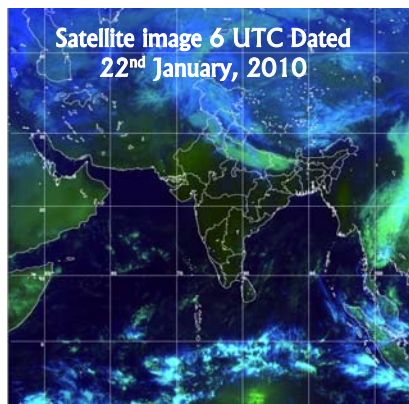




National Agromet Advisory Bulletin

Thursday, 21st January (For the period 21st to 25th January, 2010)



Rainfall Forecast valid upto 1430 hours IST of 24th January, 2010

- **Few Places:** Jammu & Kashmir and Himachal Pradesh
- **Isolated Places:** Uttarakhand, Chhattisgarh, Kerala and Andaman & Nicobar Islands.
- **Dry:** Orissa, Jharkhand, Bihar, Uttar Pradesh, Haryana, Punjab, Delhi, Rajasthan, Central India, West India, Andhra Pradesh and Karnataka
- **Mainly dry:** Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Bengal, Sikkim, Tamil Nadu & Puduchery and Lakshadweep.

Major features of weather forecast (upto 1430 hours IST of 24th January, 2010).

- Dense to very dense fog conditions will continue in the morning hours over parts of Indo-Gangetic plains during next 2 days.
- Cold day conditions may abate from Uttar Pradesh and Bihar during next 1-2 days.
- Cold wave conditions would occur over parts of Bihar, Jharkhand and Chhattisgarh during next 2 days.
- No significant change in minimum temperatures over parts of Indo-Gangetic Plains during next 2 days.
- Dry weather conditions over most parts of the country.

Weather Outlook (upto 1430 hrs IST of 26th January, 2010)

- Dry weather condition will prevail over most parts of the country.

Advisories for cold injury in Jammu & Kashmir, Rajasthan, Haryana, Himachal Pradesh, Uttar Pradesh, Delhi and Madhya Pradesh

- Farmers in Jammu & Kashmir, Rajasthan, Haryana, Himachal Pradesh, Uttar Pradesh, Delhi and Madhya Pradesh are advised to undertake the following measures to safeguard the crops from cold injury
 - Apply irrigation to the crops in the early morning to overcome adverse effects of low night temperature.
 - Arrange for burning farm waste materials around the field to reduce the impact of low temperature.
- There are chances of occurrence of frost in some pockets of Northwest India and Arunachal Pradesh. Farmers are advised to spray sulphuric acid or thiourea @ 0.1% or carbendazim 0.05% on frost sensitive crops.

Advisories for the remaining States

- As there was no significant rain in the country during last week and mainly dry weather is likely to prevail in most of the States during next five days, farmers are advised to apply need based irrigation to the standing crops.

