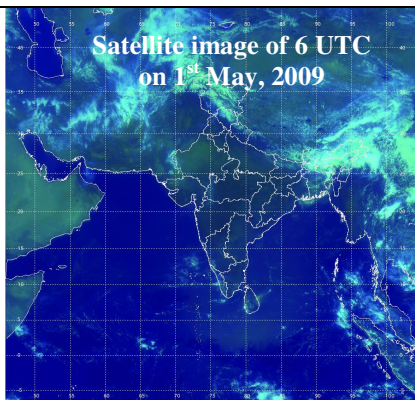




National Agromet Advisory Bulletin

Thursday, 30th April, 2009

(For the period 30th April to 4th May, 2009)



Chief Synoptic Feature (Based on 1430 hours IST observations of 30th April, 2009)

- Severe heat wave conditions are prevailing over many parts of Rajasthan. Heat wave conditions are also prevailing over many parts of Madhya Pradesh, Chhattisgarh, Vidarbha and Delhi, some parts of Punjab, Haryana, west & south Uttar Pradesh, Madhya Maharashtra, interior Orissa, Jharkhand and Jammu division of Jammu & Kashmir.
- Current meteorological analysis suggests that heat wave conditions over above regions are likely to continue for another 2 days and may also extend into some parts of Marathwada, Telangana and southeast Uttar Pradesh. A north-south trough in lower levels extends from Sub-Himalayan West Bengal to north Bay of Bengal. Under its influence scattered to fairly widespread rain/thundershowers are likely over northeastern states during next 2-3 days.

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 last week and likely to prevail during next 48 hours over many parts of Rajasthan and some parts of Madhya Pradesh, Chhattisgarh, Vidarbha and Delhi, Punjab, Haryana, west & south Uttar Pradesh, Telangana, Madhya Maharashtra, Marathwada, interior Orissa, Jharkhand and Jammu division of Jammu & Kashmir and also likely to extend over Marathwada, Telangana and southeast Uttar Pradesh. There is 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 irrigation

- As rain is likely to occur at a few places during next 24 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.
- 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:
 - San Jose scale, thrips in apple in Himachal Pradesh.
 - Fruit fly in watermelon and muskmelon in Delhi.
 - Mites in groundnut in Gujarat.
 - Early shoot borer in sugarcane in Andhra Pradesh.
- 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,



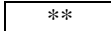
Agricultural Meteorology Division, India Meteorological Department, Shivajinagar, Pune.

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

Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks					
Sub-division	Cumulative Rainfall (% Dep.) for the period				
	1st April	8th April	15th April	22nd April	29th April
A & N Islands	242	87	756	93	-86
Arunachal Pradesh	9	-34	-84	-21	-77
Assam and Meghalaya	43	15	-82	31	-65
NMMT	49	4	-88	44	-92
SH West Bengal & Sikkim	147	211	-42	112	-90
Gangetic West Bengal	82	-100	-96	-99	-97
Orissa	-64	-98	-87	-90	-97
Jharkhand	-98	-90	-84	-100	-100
Bihar	-32	-90	-82	-84	-100
East Uttar Pradesh	-29	-100	-23	-100	-100
West Uttar Pradesh	-53	-78	662	-100	-100
Uttarakhand	-85	-48	68	-100	-100
Haryana, Chandigarh & Delhi	76	-29	467	-89	-100
Punjab	52	302	206	-92	-100
Himachal Pradesh	-51	73	-7	-5	-98
J & K	16	145	48	-54	-98
West Rajasthan	-8	-100	-99	-97	-100
East Rajasthan	-94	-83	-97	-100	-100
West M. P.	-97	25	-76	-100	-100
East M. P.	-92	-62	46	-100	-100
Gujarat region	-100	-100	-100	-100	-100
Saurashtra & Kutch	-100	-100	-100	-100	-100
Konkan and Goa	-33	-100	-100	-100	-100
Madhya Maharashtra	-88	-86	-99	-100	-100
Marathwada	-100	-48	-96	-100	-100
Vidarbha	-100	-94	26	-100	-100
Chhattisgarh	-100	-99	-61	-100	-100
Coastal A. P.	-76	-100	-69	-91	-75
Telangana	-100	-64	-76	-71	-31
Rayalseema	-100	-100	-100	-67	-68
TamilNadu & Pondicherry	-83	-96	119	-16	-67
Coastal Karnataka	403	-8	18	-93	-21
N. I. Karnataka	-63	5	-78	-60	-67
S. I. Karnataka	51	-83	-81	2	-40
Kerala	-68	-48	-15	-50	-59
Lakshadweep	-100	-99	23	-100	-81

