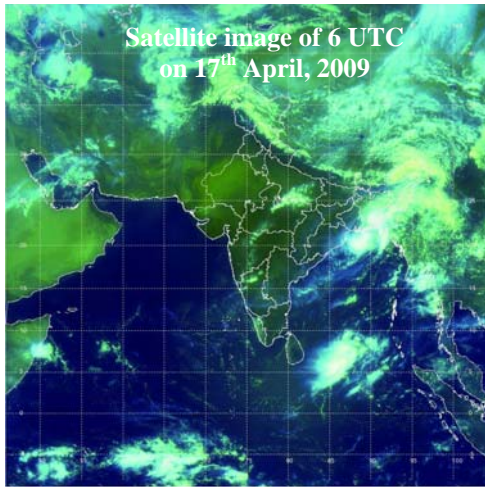




National Agromet Advisory Bulletin

Thursday, 16th April, 2009
(For the period 16th to 20th April, 2009)



Chief Synoptic Feature (Based on 1430 hours IST observations of 16th April, 2009)

- The cyclonic storm, 'Bijli' over westcentral Bay of Bengal moved northwards and lay centred at 1130 hours IST of today, the 16th April 2009 near lat. 17.5°N and long. 86.0°E, about 300 km east of Visakhapatnam and 650 km southwest of Khepupara (Bangladesh). The system is likely to intensify further and move in a northerly direction for some more time and recurve thereafter.
- The temperatures over northwest and adjoining central India are likely to fall by 2-3°C during next 3 days. Strong surface winds are also likely to prevail over Indo-Gangetic plains during 18th -20th April.
- The current meteorological Analysis suggests increase in thunderstorm activity over northeastern States during next 48 hours.

Salient Advisories

- As there is chance of rain at many to most places in coastal areas of West Bengal and Orissa in the coming days along with isolated heavy rainfall during next 24 hours, postpone irrigation, intercultural operation, sowing and application of fertilizer and plant protection measures and also harvesting of crops. Also provide suitable protection for covering the already harvested crops.
- As rain is also likely to occur at many places during coming days over the North Eastern States along with isolated heavy rainfall on 17th and 18th April, farmers are advised to postpone irrigation and other agricultural operation like sowing, transplanting, intercultural operation and also fertilizer and pesticides application for next two days. In view of expected rain, farmers are also advised to postpone harvesting of matured crops of wheat and provide suitable protection for covering the already harvested crops.

Advisories for irrigation

- 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 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:
 - late blight of potato in Himachal Pradesh.
 - powdery mildew in green gram, black gram and cowpea in Karnataka.
 - aphids in cowpea in Orissa.
 - stem borer in rice in West Bengal.
- 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.

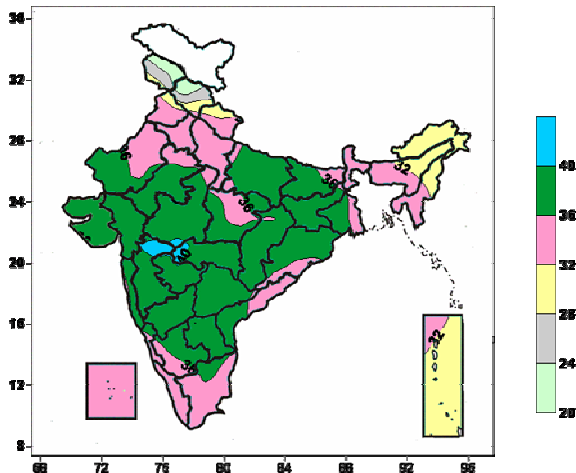
Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks					
Sub-division	Cumulative Rainfall (% Dep.) for the period				
	18 th March	25 th March	1 st April	8 th April	15 th April
A & N Islands	119	256	242	87	756
Arunachal Pradesh	-99	-83	9	-34	-84
Assam and Meghalaya	-100	-90	43	15	-82
NMMT	-100	-100	49	4	-88
SH West Bengal & Sikkim	-100	-27	147	211	-42
Gangetic West Bengal	-40	-70	82	-100	-96
Orissa	-100	-77	-64	-98	-87
Jharkhand	-100	-87	-98	-90	-84
Bihar	-100	-98	-32	-90	-82
East Uttar Pradesh	-100	-70	-29	-100	-23
West Uttar Pradesh	-100	-87	-53	-78	662
Uttarakhand	-100	-97	-85	-48	68
Haryana, Chandigarh & Delhi	-100	-8	76	-29	467
Punjab	-100	-26	52	302	206
Himachal Pradesh	-99	-36	-51	73	-7
J & K	-98	-53	16	145	48
West Rajasthan	-100	7	-8	-100	-99
East Rajasthan	-100	-67	-94	-83	-97
West M. P.	-84	-94	-97	25	-76
East M. P.	-95	-94	-92	-62	46
Gujarat region	-100	-96	-100	-100	-100
Saurashtra & Kutch	-100	-100	-100	-100	-100
Konkan and Goa	113	-100	-33	-100	-100
Madhya Maharashtra	7	-92	-88	-86	-99
Marathwada	-96	-84	-100	-48	-96
Vidarbha	358	-46	-100	-94	26
Chhattisgarh	-100	-100	-100	-99	-61
Coastal A. P.	-99	41	-76	-100	-69
Telangana	-90	127	-100	-64	-76
Rayalseema	-35	175	-100	-100	-100
TamilNadu & Pondicherry	289	-6	-83	-96	119
Coastal Karnataka	1117	2450	403	-8	18
N. I. Karnataka	52	292	-63	5	-78
S. I. Karnataka	943	206	51	-83	-81
Kerala	432	51	-68	-48	-15
Lakshadweep	-100	-95	-100	-99	23

The subdivisions like Orissa, Bihar, Jharkhand, East Uttar Pradesh, East Rajasthan, Gujarat, Saurashtra & Kutch, Marathwada and Chhattisgarh received scanty / deficient rain in all the 5 weeks; Arunachal Pradesh, Gangetic West Bengal, Uttarakhand, Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Andhra Pradesh and Lakshadweep Islands received scanty / deficient rain in 4 out of last 5 weeks; Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Sub Himalayan West Bengal, Sikkim, West Uttar Pradesh, Himachal Pradesh, West Rajasthan and Vidarbha 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

