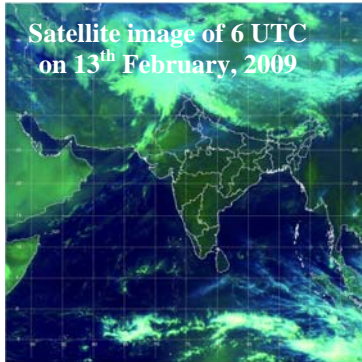




National Agromet Advisory Bulletin

Thursday, 12th February, 2009

(For the period 12th to 16th February, 2009)



Chief Synoptic Feature (Based on 1430 hours IST observations of 12th February, 2009)

- A fresh western disturbance is likely to affect western Himalayan region during next 2-3 days.
- The minimum temperatures are above normal by 3-5°C over west Rajasthan and east India and by 2-3°C over parts of east Rajasthan and northeast India. The minimum temperature is below normal by 2-3°C over central and adjoining west India.

Advisories for cold injury

- Due to possibility of low minimum temperature in some parts of Jammu and Kashmir, protect vegetable crops, mustard and gram from cold injury by arranging smoke nearby the field. Provide thatches in young orchards of mango, litchi, guava, citrus and papaya.

Advisories for irrigation

- As rain / snow is likely to occur at many places in Jammu & Kashmir, postpone irrigation to the crops.
- As there was no significant rain in 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.

Advisories for pest and disease

- Weather conditions are favourable for the incidence of pests and diseases in the following States:
 - Powdery mildew in peas in Himachal Pradesh and Delhi.
 - Thrips in chilly in North Saurashtra, Rajasthan and Coastal Andhra Pradesh.
 - Blast and brown spot in rice, red palm weevil, rhinoceros beetle, stem bleeding, leaf eating caterpillar and leaf rot in coconut, *Sigatoka* leaf spot, bunchy top and rhizome weevil in banana, white stem borer in coffee and powdery mildew, leaf spot, shoot and fruit borer in vegetable crops in Kerala.
- Monitor the crops for the pests and diseases and undertake plant protection measures if required.

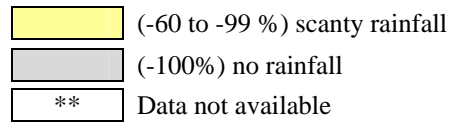
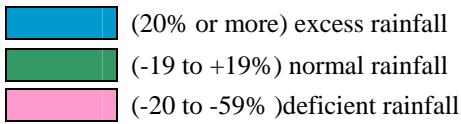
Issued by

National Agrometeorological Advisory Service Centre,
Agricultural Meteorology Division, India Meteorological Department, Shivajinagar, Pune.

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

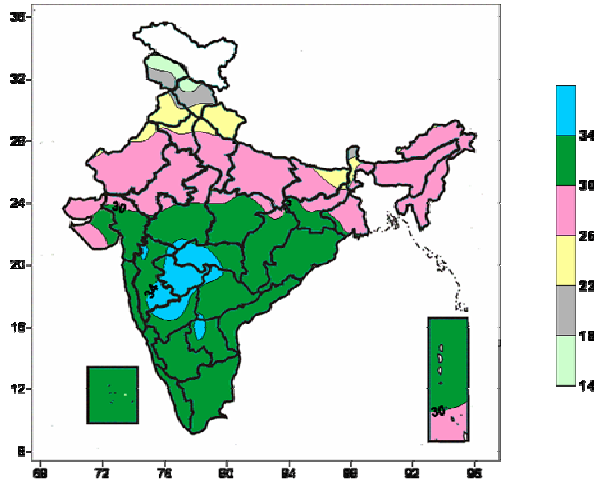
Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks					
Sub-division	Cumulative Rainfall (% Dep.) for the period				
	14th January	21st January	28th January	4th February	11th February
A & N Islands	-97	-100	-99	-96	-49
Arunachal Pradesh	-100	-94	16	-71	-100
Assam and Meghalaya	-100	-99	49	-95	-100
NNMT	-100	-100	-100	-100	-100
SH West Bengal & Sikkim	-96	-99	-100	-99	-100
Gangetic West Bengal	-51	-100	-100	-100	-100
Orissa	-99	-100	-100	-100	-100
Jharkhand	132	-100	-100	-100	-100
Bihar	-83	-100	-100	-100	-68
East Uttar Pradesh	-98	-100	-100	-100	19
West Uttar Pradesh	-64	-99	-100	-100	-2
Uttarakhand	-100	-87	-100	-100	182
Haryana, Chandigarh & Delhi	-100	-17	-87	-100	270
Punjab	-100	74	-100	-100	29
Himachal Pradesh	-84	10	-81	-95	167
J & K	-69	223	-15	-96	-50
West Rajasthan	-100	-53	-100	-100	-96
East Rajasthan	-100	-97	-100	-100	-100
West M. P.	25	-100	-100	-100	-100
East M. P.	71	-100	-100	-100	-100
Gujarat region	-100	-100	-100	-100	-100
Saurashtra & Kutch	-100	-100	-100	-100	-100
Konkan and Goa	-100	-100	-100	-100	-100
Madhya Maharashtra	-88	-100	-100	-100	-100
Marathwada	-100	-100	-100	-100	-100
Vidarbha	-100	-100	-100	-100	-100
Chhattisgarh	-77	-100	-100	-100	-100
Coastal A. P.	-100	-100	-100	-100	-100
Telangana	22	-100	-100	-100	-100
Rayalseema	-60	-100	-100	-100	-100
TamilNadu & Pondicherry	-64	-60	106	-98	-100
Coastal Karnataka	-100	-100	-100	-100	-100
N. I. Karnataka	-100	-100	-100	-100	-100
S. I. Karnataka	-90	-99	-100	-100	-100
Kerala	-97	-100	-7	-100	-100
Lakshadweep	-100	-74	4	-100	-100

The subdivisions like Andaman & Nicobar Islands, Nagaland, Manipur, Mizoram, Tripura, West Bengal, Sikkim, Orissa, Bihar, Rajasthan, Gujarat, Saurashtra & Kutch, Maharashtra, Chhattisgarh, Coastal Andhra Pradesh, Rayalaseema and Karnataka received scanty / deficient rain in all the 5 weeks; Arunachal Pradesh, Assam & Meghalaya, Jharkhand, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Telangana, Tamil Nadu & Pondicherry, Kerala and Lakshadweep Islands received scanty / deficient rain in 4 out of last 5 weeks; Haryana, Chandigarh, Delhi, Punjab and Himachal Pradesh received scanty / deficient rain in 3 out of last 5 weeks. Other subdivisions received normal or excess rain for at least 3 weeks out of last 5 weeks.



