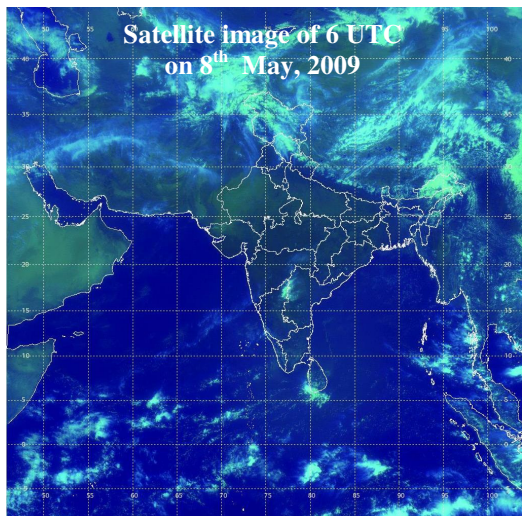




# National Agromet Advisory Bulletin

Thursday, 7<sup>th</sup> May, 2009

(For the period 7<sup>th</sup> to 11<sup>th</sup> May, 2009)



## Chief Synoptic Feature (Based on 1430 hours IST observations of 7<sup>th</sup> May 2009)

- A fresh western disturbance is likely to affect northwest India on 9<sup>th</sup> & 10<sup>th</sup>.
- The current meteorological analysis indicates a rise of 2-3°C in maximum temperatures over northwest and central India during next 48 hours.
- The current meteorological analysis and numerical weather prediction models suggest that scattered thunderstorm activity is likely over northeastern states during next 3-4 days.
- Numerical weather prediction models also suggest thunderstorm activity over Uttar Pradesh, east and adjoining central India on 11<sup>th</sup> & 12<sup>th</sup>.

## Forecast for the 2009 South-west monsoon rainfall

IMD's long range forecast for the 2009 south-west monsoon season (June to September) is that the rainfall for the country as a whole is likely to be Near Normal.

Quantitatively, monsoon season rainfall is likely to be 96% of the long period average with a model error of  $\pm 5\%$ .

## Salient Advisories

### Advisories for Severe heat wave/heat wave

- As severe heat wave/heat wave prevailed during the preceding weeks over Rajasthan, Madhya Pradesh, Chhattisgarh, Vidarbha, Delhi, Punjab, Haryana and West Uttar Pradesh and maximum temperature is likely to increase by 2-3°C during next 48 hours with no possibility of significant rain over these areas, apply light and frequent irrigation to the crops to avoid the adverse effects of high temperature.

### Advisories for sowing

- As rain is likely to occur at a few places during next 48 hours and at many places thereafter over the North East

### Advisories for irrigation

- As rain is likely to occur at a few places during next 48 hours and at many places thereafter over the North Eastern States, farmers are advised to postpone irrigation and agricultural operations like fertilizer and pesticides application.
- 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 fly in vegetables in Jammu division.
  - leaf miner, mites and thrips in summer groundnut in Karnataka.
  - yellow mosaic in urd and moong in Uttarakhand.
  - Early shoot borer in sugarcane in Andhra Pradesh.
- Monitor the crops for the pest and disease incidences and undertake plant protection measures, if required.

Issued by


National Agrometeorological Advisory Service Centre,

Agricultural Meteorology Division, India Meteorological Department, Shivajinagar, Pune.

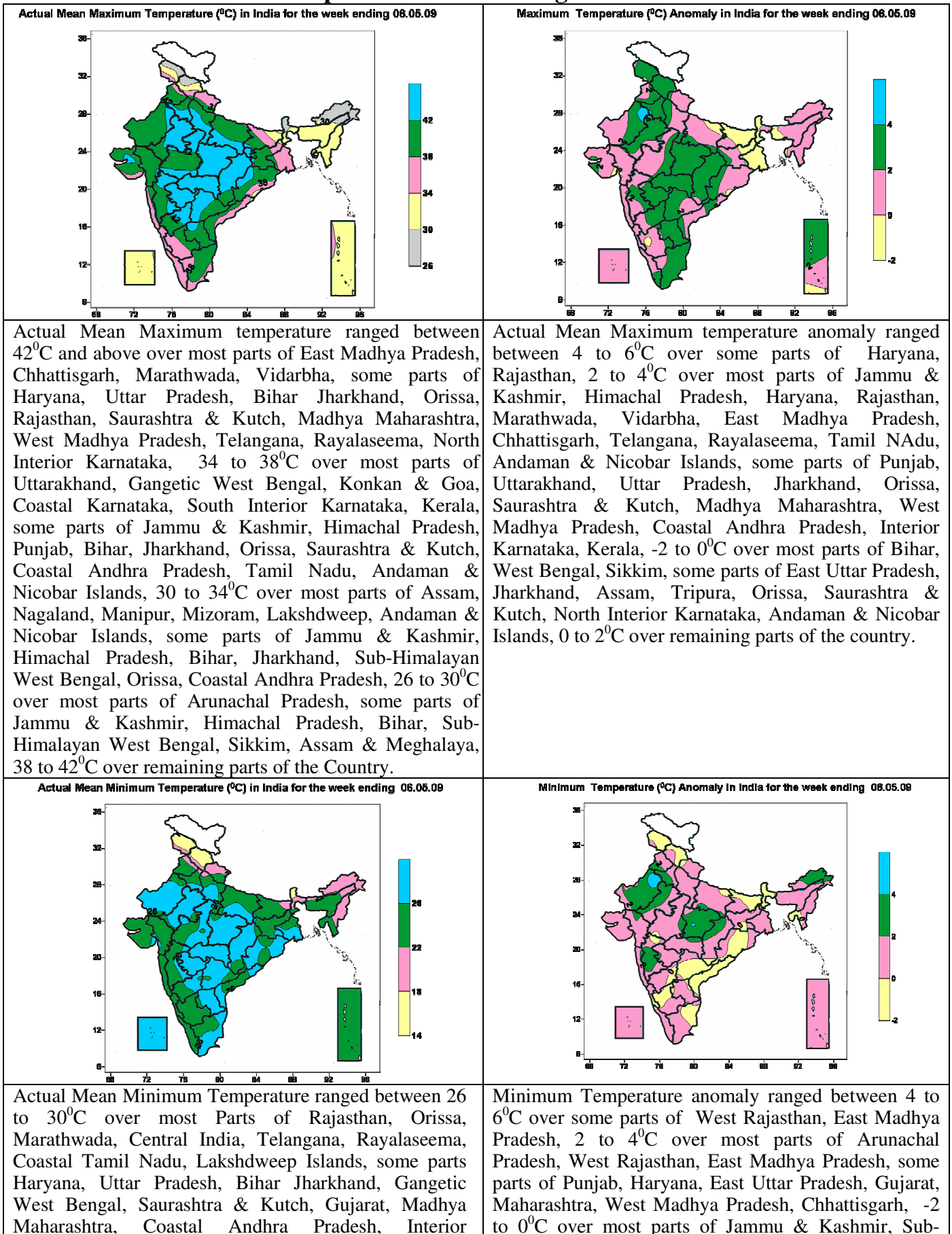
The bulletin is also displayed in the website (<http://www.imdaqrimet.org>) of the Division