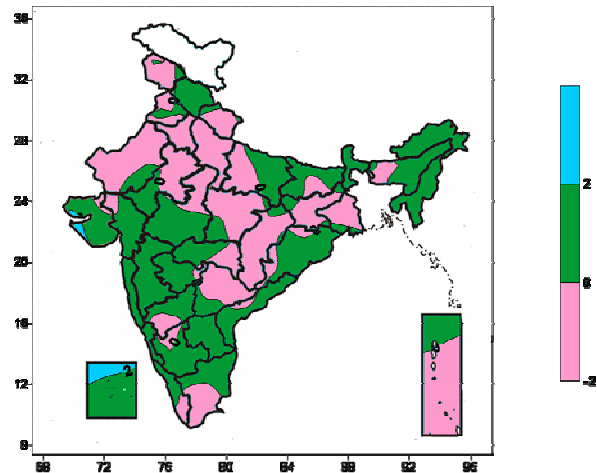
Contour maps for the week ending 15.04.09

Actual Mean Maximum Temperature (°C) in India for the week ending 15.04.09



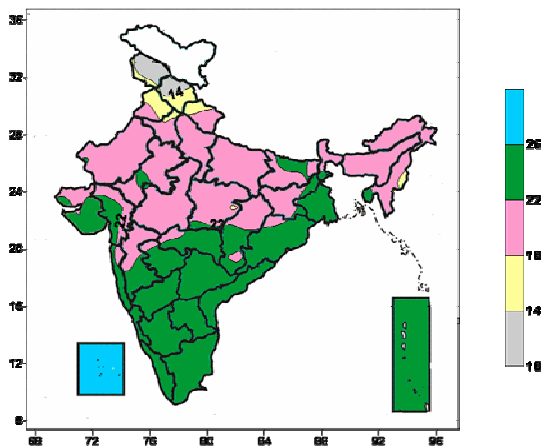
Actual Mean Maximum temperature ranged between 40 to 44°C over some parts of Madhya Maharashtra, Marathwada, Vidarbha, West Madhya Pradesh, 32 to 36°C over most parts of Punjab, Haryana, Delhi, Uttarakhand, West Uttar Pradesh, Sub Himalayan West Bengal, Sikkim, Mizoram, Tripura, Tamil Nadu, Kerala, Lakshadweep Islands, some parts of Himachal Pradesh, East Uttar Pradesh, Bihar, Gangetic West Bengal, Assam & Meghalaya, Manipur, Orissa, Rajasthan, Madhya Pradesh, Chhattisgarh Coastal Andhra Pradesh, Coastal Karnataka, South Interior Karnataka, Andaman & Nicobar Islands, 28 to 32°C over most parts of Arunachal Pradesh, Nagaland, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Himachal Pradesh, Uttarakhand, Assam, 20 to 28°C over some parts of Jammu & Kashmir, Himachal Pradesh, 36 to 40°C over remaining parts of the Country.

Maximum Temperature (°C) Anomaly in India for the week ending 15.04.09



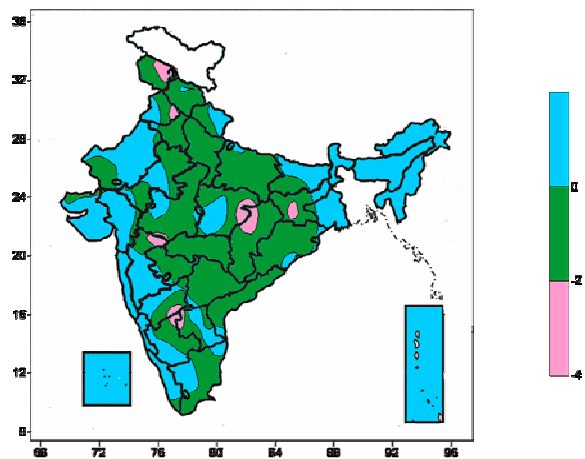
Actual Mean Maximum temperature anomaly ranged between 2 to 4°C over some parts of Saurashtra & Kutch, Lakshadweep, 0 to 2°C over most parts of Himachal Pradesh, Sub Himalayan West Bengal & Sikkim, Bihar, North East India, Orissa, Coastal Andhra Pradesh, Rayalaseema, Gujarat, West Madhya Pradesh, Maharashtra, Karnataka, Lakshadweep, some parts of Jammu & Kashmir, Punjab, Uttarakhand, East Uttar Pradesh, Jharkhand, Gangetic West Bengal, Rajasthan, East Madhya Pradesh, Chhattisgarh, Telangana, Kerala, Tamil Nadu, Andaman Nicobar Islands, -2 to 0°C over remaining parts of the country.

Actual Mean Minimum Temperature (°C) in India for the week ending 15.04.09



Actual Mean Minimum Temperature ranged between 26 to 30°C over most parts of Lakshadweep, 22 to 26°C over most parts of Gangetic West Bengal, Orissa, South Gujarat, Maharashtra, South India, Andaman & Nicobar Islands, some parts of East Rajasthan, Chhattisgarh, Bihar, Jharkhand, Tripura, East Madhya

Minimum Temperature (°C) Anomaly in India for the week ending 15.04.09

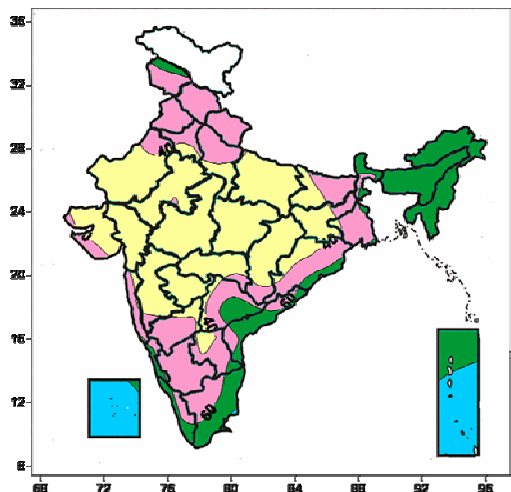


Minimum Temperature anomaly ranged between 0 to 2°C over most parts of West Rajasthan, Gujarat, Saurashtra & Kutch, West Bengal & Sikkim, North East India, Konkan & Goa, Madhya Maharashtra, Coastal Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Punjab, Haryana, Himachal

Pradesh, 14 to 18 °C over some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Manipur, 10 to 14°C over some parts of Jammu & Kashmir, Himachal Pradesh, 18 to 22°C over remaining parts of country.