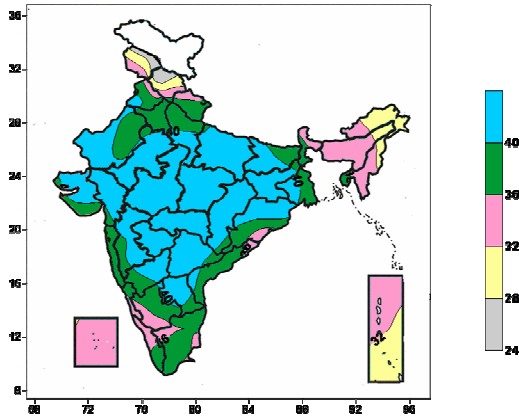
The subdivisions like Orissa, Bihar, Jharkhand, East Uttar Pradesh, East Rajasthan, Gujarat, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Marathwada, Chhattisgarh, Coastal Andhra Pradesh, Rayalaseema, Telangana, received scanty / deficient rain in all the 5 weeks; Arunachal Pradesh, Gangetic West Bengal, West Uttar Pradesh, Uttarakhand, West Rajasthan, Madhya Pradesh, Vidarbha, North Interior Karnataka, Kerala and Lakshadweep Islands received scanty / deficient rain in 4 out of last 5 weeks; Haryana, Chandigarh & Delhi, Tamil Nadu & Pondicherry and South Interior 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
 (-19 to +19%) normal rainfall
 (-20 to -59%) deficient rainfall

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

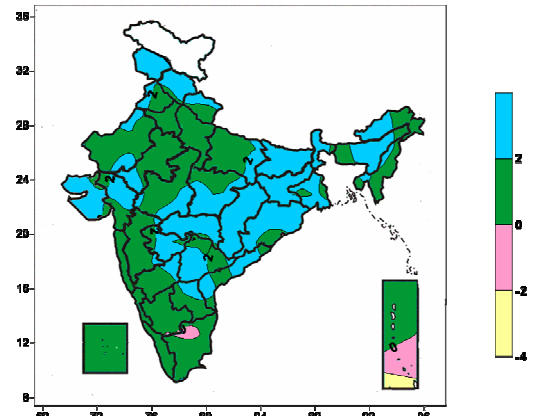
Contour maps for the week ending 29.04.09

Actual Mean Maximum Temperature (°C) In India for the week ending 29.04.09



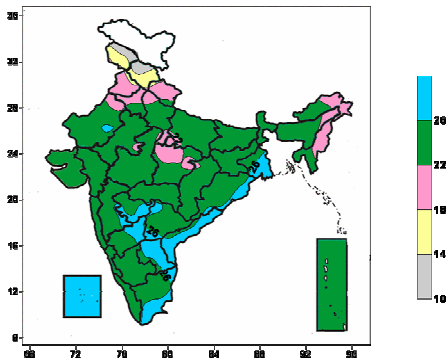
Actual Mean Maximum temperature ranged between 40 to 44°C over most parts of Rajasthan, Gujarat, East Uttar Pradesh, Bihar, Jharkhand, Central India, Madhya Maharashtra, Marathwada, Telangana, some parts of Punjab, West Uttar Pradesh, Gangetic West Bengal, Orissa, Coastal Andhra Pradesh, Rayalaseema, Interior Karnataka, 36 to 40°C over most parts of Haryana, Delhi, Uttarakhand, West Bengal, Coastal Orissa, Coastal Andhra Pradesh, Tamil Nadu, Konkan & Goa, some parts of Punjab, Bihar, Jharkhand, Tripura, Chhattisgarh, Rajasthan, Gujarat, Saurashtra & Kutch, Madhya Maharashtra, Telangana, Rayalaseema, Karnataka, Kerala, 28 to 32°C over some parts of Jammu & Kashmir, Himachal Pradesh, Arunachal Pradesh, Assam, Nagaland, Manipur, Andaman & Nicobar Islands, 24 to 28°C over some parts of Jammu & Kashmir, Himachal Pradesh, 32 to 46°C over remaining parts of the Country.

Maximum Temperature (°C) Anomaly In India for the week ending 29.04.09



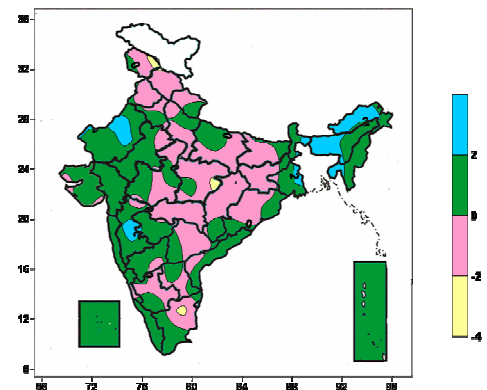
Actual Mean Maximum temperature anomaly ranged between 2 to 4°C over most parts of Jammu & Kashmir, Himachal Pradesh, Saurashtra & Kutch, East India, Marathwada, Vidarbha, Chhattisgarh, some parts of Uttarakhand, Punjab, Rajasthan, Gujarat, East Uttar Pradesh. North East India, Madhya Maharashtra, Andhra Pradesh, North Interior Karnataka, -2 to 0°C over some parts of Tamil Nadu, Andaman Nicobar Islands, -4 to -2°C over some parts of Andaman & Nicobar Islands, 0 to 2°C over remaining parts of the country.