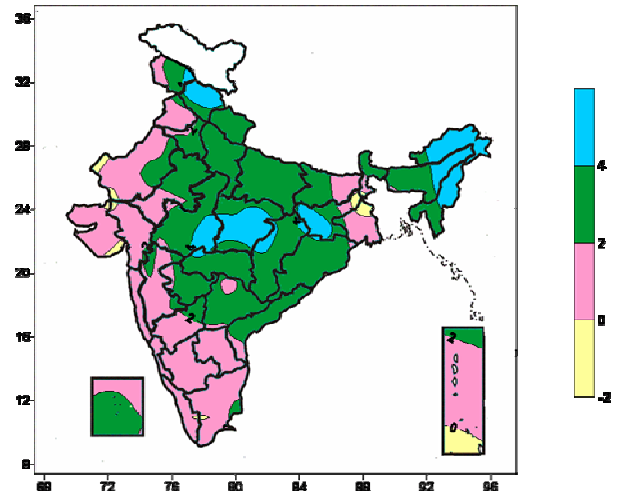
Contour maps for the week ending 11.02.09

Actual Mean Maximum Temperature (°C) in India for the week ending 11.02.09



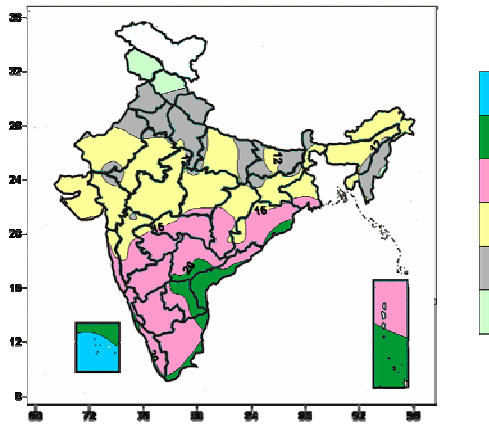
Actual Mean Maximum temperature ranged between 34 to 38°C over most parts of Marathwada, Vidarbha, some parts of West Madhya Pradesh, Madhya Maharashtra, North Interior Karnataka, Telengana and Raylaseema, 26 to 30°C over most parts of Rajasthan, Uttar Pradesh, Bihar, North East India, Gangetic West Bengal, some parts of Gujarat, Madhya Pradesh, Chattisgarh, Jharkhand, Sub Himalayan West Bengal, Andaman & Nicobar Islands, 22 to 26°C over most parts of Punjab, Uttarakhand, some part of Haryana, Himachal Pradesh, Rajasthan, West Uttar Pradesh, Bihar, Sub-Himalyan West Bengal, 18 to 22 °C over most parts of Himachal Pradesh, Sikkim, some parts of Jammu & Kashmir, Punjab, 14 to 18°C over some parts of Jammu & Kashmir, Himachal Pradesh, 30 to 34°C over remaining parts of the Country.

Maximum Temperature (°C) Anomaly in India for the week ending 11.02.09



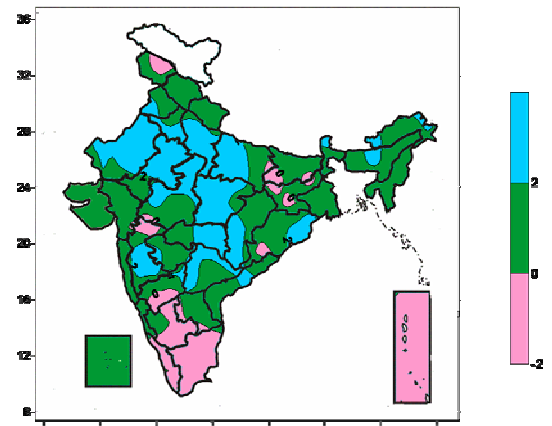
Actual Mean Maximum temperature anomaly ranged between 4 to 6°C over most parts Arunchal Pradesh, Nagaland, Manipur, some parts of the Jammu & Kashmir, Himachal Pradesh, Assam, Jharkhand, Central India, 0 to 2°C over most parts of Punjab, Gangetic West Bengal, West Rajasthan, Gujarat, Kokan & Goa, Madhya Maharashtra, Rayalaseema, Karnataka, Tamil Nadu, Kerala and Andaman Nicobar Island, over some parts of Jammu & Kashmir, Haryana, East Rajasthan, Bihar, Jharkhand, Sub-Himalayan West Bengal, West Madhya Pradesh, Coastal Andhra Pradesh, Telengana, Lakshadweep, -2 to 0°C over some parts of West Rajasthan, Saurashtra & Kutch, Jharkhand, Gangetic West Bengal, Andaman & Nicobar Islands, 2 to 4°C over remaining parts of the country.

Actual Mean Minimum Temperature (°C) in India for the week ending 11.02.09



Actual Mean Minimum Temperature ranged between 24 to 26°C over most parts of Lakshadweep, 20 to 24°C over some parts of Orissa, Andhra Pradesh, Tamil Nadu, Lakshdweep Andaman & Nicobar Islands, 18 to 20°C over

Minimum Temperature (°C) Anomaly in India for the week ending 11.02.09

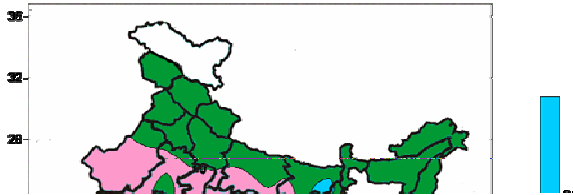


Minimum Temperature anomaly ranged between 2 to 4 °C over most parts of Haryana, Delhi, Uttar Pradesh, Sikkim, Rajasthan, Central Madhya Maharashtra, East Vidarbha, Madhya Pradesh and south Chhattisgarh, some

some parts of Orissa, Coastal Andhra Pradesh, Rayalaseema and Kerala, 16 to 20⁰C over most parts of Orissa, Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, Kerala and Andaman & Nicobar Islands, some parts of Gangetic West Bengal, Chhattisgarh, East Madhya Pradesh, 8 to 12⁰C over most parts of Punjab, Uttarakhand, Haryana, Delhi, West Uttar Pradesh, Bihar, Sikkim, Nagaland, Manipur, Mizoram, some parts over Himachal Pradesh, East Uttar Pradesh, Assam, Rajasthan, Jharkhand, Gujarat, Madhya Maharashtra, 4 to 8⁰C over most parts of Jammu & Kashmir, Himachal Pradesh, 12 to 16⁰C over remaining parts of country.

parts of Punjab, Sikkim, Assam, Arunachal Pradesh, Orissa, Coastal Andhra Pradesh, Telangana and North Interior Karnataka, -2 to 0⁰C over most parts of South Interior Karnataka, Kerala, Tamil Nadu and Andman & Nicobar Islands, some parts of Jammu & Kashmir, East Uttar Pradesh, Bihar, Jharkhand, Orissa, Madhya Maharashtra, West Madhya Pradesh, North Interior Karnataka and Rayalaseema, 0 to 2⁰C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 11.02.09



Relative humidity ranged from 80 to 100% some parts of Bihar, 60 to 80% over most parts of North India, Bihar, West Bengal, North East India, Orissa, Coastal Andhra Pradesh, Coastal Lakshadweep, Andaman & Nicobar Islands, some parts of Jharkhand, Rajasthan, west Madhya Pradesh, Chattisgarh, Telangana, Rayalaseema, Tamil Nadu, Kerala and 40 to 60% over remaining parts of the country.

