, Fatehpur and Jhunjunu, spray Formothyon 25 EC or Methyldematon 25 EC @ 1000 ml/ha or Dicopal 18.5 EC @ 1250 ml /ha.
- collar rot in tomato, okra, chilli and vegetable guar in Ajmer, Dausa, Tonk and Jaipur. Broadcast Blitox-50@8 kg/ha near roots and immediately provide light irrigation.
- bark eating caterpillar in mango, ber & aonla in Ajmer, Dausa, Tonk and Jaipur spray Endosulfan @ 1.5 ml per litre water.
- fruit borer in tomato, brinjal and bhindi in Banswara, spray 2 ml Endosulphan 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).
- Arrange seeds and other inputs to undertake sowing of *khariif* crops like paddy, maize, jowar and soybean as soon as monsoon arrives over the state.
- As there was no significant rain during last few weeks and no significant rainfall is likely to occur in the next five days over the State, apply irrigation to the crops.
- Undertake planting of chilli in Indore, Mandasaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh districts.
- Undertake planting of sugarcane in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- Undertake sowing of ginger in Jhabua and Dhar.
- Details of varieties are given in Annexure I.
- Undertake intercultural operations in early sown maize, sorghum, jowar, moong, urad, sunflower and vegetables like ladies finger, cow-pea, tomato, brinjal, chilli and cucurbitaceous crops in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts for raising summer season crops.
- **Animal Husbandry:** Provide proper ventilation and clean water to cattle and arrange for vaccination to save them from infectious diseases in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- 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), summer rice (grain maturity / harvesting), groundnut, sunflower and sesame (maturity / harvesting), and green gram (pod maturity / harvesting).
- As there was no significant rain during last few weeks over the State and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to the crops. Farmers, who have drip irrigation system, are also advised to regulate the discharge rate of the system for proper water management.

- Wherever irrigation facilities are available, farmers are advised to irrigate the fields so that the nursery sowing of rice can be done after first week of June.
- As the *kharif* season is approaching, farmers are advised to ensure the arrangement of inputs like seed fertilizers etc., before the onset of monsoon. Farmers are also advised to use certified seeds of improved / high yielding varieties for sowing of *kharif* crops for higher production.
- After harvesting of rice, sunflower, groundnut etc., summer ploughing is advised wherever sufficient moisture is available in the fields. It will help in effective pest / weed management for the coming *kharif* crops due to soil solarisation.
- During the first week of 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.



## Annexure I

### Crop varieties

#### Himachal Pradesh

- **Ageti bhindi:** P-8, Prabhini kranti, Arka anamika.
- **French bean:** Contender.
- **Brinjal:** Arka Nidhi, PPC.
- **Capicum:** California Wonder.
- **Peper:** Surjmukhi.
- **Ladies finger:** Harbhajan, Pusa Savani and P-8.
- **Raddish:** Pusa Chetakin, Early Minowwhite.

#### Uttarakhand

- **Rice:** VL-Dhan -154, Vivek Dhan -62, Vivek Dhan-65, VL Dhan-81, Vivek Dhan-82 and VL-Dhan-85
- **Ragi:** VL- Mandua-124 and VL-149, VL- Mandua-204, Pant Mandua-3, PES-176, PES-110, VL- Mandua-146
- **Bhindi:** VL Bhindi-1
- **Maize:** Ganga-2, Gannga-5, Pusa Hybrid-1, Pusa Hybrid-2 and Composite varieties like Gaurav, Amar and Surya.

#### Punjab

- **Rice:** PAU 201, PR 120, PR 118, PR 116, PR 114, PR 113, PR 111, PR 115 etc.
- **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.

#### Delhi

- **Cauliflower:** Pusa Megha and Pusa Kranti Sankar.
- **Beans:** Pusa Beans -3.
- **Cluster bean:** Pusa Sadabahar and Pusa Navbahar.
- **Pigeon pea:** Pusa 2001, Pusa 991 and Pusa 992, Paras manak, UPAS 120.
- **Rice:** Pusa Basmati 1, Pusa Sugandh 2 & 3.

#### Uttar Pradesh

- **Rice :** Aswani, Manhar, Saket-4, Govind, Narendra-118, Narendra-97

#### 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)
- **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.

#### 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.
- **Arhar:** T-21.

#### Tamilnadu

- **Cotton:** MCU 5, SVPR 2 and LRA 5166
- **Black gram:** Vamban-4, and Vamban-5
- **Green gram:** Co-7, Vamban-2
- **Bajra:** WCC 75, Co 7

#### Gujarat

- ***Kharif* rice:**
  - **Early maturing cultivars:** Sukhvel–20, GR-3, 4, 6, 7.
  - **Late maturing cultivars:** GR–101, 102, 103, 104, Narmada and Masuri

#### 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.

#### 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.
- ***Kharif* maize:** Ganga-11, Deccan-105, Trisulata, Pro-311, Bio-9681, Samishra, Dhaval, African tall.

#### Madhya Pradesh

- **Sugarcane:** Co Jawahar-86141, Co Jawahar-86572, Co Jawahar-86600, Co 86032.