Actual Mean Minimum Temperature (°C) In India for the week ending 29.04.09



Actual Mean Minimum Temperature ranged between 26 to 30°C over most Parts of Lakshdweep, Rayalaseema, Coastal Andhra Pradesh, some parts West Rajasthan, Gangetic West Bengal, Orissa, Madhya Maharashtra, Marathwada, Telangana, North interior Karnataka, Tamil Nadu, 18 to 22 °C most parts of Punjab, Uttarakhand, Nagaland, Manipur, some parts of Rajasthan, Haryana, Uttar Pradesh, Chattisgarh, Madhya Pradesh, Assam & Meghalaya, Arunachal Pradesh, 14 to 18°C over some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Uttarakhand, 10 to 14°C over some parts of Jammu &

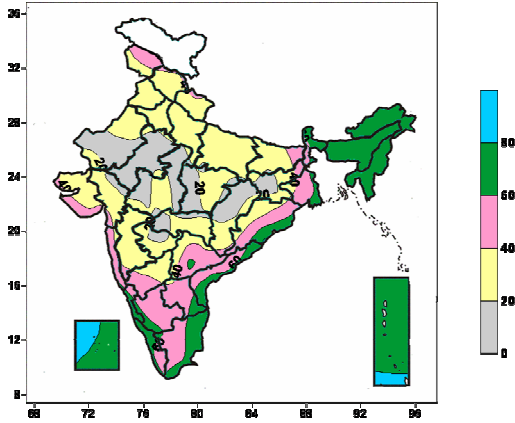
Minimum Temperature (°C) Anomaly In India for the week ending 29.04.09



Minimum Temperature anomaly ranged between 2 to 4°C over most parts of Arunachal Pradesh, some parts of West Rajasthan, West Bengal, Assam & Meghalaya, Madhya Maharashtra, -2 to 0°C over most parts of Himachal Pradesh, Punjab, Central India, Bihar, Jharkhand, Orissa, some parts of Jammu & Kashmir, Haryana, Uttarakhand, Uttar Pradesh, Gangetic West Bengal, Andhra Pradesh, Tamil Nadu, Karnataka, Saurashtra & Kutch, Madhya Maharashtra, -4 to -2°C over some parts of Jammu & Kashmir, East Madhya Pradesh, Tamil Nadu, 0 to

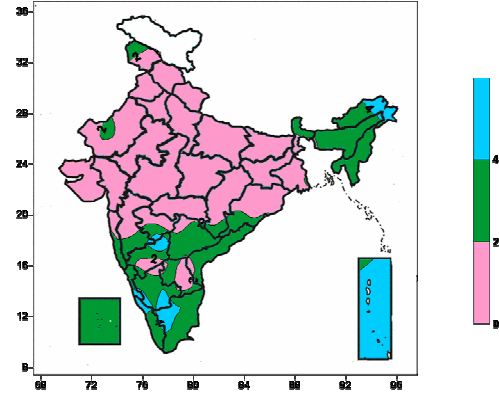
Kashmir, Himachal Pradesh, 22 to 26⁰C over remaining parts of country. 2⁰C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 29.04.09



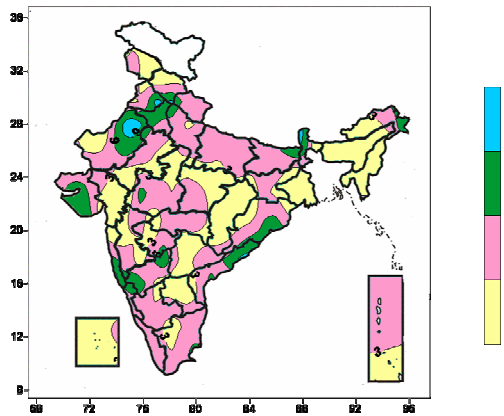
Relative humidity more than 80% to 100% over some parts of Lakshadweep, Andaman & Nicobar Islands, 60 to 80% over most parts of Sub-Himalayan West Bengal & Sikkim, North East India, Coastal Orissa, Coastal Tamil Nadu, Coastal Karnataka, North Kerala, Lakshdweep, Andaman & Nicobar Islands, some parts of Gangetic West Bengal, Andhra Pradesh, South Interior Karnataka, 40 to 60% over most parts of Konkan & Goa, Rayalaseema, Telengana, South Interior Karnataka, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Bihar, Jharkhand, West Bengal, Orissa, Gujarat, Saurashtra & Kutch, Madhya Maharashtra, North Interior Karnataka, Coastal Karnataka, Kerala, Coastal Andhra Pradesh, Tamil Nadu, 0 to 20 % over most parts of Rajasthan, North Chhattisgarh, Central Madhya Pradesh, some parts of Uttar Pradesh, Bihar, Jharkhand, Gujarat, Marathwada, Vidarbha, 20 to 40 % over remaining parts of the country.