Cloud amount ranged from 6 to 8 okta over some parts of, Assam 4 to 6 okta over some parts of, Jammu & Kashmir, Assam, Sub-Himalayan West Bengal, Andaman Nicobar Islands, 2 to 4 okta over most parts of Punjab, Haryana, Himachal Pradesh, Uttarakhand, some parts of Jammu & Kashmir, West Uttar Pradesh, Rajasthan, Assam & Meghalaya, Arunachal Pradesh, South Interior Karnataka, Tamil Nadu, Kerala, Andaman & Nicobar Islands, Lakshadweep, 0 to 2 okta over remaining parts of the country.

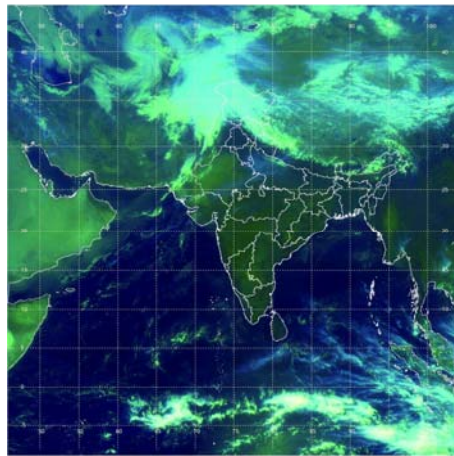
Wind speed ranged between 4 to 6 knots over most parts of Saurashtra & Kutch, some parts of Arunachal Pradesh, Rajasthan, Orissa, West Madhya Pradesh, Coastal Andhra Pradesh, Telangana, North Interior Karnataka, Kerala and Tamil Nadu, 2 to 4 knots over most parts of Haryana, Delhi, Central Orissa, Rajasthan, Gujarat, Konkan & Goa,

Southwest Madhya Pradesh, Coastal Andhra Pradesh, Telangana, South Interior Karnataka, Kerala, Tamil Nadu and Lakshdweep Islands, some parts of Jammu & Kashmir, Punjab, Assam, Arunachal Pradesh, Saurashtra & Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Rayalaseema, Coastal Karnataka, North Interior Karnataka and Andaman & Nicobar Islands, 0 to 2 knots over remaining parts of the country.

Chief Synoptic Feature (Based on 1430 hours IST observations of 12th February, 2009)

- A fresh western disturbance is likely to affect western Himalayan region during next 2-3 days.
- The minimum temperatures are above normal by 3-5⁰C over west Rajasthan and east India and by 2-3⁰ C over parts of east Rajasthan and northeast India. The minimum temperature are below normal by 2-3⁰C over central and adjoining west India.

Satellite image of 6 UTC on 13th February, 2009



Zone-wise Forecast (Forecast valid upto 1430 hours IST of 15th February, 2009)

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

- Rain / snow is likely at many places over Jammu & Kashmir during next 48 hours and at few places thereafter.
- Rain / snow is likely at a few places over Himachal Pradesh during next 48 hours and isolated thereafter.
- Isolated Rain / snow is likely over Utrtrakhand during next 48 hours and mainly dry weather thereafter.
- Rain / thundershowers are likely at a few places over Punjab during next 48 hours and mainly dry weather thereafter.
- Isolated rain / thundershowers are likely over north Haryana and Chandigarh on 13th February.
- Mainly dry weather is likely over the rest region.

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

- Mainly dry weather is likely over the region.

NORTHEAST INDIA [Arunachal Pradesh, NMM & T, Assam, Meghalaya]

- Isolated rain / thundershowers are likely over Arunachal Pradesh.
- Mainly dry weather is likely over the rest region.

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

- Isolated rain / thundershowers are likely over Andaman & Nicobar islands.
- Mainly dry weather is likely over the rest region.

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

- Rain/thundershowers are likely at isolated places over north Rajasthan during next 48 hours and mainly dry weather thereafter.
- Mainly dry weather is likely over the rest region.

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

- Mainly dry weather is likely over the region.

Warning:

- Isolated heavy snowfall is likely over Jammu & Kashmir on 13th February.

Weather Outlook from 1430 IST of 15th February, 2009 to 1430 IST of 17th February, 2009 (Based on numerical weather products):

- Isolated precipitation is likely over western Himalayan region.
- Fall in minimum temperature by 2-4⁰C is likely over northwest India.

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 (tillering), barley, oat and oil seeds (vegetative), cabbage, cauliflower and broccoli (vegetative), pea and knoll-khol (vegetative), carrot, raddish, turnip and the leafy vegetables like lettuce, methi, palak, dhania etc. (vegetative).
- As there is possibility of rain during next two days, apply fertilizers and plant protection measures after that.
- Apply urea @ 44 kg per kanal to wheat crop.
- As weather condition is favourable, it is optimum time for sowing of Chari, bajra and maize in low hills.
- For seed crop of berseem and oats one cut can be taken. Apply urea to irrigated crop of oat where first cut has been taken.
- Earthing up can be undertaken in potato crop.
- Termite affected plots may be treated with 80 ml chloropyriphos mixed with 1kg of sand for one kanal area of plot.
- Under prevailing weather it is advised for nursery sowing of tomato, chilli, capsicum and brinjal in lower plain areas. It is also optimum time for sowing of radish. In mid hills nursery sowing of cucurbits viz. Cucumber, bitter gourd, bottle guard and summer squash in poly houses can be done.
- 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. For Oyster mushroom 16-22⁰C temperature may be maintained.
- Under present weather the training and pruning work of peach, plum and apricot may be completed at the earliest.
- Under prevailing weather condition there is possibility of infestation of powdery mildew. For control of powdery mildew in peas spray Sulfex @ 25 g per 10 litres of water or karathane @ 5 ml per 10 litres of water.

- Weather condition is also congenial for downy mildew in cruciferous vegetables. For control spray Redomil M-Z @ 25 g per litre of water at 15 days interval.
- There is chance of attack of leaf miner in citrus. For its control spray 10ml matasystox or Malathion in 10 litre of water.
- Mulch the tree basins to conserve moisture. Use waste materials like dry grass, broken leaves etc. Farmers may use black UV sheet for tree basins.
- Details of crop varieties are mentioned in Annexure I.

Poultry

- Replace the poultry houses with fresh litter to avoid wetting and keep the houses clean and ensure clean drinking water to the birds.

Honeybees

- Due to winter season enough flora is not available for bees, therefore farmers are advised to give artificial feed of 50% sugar and 50% water solution to honey bees.
- Also ensure proper packing to the apiary to protect from cold.
- Ensure before packing that weak apiaries should be given artificial food. Insert the brood chamber without frame for ensuring aeration.

Animal Husbandry

- Still the night temperature is low enough to protect the newly born calves. Pregnant and lactating cows and buffaloes should be given 2 kg feed for their body maintenance and additional 1 kg for developing calves with mineral mixture @ 15-30 g per day. For milch animals 2 kg feed + one kg additional feed per 2.5 kg milk production should be given.