Advisories for pest and disease

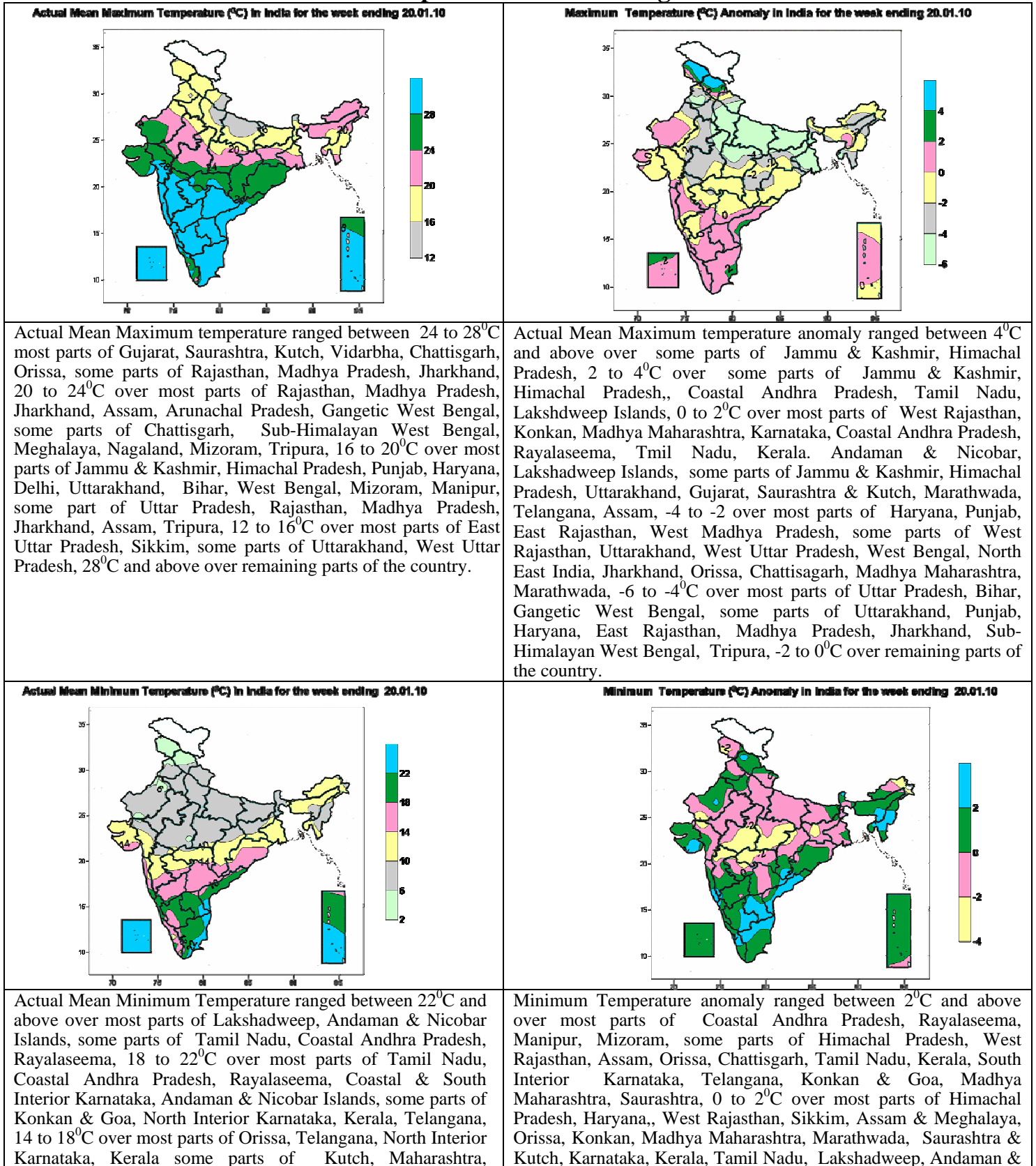
- Due to favourable weather condition, there are chances of pest and disease incidences in the following regions:
 - pod borer in gram, diamond back moth in cabbage and cauliflower, late blight in potato, purple blotch disease in onion, white rust in late sown mustard and pod borer in pea in Delhi.
 - blight in potato and aphids in rapeseed and mustard crops in Assam.
 - white rust in pea and aphids in mustard in Uttarakhand.
 - white rust and saw fly in mustard and bacterial blight in guar in Haryana.
 - Saw fly in mustard, fruit borer in tomato and brinjal in Uttar Pradesh.
 - blast in rice, *Spodoptera*, leaf miner, tikka leaf spot in groundnut, *Helicoverpa* and Maruca leaf webber in red gram in Andhra Pradesh.
- Farmers are advised to undertake plant protection measures, if required.