Cloud amount (okta) over India for the week ending 29.04.09



Cloud amount ranged from 4 to 6 okta over most parts of Andaman & Nicobar Islands, some parts of Arunachal Pradesh, Assam, Marathwada, Karnataka, Tamil Nadu, Kerala, 2 to 4 okta over most parts of Sikkim, Northeast India, South Konkan & Goa, south Madhya Maharashtra, south Marathwada, Telengana, coastal Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Lakshdweep Islands, some parts of Jammu & Kashmir, Sub-Himalayan West Bengal, Orissa, West Rajasthan, Chhattisgarh, Rayalaseema, Andaman & Nicobar Islands, 0 to 2 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 29.04.09

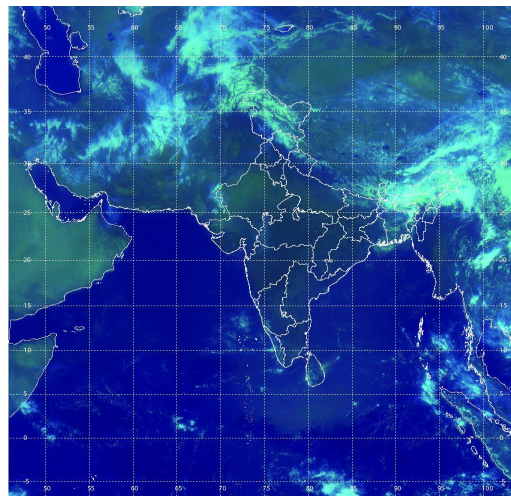


Wind speed ranged between 9 to 12 knots over some parts of Punjab, West Rajasthan, Sikkim, 6 to 9 knots over most parts of Haryana, some parts of Himachal Pradesh, Uttarakhand, Punjab, Rajasthan, West Uttar Pradesh, Bihar, Gangetic West Bengal, Sikkim, Arunachal Pradesh, Orissa, Saurashtra & Kutch, West Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh, Coastal Karnataka, North Interior Karnataka, 0 to 3 knots over most parts of Jammu & Kashmir, Gangetic West Bengal, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, East Rajasthan, Gujarat, Chhattisgarh, Telangan, Rayalaseema, Lakshdweep Islands, some parts of Himachal Pradesh, Punjab, Uttar Pradesh, Jharkhand, Sub-Himalayan West Bengal, Arunachal Pradesh, Orissa, West Rajasthan, Saurashtra & Kutch, Maharashtra, Madhya Pradesh, Coastal Andhra Pradesh, Interior Karnataka, Tamil Nadu, Andaman & Nicobar Islands, 3 to 6 knots over remaining parts of the country.

Chief Synoptic Feature (Based on 1430 hours IST observations of 30th April, 2009)

- Severe heat wave conditions are prevailing over many parts of Rajasthan. Heat wave conditions are also prevailing over many parts of Madhya Pradesh, Chhattisgarh, Vidarbha and Delhi, some parts of Punjab, Haryana, west & south Uttar Pradesh, Madhya Maharashtra, interior Orissa, Jharkhand and Jammu division of Jammu & Kashmir.
- Current meteorological analysis suggests that heat wave conditions over above regions are likely to continue for another 2 days and may also extend into some parts of Marathwada, Telengana and southeast Uttar Pradesh.
- A north-south trough in lower levels extends from Sub-Himalayan West Bengal to north Bay of Bengal. Under its influence scattered to fairly widespread rain/thundershowers are likely over northeastern states during next 2-3 days.

Satellite image of 6 UTC on 1st May, 2009



Zone-wise Forecast (Forecast valid upto 1430 hours IST of 2nd May, 2009)

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

- Isolated rain/thundershowers is likely over Jammu & Kashmir and Himachal Pradesh on 2nd & 3rd May.
- Heat wave conditions are likely over Punjab, Haryana, Chandigarh, Delhi, Rajasthan and west & south Uttar Pradesh.
- Mainly dry weather is likely over the rest region.