Uttarakhand

- **Major Standing Crops:** Sugarcane (harvesting), wheat (heading) and potato (tuber formation), mustard, chickpea and lentil (flowering/pod formation) and cabbage, onion, garlic and tomato (vegetative).
- As there was no significant rainfall in most of the districts during last few weeks and no significant rainfall is likely for the next five days, apply irrigation to the standing *rabi* crops.
- Farmers are advised to complete transplanting of onion and chilly seedlings.
- Undertake field preparation and planting of sugarcane.
- Undertake harvesting of matured crops of potato and toria
- Farmers are advised to undertake field preparation and sowing of sunflower. Sow certified seeds of high yielding varieties.
- Farmers are also advised to undertake sowing of french bean.
- Details of varieties are given in Annexure I.
- Provide balanced feed to animals and continue to keep them inside the shed to protect them from cold.

Punjab

- **Major Standing Crops:** Horticultural crops (vegetative), *spring* sugarcane (early vegetative), potato (vegetative), wheat (elongation/heading), gram and lentil (vegetative), pea and vegetable crops like chilly, tomato, brinjal and onion (seedling/transplanting/early vegetative), oilseeds (flowering/pod formation).
- Farmers are advised to complete sowing of sunflower and transplanting of chilli, tomato, brinjal and onion. Undertake sowing of cucurbits in polythene bags for raising early crop.
- Undertake field preparation for planting of sugarcane. Start planting of sugarcane from second fortnight of this month. Details of crop varieties are mentioned in Annexure I.
- As there is possibility of rain during next two days, apply fertilizers and plant protection measures after that.
- Farmers are advised to undertake planting of deciduous fruit crops like pear, grapes and phalsa. Pruning in grapes may be completed by mid-February.

- Undertake layering of litchi trees and side grafting of mango for their propagation.
- The weather is congenial for *Alternaria* leaf blight and white rust in mustard, the farmers are advised to protect the crop by spraying Indofil M-45 @ 250 g in 100 litres of water.
- Farmers are advised to cover the side of poultry sheds to maintain the temperature inside the shed.
- Farmers are advised to keep the animals under roof in night and in the sun during the day time. Newly born calves need special care in cold weather, since they are susceptible to pneumonia. Protect young calves from cold weather by providing dry bedding and clothing (Jhull). Fix pallis/tat/plastic cover if required in the shed. Give well chopped barseem mixed with wheat straw to avoid aphara (Tympny).

Haryana

- **Major Standing Crops:** Spring sugarcane (early vegetative), vegetable crops (seedling/early vegetative), wheat (elongation/heading) and oilseeds (flowering/pod formation).
- As no significant rainfall is likely for the next five days, apply irrigation to the standing *rabi* crops.
- Continue sowing of sunflower and berseem. Details of crop varieties are mentioned in Annexure I.
- Complete transplanting of tomato and continue transplanting of onion. Pruning in grapes may be completed.
- Farmers are advised to provide bedding to calves and adult animals. Density of the ration may be increased by adding grains and oils. In view of expected fall in temperatures, farmers are advised cover the side of poultry sheds to maintain the temperature inside the shed.

Delhi

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), mustard (capsule formation), potato (tuber formation / tuber maturity), gram (flowering / pod formation), wheat (tillering), *rabi* onion (vegetative).
- As dry weather is likely to prevail for next five days, farmers are advised to apply irrigation to wheat, vegetables, mustard, potato, gram etc.
- As there is no chance of rain, farmers are advised to undertake intercultural operation to keep the crop fields weed free.
- As dry weather is likely to prevail, farmers are advised to start harvesting of already matured crops of potato. Also stop irrigation to the potato crops which will be ready for harvest within two weeks.
- In view of prevailing dry weather farmers are advised to apply third irrigation to timely sown wheat and second irrigation to late sown wheat.
- Farmers are also advised to apply irrigation to mustard wherever crops are at capsule formation stage.
- As weather condition is favourable, transplanting of mature seedlings of cucurbitaceous crops can be done.
- Weather conditions are also ideal for transplanting of fresh seedlings of chilli and brinjal.
- Farmers are also advised for field preparation for transplanting of ladies finger during this week.
- Under present weather farmers also advised to sow sunflower.
- Prevailing weather condition is highly conducive for powdery mildew infestation in peas. Spraying of Carathene @ 2 g per litre of water (700 litres / ha) is advised where infection is observed.
- In view of favourable weather conditions for aphid infestation in tomato, spraying of Malathion @ 1 ml per litre (700 litres / ha) of water in those fields where crop is at flowering stage where as Confidor @ 1 ml per litre of water in those fields where crop is at fruiting stage is recommended.
- There is also possibility of aphid infestation in mustard. Farmers are advised to spray Confidor @ 1 ml per 4 litres of water.
- Present weather condition is favourable for infestation of pod borer in gram. Farmers are advised to monitor the crops and use pheromone traps for managing the pest. Under high infestation farmers are advised to apply Rogor or Malathion @ 2 ml / litre of water.

- Weather conditions are highly favourable for thrips, stem filial and purple blight in onion. Spraying of Mencozeb @ 2 g + Metasystox @ 2 ml per litre of water (700 litres / ha) with a sticking agent is advised for blight and thrips.
- Details of crop varieties are mentioned in Annexure I.

Uttar Pradesh

- **Major Standing crops:** Sugarcane (grand growth / cane formation), mango (fruit setting), rai, mustard, gram, pea and lentil (pod formation), potato (vegetative) and wheat (heading).
- As there was no significant rainfall in most of the districts during last few weeks and mainly dry weather is likely to prevail for the next five days, apply irrigation to the standing *rabi* crops and sugarcane.
- Continue picking of vegetable crops depending upon the market demand.
- Undertake weeding, intercultural operations, application of fertilizers and pesticides in the standing crops like garlic, onion and potato as favourable weather conditions prevail during these days.
- Sowing/transplanting of onion may be continued.
- Farmers are advised to harvest the matured crops of sugarcane and toria.
- Weather conditions are favourable for mild incidences of hopper in mango and leaf eating caterpillar in *summer* vegetable crops. Monitor the crops for the pests and undertake plant protection measures to control the pests.

J & K

- **Major Standing Crops:** Wheat (tillering), pulses (late vegetative), mustard (late vegetative). This is proper time for planting of orchard tree saplings in Jammu and sowing of vegetable crops in nursery in Rajouri divisions.
- As rain/snow is likely to occur at many places, postpone irrigation to the crops.
- Due to possibility of low minimum temperature in Srinagar and Rajouri divisions, protect vegetable crops, mustard and gram from cold injury by arranging smoke nearby the field. Provide thatches in young orchards of mango, litchi, guava, citrus and papaya.
- Undertake intercultural operations in brown sarson, pulses and wheat in Srinagar, mustard in Jammu division, beet, mongol and spinach in Leh division and mustard, berseem, pulses and vegetable crops in Rajouri division after spells of rain to keep the field weed free.
- Complete transplanting of onion and tomato seedlings in Jammu division. Undertake planting of saplings in orchard.
- Undertake sowing of tomato, brinjal, chilly and capsicum in nursery and raising of poly bags for bottle gourd, cucumber, pumpkin, sponge gourd and bitter gourd in Rajouri division.
- Due to decrease in minimum temperature protect the pregnant and milch animals from cold and feed them mineral mixture regularly. Cover the poultry shed with gunny bags in order to protect the birds from cold weather.
- Weather conditions are congenial for mild incidences of
- aphids in mustard, collar rot and root rot in pulses and leaf eating caterpillar in vegetable crops in Rajouri division;
- collar rot in gram in Jammu division;
- monitor the crops for the pests and diseases and undertake plant protection measures.