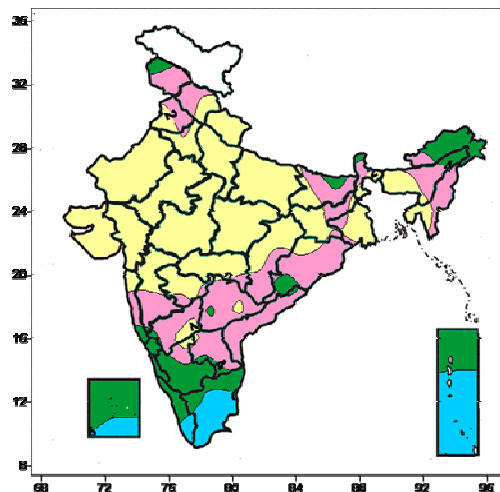
Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, Marathwada, Interior Karnataka, Andhra Pradesh, Tamil Nadu -4 to -2°C over some parts of Jammu & Kashmir, Punjab, Jharkhand, Madhya Maharashtra, Madhya Pradesh, Chhattisgarh, Interior Karnataka, Rayalaseema, -2 to 0°C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 15.04.09



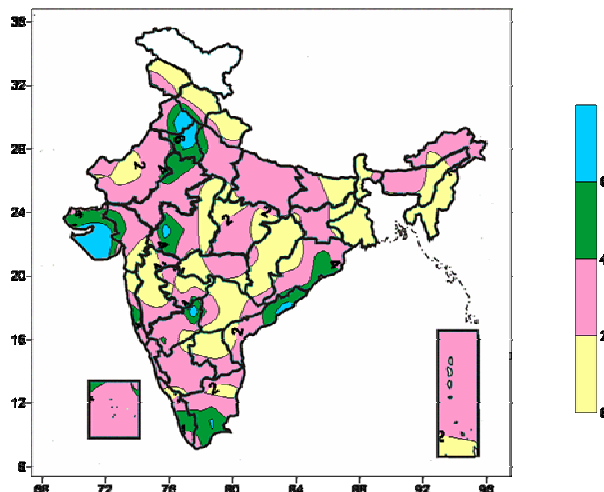
Relative humidity more than 80% to 100% over most parts of Lakshadweep, Andaman & Nicobar Islands, 60 to 80% over most parts of Sub Himalayan West Bengal & Sikkim, North East India, Coastal Orissa, Coastal Andhra Pradesh, Coastal Karnataka, Coastal Kerala, Coastal Tamil Nadu, some parts of Jammu & Kashmir,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

Cloud amount (okta) over India for the week ending 15.04.09



Cloud amount ranged from 6 to 8 okta over most parts of Andaman Nicobar Islands, some parts of Kerala, Tamil Nadu, Lakshdweep Islands, 4 to 6 okta over most parts of Coastal Karnataka, South Interior Karnataka, Lakshdweep Islands, some parts of Jammu & Kashmir, Bihar, Sikkim, North East India, Orissa, Andhra Pradesh, North Interior Karnataka, Kerala, Tamil Nadu, Andaman Nicobar Islands, 2 to 4 okta over most parts of Bihar, Sub Himalayan West Bengal, Orissa, Andhra Pradesh, North Interior Karnataka, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Jharkhand, Chattisgarh, South Maharashtra, South Interior Karnataka, 2 to 4 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 15.04.09



Wind speed ranged between 6 to 8 knots over some parts of Punjab, Haryana, Saurashtra & kutch, West Madhya

Pradesh, Coastal Andhra Pradesh, North Interior Karnataka, 4 to 6 knots over some parts of Punjab, Haryana, West Uttar Pradesh, Rajasthan, Gujarat, Saugarashtra & Kutch, West Madhya Pradesh, Konkan & Goa, Orissa, Coastal Andhra Pradesh, Telangana, Coastal Karnataka, North Interior Karnataka, Kerala, Tamil Nadu, Lakshdweep, 0 to 2 knots over most parts of Himachal Pradesh, Uttarakhand, West Bengal, Sikkim, Nagaland, Manipur, Mizoram, Tripura, Chhattisgarh, North Madhya Maharashtra, some parts of Jammu & Kashmir, Uttar Pradesh, Bihar, Jharkhand, Orissa, Arunachal Pradesh, Assam & Meghalaya, West Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Interior Karnataka, Andhra Pradesh, Kerala, Tamil Nadu, Andaman & Nicobar Isladnds, 0 to 2 knots over remaining parts of the country.

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- The current meteorological Analysis suggests increase in thunderstorm activity over northeastern States during next 48 hours.

Satellite image of 6 UTC on 17th April, 2009



Zone-wise Forecast (Forecast valid upto 1430 hours IST of 19th April, 2009)

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

- Rain/thundershowers are likely at isolated places over Jammu & Kashmir and Himachal Pradesh and Uttarakhand during next 24 hours and mainly dry weather thereafter.
- Mainly dry weather is likely over the rest region.

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

- Rain/thundershowers are likely at most places over coastal Orissa during next 24 hours and decrease thereafter.
- Rain/thundershowers are likely at many places over coastal West Bengal during next 48 hours and decrease thereafter.
- Isolated rain/thundershowers are likely over interior Orissa, Jharkhand and remaining parts of West Bengal during next 24 hours and mainly dry weather thereafter.
- 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 many places over Andaman & Nicobar Islands.
- Rain/thundershowers are likely at a few places over north Coastal Andhra Pradesh during next 24 hours and mainly dry weather thereafter.
- Rain/thundershowers are likely at isolated places over Kerala, Lakshadweep and south Tamil Nadu.
- Mainly dry weather is likely over the rest region.

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

- Mainly dry weather is likely over the region.
-

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

- Isolated rain/thunderstorm is likely over Chhattisgarh during next 24 hours and mainly dry weather thereafter.
- Mainly dry weather is likely over the region.

WARNING: (For next 48 hours)

- Gale force winds speed reaching 60-70 kmph gusting to 80 kmph are likely along and off north Andhra Pradesh coast during next 24 hours and Orissa and West Bengal coasts during next 48 hours. Sea condition will be very rough to high. Fishermen are advised not to venture into the sea along and off these coasts.
- Isolated heavy to very heavy rainfall is likely over coastal areas of Orissa during next 24 hours.
- Isolated heavy rainfall is likely over coastal areas of West Bengal during next 24 hours.
- Isolated heavy rainfall is likely over northeastern states on 17th and 18th April.
- Isolated thunder squall is also likely over Orissa and West Bengal.