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

- Isolated rain/thunderstorm is likely over Orissa and west Bengal & Sikkim.
- Heat wave conditions are likely over Interior 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 24 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 Kerala and Lakshadweep.
- Isolated rain/thundershowers are likely over South Tamilnadu and coastal and south interior Karnataka.
- Mainly dry weather is likely over the rest region.

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

- Heat wave conditions are likely over Madhya Maharashtra and Marathwada.
- Mainly dry weather is likely over the region.

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

- Heat wave conditions are likely over the region.

WARNING: (For next 48 hours)

- Severe heat wave conditions are likely over many parts of Rajasthan.
- Heat wave conditions are also likely over many parts of Madhya Pradesh, Chhattisgarh, Vidarbha and Delhi, some parts of Punjab, Haryana, south Uttar Pradesh, Talengana, Madhya Maharashtra, Marathwada, interior Orissa, Jharkhand and Jammu division of Jammu & Kashmir.

Weather Outlook from 1430 IST of 3rd May, 2009 to 1430 IST of 5th May, 2009 (Based on numerical weather products):

- Decrease in rainfall activity over northeastern states.
- Slight fall in maximum temperatures are likely over northwest and central India.
- A fresh western disturbance is likely to affect northwest India during 3rd to 5th May.

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 (early grain maturity), barley and oat (grain formation / maturity), oil seeds (pod formation), 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 few weeks 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.
- 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.
- 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 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 Sanjoje 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), wheat (maturity), cabbage, onion, garlic, tomato (vegetative) and summer sunflower, moong, urd (vegetative).
- Undertake field preparation and planting of sugarcane.
- As there was no rainfall during last week and no significant rainfall is likely to occur for next five days, apply irrigation to the crops.
- Farmers are advised to continue harvesting of matured crops of wheat.
- Continue sowing of foxtail millet with improved local varieties as weather conditions are favourable for sowing.
- Apply 40 kg Urea, 180 kg SSP and 20 kg MOP in ratoon sugarcane crop for enhancing its growth.

- Farmers are also advised to undertake sowing of bhindi, french bean and tomato. Details of varieties are given in Annexure I.
- Continue sowing of maize and cowpea (lobia) varieties as green fodder crops with irrigation facilities.
- Undertake weeding, intercultural operations and top dressing in earlier sown chaiti dhan and pea crops.
- 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.

Punjab

- **Major Standing Crops:** Horticultural crops (vegetative), spring sugarcane (early vegetative), wheat (maturity), pea and vegetable crops like chilli, tomato, brinjal, bhindi and onion (early vegetative), oilseeds (harvesting), summer pulses, sunflower (vegetative)
- Continue planting of late maturing sugarcane varieties using 35 % higher seed rate than timely sown crop. Irrigate the sugarcane crop at 7-12 days interval for getting better growth of the crop.
- As there was no significant rain during last two weeks and heat wave conditions are likely to continue over parts of the State, apply light and frequent irrigation to the crops.
- Continue harvesting of matured crops as dry weather is prevailing. Farmers are advised to store the harvested produce at a specific moisture level in dry or insect free bins.
- Complete sowing of maize with irrigation facilities.
- Details of crop varieties are mentioned in Annexure I.
- Continue sowing of recommended varieties / hybrids of cotton / *desi* cotton including Bt cotton. Apply pre-sowing irrigation, if required.
- Sowing of bajra, maize, cowpea etc. for fodder may be undertaken after harvesting of *rabi* crops.
- The evergreen fruit plants like citrus, mango, litchi, guava and ber may be planted in the field.
- As temperature is rising rapidly and humidity is low, the fruit growers are advised to whitewash the trunk, 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.
- Take adequate steps to protect the animals from summer heat and stress.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- jassid in bhindi, so apply three rounds of 500 g Sevin / Hexavin 50 WP or 350 ml Thiodan 35 EC per acre in 100-125 litres of water at 15 days interval.
- downy mildew in cucurbits. Apply preventive sprays of 300-600 g Indofil M 45 in 100-200 litres of water per acre.

Haryana

- **Major Standing Crops:** Spring sugarcane (early vegetative), vegetable crops (early vegetative), wheat (maturity), summer pulses, sunflower (vegetative).
- Continue harvesting and threshing of wheat as weather is favourable.
- As there was no significant rain during last two weeks and heat wave conditions are likely to continue over parts of the State, apply light and frequent 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.
- 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.
- Details of crop varieties are mentioned in Annexure I.
- Farmers are advised to prepare the field and continue sowing of cucurbits.