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

Bihar

- **Major Standing Crops:** Sugarcane (vegetative), *rabi* maize (cob formation), pulses (pod formation), potato (late vegetative) and sunflower (head formation), wheat (heading) and *boro* rice (seedling/early vegetative)

- As there was no significant rainfall during last few weeks in most of the districts and mainly dry weather is likely for the next five days, apply irrigation to the standing crops. Avoid moisture stress in potato and maize crop by maintaining adequate soil moisture as moisture stress at this stage affects the yield of these crops. Avoid irrigation to fruit crops during flowering.
- Undertake intercultural operations, application of fertilizers and pesticides in maize, tomato, brinjal, cauliflower, cabbage and *boro* rice.
- Farmers are advised to continue the field preparation for planting of sugarcane crop.
- Due to prevailing high temperature, there are chances of incidence of litchi mite and borer in litchi orchards. Spray Rogor @ 1.5 to 2.0 ml/litre of water against borer insects immediately.

Jharkhand

- **Major Standing Crops:** Arhar and maize (harvesting), wheat (heading), *rabi* oilseeds (pod formation).
- As there was no significant rainfall during last few weeks in the state and mainly dry weather is likely for the next five days, apply irrigation to the standing crops. Farmers are advised to apply third irrigation to late sown wheat at 60 to 65 days after sowing along with top dressing of urea @ 22kg/ha.
- Undertake transplanting of onion and sowing of bitter gourd, sponge gourd, ridge gourd, bhendi and water melon in the main field.
- Farmers are advised to undertake weeding, intercultural operations in early sown *summer* rice, potato, oilseeds and wheat.

Orissa

- **Major Standing crops:** Sugarcane (harvesting), sunflower, mustard (head formation / pod formation), vegetables (vegetative / flowering / fruiting / harvesting), wheat (ear initiation / heading / flowering), potato (tuber formation / early maturity), onion (vegetative) and summer rice (transplanting / early tillering) and summer sunflower (seedling / early vegetative).
- As there was no significant rainfall in the State during last few weeks and mainly dry weather is likely for the next five days, apply irrigation to the standing *rabi* crops.
- Farmers are advised to undertake sowing of groundnut, summer moong, sunflower, maize, sesame and planting of marigold.
- Undertake planting of sugarcane. Dip the sugarcane seed material (setts) in Bavistin solution (1.5 g / litre of water) for 20-30 minutes before planting.
- Also complete transplanting of rice. Apply 16 kg N / ha wherever the crops are at tillering stage. After 48 hours of application of fertilizer maintain 3 – 5 cm water in the field.
- As dry weather is prevailing, undertake intercultural operations in *rabi* crops to keep the fields weed free.
- Early sown summer sunflower is at 25 days. Thin out plants keeping one healthy plant.
- There is possibility of Spodoptera in cabbage and cauliflower under prevailing weather. Alternate spraying of B.T. product 1 kg or 250 LE SLNPV / acre may be undertaken at weekly interval or use 4 Tricogramma cards / acre.
- Present weather may be favourable for infestation of purple blotch or tip burn in onion. So spray the crop with Mancozeb @ 0.25% at 12-14 days interval to control this disease.
- Appearance of Leaf blight in tomato and beans and late blight in potato is reported and likely to be increased under present weather condition. The diseases can be effectively controlled by application of Dithane-M-45 @ 3 g / litre of water.
- Details of crop varieties are mentioned in Annexure I.

West Bengal

- **Major Standing Crops:** Sugarcane (cane maturity / harvesting), mustard, gram and lentil (pod formation / seed formation), wheat (ear initiation / flowering), potato (tuber formation / early maturity) and *boro* rice (transplanting / early vegetative).
- As there was no significant rain during last few weeks in most of the districts of the State and no significant rain is likely to occur during next five days, apply irrigation to mustard, gram, lentil, wheat, vegetables and potato.
- As there is no possibility of rainfall, farmers are advised to undertake intercultural operation to keep the fields weed free.
- Irrigate the seedbed of *boro* rice regularly to maintain 2-3 cm stagnant water in the bed. Undertake preparation of the main field and transplanting of *boro* rice. Transplant 3-4 no. of seedlings together in 4-5 cm depth in the main field with a spacing of 20 x 10 cm. Maintain 1-2 cm stagnant water in the field. Timely transplanted crop is now at tillering stage. Apply first topdressing of nitrogen.
- Stop application of irrigation 15 days before harvesting of potato. Dehaulm the upper portion of the crop so that infestation of tuber from virus can be checked. In the foggy weather, attack of late blight disease is becoming severe. To control the disease, apply alternately Mancozeb (2 g) or mixture of mancozeb and Metalaxil (2.5 g) per lt of water.
- Harvest timely sown mustard.
- Under present weather condition, undertake preparation of land for sowing of groundnut and sunflower. Well filled kernels of groundnut should be selected and treated with 5 g of Thiram or 3 g of Captan per kg of kernels. 18-20 kg healthy and well developed pods of groundnut are required per bigha. 600 to 800 g of well filled plump seeds of sunflower are required to cover one bigha land.
- Under the prevailing weather condition aphid infestation is remaining high in mustard in New Alluvial zone and Coastal Saline zone. Apply 1.5 ml metasystox per litre of water to control the pest.
- Details of crop varieties are mentioned in Annexure I.

Sikkim

- **Major Standing Crops:** Orange (maturity/picking), large cardamom (vegetative), *rabi* wheat (heading/flowering), mustard (capsule formation), vegetable crops (flowering/fruitletting/harvesting), potato (maturity)
- As there was no significant rainfall during last few weeks in the state and mainly dry weather is likely to prevail over the state for the next five days, apply irrigation to the vegetable crops, wheat, orange and large cardamom in medium and low hills.
- Undertake intercultural operations and application of mulches in mustard, wheat and vegetable crops like cabbage, cauliflower, carrot, Chinese cabbage, knol-khol, garden peas, radish, turnip, lettuce, celery, spinach, etc., to conserve moisture.
- Continue harvesting orange and potato and other vegetable crops depending upon market demand.
- Maintain large cardamom sucker nursery; apply FYM and undertake intercultural operations.
- **Plant Protection:** Weather conditions are congenial for mild incidences of fruit fly and trunk borer in orange. Monitor the crop/tree and undertake plant protection measures to control the pests and diseases.