Weather Outlook from 1430 IST of 19th April, 2009 to 1430 IST of 21st April, 2009 (Based on numerical weather products):

- Scattered to fairly widespread rain/thundershowers are likely over 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 formation), barley and oat (grain formation), 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).
- For seed crop of berseem and oat one cut can be taken.
- It is optimum time for sowing of chari, bajra and maize in low hills.
- It is advised for nursery sowing of tomato, chilli, summer squash, capsicum, brinjal, ridge gourd, bitter gourd and pepper in poly houses.
- It is time for sowing of ageti bhindi and french bean in the field.
- It is optimum time for plantation of gladiolus and liliium. 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.
- Weather is congenial for production of white button mushroom in the closed room. Maintain room temperature at 18-22⁰C and relative humidity around 85% for successful cultivation.
- Details of crop varieties are mentioned in Annexure I.

Plant protection

- There are chances of attack of peach leaf curl disease in peach and pear fruit plant where fruit bearing has started. For control spray Nuvan @ 1 ml + 3 g Blitox per litre of water.

- 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), mustard, chickpea and lentil (maturity), cabbage, onion, garlic and tomato (vegetative), summer sunflower, moong, urd (early vegetative / vegetative).
- Undertake field preparation and planting of sugarcane.
- As there was no significant rain 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 like wheat, mustard, chickpea, garlic and lentil.
- 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.
- Undertake field preparation and sowing of non seasonal pea with improved varieties in high hills.
- Farmers are also advised to undertake sowing of bhindi, french bean and tomato. Details of varieties are given in Annexure I.
- Undertake weeding, intercultural operations and top dressing in earlier sown chaiti dhan, onion, potato and chilli crops.
- **Plant Protection:** Weather conditions are favourable for mild incidences of aphids in late sown lentil crop, hence farmers are advised to go for spraying of 35 EC Endosulphan @ 2 ml per liter of water.

Punjab

- **Major Standing Crops:** Horticultural crops (vegetative), spring sugarcane (early vegetative), wheat (early maturity / maturity), gram and lentil (harvesting), pea and vegetable crops like chilli, tomato, brinjal, bhindi and onion (early vegetative) and oilseeds (harvesting), summer pulses, sunflower (vegetative), summer rice (tillering).
- Complete field preparation and planting of sugarcane with irrigation facilities. One row summer moong / summer mash may be intercropped.
- As there was no significant rain during last week in the State and mainly dry weather is likely to occur for next five days, apply irrigation to the crops.
- Undertake harvesting of matured crops on sunny days.
- Farmers are advised to undertake field preparation and nursery sowing of bhindi.
- Details of crop varieties are mentioned in Annexure I.
- Farmers are advised to undertake sowing of cucurbits in polythene bags for raising early crop as weather is favourable for sowing.

- Undertake sowing of recommended varieties / hybrids of cotton / *desi* cotton including Bt cotton as there was rainfall during last week.
- Complete the transplanting of seedlings of carrot for seed production.
- Undertake sowing of cowpea and sweet potato as the weather is favourable for sowing.
- Undertake intercultural operations in tomato, onion and chilli.
- Young plants may be given nitrogenous fertilizer in small split dose. The evergreen fruit plants like citrus, mango, litchi, guava and ber may be planted in the field.
- Continue sowing of greens (*Khada*).
- Take adequate steps to protect the animals from summer heat and stress. Keep the animal and poultry sheds clean and dry. Regularly deworm the calves with piperazine liquid (4 ml / kg body weight) first at 10 days of age, then 15 days and then monthly upto 3 months of age and then 4 monthly upto 1 year of age. Make sure that all the animals are vaccinated against FMD. Do not feed excess wheat / cereal to dairy animals. This can be fatal.

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

- fruit and shoot borer in bhindi. Apply Sevin 500 g or Thiodan 350 ml per acre at the appearance of borer. Repeat the spray after 15 days.
- powdery mildew in early sown cucurbits. Apply 50-80 ml Karathane 25 EC per acre to check the disease.

Haryana

- **Major Standing Crops:** Spring sugarcane (early vegetative), vegetable crops (early vegetative), wheat (early maturity / maturity) and oilseeds (maturity), summer pulses, sunflower (early vegetative).
- Undertake harvesting of matured crops on bright sunny days.
- As there was no significant rain in most of the districts during last week except Rohtak district and mainly dry weather is likely to occur for next five days, apply irrigation to the crops. Postpone irrigation in Rohtak district as there was sufficient rainfall during last week.
- Complete the planting of sugarcane with irrigation facilities. Intercrop of summer moong or summer mash may be sown.
- 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 watered 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.
- **Plant Protection:** Weather conditions are favourable for mild incidence of yellow rust in wheat. Apply tilt @ 200 ml in 200 litres of water as spot application.

Delhi

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), mustard (seed maturity / harvesting), gram (grain maturity / harvesting), wheat (early maturity / maturity).

- Conserve moisture in the soil where the crops are at maturity stage.
- As dry weather is likely to prevail for next five days, farmers are advised to continue harvesting of already matured crops of wheat, gram etc.
- Early threshing after harvest of the crops is advised. Grains and seeds are advised to be dried to their recommended moisture content.
- There is chance of attack of mealy bug in mango. Application of sticky strap around the tree trunk to prevent the climbing of mealy bug is recommended. Spraying of Endosulfan in heavily attacked trees is advised.
- Under prevailing weather there is chance of attack of fruit fly in cucurbits. Fruit fly infested fruit should be collected and buried deeply. Installation of pheromone trap and in case of heavy infestation wet spraying of Endosulfan @ 2gm + 50 gm jaggary per litre of water in cucurbitaceous crops is advised.
- Present weather conditions are highly favourable for the powdery mildew and even downy mildew infection in the cucurbitaceous crops. Spraying of Mancozeb against powdery mildew and Redomil against downy mildew should be carried out.
- Spraying of Sevin or Carbaryl against Red Pumpkin Beetle is advised.