Issued by

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

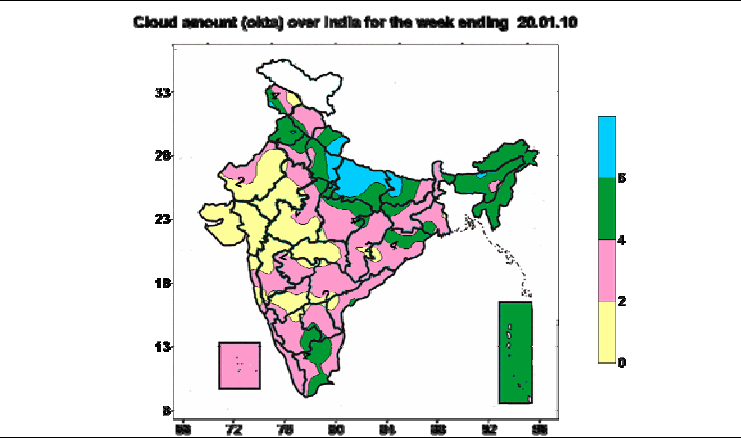
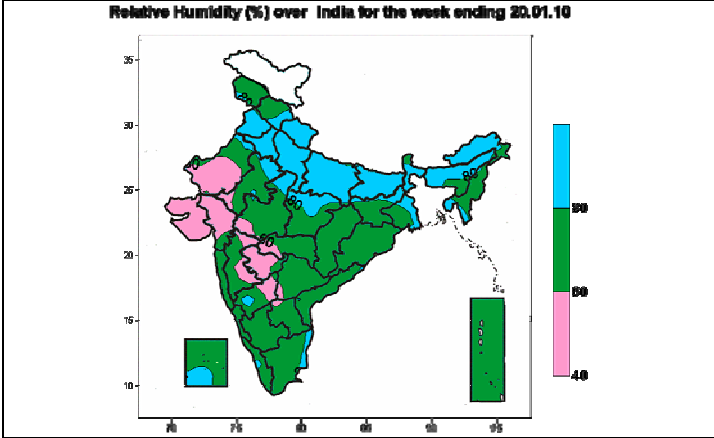
The bulletin is also displayed in the website (<http://www.imdagrimet.org>) of the Division

Contour maps for the week ending 20.01.10



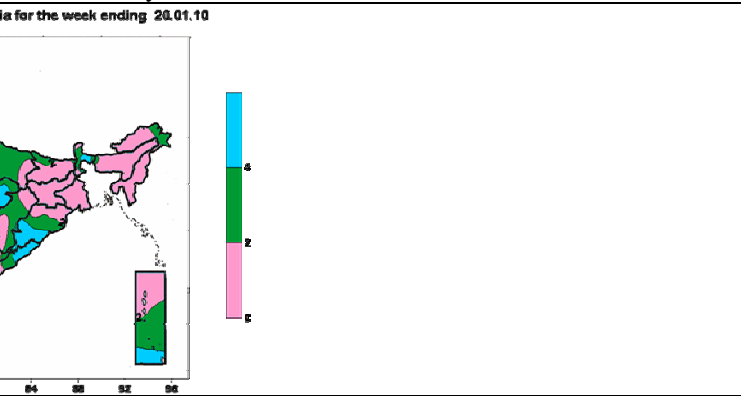
Chhattisgarh., Coastal Andhra Pradesh, Rayalaseema, Coastal & South Interior Karnataka, Andaman & Nicobar Islands, 10 to 14⁰C over most parts of Saurashtra & Kuch, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Tripura, Maharashtra, Chattisgarh, some parts of Gujarat, Madhya Pradesh, Konkan, Madhya Maharashtra, Marathwada, Nagaland, Mizoram, Jharkhand, Orissa, Kerala, 2 to 6⁰C over most parts of Himachal Pradesh, some parts of Jammu & Kashmir, Punjab, west Rajasthan, west Madhya Pradesh, Sub Himalayan West Bengal, Gujarat, West Madhya Pradesh, 6 to 10⁰C over remaining parts of the Country.

Nicobar Islands, some parts of Jammu & Kashmir, Uttarakhand, Punjab, Arunachal Pradesh, Nagaland, Mizoram, Tripura, Bihar, Jharkhand, Vidarbha, Chhattisgarh, Andhra Pradesh, Gujarat, -4 to -2⁰ C over most parts of Madhya Pradesh, some parts of Jammu & Kashmir, West Rajasthan, Arunachal Pradesh, Gujarat, Jharkhand, Madhya Maharashtra, Marathwada, Vidarbha, -2 to 0⁰C over remaining parts of the Country.