<b>Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks</b>					
<b>Sub-division</b>	<b>Cumulative Rainfall (% Dep.) for the period</b>				
	<b>8<sup>th</sup> April</b>	<b>15<sup>th</sup> April</b>	<b>22<sup>nd</sup> April</b>	<b>29<sup>th</sup> April</b>	<b>6<sup>th</sup> May</b>
A & N Islands	87	756	93	-86	-45
Arunachal Pradesh	-34	-84	-21	-77	-61
Assam and Meghalaya	15	-82	31	-65	-9
NMMT	4	-88	44	-92	-27
SH West Bengal & Sikkim	211	-42	112	-90	-19
Gangetic West Bengal	-100	-96	-99	-97	-28
Orissa	-98	-87	-90	-97	-53
Jharkhand	-90	-84	-100	-100	-14
Bihar	-90	-82	-84	-100	-51
East Uttar Pradesh	-100	-23	-100	-100	48
West Uttar Pradesh	-78	662	-100	-100	-89
Uttarakhand	-48	68	-100	-100	-18
Haryana, Chandigarh & Delhi	-29	467	-89	-100	-8
Punjab	302	206	-92	-100	-14
Himachal Pradesh	73	-7	-5	-98	75
J & K	145	48	-54	-98	61
West Rajasthan	-100	-99	-97	-100	-65
East Rajasthan	-83	-97	-100	-100	-96
West M. P.	25	-76	-100	-100	179
East M. P.	-62	46	-100	-100	-99
Gujarat region	-100	-100	-100	-100	-100
Saurashtra & Kutch	-100	-100	-100	-100	-100
Konkan and Goa	-100	-100	-100	-100	-100
Madhya Maharashtra	-86	-99	-100	-100	-100
Marathwada	-48	-96	-100	-100	-100
Vidarbha	-94	26	-100	-100	-100
Chhattisgarh	-99	-61	-100	-100	-84
Coastal A. P.	-100	-69	-91	-75	120
Telangana	-64	-76	-71	-31	-16
Rayalseema	-100	-100	-67	-68	-50
TamilNadu & Pondicherry	-96	119	-16	-67	-49
Coastal Karnataka	-8	18	-93	-21	-77
N. I. Karnataka	5	-78	-60	-67	-74
S. I. Karnataka	-83	-81	2	-40	-46
Kerala	-48	-15	-50	-59	-51
Lakshadweep	-99	23	-100	-81	-78

The subdivisions like Arunachal Pradesh, Gangetic West Bengal, Orissa, Bihar, Rajasthan, Gujarat, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Marathwada, Chhattisgarh, Rayalaseema, received scanty / deficient rain in all the 5 weeks; Jharkhand, Uttar Pradesh, East Madhya Pradesh, Vidarbha, Coastal Andhra Pradesh, Telangana, North & South Interior Karnataka, Kerala and Lakshadweep Islands received scanty / deficient rain in 4 out of last 5 weeks; Nagaland-Manipur-Mizoram-Tripura, Uttarakhand, West Madhya Pradesh, Haryana, Chandigarh & Delhi, Tamil Nadu & Pondicherry and Coastal Karnataka, received scanty / deficient rain in 3 out of last 5 weeks. Remaining States received normal / excess rain in 3 or more weeks during last 5 weeks.

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

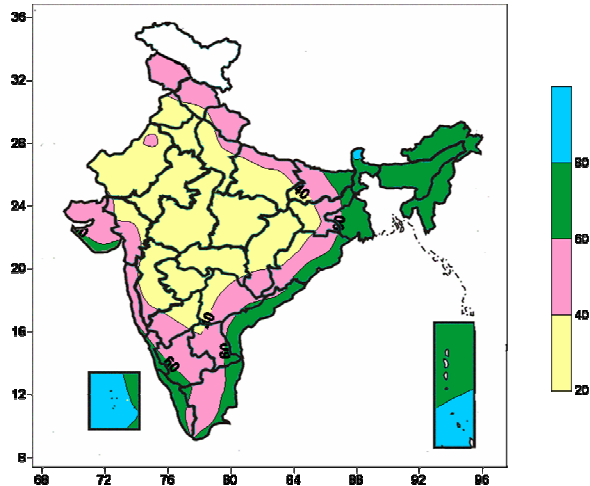
## Contour maps for the week ending 06.05.09



Karnataka, 18 to 22 °C most parts of Arunachal Pradesh, Nagaland, Manipur, some parts of Jammu & Kashmir, Himachal Pradesh, Uttrakhand, Punjab, Haryana, West Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Assam & Meghalaya, Mizoram, 14 to 18 °C over most parts of Jammu & Kashmir, Himachal Pradesh, Sikkim, 22 to 26 °C over remaining parts of country.

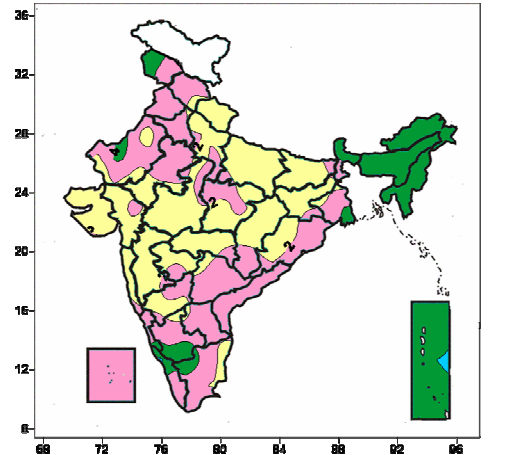
Himalayan West Bengal, Sikkim, Tripura, Central Orissa, Coastal Andhra Pradesh, Telangana, some parts of Himachal Pradesh, Uttrakhand, East Uttar Pradesh, Bihar Jharkhand, Mizoram, Madhya Maharashtra, West Madhya Pradesh, Chhattisgarh, Rayalaseema, Karnataka, Kerala, Tamil Nadu, 0 to 2 °C over remaining parts of the Country.