Uttar Pradesh

- **Major Standing crops:** Sugarcane (cane formation / harvesting), summer sugarcane and vegetables (early vegetative), mango (fruit setting), rai, mustard, gram, pea and lentil (harvesting), wheat (early maturity / maturity), *zaid* maize (early vegetative).
- Undertake harvesting of matured crops like garlic, pea, sugarcane and rai on bright sunny days.
- As there was no significant rain in most of the districts during last week and no significant rainfall is likely to occur for next five days over the State, apply 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.
- Sowing of *zaid* maize at seed rate of 18-20 kg / hectare may be continued.
- Prepare field and continue sowing of vegetables, sunflower, moong, lobia and urd and complete planting of summer sugarcane with irrigation facilities. Details of crop varieties are mentioned in Annexure I.
- Prepare the field for undertaking sowing of turmeric and ginger.
- 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 formation / maturity), pulses (pod formation / maturity), mustard (capsule formation / 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.
- Farmers are advised to continue harvesting of matured crops like wheat, mustard and pulses as weather is likely to be favourable for harvesting.
- Continue planting of saplings in orchard and nursery sowing of cole crops in Leh and Rajouri divisions.
- Undertake sowing of vegetable crops like brinjal, tomato, chilli, capsicum, bhindi, beans, cucurbits, pumpkin and transplanting of tomato, brinjal and chillies in Jammu and Rajouri divisions. Undertake transplanting of popular trees in main field in Jammu division.
- Undertake sowing of summer pulses in Jammu Division.

- Undertake sowing of summer fodder (maize, cow pea, jowar) using a seed rate of 60 kg / ha in 1:2:2 ratio in fields vacated by mustard crop.
- Undertake sowing of stratified seeds of apple, apricot and other pome and stone fruits in polyhouses / trenches.
- Intercultural operations, sowing of crops and application of fertilizers and pesticides may be undertaken.
- Undertake planting of evergreen fruit trees such as mango, guava, litchi, citrus etc can be done. Deciduous plants such as pear, peach, plum and grapevine can also be planted, if shifted with the earth ball around their roots. Gap filling in orchards for frost damaged plants may also be done during these days. Transplanting may be done during this week taking advantage of the rainfall received during the last week.
- Summer crops like mash and moong may be sown during these days on fields vacated by harvesting of mustard, potato and fodder crops by utilising full advantage of the previous week's rainfall. Summer moong crop can be sown up to 20th April with recommended varieties at a seed rate of 20-25 kg ha⁻¹ after inoculation with *Rhizobium* culture. There is sufficient moisture in the fields due to the rainfall received during the preceding week, so farmers are advised to go for ploughing followed by planking for *in situ* conservation of moisture during field preparation.
- **Plant Protection:** Weather conditions are congenial for mild incidences of brown rust in wheat. If 10 per cent of the leaves are found to be infested with lesions of brown rust, spray Mancozeb @ 0.2 % or Tropicnazole @ 2%.

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

Bihar

- **Major Standing Crops:** Sugarcane (vegetative), *rabi* maize (cob formation), pulses (harvesting), sunflower (head formation / flowering), wheat (maturity / harvesting) and *boro* rice (panicle initiation / flowering), 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 and *boro* rice.
- Farmers are advised to complete the planting of sugarcane.
- 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.
- Farmers are also advised to harvest the matured wheat, rapeseed, gram, pea, lentil and mustard crops as weather favourable for undertaking harvesting.
- **Plant Protection:** Weather conditions are favourable for mild incidence of fruit fly in mango and litchi. Spray insecticide Endosulphan @ 1.5 ml/liter of water on flower to manage.

Jharkhand

- **Major Standing Crops:** Sugarcane (vegetative), wheat (maturity / harvesting), *rabi* oilseeds (maturity / harvesting), summer maize (silking / cob formation) and rice (panicle initiation / flowering).
- Undertake field preparation and sowing of summer moong. Use seed rate of 30 kg per hectare and apply 44 kg Urea, 250 kg SSP, 34 kg MOP per hectare before sowing. Treat the seeds with *Rhizobium* culture.

- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State, apply irrigation to the crops.
- Undertake transplanting of onion and sowing of bitter gourd, sponge gourd, ridge gourd, bhindi and water melon in the main field.
- Farmers are advised to undertake weeding, intercultural operations in summer rice, sugarcane, maize as weather is favorable.
- 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.
- Undertake planting of *colacasia* as the weather is favourable and it is the right time for the cultivation of *colocasea* crop on upland. Generally, 0.5 kg of tuber is needed and to be planted at a distance of 75 x 75 cm apart. Tuber should be treated with emisan @ 2.5 g with 0.5 g streptocycline per liter of water for 15-20 minutes or fresh manure slurry mixed with Bavistin @ 1-2 g / litre of fresh manure slurry and immerse the tuber for 20 – 25 minutes then lift the tuber from the solution and dry it for 10-15 minutes in shadow. Also apply lindane dust powder @ 15-20 g per pit to protect the tuber from the attack of termites.
- 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 (flowering / grain formation), summer sunflower (vegetative), 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 next five days over interior Orissa, apply irrigation to the crops. Sprinkler irrigation should be provided to the orchard crops and vegetables.
- As rain / thundershowers are likely at most places over coastal Orissa along with isolated heavy rainfall during next 24 hours, postpone irrigation, intercultural operation, sowing and application of fertilizer and plant protection measures and also harvesting of crops like wheat, mustard. Also provide suitable protection for covering the already harvested crops. Also provide adequate drainage facilities to protect the crops from water logging.
- Weather conditions are favorable for bhindi sowing in interior Orissa. Sow improved high yielding varieties. For line sowing use 5 to 7 kg seeds/acre for improved varieties and 1250 to 1500 g seeds / acre for hybrid varieties. Sow the seeds in lines at 30x30cm spacing for improved varieties and at 60x45 cm. spacing for hybrid varieties. Undertake sowing after current spells of rain in coastal Orissa.
- Undertake sowing of fodder maize and cowpea as mixed cropping sowing in interior Orissa.
- As weather conditions are favourable for ginger sowing in interior Orissa, go for ginger sowing. Cover the beds with straw.
- As weather conditions are favourable for jute sowing in interior Orissa, sow the recommended variety JRO-524 (Naveen) which is resistant to mite.
- Spray 2% Urea and 2% DAP in green gram and black gram twice i.e. at pre-flowering and 15 days after 1st spray.
- Maintain 3 – 5 cm standing water in the summer rice field.
- The late sown sesame crop is at 3 to 4 week stage. Apply 13 kg urea per acre followed by earthing up. Irrigate the crop after fertilizer application.
- Summer sunflower crop is at pre -flowering stage. Spray 2-3 g Borax per litre water.