- Undertake intercultural operations in tomato, onion and chilli.
- Farmers are also advised to complete sowing of pigeon pea.
- 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 dry weather is prevailing for last few days and is also like to prevail for next five days along with high temperature and heat wave condition, farmers are advised to apply light and frequent irrigation to *lobia*, green gram and the vegetables like bhindi, brinjal, chilli etc.
- As dry 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 advised 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.
- 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 fruit fly in watermelon and muskmelon crops. Spraying of Sevin @ 2 g / litre will help the farmers to reap a good harvest.

Uttar Pradesh

- **Major Standing crops:** Summer sugarcane and vegetables (early vegetative), mango (fruit setting), wheat (maturity), *zaid* maize (early vegetative).
- Undertake harvesting of matured crops like garlic, pea, sugarcane and rai.
- As there was no significant rain during last two weeks and heat wave conditions are likely to continue over west, south and south east Uttar Pradesh, apply light and frequent irrigation to the crops.
- Undertake weeding, intercultural operations, application of fertilizers and pesticides in the standing crops like early sown *zaid* maize, garlic, onion, brinjal, tomato and chilli.
- Prepare field and complete sowing of vegetables, sunflower, moong, *lobia* and urd and planting of summer sugarcane with irrigation facilities. Details of crop varieties are mentioned in Annexure I.
- Continue sowing of maize and cowpea (*lobia*) varieties as green fodder crops.
- 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.
- 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 / transplanting of vegetable crops in nursery / main field in Leh, Jammu and Rajouri divisions.

- Heat wave conditions prevailed and likely to prevail during next two days over some parts of Jammu division. Farmers are advised to apply light and frequent irrigation to protect the crops from heat injury.
- 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.
- Continue planting of saplings in orchard in Leh and Rajouri divisions.
- Undertake transplanting of vegetable crops like brinjal, tomato, chilli and capsicum and sowing of bhindi, beans, cucurbits and pumpkin in Doda, Udampur, Kathua and Rajouri divisions.
- Undertake sowing of fodder (maize, cow pea, jowar) using a seed rate of 60 kg / ha in 1:2:2 ratio in fields vacated by mustard crop.
- Intercultural operations, sowing of crops and application of fertilizers and pesticides may be undertaken.
- Protect the orchard trees from sun scorching by painting with lime in the bottom portion of the trees in Doda, Udampur, Kathua and Rajouri divisions.
- Summer crops like maize and moong may be sown during these days. Also undertake sowing of rice in the nursery.
- **Plant Protection:** Weather conditions are congenial for mild incidences of fruit fly in vegetables in Jammu division. Undertake plant protection measures.

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), summer vegetables (early vegetative / 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 and maize crop 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 the planting of sugarcane and undertake sowing of fodder maize, jowar and lobia.
- Continue harvesting of 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 thrips in onion. Farmers are advised to spray Sevin@0.3 percent if the insects are visible in the crop.

Jharkhand

- **Major Standing Crops:** Sugarcane (vegetative), wheat (maturity / harvesting), *rabi* oilseeds (maturity / harvesting), summer maize (cob formation), moong (vegetative), summer vegetables (early vegetative) and rice (flowering / grain formation).
- As there was no significant rain during last few weeks and heat wave conditions are likely to continue over parts of the State, apply light and frequent irrigation to the crops.
- 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.
- Undertake sowing of Eucalyptus, khair, bel, semal, ber etc. in polythene bag.

- 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.
- Weather conditions are favourable for spread of ranikhet viral disease among fowls. Hence, prophylactic measure is recommended. Vaccine like Lasota starin should be administered through nostril and eyes to 4 – 7 days old chicks and with a booster dose of R2B Mukteshwar strain at 8 – 10 weeks.

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 and also heat wave conditions are likely to continue over Interior Orissa, apply light and frequent irrigation to the crops. Sprinkler irrigation should be provided to the orchard crops and vegetables.
- Continue sowing of bhindi as weather conditions are favorable for bhindi sowing.
- Undertake sowing of fodder maize and cowpea as mixed cropping sowing in interior Orissa.
- 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.
- Provide sufficient water to the cattle to drink during hot summer. Never allow cattle to go outside during afternoon hour.
- 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 formation/maturity), sesame (flowering / pod formation), green gram (vegetative), groundnut (pegging / pod formation) and jute (seedling).
- As there was no significant rain during last week in most of the districts of the State and no significant rain is likely to occur during next five days, apply irrigation to the standing crops.
- Harvest the matured crops of early sown *boro* rice 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.

- 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.
- Undertake planting of elephant foot yam.
- 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.
- There is report of severe attack of brown plant hopper in rice. Apply Acephate @ 3 gm per 4 liter water or Triazophos @ 1.5 ml per litre of water to control it.
- 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 pod borer in sesame under prevailing weather. To reduce pod borer infestation, apply Endosulphan @ 2 ml per litre of water.