**Relative Humidity (%) over India for the week ending 06.05.09**



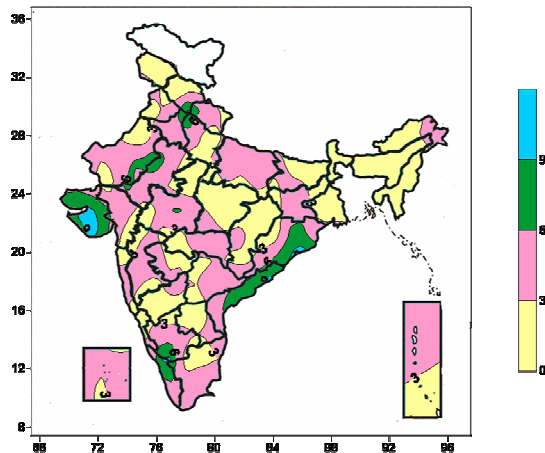
Relative humidity more than 80% to 100% over most parts of Lakshadweep Islands, some parts of Sikkim, Andaman & Nicobar Islands, 60 to 80% over most parts of West Bengal, Northeast India, Coastal Orissa, Coastal Andhra Pradesh, Coastal Tamil Nadu, Kerala, Coastal Karnataka, , Andaman & Nicobar Islands, some parts of Bihar, Jharkhand, Saurashtra & Kutch, Telangana, Rayalaseema, South Interior Karnataka, Lakshadweep Islands, 20 to 40% over most parts of Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Madhya Maharashtra, Marathwada, Central India, some parts of Himachal Pradesh, Uttrakhand, Bihar, Jharkhand, Orissa, Gujarat, Telangana, Rayalaseema, North Interior Karnataka, 40 to 60 % over remaining parts of the country.

**Cloud amount (okta) over India for the week ending 06.05.09**



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

**Wind speed (knots) over India for the week ending 06.05.09**



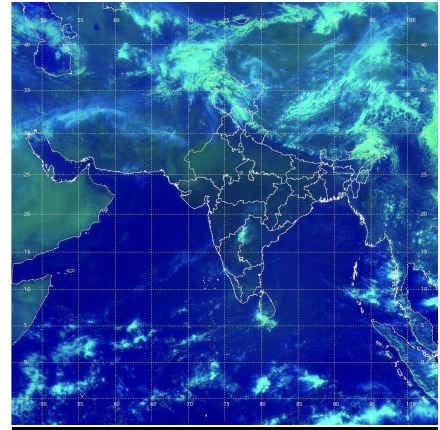
Wind speed ranged between 9 to 12 knots over some parts of Saurashtra & Kutch, Orissa, 6 to 9 knots over most parts of Saurashtra & Kutch, Coastal Andhra Pradesh, some parts of Himachal Pradesh, Uttrakhand, Haryana, West Uttar Pradesh, Orissa, Rajasthan, South Interior Karnataka, Kerala, 0 to 3 knots over most parts Jammu & Kashmir, Bihar, West Bengal, Sikkim, Northeast India, East Madhya Pradesh, Chhattisgarh, North Interior Karnataka, some parts of Himachal Pradesh, Uttrakhand, Punjab, Uttar Pradesh, Jharkhand, Orissa, Rajasthan,

Gujarat, Maharashtra, West Madhya Pradesh, Coastal Karnataka, South Interior Karnataka, Telangana, Rayalaseema, Tamil Nadu, Lakshdweep, Andaman & Nicobar Islands, 3 to 6 knots over remaining parts of the country.

**Chief Synoptic Feature (Based on 1430 hours IST observations of 7<sup>th</sup> May, 2009)**

**Satellite image of 6 UTC on 8<sup>th</sup> May, 2009**

- A fresh western disturbance is likely to affect northwest India on 9<sup>th</sup> & 10<sup>th</sup>.
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**Zone-wise Forecast (Forecast valid upto 1430 hours IST of 10<sup>th</sup> May, 2009)**

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

- Rain/thundershowers are likely at isolated places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 48 hours and at a few places thereafter.
- Isolated duststorm/thunderstorm is likely over Rajasthan.
- Isolated rain/thunderstorm is likely over Punjab during next 48 hours and at a few places thereafter.
- Isolated thunderstorm is likely over the rest region from 9th onwards.

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

- Rain/thundershowers are likely at isolated places over West Bengal & Sikkim, Orissa and Jharkhand.
- Mainly dry weather is likely over the rest region.

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

- Rain/thundershowers are likely at a few places over the region during next 48 hours and at many places thereafter.

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

- Rain/thundershowers are likely at a few places over Andaman & Nicobar Islands, Kerala, Coastal & south interior Karnataka and Lakshadweep.
- Rain/thundershower is likely at isolated places over Tamilnadu, north interior Karnataka and Coastal Andhra Pradesh.
- Mainly dry weather is likely over the rest region.

**WEST INDIA [GOA, MAHARASHTRA (OTHER THAN VIDARBHA), GUJARAT, RAJASTHAN]**

- Isolated rain/thunderstorm is likely at isolated places over south Madhya Maharashtra during next 48 hours and mainly dry weather thereafter.
- Mainly dry weather is likely over the rest region.

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

- Mainly dry weather is likely over the rest region.

**WARNING: (For next 24 hours)**

- Isolated thunder squall is likely over West Bengal & Sikkim, Orissa and northeastern states.

**Weather Outlook from 1430 IST of 10<sup>th</sup> May, 2009 to 1430 IST of 12<sup>th</sup> May, 2009 (Based on numerical weather products):**

- Scattered rain/thundershowers activity is likely over western Himalayan region 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), wheat (grain maturity), barley and oat (maturity), oil seeds (pod formation/maturity), potato (planting / vegetative / tuber formation), cabbage, cauliflower and broccoli (head formation), pea (pod formation / early maturity), leafy vegetables like lettuce, methi, palak, dhania etc. (vegetative).
- 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 should be carried out and required fertilizers should be added in the basin.
- Apply well decomposed compost to tea plants @ 15 quintals per kanal. Delay the fertilizer applications as soil is dry and no significant rain is expected in next five days. Make preparation for tea plucking.
- Harvest the matured crops of potato and wheat as weather is favourable for harvesting.
- Transplanting of tomato and capsicum may be undertaken.
- To have green fodder in summer, it is optimum time for sowing of chari, bajra and maize in low hills. For seed crop of berseem and oat one cut can be taken.
- It is advised for nursery sowing of khira, summer squash, bitter gourd, tori, tomato, chilli, capsicum, brinjal and pepper in poly houses.
- It is time for sowing of bhindi and French bean in the field.
- It is optimum time for plantation of gladiolus and liliun. It is also optimum time for raising nursery of summer flowers viz. China aster, glardia, rudevekia, Kochia, African Marigold, French Marigold, partulaca, Tithinia, Torinia and cleome etc.
- Details of crop varieties are mentioned in Annexure I.

### Plant protection

- There is report of attack of late blight of potato and infestation may increase due to congenial weather condition. For the control of late blight of potato spray Dithane M-45 @ 25 g in 10 litres of water and repeat the spray at 10-15 days interval.
- Aphids are appearing in the seed crop of cole crops and there is also chance of increase of the infestation under prevailing weather. For control, spray Rogor @ 1 ml per litre of water.
- As there is chance of attack of Sanjose scale, thrips etc. under prevailing weather condition, to control apply tree spray oil (Servo Orchard Spray oil or Hindustan Petroleum Spray oil) @ 4 litres +4 ml Durmat in 200 litres 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.