- Current weather conditions are favourable for planting of pine apple, tuberose and marigold. Use healthy, robust 3-4 months aged pineapple rhizomes of 350-400 g by weight. Plant the seedlings in 0.5x0.5x0.5 m pit at a spacing of 1x 0.3 m distance.
- Transplanting of vegetables should be done in afternoon hours to avoid high temperature 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 to save them from thunder / hailstorm / squally wind.
- Maintain average water depth at 5ft level in the fish pond. Feed fishes with oil cake, bran mixture at 2% of their body weight daily. Start partial harvesting of fishes above ABW 750g.
- 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.
- yellow vein mosaic in summer green gram. Spray 20 ml Rogor / 10 litres of water to control the white fly, the vector of YMV virus.
- 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.
- blast, bacterial leaf blight and sheath blight diseases in summer rice. Spray Beam @ 1 gm or Hinosan @ 1 ml or Biomycin @ 2 ml / litre of water to control blast, Plantomycin @ 1.5 gm + Copper Oxychloride @ 2 g / litre of water to control bacterial leaf blight, apply Sheethmar / Rhizocin @ 3 ml / litre or Hexaconazol @ 2 ml / litre of water to control Sheath blight. Repeat the spray after 10-12days.
- Undertake spraying after current spells of rain in coastal Orissa.

West Bengal

- **Major Standing Crops:** Sugarcane (planting), wheat (maturity / harvesting) and *boro* rice (panicle initiation / flowering / grain formation), sesame (vegetative / flowering / pod formation), green gram (vegetative), groundnut (flowering / pegging / pod formation) and jute (sowing).
- As rain / thundershowers are likely at many places over coastal West Bengal during next 48 hours along with isolated heavy rainfall during next 24 hours, postpone irrigation, intercultural operation, and application of fertilizer and plant protection measures and also harvesting of crops like wheat over this region. Also provide suitable protection for covering the already harvested crops. As there was no significant rain during last week in most of the remaining districts of the State and no significant rain is likely to occur during next five days, apply irrigation to the standing crops. Under prevailing weather the following advisories may be followed in remaining parts of the State.
- As congenial weather is likely to prevail, farmers are advised to undertake intercultural operation to keep the fields weed free. Complete intercultural operation of groundnut during flowering stage.
- Keep 5 to 7 cm standing water in *boro* rice field.
- As no significant rainfall is likely to occur for the next five days, wheat should be harvested and threshed at the earliest.
- Prepare the land for sowing of jute. Apply two cart of FYM during land preparation. Collect good quality seed material in advance. Maintain seed rate 800 g for *Olitorious* and 1 kg for *Capsularis*.
- Under prevailing weather condition undertake land preparation and planting of sugarcane setts.
- Those who have not treated the sesame seeds earlier may encounter collar rot or root rot disease. To combat it spray 1 g Carbendazim and 2 g Mancozeb combinely mixing in one litre water.
- In the prevailing weather condition, there is chance of infestation of stem borer attack in rice in Coastal saline zone. Apply Triozophos 40EC @ 1.2 ml / litre or Chloropyriphos 20 EC @ 2.5 ml /

litre or Phosphamidon 85 EC @ 1 ml / litre of water after current spells of rain when 5% dead heart or one egg mass or one moth / sq.m. is noticed.

- The seedlings of cucurbitaceous crops may be infested by whitefly under prevailing weather condition. For controlling the same spraying should be done with Monocrotophos @ 1.5 ml / liter or Acephate @ 1 g / liter of water.

Sikkim

- **Major standing crops:** (a) **High hills:** Off-season vegetable crops (nursery sowing / seedlings / transplanting), (b) **Medium & Low hills:** Orange (flowering), large cardamom (flowering), wheat (milk / dough), mustard (maturity / harvesting), vegetable crops (flowering / fruiting / harvesting), *rabi* potato (maturity / harvesting).
- As there was no significant rain during last week and mainly dry weather is likely for next five days over the State, apply irrigation to the crops.
- Farmers are advised to sow maize crop in the mid and low hills within 2nd week of April adopting usual sowing method and apply FYM / recommended compost before sowing the seeds.
- 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), wheat (maturity / harvesting), *boro* rice (flowering / grain formation), early *ahu* rice (tillering), regular *ahu* rice (direct sowing / transplanting) and *Bao* (Deep water rice) rice (sowing), jute, maize and summer vegetables (sowing), sugarcane, turmeric and ginger (planting).
- As rain is likely to occur at many places during coming days over the State along with isolated heavy rainfall on 17th and 18th April, farmers are advised to postpone irrigation to the crops. Farmers are also advised to undertake following agricultural operation like sowing, transplanting, fertilizer and pesticides application after 18th April.
- In view of expected rain, farmers are also advised to postpone harvesting of matured crops of wheat and provide suitable protection for covering the already harvested crops.
- Maintain 3-5 cm stagnant water in *boro* rice field.
- Sowing of direct seeded regular *ahu* rice and also nursery sowing for transplanted regular *ahu* rice may be undertaken during these days. Sowing of *Bao* rice (Deep water rice) may also be completed within April.
- Farmers may go for cultivation of summer vegetables like ladies finger, bottle gourd, pumpkin, ridge gourd, cucumber, bitter gourd, snake gourd etc.
- As March-April is the high time for sowing of jute seeds, prepare land and undertake sowing of jute.
- Prepare land and undertake sowing of maize and 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 seeds are required and seeds should be sown at a spacing of 45 X 30 cm.
- Soil and air temperatures are favourable for the attack of stem borer in *boro* rice. If eggs of the pests are noticed, apply 'Darsban' or 'Monocrotophos' at the rate of 2 tea spoon full per 5 litres of water in the field after current spells of rain.
- Due to increase in RH and probable increase in temperature in the coming days, the condition has been 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.
- Details of crop varieties are mentioned in Annexure I.
- Farmers are advised to apply fertilizers in the coconut and arecanut trees in ring method after current spells of rain. For bearing trees the recommended doses of the fertilizers are –
 - Coconut: 750 g Urea, 1250 g SSP, 850 g MOP and 25 g borax per plant.
 - Arecanuat: 115 g Urea, 125 g SSP, 137 g MOP and 5 g borax per plant.