Sikkim

- **Major standing crops: (a) High hills: Off-season Vegetable crops** Nursery sowing/ seedlings/Transplantation; **(b) Medium hills: Orange:** Early Flowering; **(c) Medium & Low Hills: Kharif Vegetables:** Nursery sowing/ seedlings; **Large Cardamom** (Early/Secondary Flowering); **Wheat** (Maturity/Harvesting); **Mustard** (Maturity/Harvesting); **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.
- Land preparation may be initiated 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.
- 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.
- Maintain large cardamom sucker nursery; apply FYM (dry and powdered) / compost; and undertake intercultural operations.
- 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. Sowing of *Bao* rice (Deep water rice) may also be completed within April.
- As March-April is the high time for sowing of jute seeds, prepare land and undertake sowing of jute.
- Prepare land and complete planting of 3 – 4 budded sugarcane setts.
- Undertake planting of turmeric and ginger.
- 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.
- Due to increase in RH and probable increase in temperature in the coming days, the condition is suitable for the attack by ‘blast’ disease in *ahu* rice. Spray Bavistin @ 1 gm per litre of water after current spells of rain when the symptoms appear.
- Weather conditions are suitable for the attack of rice hispa in *ahu* rice. Apply ‘Monochrotophos’ @ one teaspoonful in every 2 litres of water after current spells of rain when the crop is attacked.
- 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)
- 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 utilizing the rainfall received during last week.
- Undertake weeding, intercultural operations in early sown crops to keep the field weed free.
- 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 (grand growth), vegetable crops (flowering/fruitletting) and chilli (fruit development).
- Heat wave conditions prevailed and likely to prevail over some parts of Telangana division. Farmers are advised to apply light and frequent irrigation to protect the crops from heat injury.
- As there was no significant rain during last few weeks and dry weather is likely to prevail for next five days over remaining part of the State, apply irrigation to the crops.
- 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.
 - BPH in rice. If noticed (20-25 hoppers / hill), control by spraying Acephate @ 1.5 g or Imidacloprid @ 0.25 ml or Thiomethoxam @ 0.2 g of Ethofenprox @ 1.5 ml or BPMC @ 2 ml per litre of water, and also avoid application of excess nitrogen. Alternate drying and wetting of field is suggested. Undertake spraying after 24 hours in north coastal Andhra Pradesh as rainfall is expected.

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 except in Kannur district during last week and no significant rainfall is likely to occur for the next five days, apply irrigation to the crops. Postpone irrigation in the above districts as there was excess rainfall during last week.
- Harvest *puncha* rice in Kannur, Kasargod, Malappuram and Kozhikode districts. Arrange for nursery sowing of first season rice in Thiruvananthapuram.

- Arrange for nursery sowing of vegetable crops for transplanting during monsoon.
- Intercultural operations and mulching may be continued on a non rainy day in 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.
- Tapping may be continued in alternate days in rubber. The basal trunk portion may be painted with lime to protect the young trees from sun scorching. The plantation may be kept clean and fire belt may be made to avoid fire incidence.

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.

Tamilnadu

- **Major Standing Crops:** Sugarcane (cane maturity) and cotton (picking stage). This is proper time for raising nursery for 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.
- Due to possibility of low rainfall, undertake mulching of crops in Kanyakumari district. Undertake sowing of vegetable crops in nursery for transplanting during monsoon.
- Details of varieties are given in Annexure I.
- **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, flowering / 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. As heat wave conditions are prevailing over parts of Madhya Maharashtra and Vidarbha and also likely

over Marathwada, apply frequent irrigation to the crops over this region. 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 cow pea, *kuthi* & *ragi* in Konkan.

Plant protection

- There is possibility of blackening of mango fruits in North Konkan. For control spray Carbendazim @ 10 g or Contaf @ 5 ml per 10 liters of water.
- 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) and green gram, black gram, cow pea, cluster bean and pearl millet (vegetative).
- As there was no significant rain during last few weeks over the State and mainly dry weather is likely to prevail along with high temperature 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.
- 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.

Animal Husbandry

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

Poultry

- Put curtains on north-east direction in poultry to protect against hot winds.

Rajasthan

- **Major Standing Crops:** Wheat (grain maturity), mustard, gram (pod maturity), vegetable crops (flowering / fruiting).
- Severe heat wave conditions prevailed and likely to prevail during next two days over many parts of Rajasthan. Farmers are advised to apply light and frequent irrigation to the crops to protect from heat injury.
- Conserve moisture in the soil where the crops are at maturity stage.
- Undertake sowing of summer moong in Banswara and grow YMV resistant varieties and do seed treatment before sowing with Thiram @ 3 g or Carbendazim @ 2 g or Imidacloprid @ 5 ml or Gaucho @ 4 g / kg seeds and Rhizobium Culture @ 600 g / ha.