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

Assam

- **Major Standing crops:** Arhar (pod formation / maturity), sugarcane (harvesting), vegetables (vegetative / flowering / fruiting / harvesting), mustard, lentil and pea (pod formation / early maturity), *toria* (maturity), wheat (tillering / ear initiation / heading), potato (tuber formation / maturity) and *boro* rice (transplanting / early vegetative / tillering).
- As there was no significant rain over the State during last few weeks and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to arhar (at pod formation stage)

and vegetable crops like cauliflower, cabbage, raddish, brinjal, tomato, knolkhol, onion and carrot and also to wheat, mustard, lentil, pea and potato.

- As there is possibility of dry weather, farmers are advised to undertake intercultural operation to keep the fields weed free.
- Under prevailing dry weather condition, farmers are advised to undertake harvesting of sugarcane. Farmers are also advised to harvest already matured crops of potato and *toria* under present weather.
- Transplanting of *boro* rice may be undertaken as the weather condition is favourable. Under present weather top dressing of N @ 3 kg urea per bigha may be carried out in *boro* rice at the tilling stage. Also maintain 3-5 cm stagnant water in already transplanted *boro* rice field.
- As weather condition is favourable, start sowing of black gram and green gram. Sowing may be done from 15th February to 15th March.
- As present weather condition is favourable, farmers may go for cultivation of summer vegetables like ladies finger, bottle gourd, pumpkin, ridge gourd, cucumber, bitter gourd etc. as growing of early summer vegetable crops will fetch more income.
- As weather condition is favourable, farmers should be vigilant for the attack of aphids in late sown rapeseed and mustard. If the number of aphids is more than 30 in the main shoot, then application of either Malathion 50 EC @ 2 ml / litre or Dimethoate 30 EC @ 1 ml / litre is essential to control the pest.
- Rust in field pea has been observed in some locality and is likely to be increased. To prevent the spread of this disease Calixin @ 1-2 ml / litre of water may be applied depending on the disease intensity.
- Details of crop varieties are mentioned in Annexure I.

Fishery

- Due to gradual decline of water level in ponds, fishery owners are advised to take out excess fishes from their ponds.

Arunachal Pradesh

- **Major Standing crops:** *Rabi* vegetables, pea and potato (harvesting), wheat (flowering / grain formation), mustard (pod formation / seed formation), *rabi* maize (grain formation / maturity).
- As there was no significant rainfall in most of the districts during last few weeks and no significant rainfall is likely during next five days, apply irrigation to mustard, wheat and *rabi* maize.
- As there is less chance of rain, farmers are advised to undertake intercultural operations in late sown crops.
- Also Undertake harvesting of matured vegetables, pea, potato and *rabi* maize.

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

Andhra Pradesh

- **Major Standing Crops:** sugarcane (grand growth), gram (grain formation/development/maturity), wheat, mustard and sunflower (grain/seed development) and chilli (fruit development)
- Apply irrigation to the crops as there was no rainfall during last week and mainly dry weather is likely to prevail over the state for the next five days.
- Farmers in Srikakulam, Vizayanagaram and Visakappattinam are advised to continue harvesting of sugarcane. After the harvest, allow ratoon or undertake new planting of sugarcane. Undertake thinning and intercultural operations in rice fallow maize.
- Farmers in Krishna, West Godavari, Guntur and Prakasam districts are advised to undertake sowing of rice fallow maize and rice fallow pulse crops during these days. Details of varieties are given in Annexure I.
- Farmers in Guntur are advised to complete transplanting rice seedlings in the main field.

- Farmers in Anantapur are advised to undertake intercultural operations in rice and groundnut.
- Farmers in high altitude regions of Srikakulam, East Godavari, Vijayanagaram, Visakappattinam and Khammam are advised to complete harvesting of red gram. Complete transplanting the seedlings of rice and ragi.
- **Animal Husbandry:** There are chances of occurrence of FMD in cattle, sheep pox in sheep and ranikhet in poultry. Consult veterinarian and undertake vaccination.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- thrips, leaf miner, late leaf spot and rust in groundnut, stem borer and blast in rice, stem borer in maize and thrips, mite, fruit rot and dieback in chilli in Karimnagar, Nizamabad, Warranagl and Medak districts;
- spotted pod borer and powdery mildew in black gram, green gram and red gram, *Spodaptera* in gram, sucking pests in cotton and white fly and fruit rot in chilly in Guntur;
- rust in sugarcane, powdery mildew and thrips in chilli, *Alternaria* leaf spot and fruit borer in tomato, powdery mildew in gourds, leaf spot and aphids in field bean and hopper and anthracnose in mango in Srikakulam, Vizayanagaram and Visakappattinam undertake plant protection measures to control the pests and diseases.

Karnataka

- **Major Standing Crops:** Annual sugarcane (grand growth). *rabi* crops (grain development/maturity/harvesting). This is proper time for sowing of *summer* and *rice fallow* crops.
- As there was no rainfall during last few weeks in the state and mainly dry weather is likely to prevail over the state for the next five days, apply irrigation to the crops.
- Farmers in Gulbarga and Raichur are advised to undertake harvesting of red gram and early sown sunflower due to dry weather conditions prevail during these days. Arrange proper storage for harvested produce. As sorghum and safflower crops are at grain filling stage, conserve moisture in the soil to overcome stress conditions.
- Undertake sowing of *summer* crops like water melon, snake gourd and ribbed gourd.
- After the harvest of *rabi* crops, farmers are advised to undertake deep ploughing to conserve moisture and to control weeds and soil borne pathogens.
- **Plant Protection:** Weather conditions are favourable for mild incidences of:
- *Heliothis* in gram and red gram and jassids and powdery mildew in mango in Dharwad;
- blast in rice, flower drop in arecanut and powdery mildew in pulses and mango;
- undertake plant protection measures.

Kerala

- **Major Standing Crops:** *Mundakan* rice (grain development/maturity), vegetable (vegetative/flowering/fruitletting) and plantation crops (coconut, arecanut, pepper and cashew). This is proper time for sowing *puncha* rice and *rice fallow/summer* vegetable crops.
- As there was no rainfall during last few weeks in the state and mainly dry weather is likely to prevail for the next five days, farmers are advised to apply irrigation to the crops.
- Undertake sowing of *puncha* rice in nursery in Malappuram, Kasargod, Kozhikode and Kannur districts.
- Undertake sowing of rice and *summer* vegetable crops in and around Thrissur.
- Details of varieties are given in Annexure I.
- Provide thatches to young plants of arecanut in Wayanad and coconut in Thiruvananthapuram to prevent from sun scorching. Undertake coating of bottom portion of rubber trees with lime.
- Continue harvesting/plucking of arecanut, coconut, pepper, banana, ginger, cardamom and coffee in Wayanad and turmeric, ginger and pepper in Thrissur as conducive weather conditions prevail during these days. Collect and store seed nuts for new planting.
- Undertake planting of ginger in Wayanad district and pepper in poly bags in Thrissur district.