### Uttarakhand

- **Major Standing Crops:** Sugarcane ratoon (early vegetative), cabbage, onion, garlic, tomato (vegetative) and summer sunflower, moong, urd (vegetative).
- 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.
- Farmers are advised to go for deep ploughing of their fields for increasing its soil physical condition, controlling insects, pests, diseases in fields vacated after harvesting of wheat.
- Due to dry weather go for irrigation for enhancing fruiting in mango, litchi and lemon trees. In order to retaining more fruits on mango trees, spray NAA @ 40 mg per litre of water as second spray and also borax @ 8 g per litre of water.

- Farmers are advised to continue sowing of *chiatee dhan* in nursery with improved varieties under rainfed conditions at 1500 m height.
- Continue sowing of maize and cowpea (lobia) varieties as green fodder crops with irrigation facilities. Details of varieties are given in Annexure I.
- Undertake weeding, intercultural operations and top dressing in earlier sown chaiti dhan and vegetable crops.
- Farmers are also advised to continue sowing of bhindi.
- Protect the animals from heat stroke by providing adequate shading and water.
- **Plant Protection:** Weather conditions are favourable for mild incidences of white fly to spread yellow mosaic in urd and moong. Spray Metasystox @ 400 ml per acre. Spraying after 9<sup>th</sup> May is advised on a non rainy day as there is chance of rain.

### Punjab

- **Major Standing Crops:** Horticultural crops (vegetative), spring sugarcane (early vegetative/vegetative), wheat (maturity/harvesting), pea and vegetable crops like chilli, tomato, brinjal, bhindi and onion (early vegetative), oilseeds (harvesting), summer pulses, sunflower (vegetative/flowering)
- Undertake weeding, intercultural operations in sugarcane. Irrigate the sugarcane crop at 8-10 days interval for getting better growth of the crop. Provide straw mulching in between the rows to conserve the soil moisture.
- As there was no significant rain during last few weeks and no significant rainfall is likely to occur over the State, apply irrigation to the crops.
- Continue harvesting of matured crops as the weather is favourable for harvesting. Farmers are advised to store the harvested produce at a specific moisture level in dry or insect free bins.
- After the harvest of wheat crop, groundnut may be sown upto the first week of May, after applying rauni irrigation. Treat the seed before sowing with 12.5 ml of Dursban 20 EC (Chlorpyrifos) per kg of kernels.
- Undertake sowing of fodder crops in mixture i.e. maize + cowpeas. For getting good growth of fodders, provide irrigation at regular interval.
- Farmers are advised to undertake sowing of radish. Details of crop varieties are mentioned in Annexure I.
- The evergreen fruit plants like citrus, mango, litchi, guava and ber may be planted in the field.
- The fruit growers are advised to whitewash the trunk, if not done earlier. Provide shelter to young tree and give frequent irrigation to save their fruit trees from drought, windstorm and sun scorching. Apply second dose of inorganic fertilizers to citrus and grapes.
- The animals have to be vaccinated immediately against gal ghotu, black quarter. Keep the animals in shade and provide clean fresh drinking water. Animal should not be made to work during peak hours of summer. Due to sun stroke or if an animal starts bleeding from nose, do not disturb it much and pour ice cold water over face and head and keep its head lifted.
- **Plant Protection:** Summer moong is severely attacked by thrips. Spray the crop with 100 ml of Rogar 30 EC in 80-100 litres of water per acre at flower bud initiation stage. Spraying after 9<sup>th</sup> May is advised on a non rainy day as there is chance of rain.

### Haryana

- **Major Standing Crops:** Spring sugarcane (early vegetative/vegetative), vegetable crops (early vegetative), summer pulses, sunflower (vegetative/flowering).
- Continue threshing of wheat as weather is favourable.
- As there was no significant rain during last few weeks and no significant rainfall is likely to occur over the State, apply irrigation to the crops.
- Apply 45 kg urea or 80 kg CAN/acre to sugarcane. In ratoon crop, apply 65 kg urea/acre. Undertake hoeing and weeding and conserve soil moisture by application of mulches. Irrigate the crop at 10-15 days interval for getting better growth of the crop.

- Complete sowing of berseem, summer fodder, also undertake sowing of bajra, lobia, sudan and napier grass for fodder.
- Farmers are advised to prepare the field for cotton sowing and start the sowing of *desi* cotton and american cotton. If farmers are interested to sow BT Cotton, use BT varieties approved by Haryana Government. Farmers are advised to harvest the mustard crop and after that prepare the field for sowing of cotton crop.
- Farmers are advised to prepare the field and continue sowing of cucurbits. Details of crop varieties are mentioned in Annexure I.
- Undertake intercultural operations in tomato, onion and chilli.
- The newly planted young fruit plants should be irrigated at frequent interval. Young plants may be given nitrogenous fertilizer in small split dose. Undertake planting of fruit crops like citrus, mango, litchi, guava and ber.
- Farmers are advised to feed the animals with 50 to 100 grams good quality mineral mixture. Vaccinate against sheep pox as per veterinarian advice.

### Delhi

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), gram (grain maturity / harvesting), wheat (grain maturity / harvesting), green gram (early vegetative / vegetative).
- As there was no significant rain during last week and no significant rain is likely to occur during next five days along with high temperature, farmers are advised to apply light and frequent irrigation to *lobia*, green gram and the vegetables like bhindi, brinjal, chilli etc.
- As condicive weather is likely to prevail for next five days, farmers are advised to complete harvesting of already matured crops of wheat, gram etc. Harvesting should be done very early in the morning as moisture present at that moment helps to prevent shattering of grains.
- Early threshing after harvest of the crops is advised. Grains and seeds are to be dried to their recommended moisture content.
- Farmers are advised to start harvesting of cucurbits, which turns yellowish and apply light irrigation at weekly interval.
- Farmers are advised not to harvest the mature crop of onion for the next three to four days as weather is not conducive
- Progressive farmers, who want to grow cotton, are advised to start preparing fields and procurement of quality seeds along with fertilizers.
- For green manures, sowing of barseem may be started maintaining high seed rate for sowing.
- Present weather conditions are highly conducive for incidence of downey mildew in cucurbits. Spray Redomil @ 2 ml / litre to control the disease.