Relative humidity between 80% and above over most parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Assam & Meghalaya, Arunachal Pradesh, Tripura, some parts of Jammu & Kashmir, Himachal Pradesh, Rajasthan, Jharkhand, Gangetic West Bengal, Mizoram, Madhya Pradesh, North Interior Karnataka, Kerala, Tamil Nadu, Lakshdweep Islands, 40 to 60% most parts of West Rajasthan, Gujarat, Saurashtra & Kutch, Marathwada, some parts of East Rajasthan, West Madhya Pradesh, Madhya Maharashtra, Vidarbha, North Interior Karnataka, Telengana, Rayalaseema, 60 to 80% over remaining parts of the country.

Cloud amount 6 okta and above over most parts of East Uttar Pradesh, some parts of Uttarakhand, West Uttar Pradesh, Bihar, Assam, 4 to 6 okta over most parts of Punjab, West Uttar Pradesh, Northeast India, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Jharkhand, West Bengal, Orissa, Madhya Pradesh, Chhattisgarh, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka, Tamil Nadu, 0 to 2 okta over most parts of Rajasthan, Gujarat, Saurashtra & Kutch, West Madhya Pradesh, North Madhya Maharashtra, Vidarbha, North Interior Karnataka, some parts of Jammu & Kashmir, East Madhya Pradesh, Chhattisgarh, Orissa, Konkan & Goa, South Madhya Maharashtra, Marathwada, Andhra Pradesh, South Interior Karnataka, 2 to 4 okta over remaining parts of the country.



Wind speed ranged between 4 knots and above over some parts of, Haryana, Delhi, West Uttar Pradesh, Madhya Pradesh, Orissa, Sub-Himalayan West Bengal, Coastal Andhra Pradesh, Tamil Nadu, Kerala, Konkan & Goa, Saurashtra & Kutch, Gujarat, Lakshadweep, Andaman & Nicobar Islands, 2 to 4 knots over most parts of Himachal Pradesh, Uttarakhand, Uttar Pradesh, Gujarat, Saurashtra, Coastal & South Interior Karnataka, Sub-Himalayan West Bengal, Madhya Pradesh, Vidarbha, Kerala, Lakshadweep, Andaman Nicobar Islands, some parts of Punjab, Haryana, Bihar, Arunachal Pradesh, Orissa, Chattisgarh, East Rajasthan, Kutch, Konkan & Goa, Madhya Maharashtra, Marathwada, Andhra Pradesh, Tamil Nadu, , 0 to 2 knots over remaining parts of the country.

Wind speed ranged between 4 knots and above over some parts of, Haryana, Delhi, West Uttar Pradesh, Madhya Pradesh, Orissa, Sub-Himalayan West Bengal, Coastal Andhra Pradesh, Tamil Nadu, Kerala, Konkan & Goa, Saurashtra & Kutch, Gujarat, Lakshadweep, Andaman & Nicobar Islands, 2 to 4 knots over most parts of Himachal Pradesh, Uttarakhand, Uttar Pradesh, Gujarat, Saurashtra, Coastal & South Interior Karnataka, Sub-Himalayan West Bengal, Madhya Pradesh, Vidarbha, Kerala, Lakshadweep, Andaman Nicobar Islands, some parts of Punjab, Haryana, Bihar, Arunachal Pradesh, Orissa, Chattisgarh, East Rajasthan, Kutch, Konkan & Goa, Madhya Maharashtra, Marathwada, Andhra Pradesh, Tamil Nadu, , 0 to 2 knots over remaining parts of the country.