Animals

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

Arunachal Pradesh

- **Major Standing crops:** Pea (harvesting), wheat (maturity), mustard (maturity), *rabi* maize (grain formation / maturity).
- Continue harvesting of matured crops of wheat, mustard, pea and maize after current spells of rain. Farmers are also advised to put cover to protect the already harvested crops from rain.
- As rain is likely to occur at many places during coming days over the State along with isolated heavy rainfall on 17th and 18th April, farmers are advised to postpone irrigation to the crops. Farmers are also advised to undertake sowing of maize, summer vegetables and ginger, fertilizer and pesticides application after 18th April.
- Prophylactic measure for protection of seed ginger rhizome from fungal disease may be taken. Water logging in the field must also be avoided.
- Farmers are advised to prepare the field for *jhum* rice and wet seeded rice (early *kharif* rice) after current spells of rain.

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

Andhra Pradesh

- **Major Standing Crops:** sugarcane (grand growth), gram (grain maturity) and chilli (fruit development).
- As there was no significant rain during last few weeks and no significant rainfall is likely for next five days over the State, apply irrigation to the crops.
- Complete transplanting of rice and undertake planting of sugarcane.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - 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 on 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.

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.

Karnataka

- **Major Standing Crops:** Annual sugarcane (grand growth), *rabi* crops (maturity / harvesting), cotton (harvesting), summer vegetables (sowing), green gram, black gram and cowpea (vegetative), summer groundnut (vegetative / flowering).
- As there was no rainfall during last few weeks in the State and mainly dry weather is likely to occur 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.
- Complete sowing of summer crops like water melon, snake gourd and ribbed gourd.
- After the harvest of *rabi* 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 may be noticed. Spray 1 per cent bordeaux mixture or 2 gm of copper oxy chloride. 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 –

- powdery mildew in pulse crops namely green gram, black gram and cowpea. Spray Carbendazim @ 1.0 g or water soluble sulphur @ 3 g per liter of water.
- leaf miner, mites and thrips in summer groundnut. Spray 1.0 ml Monocrotophos 36 SL or 0.5 ml Phosphamidon 85 WSC per litre of water.
- purple blotch in onion in Bidar region; spray Mancozeb @ 2 ml / litre of water.
- also necrosis in sunflower; spray Imidachlorpid @ 0.3 ml/litre of water.
- *koleroga* in arecanut crop, go for spraying of 1% Bordeaux mixture to avoid disease incidence.

Kerala

- **Major Standing Crops:** Rice (tillering), 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.
- Complete sowing of *puncha* rice in nursery in Malappuram, Kasargod, Kozhikode and Kannur districts.
- Intercultural operations, mulching and shading of young plants may be continued in plantation crops.
- Provide thatches to young plants of areca nut 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.

Tamilnadu

- **Major Standing Crops:** Sugarcane (cane development), cotton (picking stage), groundnut (vegetative).
- As there was sufficient rainfall in Kanyakumari, Nagapattinam, Ramanathapuram, Sivagangai, Thanjavur, Tirunelveli, Tiruvarur and Tuticorin districts during last week, postpone irrigation to the crops. As there was no significant rainfall during last week in the remaining districts and no significant rainfall is likely for the next five days, apply irrigation to the crops.
- Undertake nursery sowing of *sornavari* rice in Kanchipuram, Thiruvallur, Vellore, Thiruvannamalai, Cuddalore and Villupuram districts utilizing the rainfall during last week.
- Undertake field preparation for sowing of sunflower, ground nut, green gram, black gram and gingelly in north western Tamil Nadu. Prepare the land well in advance, and apply 5 tons of manure per acre of land.
- Undertake land preparation and sowing of bitter gourd, pumpkin, snake gourd and water melon as conducive weather conditions prevail during these days.
- Complete transplanting of vegetable crops such as bhindi, tomato, cowpea, dolichos and chilli with irrigation facilities.
- Continue land preparation for sowing of summer irrigated crops like cotton, black gram and bajra in Thirunelveli, Tuticorin and Virudhunagar districts.
- Details of varieties are given in Annexure I.

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

- stem borer in maize and sorghum crop at flowering stage and thrips in onion. Monitor the pest out break and take appropriate plant protection measures.
- leaf folder incidence in rice crop. Monitor the incidence and spray Monochrotophos @ 1 litre / ha.
- 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 the titre for Infectious Bronchitis (IB) and Ranikhet disease and in the case of lower values, administration of commercial vaccine is advised.
- white fly in chillies and green capsicum, spray 2 ml of Methyl Demeton per litre of water at 15 days interval.
- caterpillar incidence in 30 days old cauliflower crop. Hence watch for the incidence and take appropriate plant protection measures.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT, RAJASTHAN]

Maharashtra

- **Major Standing Crops:** Summer rice (grain formation / grain maturity in South Konkan, panicle initiation / flowering in North Konkan, tillering in East Vidarbha), summer groundnut (pod formation in Konkan and flowering / pegging in other divisions), summer maize (active vegetative to flowering), summer sunflower (head formation / flowering) and summer bajra (ear head emergence / flowering / grain formation).
- 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.
- Start 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.

- Apply dose of Gypsum @ 125 kg / ha at flowering stage of summer groundnut. Complete final intercultural operation at this stage to keep the field weed free.
- As dry weather is prevailing, to avoid flower drop in tomato crop, spray 50 ppm concentration Naphthalic Acetic Acid.
- As weather condition is favorable, start harvesting of already matured cow pea, *kuthi* & *ragi* in Konkan.

Plant protection

- As there is chance of attack of powdery mildew in mango, spray Carbendazim @ 10 g or Hexaconazol @ 5 ml per 10 liters of water to control the disease.
- There is chance of infestation of blight in rice in North Konkan. For control spraying of Carbendazim @ 1 g / litre of water or Copper oxy chloride @ 2.5 g / litre of water may be done.

Poultry

- Cool temperature may be maintained in the shade by covering them with paddy straw or wet gunny bags.

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 the rate of evaporation and temperature.