Plant Protection:

- Weather conditions are favourable for the attack of
- Blast and brown spot in rice, red palm weevil, rhinoceros beetle, stem bleeding, leaf eating caterpillars and leaf rot in coconut, *Sigatoka* leaf spot, bunchy top and rhizome weevil in banana, white stem borer in coffee and powdery mildew, leaf spot, shoot and fruit borer in vegetable crops in Wayanad.
- fruit fly and powdery mildew in gourds and bacterial wilt in tomato, brinjal and chilly in Malappuram, Kasargod, Kozhikode and Kannur districts;
- pseudo stem weevil, rhizome weevil and bunchy top in banana and tea mosquito bug in cashew.
- Undertake plant protection measures.

Tamilnadu

- **Major Standing Crops:** Special season sugarcane (grand growth stage), Cotton (boll maturity/ picking stage). *Rabi* crops like rice, pulses, millets and oilseeds are at grain development/ maturity stage.
- As there was no sufficient rain during last few weeks in the state and mainly dry weather is likely to prevail over the state for the next five days, farmers are advised to apply irrigation to the crops.
- Undertake land preparation and sowing of bitter gourd, pumpkin, snake gourd and water melon as conducive weather conditions prevail during these days.
- Complete sowing of irrigated safflower, gingelly and groundnut in Western region and undertake transplanting of vegetable crops such as bhendi, tomato, cowpea, dolichos and chilly may be taken up with irrigation facilities.
- Complete harvesting matured crops of jowar, maize, cotton, oilseed crops and pulses in Virudunagar district, pulses in Tuticorin district and cereals and pulses in Erode district as conducive weather prevails during these days. Arrange for proper storage after the harvest of crops.
- **Plant Protection:** Present weather is conducive for mild incidences of boll worm in cotton and fruit borer and tip rot in chilly in southern region; undertake plant protection measures.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT, RAJASTHAN]

Maharashtra

- **Major Standing Crops:** Sugarcane (pre-seasonal and *suru*) (cane maturity / harvesting), *rabi* jowar (grain maturity / harvesting in Pune, Kolhapur divisions and grain formation in Nagpur and grain maturity in other divisions), *rabi* sunflower (seed formation / seed maturity), maize (cob initiation / cob maturity), gram (pod maturity / harvesting in Pune, Nashik and pod maturity in other divisions), wheat (milk / dough), safflower (seed maturity).
- As there was no significant rain in all the districts of the State during last few weeks and mainly dry weather is likely to prevail during next five days, apply irrigation to the standing crops.
- As dry weather is prevailing, farmers are advised to undertake harvesting of sugarcane and continue harvesting of already matured crops of jowar & gram and start harvesting of matured safflower.
- As weather condition is favourable, planting of sugarcane (*suru*) may be carried out in Madhya Maharashtra & Marathwada. Sugarcane setts may be treated with 100 g Bavistin + Rogor 30 % @ 265 ml in 100 liters of water for 5-10 minutes. 15 to 20 cm distance may be kept between two cane setts.
- Under prevailing weather, transplanting of summer rice and ragi may be completed with 30 to 35 days old seedlings at a distance of 20 x 20 cm or 15 x 15 cm in Konkan & also start transplanting of summer rice in East Vidarbha. Also undertake sowing of summer groundnut (30 x 10 cm spacing), summer bajra (30 X 10 cm spacing) and summer sunflower, summer ridge gourd (1.5 X 1 m spacing), summer tomato (90 x 30 cm spacing in row & furrow) and summer ladies finger (30 x 20 or 30 X 15 cm spacing).
- Under present situation, apply a dose of Nitrogen @ 40 kg / ha to summer rice after 30 days from transplanting in South Konkan.
- Details of crop varieties are mentioned in Annexure I.

- **Plant protection**
- Present weather condition is favourable for infestation of powdery mildew in green gram, pea and black gram crops at Eastern Vidarbha zone. Spray water soluble Sulphur @ 25 gm or Carathane @ 10 ml in 10 liters of water to control the disease.
- Under prevailing weather condition, there is possibility of increase in incidence of hoppers and powdery mildew on newly emerged inflorescence of mango. Spray Imidacloprid 17.8 EC @ 3 ml per 10 liters of water against hoppers. Mix water soluble Sulphur @ 20 g or Hexaconazole @ 5 g during insecticidal spray for controlling powdery mildew.

Gujarat

- **Major Standing Crops:** Sugarcane (maturity / harvesting), *Kharif* cotton (boll maturity / picking), castor (maturity / picking), mustard (flowering / pod formation), vegetables (vegetative / flowering / fruiting / harvesting), potato (tuber formation / early maturity) and wheat (tillering).
- 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 mustard, wheat, potato and vegetables.
- As there is no possibility of rain, undertake intercultural operation in above mentioned crops to keep the fields weed free.
- Prevailing weather is conducive for harvesting matured crops of castor and picking of *kharif* cotton.
- As weather condition is favourable, farmers are advised to undertake transplanting of summer rice in the main field.
- Under prevailing weather condition farmers are advised to prepare land and undertake sowing of summer groundnut and other summer crops like green gram, black gram, cow pea, cluster bean and pearl millet.
- As there is chance of attack of pod borer in gram in Bhal and Coastal region and Saurashtra region due to favourable weather condition, apply Endosulphan 35 EC or Monocrotophos 35 EC @ 20 ml in 10 liters of water for effective control of pod borer.
- Under prevailing weather condition there is chance of attack of thrips in chilli in North Saurashtra region and powdery mildew in mango in North Saurashtra, South Gujarat and Bhal and Coastal regions. 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.

Rajasthan

- **Major Standing Crops:** *Rabi* crops (wheat, mustard, gram, vegetable crops, etc.) are at flowering/grain formation stage. This is proper time for sowing of *summer* crops.
- As there was no significant rainfall during last few weeks in the state and no significant rainfall is likely for the next five days, apply irrigation to the crops.
- Undertake intercultural operations in mustard, gram, onion and garlic in Alwar, Bharatpur, Dholpur, Karauli and Sawai Madhepur districts and in cumin, fenugreek, isabgol, garlic and radish in Ajmer, Dausa, Jaipur and Tonk districts to conserve moisture in the soil.
- Undertake sowing of cucurbits, zaid pearl millet fodder, zaid sorghum fodder, zaid green gram and okra in Ajmer, Dausa, Tonk and Jaipur.
- Undertake sowing of sweet gourd, cucumber, pumpkin, bitter gourd, tinda, tomato and ladies finger in Barmer, Churu, Jalore and Jodhpur. Also undertake sowing of cumin.
- Undertake planting of sugarcane in Sriganganagar and Hanumangarh
- Details of varieties are given in Annexure I.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- fruit fly in ber in Pali; spray Monocrotophos @ 1 ml + Endosulphan @ 1 ml/litr of water.
- *Heliothis* in gram in Bikaner and Jaisalmer, spray any of insecticides i.e. Endosulphan @ 300ml./bigha or Endoxacrab @ 50 ml/bigha or Spinosid @.33ml/liter or Emamectin Benzoite @0.4gm/liter of

water. Also aphids in cumin, fenugreek and mustard, spray Daimethoate 30 E.C. or Methyl-demeton 300ml/bigha or Thiomethocxam 25 WG @25 gm./bigha