### Uttar Pradesh

- **Major Standing crops:** Summer sugarcane and vegetables (early vegetative), mango (fruit setting), *zaid* maize (early vegetative/vegetative), urd, moong (vegetative), vegetables (early vegetative).
- Undertake harvesting of matured crops like garlic, sugarcane and rai.
- 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.
- Undertake weeding, intercultural operations, application of fertilizers and pesticides in the standing crops like *zaid* maize, pulses, sugarcane, fodder, garlic, brinjal, tomato and chilli.
- Prepare the field for undertaking sowing of turmeric and ginger.
- Top dressing of remaining dose of nitrogen 40-50 kg/hectare may be done in mentha crop and first cutting of crop may be done for extracting oil.
- 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:** Wheat (grain development / maturity / harvesting), pulses (pod maturity), mustard (capsule maturity). This is proper time for planting of orchard tree saplings in Jammu and Rajouri and sowing of rice in the nursery.
- Farmers are advised to continue harvesting of matured crops like wheat and pulses as weather is favourable for harvesting in Jammu, Kashmir, Rajouri, Udampur, Kathua and Doda divisions.
- Undertake sowing of rice in the nursery in Kashmir, Rajouri, Udampur, Kathua and Doda divisions.
- 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 on a non rainy day.

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

### Bihar

- **Major Standing Crops:** Sugarcane (vegetative), *rabi* maize (cob maturity), wheat (harvesting), *boro* rice (flowering / grain formation), summer moong, urd, sunflower, sesame (vegetative/flowering), summer vegetables (vegetative).
- As there was no significant rain during last few weeks and mainly dry weather is likely for next five days over the State, apply irrigation to the crops.
- Avoid moisture stress in summer vegetables by maintaining adequate soil moisture as moisture stress at this stage affects the yield of these crops.
- Undertake intercultural operations, application of fertilizers and pesticides in summer vegetables, tomato, brinjal, cauliflower, cabbage, summer maize, moong, urd, sunflower and *boro* rice.
- Farmers are advised to complete sowing of fodder maize, jowar, lobia and sudan grass.
- Undertake deep summer ploughing in fallow land for moisture conservation to suppress weeds, insects population infestation.
- Continue harvesting of maize and wheat as dry weather is likely for the next five days. Thresh harvested wheat and store grain below 12% moisture level.
- Maintain 5 – 7 cm standing water in *boro* rice field.
- **Plant Protection:** Weather conditions are favourable for mild incidence of
- powdery mildew in the mango orchards. Spray wettable sulphur (0.2 %) to control the disease.

### Jharkhand

- **Major Standing Crops:** Sugarcane (vegetative), wheat (maturity / harvesting), summer maize (cob formation), moong (flowering), summer vegetables (early vegetative) and rice (grain formation).
- 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.
- Undertake sowing of dhaincha as green manure crop.
- Harvest the matured crops of wheat as the weather conditions are favourable for harvesting.
- Farmers are advised to undertake weeding, intercultural operations in summer rice, moong, sugarcane, maize and vegetables as weather conditions are favourable for undertaking these operations.

- Maintain continuous standing water of 5 – 7 cm depth in summer rice field.
- Continue planting of *colacasia* as the weather is favourable and it is the right time for the cultivation of *colocasea* crop on upland.
- 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), sunflower, mustard (maturity), vegetables (fruiting / harvesting), onion (vegetative) and summer rice (grain formation), summer sunflower (vegetative/flowering), summer sesame (vegetative / flowering / pod formation), pulses like cowpea (vegetative), summer green gram (vegetative / flowering), summer maize (vegetative / tasseling / silking) and summer groundnut (pegging / pod formation).
- 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. Sprinkler irrigation should be provided to the orchard crops and vegetables.
- Farmers are advised to go for summer ploughing in places received soaking rainfall to reduce weed infestation, to destroy eggs and larvae of hibernated soil insects and to increase soil profile recharge.
- Undertake sowing of baby corn. Select suitable Hybrid varieties. Use 10-12 kg seeds/acre.
- Continue sowing of bhindi as weather conditions are favorable for bhindi sowing.
- Undertake sowing of fodder maize and cowpea as mixed cropping.
- As weather conditions are favourable, go for ginger and turmeric planting.
- As weather conditions are favourable for jute sowing, undertake sowing in Anandpur subdivision.
- Maintain 3 – 5 cm standing water in the summer rice field.
- Continue planting of pine apple, tuberose and marigold as weather conditions are favourable.
- Transplanting of vegetables should be done in afternoon hours as heat wave conditions are prevailing and place the paper cap over the freshly transplanted seedlings.
- Farmers are advised to complete planting of papaya. Details of crop varieties are mentioned in Annexure I.
- As the temperature is rising day by day, cows and buffaloes should be kept in cattle shed during day time and provide them sufficient water to drink.
- **Plant Protection:** Weather conditions are favourable for mild incidence of –
- fruit borer and aphids in cowpea. Apply Endosulphan @ 2. 4 litre / acre in 200 litre of water.
- shoot borer in sugarcane, for which *Trichogramma* can be released in the field @ 20000 / acre. Release the parasites 2-3 times at an interval of 7 days.
- There has been high incidence of BPH and WBPH in rice. Immediately dry the field and spray Monocrotophos or Phosalone or Fipronil @ 400 ml/acre in 200 litres of water. Attention should be given on spraying at the basal portion of the plant. A mixture of Acephate and Buprofezin can also be sprayed.

### West Bengal

- Major Standing Crops: Sugarcane (planting / vegetative), *boro* rice (grain maturity), sesame (flowering / pod formation / maturity), green gram (flowering), groundnut (pegging / pod formation) and jute (seedling).
- As there was no significant rain during last week in most of the districts except in 24 Pargana (N), Coochbehar, Darjeeling, Jalpaiguri and Malda and no significant rain is likely to occur during next five days, apply irrigation to the standing crops.
- Provide mechanical support to crops to prevent from thunder squalls
- Harvest the matured crops of early sown *boro* rice in Gangetic Alluvial zone, Vindhyan Alluvial zone and Coastal Saline zone as weather is favourable for harvesting.
- As congenial weather is likely to prevail, farmers are advised to undertake intercultural operation to keep the fields weed free.

- Keep 5 to 7 cm standing water in late sown *boro* rice field.
- Undertake sowing of rice in the nursery for *kharif* rice and planting of ginger and turmeric in the main field in Vindhyan Alluvial zone. Harvest matured crops of black gram and green gram.
- Undertake planting of elephant foot yam in Coastal Saline zone. Details of crop varieties are mentioned in Annexure I.
- Continue thinning operation and maintain proper plant population in early sown crops of jute. Apply first top dressing of fertilizer (Urea) @ 7.5 kg/bigha.
- Under prevailing weather condition undertake land preparation and planting of sugarcane setts.
- Due to continuous dry weather there is a chance of fruit drop. Spray water to the fruits along with Planofix @ 0.25 ml per litre of water. To reduce attack of fruit fly and hopper apply Monocrotophos or Fosalone @ 1.5 ml per litre of water.
- Flower sticks of early planted gladiolus crop in Hill zone should be harvested leaving 4 leaves for development of corm and cormels (planting materials). After harvesting the crop is to be sprayed with Bavistin @ 1 g/lit of water.
- At present attack of jute semilooper, bihar hairy caterpillar and stem weevil is becoming severe in jute. To control, apply Diclorovos @ 3 ml per 4 litres of water or Endosulphan @ 2 ml per litre of water.
- Weather is favourable for the attack of anthracnose disease in betel vine. Spray the vine with Bordeaux mixture @ 0.5% or with any copper oxychloride preparation 0.3-0.4% at 7 days intervals.
- There is chance of infestation of shoot and fruit borer in brinjal under prevailing weather. To reduce infestation, spray Triazophos 40 EC @ 1.5 ml, Spinosad 45 EC @ 0.2 ml or Cartap Hydrochloride @ 0.75 g per litre of water.