Gujarat

- Major Standing Crops: Sugarcane (vegetative), vegetables (vegetative / flowering / fruiting / harvesting), wheat (maturity / harvesting), groundnut (flowering / pegging / pod formation), summer rice (flowering / 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 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 followed by first earthing up in 3 – 4 months old crops of sugarcane.
- Under prevailing dry weather, spray 20 ppm amethelin acetic acid and 2 % urea solution in mango orchard for effective control of dropping of fruits.
- If yellowing of leaves is seen in the fields of groundnut, spray 100 gm ferrus sulphate + 10 gm citric acid in 10 litres of water at 8 to 10 days intervals as weather condition is favourable for spraying.
- Under prevailing weather condition there is chance of attack of thrips in chilli and powdery mildew in mango in North Saurashtra region. For control of thrips in chilli, spray triphose @ 15 ml / 10 litres of water. To control powdery mildew in mango spray sulphur 80 WP @ 30 gm or dinocap @ 10 ml / 10 litres of water.

Animal Husbandry

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

Poultry

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

Rajasthan

- **Major Standing Crops:** Wheat (grain formation / development), mustard, gram (pod formation / development), vegetable crops (flowering / fruiting).
- As there was no significant rain during last few weeks and no significant rainfall is expected during next five days over the State, apply irrigation to the crops.
- Conserve moisture in the soil where the crops are at maturity stage.

- Undertake sowing of summer moong in Banswara and grow YMV resistant varieties i.e. SML-686, Pusa Vishal, PDM-139 & G-8 and do seed treatment before sowing with Thiram @ 3 g or Carbendzim @ 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 (*kaddu*), cucumber, round gourd (*tinda*), ridged gourd (*turai*), 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.

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).
- As there was no significant rain during last few weeks and mainly dry weather is likely to prevail for next five days over the State, apply irrigation to the crops.
- 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.
- **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.

Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative), wheat (harvesting), vegetables (vegetative / flowering / fruiting / harvesting), summer rice (panicle initiation / flowering / grain formation), groundnut (flowering / pegging), sunflower (head formation / flowering), summer vegetables and sesame (early vegetative / vegetative / flowering) and green gram (early vegetative / vegetative).
- There was no significant rain during last few weeks over the State and no significant rain is likely to occur for next five days and also the open pan evaporation rates are observed higher 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 weather condition is congenial, intercultural operation and weeding are advised in sunflower and groundnut. Complete final intercultural operation in groundnut within flowering stage. Fertilizer application followed by irrigation should also be done 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.

Annexure I Crop varieties

Himachal Pradesh

- **Ageti 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.
- **Sunflower:** MSFS-8, NSFH-9, Ranjha, Heer, Badshah etc.(hybrids), Morden and Paradobic (Varieties).
- **French bean:** Pant Anupama, Pant Bean-2, VL Vonibean-1 and Pusa Parvati
- **Pea:** VL Ageti, Matar-7 or Vivek Matar-10
- **Moong:** Pant Moong-2, Pant Moong-4, Pant Moong-5 & Narendra Moong-1.
- **Tomato:** VL-Tomato – 3
- **Urd:** Pant Urd – 30, Pant Urd-35 & Narendra Urd -1.
- **Fox tail millet:** VL-29, VL-21, VL Madira-172
- **Bhindi:** Pusa Savany, Parbhani Krant

Punjab

- **Sugarcane:**
Early maturing: COJ 64, COH 56 and COH 92, **mid-season:** CoJ-88 CoS-8436, and **late maturing variety:** CoJ-89 and Co-1148
- **Bhindi:** Punjab Padmini, Punjab 7, Punjab 8 and Pusa sawni.

Haryana

- **Sugarcane:** COJ 64, COH 56 and COH 92.
- **Pigeon pea:** UPAS 120 and T-21.
- **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

J & K

- **Potato** Kufri Jyoti and Kufri Badshah
- **Summer moong and mash:** PDM-54, PS-16, PS-7 and ML -131

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.
- **Sesame:** Uma, Usha, Kalika, Nirmala, Prachi and Amrit.
- **Summer moong:** PDM 11, PDM 54, K 851 and TARM 1.

- **Cowpea:** Bush type- Pusa Phalguni, Pusa Komal, and runner type- American long, and Banarasi long, other improved varieties like Russian Giant, EC-4316, NP-3, C-152, UPC-286, UPC-5286 and IGFI-450 can be grown.
- **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.
- **Tube rose:** Shringar, Coimbatore Single and Kolkatta Single and Suhasini double.
- **Ginger:** Suprava, Suruchi, Surabhi.
- **Bhindi:** Utkal Gourav, Arka Anamika, Uphar, Parvani kranti and Hybrid Vars.- Varsa, Vijay, Vishal, Tara, Adhunik, Atyadhunik, and Supriy.
- **Maize:** African Tall
- **Cowpea:** EC-4216

West Bengal

- **Olitorious jute:** Basudev, Navin, Chaitali.
- **Capsularis jute:** Sonali, Sabuj Sona.

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.
- **Ridge Gourd:** Pusa Nasder, Surekha etc.
- **Bitter gourd:** Monsoon Monarch, Long green Monsoon, Coimbatore long etc.
- **Pumpkin:** Arka Suryyamukhi, Arka-Chandan, Large green etc.
- **Snake gourd:** Long green, Long white, Extra long etc.
- **Cucumber:** Chinese Green, Pusa Sonjog, AAUC-I, AAUC-2, AAUC-3, UC-4 etc.
- **Jute:** JTC 212, JRC 312, UPC 94.
- **Maize:** Ganga-5, Highstars, NLD, Dhawal, Navjot, Kishan etc.
- **Ginger:** Nodia, Moran etc.
- **Bhindi:** Pusa Sawani, Arka Anamica, Parvani kranti, Panchasira etc.
- **Deep water rice:** Maguri, Negheri, Kekua, Tarabao etc.

Andhra Pradesh

- **Black gram:** LBG 402, 648, 645, 685, 709 and 752.

Kerala

- **Bhindi:** Arka anamica, Arka Abhay, Susthira

Tamilnadu

- **Groundnut:** TMB-13, VRI-6 and VRI-7
- **Gingelly:** SVPR-1, TMB-5, 6 and VRI-2.
- **Rice:** ADT-36, ADT-37, ADT-39, ADT-43, ADT(R)-45, ADT(R)-47, Co-43, Co-47
- **Maize:** Co-1, Co.H.(M)-4, Co.H.(M)-5, Private Hybrids
- **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, Pusa Alankar, Arka Suryamukhi
- **Bitter guard:** Arka Harit Pusa Vishesh, Priya
- **Round gourd-** Arka tinda, Bikaneri green, Punjab-48.

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