- green pod borer in gram in Sriganganagar, spray Endosulphan 35 EC 300 ml or Trijophos 40 EC @ 375 ml or Prophenophos 50 EC @ 250 ml

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Major Standing Crops:** Sugarcane (grand growth), soyabean (pod maturity), maize (cob development/maturity), cotton (boll development) and vegetable crops (vegetative).
- As there was no significant rainfall during last few weeks and dry weather is likely to prevail over the state for the next five days, apply irrigation to the standing crops.
- Undertake intercultural operations in cauliflower, cabbage, tomato, chilli, onion and brinjal in Chindwara and Betul.
- Undertake sowing of *summer* vegetables like cucurbits and okra in the pit in Jhabua and Dhar and also in Morena, Bhind, Gwalior, Shivpuri, Guna, Sheopur, Ashoknagar, Damoh, Bhopal, Sagar, Raisen, Sehore and Vidisha.
- Undertake sowing of *summer* groundnut in Khargone, Khandwa and Barwani
- Details of varieties are given in Annexure I.
- **Animal Husbandry:** Undertake vaccination in cattle against Anthrax, Galgotu, Black quarter and FMD in Indore, Mandsaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh. Also undertake deworming.
- Cattle should be kept in aeration condition and in dry place, provide balanced and nutrient rich feed having protein, carbohydrate, fat vitamins and antibiotics in Jhabua
- **Plant Protection:** Weather conditions are favourable for
- agathi or pacheti and zulsa in potato in Morena, Bhind, Gwalior, Shivpuri, Guna, Sheopur and Ashoknagar districts; spray Mancozeb @ 2 kg in 600 lit water.
- mealy bug in mango, spray 25 gm Esiphet or 30 gm Prophenophos in Khargone, Khandwa and Barwani
- pod borer in chickpea in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi., to control place “T” shaped pegs in the field to shelter the predators and also use different types of light traps i.e. Mercury Vapor Lamp and Pheromone Traps @ 5 trap/ hectare and for caterpillar spray NPV virus @ 250 lt. dissolve in 500 L water.
- sucking pest on chilli, tomato, brinjal, spray Dimethoate @ 1 ml/lit of water or Phosphomedon 3 ml/litre of water in Damoh, Bhopal, Sagar, Raisen, Sehore and Vidisha.

Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative / maturity), wheat (tillering / heading), gram, pea, mustard, berseem, pigeon pea and linseed (pod formation), potato (tuber formation / early maturity), vegetables (vegetative / flowering / fruiting / harvesting), summer vegetables (sowing).
- In view of no significant rain during last few weeks over the State and possibility of mainly dry weather during next five days and due to above normal temperatures, the evaporation rate has increased (5 mm/day) and thereby the water requirement of *rabi* crops has also increased. It is, therefore, advised to reduce the interval between two irrigations particularly in wheat crop. The farmers who have drip irrigation system for vegetables and plantation crops should regulate the water discharge rate accordingly.
- As weather condition is congenial, intercultural operation and weeding are advised in sunflower and groundnut. Fertilizer application followed by irrigation should also be done in sunflower after weeding.

- 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.
- Now the temperature conditions are approaching towards suitable for proper germination of sugarcane to be sown during the last week of February and first week of March. Hence, it is advised to prepare well pulverized field for sowing of sugarcane.
- As weather condition is favourable, it is time for sowing of some cucurbitaceous crops, like watermelon, muskmelon, pumpkin, bottle gourd, etc. Hence, the sowing of these vegetables should be completed at the earliest.
- Field preparation and sowing can also be done for summer vegetables like okra, cowpea etc.
- Complete the transplanting of summer rice at the earliest.
- Presently mango crop is at flowering / fruit setting stage and at this stage there is chance of infestation of powdery mildew, which causes poor fruit setting and later on fruit dropping. Hence, it is advised to keep watch over the crops and whenever the symptom appears, spray Carbendizim (Bavistin) @ 1.5 g or Sulphex @ 3 g per litre of water.

Annexure I

Crop varieties

Jammu

- **Radish:** Japanese white and Minowase
- **Beans** Contender and Arka Komal
- **Potato** Kufri Jyoti and Kufri Badshah

Madhya Pradesh:

- **Wheat:**
 - **Unirrigated/ Semi-irrigated:** JWS-17, HW-2004, HI-1500, Malav Ratna (HD-4672) and Malav Shri (HI-8381).
 - **Irrigated:** GW-273, Kanchan (DL-803-3), WH- 147, GW- 190, GW- 322 and Malav Shakti (HI-8498).
- **Gram:** JG- 412, JG- 226, JG- 11 and JG- 130.
- **Maize:** JM- 421, JM- 8, JM- 12, Chandan makka- 3, Ganga- 3, Ganga- 4 and HPQM – 1.

Andhra Pradesh:

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

Kerala:

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

Tamil Nadu:

- **Groundnut:** TMB-13, VRI-6 and VRI-7
- **Gingelly:** SVPR-1, TMB-5, 6 and VRI-2.

Rajasthan:

- **Green gram:** K-851 (60-70 days), PDM-11 (60-65 days), Pusa Baisakhi (60-80 days), RMG-268 (65-70 days)

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

Assam

- **Boro rice:** Jyotiprasad, Bishnuprasad, Jaymoti, Kanaklata, Boro-1 and Boro-2.
- **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.

West Bengal

- **Boro rice:** IET - 1444, IET – 4786 (Satabdi), IET – 4094, Lalat, MTU - 1010, JGI –1798 etc.
- **Ground nut:** A.K. 12-24, J.L.-24, Girnar-1, Somnath, ICGS-11, ICGM-44, T.J.-3 etc.
- **Sunflower:** Morden, Sidhesor, Surya and hybrid varieties like Pack-36, Pack-1091, M.F.S.H.-17, Sungin-85, B.S.H.-1, Surya-51, K.B.S.H.

Himachal Pradesh

- **Raddish:** Pusa Himani.

Maharashtra

- **Groundnut:** Improved varieties like TAG-26, TG-37, TAG-24 & SB-11.
- **Sugarcane (*Suru*):** Co-86032, Co-94012, Co-M-0265.
- **Summer ridge gourd:** Pusa Nasdar, Konkan Harita.
- **Summer sunflower :** EC-68414, Morden & PKVSF-9.
- **Summer tomato:** Dhanshri, Phule-Raja.
- **Summer ladies finger:** Parbhani Kranti, Parbhani Utkarsha, Akola Bahar, Arka Anamika, Arka Abhay & Phule Kriti.

Delhi

- **Sunflower:** Modern.

Punjab:

- **Sugarcane:**
Early maturing: CoJ-85, CoJ-83 CoJ-64, **mid-season:** CoJ-88 CoS-8436, and **late maturing variety:** CoJ-89 and Co-1148

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.
- **Marigold:** Ceracol.

Haryana:

- **Sunflower:** Surajmukhi No.1, Hybrids: KBSH 1, PAC 36, MSFH 8, PCSH 234, KBSH 44, HSFH 848.