#### Sikkim

- **Major standing crops:** (a) **High hills: Off-season Vegetable crops:** Transplantation; (b) **Medium hills: Orange:** Flowering; (c) **Medium & Low Hills: Kharif Vegetables:** Transplantation; **Maize:** Vegetative; **Large Cardamom** Early/Secondary Flowering; **Rabi Potato:** Maturity/Harvesting.
- As there was no significant rain during last week and no significant rainfall is likely to occur for the next five days over the State, apply irrigation to the crops.
- Provide mechanical support to crops and young orchard trees to prevent from thunder squalls
- Land preparation may be continued for sowing of ginger in mid & low hills.
- Apply mulches around Orange trees in the mid hills in order to conserve sufficient moisture in the soil. Undertake planting of new saplings.
- Pre-treated, healthy & certified seeds of *kharif* vegetable crops like tomato, chilli, capsicum, brinjal, lali sag, ladies finger, radish etc. may be sown in nursery beds and climbing plants like bodi, iscus, bitter and other gourds in suitable places after applying FYM / compost and irrigating the soil for proper germination.
- All the disease / pest infected suckers in the nursery and all the aged / diseased / unproductive plants in the field of large cardamom crop may be removed / uprooted and destroyed.
- Chirke and Foorkey infected cardamom plants may be destroyed by uprooting and buried in the pits at regular intervals.

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

##### Assam

- **Major Standing crops:** vegetables (vegetative / flowering / fruiting / harvesting), *boro* rice (grain formation / early maturity), early *ahu* rice (tillering), regular *ahu* rice (direct sowing / transplanting) and *Bao* (Deep water rice) rice (sowing), jute and maize (sowing / germination / early vegetative), summer vegetables (sowing / vegetative / flowering / fruiting), sugarcane, turmeric and ginger (planting).
- As rain is likely to occur at a few places during next 24 hours and at many places thereafter over the State, farmers are advised to postpone irrigation to the crops.

- Maintain 3-5 cm stagnant water in *boro* rice and early *ahu* rice field.
- Sowing of direct seeded regular *ahu* rice and also nursery sowing for transplanted regular *ahu* rice may be continued during these days.
- Prepare land and complete planting of 3 – 4 budded sugarcane setts.
- Undertake planting of turmeric and ginger.
- This is the optimum time for sowing high yielding varieties of bhindi. For one bigha of land 2-3.5 kg of seed is required and seed should be sown at a spacing of 45 X 30 cm.
- The soil-moisture and temperature regimes have become congenial for planting banana, pineapple and coconut suckers / seedlings. Apply first dose of fertilizer to the existing coconut plants.
- Weather conditions are suitable for the attack of blast disease in *ahu* rice. Spray Bavistin @ 1 gm per litre of water when the weather is dry.
- As there is chance of attack of *gundhi* bug in *boro* rice under prevailing weather, vigilance is also necessary for appearance of *gundhi* bugs in *boro* rice which is in flowering stage to check infestation in subsequent milk stage.
- Details of crop varieties are mentioned in Annexure I.

#### **Animals**

- Immunizations of animals against Foot and Mouth disease in cattle & buffaloes and swine-fever in pigs may be carried out during pre-monsoon season.

#### **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 (early vegetative), ginger, summer vegetables (early vegetative), jhum rice, wet seeded rice(seedling)
- As rain is likely to occur at many places in the coming days over the State, farmers are advised to postpone irrigation to the crops.
- Farmers are also advised to continue sowing of maize, summer vegetables, *jhum* rice, wet seeded rice and ginger.
- Continue sowing of wet seeded rice.
- Undertake weeding, intercultural operations in early sown crops after current spells of rain.
- 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) and chilli (fruit development).
- As there was no significant rain during last few weeks and isolated rain/thundershowers over Coastal Andhra Pradesh and dry weather is likely to prevail over rest of the region for the next five days, apply irrigation to the crops.
- Due to the forecast of high wind speed over Anantapur area, provide staking to banana. Harvest immediately the matured fruits of tomato to prevent damage.
- After the harvest of crops, undertake summer ploughing to conserve moisture in the field.
- **Poultry:** To minimize the summer effect, the following management practices need to be adopted–
  - Arrange fans and foggers in sheds.
  - Cover the sheds with paddy straw and arrange sprinklers.
  - Feed poultry birds with wet mash to increase the feed intake.
  - Provide cool water for drinking

- 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.
  - yellow and red spider mites in sugarcane. To control, spray Wettable Sulphur @ 3 g per litre of water to cover the under surface of the leaves.

### Karnataka

- **Major Standing Crops:** Annual sugarcane (cane development), cotton (harvesting), green gram, black gram and cowpea (flowering), summer groundnut (flowering).
  - As there was no rainfall during last few weeks in the State and isolated rain/thundershowers over Coastal and South Interior Karnataka and mainly dry weather is likely to occur/prevail over rest of the state for the next five days, apply irrigation to the crops.
  - Irrigation must be given to coconut at an interval of 5-10 days depending upon the type of soil, weather, which helps to control dropping of fruits. Also apply mulches in the soil to conserve moisture.
  - Before sowing of *kharif* crops, farmers are advised to undertake summer ploughing to conserve moisture and to control weeds and soil borne pathogens and also to absorb the moisture during light showers.
  - As temperature is rising, undertake intercultural operations and mulching with crop residues in summer crops to reduce the moisture loss (evaporation) from the soil.
  - Undertake harvesting of cotton in Dharwad as dry weather conditions prevail during these days.
  - Continue planting of seed-nuts for coconut and arecanut in nursery in Sirsi region.
  - Irrigation should be continued for arecanut (10 lts / day), coconut (50 lts / day) and black pepper (2 lts / day). Irrigation should be given through drip irrigation to save water and to reduce evaporation of water and also provide the mulch around the trees / plants.
  - The dropping of tender nuts and buds in arecanut is noticed. Spray Bordeaux mixture @ 1% or copper oxy chloride @ 2 gm/litre of water. Apply organic, bio fertilizer and NPK, calcium and boron based on soil test value basis.
- Plant Protection:** Weather conditions are favourable for mild incidences of –
- leaf miner, mites and thrips in summer groundnut. Spray Monocrotophos 36 SL @ 1.0 ml or Phosphamidon 85 WSC @ 0.5 ml per litre of water.