- Complete sowing of cucurbits like bitter gourd, water melon, pumpkin, cucumber, round gour), ridged gour), bottle gourd, muskmelon in Bhilwara, Sirohi, Udaipur and Chittorgarh.
- 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 Melathion 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 / lit.
- 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.
- virus disease is seen in cucurbits. In this disease flower & fruit deteriorate in shape & size. Uproot & burn the affected plants & spray Dimethoate 30EC @ 1.0 ml per litre water.
- stem borer in sugarcane in Sriganganagar and Hanumangarh, spray Quinolphos 25 EC or Dekamethryn 28 EC 100ml of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Major Standing Crops:** Sugarcane (grand growth), soyabean (pod maturity), maize (cob maturity), cotton (boll development) and vegetable crops (vegetative).
- Heat wave conditions prevailed and likely to prevail during next two days over many parts of Madhya Pradesh. Farmers are advised to apply light and frequent irrigation to the crops to protect from heat injury.
- Complete sowing of summer vegetables like cucurbits, ladies finger and also cow pea.
- Complete sowing of moong and urad in Khandwa, Khargone and Harda districts and sunflower in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- 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 summer okra, summer moong and urd in Jhabua and Dhar districts.
- Undertake sowing of maize, sorghum, jowar, moong, urad, sunflower and vegetables like ladies finger, cow-pea and cucurbitaceous crops in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts. Prepare nursery for tomato, brinjal and chilli for raising summer season crops.
- Undertake sowing of moong, maize, urd, til, lobia in Chhindwara and Betul 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.
- To control foot and mouth disease in animals in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi, use potassium permanganate @ 5 ml per litre of water for infected animals.
- **Plant Protection:** Weather conditions are favourable for –
- sucking pest in okra in Jhabua and Dhar; spray Mithyl Dimetron 25 EC @ 1 ml / litre of water

- caterpillar in pomegranate in Sehore, Bhopal, Sagar, Vidisha, Damoh, Raisen districts; spray Melathion 50 EC @ 1 ml / lit water
- mealy bug in mango in Khargone district; spray 25 g Asiphate and 30 ml prophenos / litre of water.
- stem borer in sugarcane in Sehore, Bhopal, Sagar, Vidisha, Damoh, Raisen districts, spray foret 10 kg per hectre
- fruit borer in tomato and chilli in Chhindwara and Betul, spray Endosulphan 35 EC in 2.5 ml 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 in 25 EC, 2 ml of water.

Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative), vegetables (vegetative / flowering / fruiting / harvesting), summer rice (flowering / grain formation), groundnut (pegging / pod formation), sunflower (flowering / 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 and likely to prevail for the next two days 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.
- Weather conditions are favourable for proper germination of maize to be grown for green cobs. Hence the farmers who have assured irrigation facilities are advised to complete the sowing of summer maize at the earliest.
- 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.
- Weather conditions are favourable for the incidences of stem borer in summer rice and maize crops; undertake plant protection measures to control the pest

Annexure I

Crop varieties

Himachal Pradesh

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

Uttarakhand:

- **Sugarcane:** Co- Pant 84211, COS-95255, COS-8436, COS-88230, COS-96268 and Moderate to late varieties like Co-Pant 97222, Co-Pant-96219, Co-Pant-84212, Co-Pant-90223.
- **French bean:** Pant Anupama, Pant Bean-2, VL Vonibean-1 and Pusa Parvati
- **Pea:** VL Ageti, Matar-7 or Vivek Matar-10
- **Tomato:** VL-Tomato – 3
- **Fox tail millet:** VL-29, VL-21, VL Madira-172
- **Bhindi:** Pusa Savany, Parbhani Krant
- **Maize:** Ganga-2, Ganga-7, African Tall
- **Lobia:** Russian Joint, EC-4216, UPC-5286

Punjab:

- **Sugarcane:** CoJ-89 and Co-1148
- **Bhindi:** Punjab Padmini, Punjab 7, Punjab 8 and Pusa sawni.
- **Maize:** Sathi maize, Pb Sathi No.1

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.

Uttar Pradesh:

- **Sunflower:** Modern, Sankar, Surya, Jwalamukhi
- **Moong:** Pant-1, pant-2, 3, Narendra-1, Malviya, jyoti

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.

West Bengal

- ***Olitorious* jute:** Basudev, Navin, Chaitali.
- ***Capsularis* jute:** Sonali, Sabuj Sona.
- **Elephant foot yam:** Bidhan kusum & Cavour

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

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

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

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.