### Kerala

- **Major Standing Crops:** vegetable (vegetative / flowering / fruiting) and plantation crops (coconut, arecanut, pepper and cashew).
  - As there was no significant rainfall in most of the districts during last week and no significant rainfall is likely to occur for the next five days, apply irrigation to the crops.
  - Undertake nursery sowing of *virippu* rice and amaranthus, brinjal and chilli. Also plant tubers of Dioscoria, ginger, turmeric and tapioca in Thrissur.
  - Undertake sowing of vegetable crops in nursery for transplanting during monsoon.
  - Intercultural operations and mulching may be continued on a non rainy day in summer vegetable crops and plantation crops.
  - Provide thatches to young plants of arecanut and coconut to protect from sun scorching.
  - Harvesting and nursery propagation operations may be continued in cashew.
- Plant Protection:**
- Due to high temperature and high humidity, pest and disease incidences like stem bleeding in coconut, blast and sheath blight in rice, pollu beetle and thrips in pepper, Sigatoka leaf spot in banana and leaf rust in coffee may occur. Monitor the crops for the pests and diseases and undertake plant protection measures on a non rainy day.

- Due to cloudy weather conditions in Kannur, Kasargod, Malappuram and Kozhikode, pests and disease incidences may occur. Monitor the crops for the pests and disease incidence and undertake plant protection measures on a non rainy day.
- Weather conditions are favourable for mild incidences of *Epilachna* beetle in brinjal, aphids in cowpea and pseudostem weevil in banana in Kottayam. 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 rainfall during last week in the state and no significant rainfall is likely for the next five days, apply irrigation to the crops.
- Undertake nursery sowing of *kuruvai* rice in Cauvery deltaic areas.
- Undertake land preparation for sowing of crops like cotton in Thirunelveli, Thooththukkudi and Virudhunagar districts.
- Details of varieties are given in Annexure I.
- Due to possibility of rainfall, undertake mulching of crops in Kanyakumari district. Undertake sowing of vegetable crops in nursery for transplanting during monsoon.
- **Poultry:** Heat stress in poultry. Foggers may be sprayed between 11 am to 3 pm frequently to prevent heat stress in poultry. Farmers are advised to monitor for Infectious Bronchitis (IB) and Ranikhet disease and in the case of lower values, administration of commercial vaccine is advised.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- leaf folder incidence in rice crop. Monitor the incidence and spray Monochrotophos @ 1 litre / ha.
- damping off and white fly in chillies and green capsicum, spray Copper-oxy-chloride @ 2.5 g/liter of water for damping off and 2 ml of Methyl Demeton per litre of water for white fly.
- green leaf hopper in cotton, thrips in chilli and aphids in maize in Thirunelveli, Thooththukkudi and Virudhunagar districts; undertake plant protection measures to control the pests.
- dieback in clove orchards in Kanyakumari district; prune the affected branches to prevent further spread.

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

#### Maharashtra

- **Major Standing Crops:** Summer rice (grain maturity in South Konkan, grain formation in North Konkan, panicle initiation/ flowering in East Vidarbha), summer groundnut (pegging /pod formation in Nagpur division and pod formation / pod maturity in other divisions), summer maize (tasseling / silking / cob initiation in Nashik division and cob initiation/ cob maturity in other divisions), summer sunflower (seed formation / seed maturity) and summer bajra (grain formation / grain maturity in Pune, Nashik & Aurangabad divisions).
- As there was no significant rain in most of the districts during last few weeks over the State and no significant rain is likely to occur for next five days, apply irrigation to the standing crops. Maintain 4 – 5 cm standing water in summer rice field.
- As dry weather is prevailing, continue harvesting of already matured summer rice in South Konkan. Drain out water from field at least 8–10 days before harvesting.
- Harvesting of matured mango fruits may be done in Konkan.
- As weather condition is favorable, continue harvesting of already matured chilli, brinjal, okra, groundnut, cow pea, *kuthi* & *ragi* in Konkan.
- As the rate of evaporation is increased and wind speed may increase in south konkan, apply irrigation to irrigated fruit crops at three to four days interval.
- Land preparation may be done for new plantation of fruit crops like mango, cashew, coconut, arecanut, etc. in south Konkan. Dig the pit for plantation of mango at the spacing of 10 x 10 m or 5x5 m and for cashew at 7x7 m. Pit size should be 1x1x1 m for mango and 0.6x0.6x0.6 m for cashew.

### **Plant protection**

- There is possibility of infestation of early shoot borer in sugarcane in sub montane zone, central maharashtra plateau Zone & western maharashtra plain zone, for 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 as there is increase in temperature and the rate of evaporation.

### **Gujarat**

- **Major Standing Crops:** Sugarcane (vegetative), vegetables (vegetative / flowering / fruiting / harvesting), groundnut (pegging / pod formation), summer rice (grain formation), pearl millet (vegetative/ flowering) and green gram, black gram, cow pea, cluster bean (pod formation)
- 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. Also maintain 5 – 7 cm stagnant water in the rice field.
- 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.
- There is chance of infestation of thrips in summer groundnut due to favourable weather condition. Spray trisophos @ 15 ml / 10 litres of water to control thrips.
- Prevailing weather is congenial for infestation of leaf miner in lemon. Control the infestation of leaf minor on lemon plants by spraying of 2.1 ml Dicofol or 1.0 ml Defenturon per one liter water.
- Under prevailing weather there is chance of attack of mites in groundnut. Spraying of Dicofol (18.5%) @ 16 ml / 10 litres of water is recommended to control mites.
- Undertake deep ploughing to prepare the land for *kharif* sowing.

### **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:** Wheat, mustard, gram (grain/pod harvesting), vegetable crops (flowering / fruiting).
- Dry weather prevailed over the state during last week and dust storm/thunderstorm is likely to occur for the next five days. Farmers are advised to apply irrigation to the crops. Conserve moisture in the soil where the crops are at maturity stage.
- Due to dry weather conditions prevail over Sirohi region, citrus fruit drop is observed. Spray Planofix @ 4ml/15 litre of water along with irrigation to prevent fruit drop.
- Undertake sowing of cotton in Bikaner, Jaisalmer, Udaipur, Bhilwara and Chittaurgarh districts.
- Complete sowing of okra, cucurbits, *zaid* pearl millet fodder, *zaid* sorghum fodder, *zaid* green gram and okra in Ajmer, Dausa, Tonk and Jaipur.
- Complete sowing of bajra, jowar, sweet gourd, cucumber, pumpkin, bitter gourd, *tinda*, tomato and ladies finger in Pali, Barmer, Churu, Jalore and Jodhpur.
- 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 / lit or Sulphur Fungicide @ 2.5 g / liter.

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

### Madhya Pradesh

- **Major Standing Crops:** Sugarcane (grand growth), soyabean (harvesting), maize (harvesting), cotton (boll development/maturity) and vegetable crops (vegetative).
- Heat wave conditions prevailed during last week over many parts of Madhya Pradesh and dry weather is likely to prevail for the next five days. Farmers are advised to apply light and frequent irrigation to the crops to protect from high temperature.
- Complete sowing of chilli in Indore, Mandsaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh districts.
- Undertake planting of sugarcane in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- Complete transplanting for tomato, brinjal and chilli.
- Undertake intercultural operations, application of fertilizers and pesticides in moong, maize, urd, til, lobia in Chhindwara and Betul districts.
- Undertake land preparation for sowing of *kharif* cotton in Shajapur, Dewas, Indore, Rajgarh Mandsaur, Neemuch, Ratlam and Ujjain districts.
- Details of varieties are given in Annexure I.
- **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 –

- stem borer in sugarcane in Sehore, Bhopal, Sagar, Vidisha, Damoh, Raisen districts, spray Phorate @ 10 kg per hectre.
- fruit borer in tomato and chilli in Chhindwara and Betul, spray Endosulphan 35 EC @ 2.5 ml/litre of water.
- powdery mildew in vegetables in Chhindwara, Betul, Datia, Chattarpur and Tikamgarh, spray Karethon or Sulphex.
- fruit borer in brinjal in Chattarpur, Datia and Tikamgarh, spray Quinolphos 25 EC @ 2 ml/litre of water.

### Chhattisgarh

- **Major Standing Crops:** Sugarcane (vegetative), vegetables (flowering / fruiting / harvesting), summer rice (grain formation), groundnut (pegging / pod formation), sunflower (seed formation), summer vegetables (vegetative / flowering / fruiting) and sesame (vegetative / flowering / pod formation) and green gram (vegetative / flowering).
- There was no significant rain during last few weeks over the State and no significant rain is likely to occur for next five days. Heat wave conditions prevailed during last week over many parts of Chhattisgarh. This also increases the open pan evaporation rates and it is being recorded more than 10 mm / day. This has increased the water requirements of summer crops like rice, vegetables, sunflower, green gram, groundnut etc. Hence, farmers are advised to irrigate the crops frequently. Farmers, who have drip irrigation system, are also advised to regulate the discharge rate of the system for proper water management.
- As dry weather is prevailing, it is advised to undertake intercultural operation, fertilizer application, earthing up followed by irrigation in sugarcane crop wherever the crop is at knee height stage.
- As weather condition is congenial, intercultural operation and weeding are advised in sunflower. Irrigation should also be applied in sunflower after weeding.
- After harvesting of *rabi* crops deep ploughing is advised for soil solarisation, particularly in those fields where wilt, stem rot and nematode diseases are frequently observed.



## Annexure I Crop varieties

### Assam

- **Direct seeded *ahu* rice:** Luit, Kapili,disang, Pusa-2-21, Culture-1 etc.
- **Transplanted *ahu* rice:** Lachit, Chilarai, Govind, IR-50, Rachi, Jaya etc.
- **Jute:** JTC 212, JRC 312, UPC 94.
- **Ginger:** Nodia, Moran etc.
- **Deep water rice:** Maguri, Negheri, Kekua, Tarabao etc.
- **Bhindi:** Pusa Sawani, Arka Anamica, Parvani kranti, Panchasira etc.

### West Bengal

- **Elephant foot yam:** Bidhan kusum & Cavur

### Himachal Pradesh

- **Bhindi:** Prabhini Kranti, Arka anamika.
- **French bean:** Conender.
- **Brinjal:** Arka Nidhi, PPC.
- **Capicum:** California Wonder.
- **Peper:** Surjmukhi.

### Madhya Pradesh:

- **Maize:** JM- 421, JM- 8, JM- 12, Chandan makka- 3, Ganga- 3, Ganga- 4 and HPQM – 1.
- **Sugarcane:** Co Jawahar-86141, Co Jawahar-86572, Co Jawahar-86600, Co 86032.
- **Summer moong:** PDM-11, JM-721, TJM-1
- **Urad:** Jawahar Urad-2, PDU-1, TPU-4

### Tamil Nadu:

- **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

### Rajasthan:

- **Green gram:** SML-686, Pusa Vishal, PDM-139 & G-8.
- **Groundnut:** TAG-24, SB-11, DH-86 and GG-2.
- **Bhindi:** Pusa sawani, Pusa Makhmali, Parbhani, Kranti, Arka Abhay & Arka Anamika
- **Bottle guard:** Pusa Naveen, Arka Bahar
- **Pumpkin -** Pusa Vishwas, Arka Chandan, Puas Alankar, Arka Suryamukhi
- **Bitter guard:** Arka Harit Pusa Vishesh, Priya
- **Round gourd-** Arka tinda, Bikaneri green, Punjab-48.

### Uttarakhand:

- **Chiatee Dhan:** VL-Dhan-206, Majdera-7 etc.
- **Maize:** Ganga-2, Ganga-7, African Tall
- **Lobia:** Russian Joint, EC-4216, UPC-5286
- **Bhindi:** VL Bhindi-1

### Punjab:

- **Bhindi:** Punjab Padmini, Punjab 7, Punjab 8 and Pusa sawni.
- **Maize:** Sathi maize, Pb Sathi No.1
- **Groundnut:** SG 99, M 522, SG 84

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

#### **Haryana:**

- **Sugarcane:** COJ 64, COH 56 and COH 92.
- **Cotton:** desi cotton varieties: HD 107, HD 123 and AAH 1, american cotton with varieties: HS6 & H1117.

#### **Bihar:**

**Summer maize:** Suwan, Ganga 11, Deoki, Shaktiman 3 and 4

**Summer moong:** Pusa Vishal, Samrat, PS 16 and SML 668

#### **Jharkhand:**

**Summer moong:** Sunayana, Pusha baishakhi, K851

#### **Orissa:**

- **Maize:** Hybrid varieties-MRM-3838, MRM-3765, Shaktiman 1, Bio 9681, Cargil 633, Deccan 105, K.H. 510 , Composite varieties – Navjot, Arun, Kiran.
- **Papaya:** Honey dew, Coorg honey dew, Coimbatore-1, Coimbatore-2, Pusa delicious, Pusa Majestic, Pusa Dwarf and Pusa Giant.
- **Pineapple:** Que, queen, Simachalan and Maritius.
- **Ginger:** Suprava, Suruchi, Surabhi.
- **Bhindi:** Utkal Gourav, Arka Anamika, Uphar, Parvani kranti and Hybrid Vars.- Varsa, Vijay, Vishal, Tara, Adhunik, Atyadhunik, and Supriya.
- **Maize:** African Tall
- **Cowpea:** EC-4216
- **Jute:** JRC-212, JRC-321, JRC-9442, JRC-4444.KC-1, For up land: JRD-632, JRD-878, JRD-5204