Zonewise Agromet Advisories

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

Himachal Pradesh

- **Realised Rainfall:** There was no significant rainfall in the State during last week.
- **Rainfall Forecast:** Weather is likely to be dry over the State for next 48 hours and rain is likely to occur at a few places after that.
- **Major Rabi Crops:** Wheat (crown root initiation / tillering), gram and lentil (vegetative / flowering) and vegetables.
- **Advisory:**
 - Farmers are advised to undertake the following measures to safeguard the crops from cold injury.
 - Apply light and frequent irrigation to the crops in the early morning to overcome chilling injury.
 - Arrange for burning farm waste materials around the field to reduce the impact of low temperature.
 - Undertake weeding and apply irrigation in wheat, gram and lentil.
 - Undertake sowing of radish (var. Early Meno White, Japanese White, Chinese Pink and Pamp Hriday), peas (Palm Priya or Linclon) in the fields. Treat the seeds with 2.5 g Sevin or bavistin per kg of seeds before sowing of pea crop. Drench the crop with Dithane M-45 @ 2 g and Bavistin @ 1 g for the control of damping off of nursery.
 - As there was no significant rainfall in the State during last week and no significant rain is likely to occur, the farmers are advised to apply need based irrigation to wheat, gram, lentil and vegetable crops.
- **Major Seasonal Crop:** Fruit crops, floral crops and Vegetables.
- **Advisory:**
 - Weather condition is conducive for cleaning and preparation of basins in the orchards.
 - Training and pruning work can be completed in tea. It is time for nursery raising of tea plants in polythene tubes. Do lopping of the tree in the tea orchards to have more sunlight.
 - In apple plants of more than ten years apply well rotten FYM (100 kg), Super phosphate (2 kg once in two years) and 1 kg of Potash.
 - It is time for planting the winter flowers annuals viz. calendula, aster, larkspur, dianthus, african daisy, stasis, lupines, petunia, flox, nicotiana, vanadium and torinia. Flowers can be raised in the pots, hanging pots, rocks etc. Keep the flower beds free from the weeds. Remove the apical shoot in winter annuals to have more side branches to cover the entire pot. It is time for sowing of bulbous flowers like fresia, tulips and nargis etc.
 - As there was no significant rainfall in the State during last week and no significant rainfall is likely to occur, the farmers are advised to apply need based irrigation to floricultural crops.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - Aphids in floricultural crops, spray malathion @ 0.05%.
 - downy mildew in cruciferous vegetables, for control spray ridomil MZ @ 25 g per litre of water at 15 days interval. For control of powdery mildew in peas, spray celfex @ 25 g per 10 litres of water or karathane @ 5 ml per 10 litres of water.
 - To control the root borer in apple, irrigate the basins after removing the upper soil with 10-15 liters of the solution of Chlorpyrifos 20 E.C. @ 5 ml per liter of water.
 - powdery mildew in cauliflower, spray Dithane M-45 (500 gm) or Redomil MZ (500gm) per 200 liters of water. If need arises repeat the spray after 12-15 days.

- **Animal Husbandry:**

- For milch animals follow schedule of 1 kg feed+50 g mineral mixtures per 2 litres of milk. This schedule will maintain the reproductive ability of animals.
- Ensure cleanliness in cows having advanced pregnancy to avoid mastitis. Protect the animals from cold as temperature is expected to fall in next week.

- **Poultry:**

- Protect the birds from cold and increase the feed by 10%. Replace the poultry houses with fresh litter to avoid wetting and keep the houses clean and ensure clean drinking water to the birds.
- Climate is congenial for attack of Diarrhira and cocksedia. So, consult the nearby veterinarian. Put marbel (calcium) grits for calcium for layers.

- **Fisheries:**

- It is also time to disinfect the fish tank by draining out the water and exposing the bottom floor of the tank to direct sunlight.

Uttarakhand

- **Realised Rainfall:** Most of the districts received deficient/scanty rainfall during last week except Almora district which received excess rainfall.

- **Rainfall Forecast:** Dry weather is likely over the State for next two days and isolated thereafter.

- **Major Rabi crops:** Wheat (vegetative/ear head emergence), mustard, lentil, pea, chickpea, rajmah (early vegetative), toria (harvesting).

- **Advisory:**

- Farmers are advised to undertake the following measures to safeguard the crops from cold injury.
 - Apply light and frequent irrigation to the crops in the early morning to overcome chilling injury.
 - Arrange for burning around the field using farm waste materials to reduce the impact of low temperature.
- Farmers are advised to top dress Urea @ one kg per Nali to boost the ear head emergence utilizing the last week rainfall.
- Complete weeding and intercultural operations and top dress 1/2 kg Urea per Nali in mustard crop.
- Undertake weeding and intercultural operations in other standing crops like pea, chickpea, rajmah etc. for their better growth.
- Complete harvesting and threshing operations of matured toria crop during this week.

- **Major Seasonal Crop with stage:** Sugarcane ratoon (early vegetative), cabbage, garlic, tomato (vegetative), French bean (early vegetative).

- **Crop Condition:** Good

- **Advisory:**

- Farmers are advised to undertake weeding in early sown garlic crop and give irrigation for better crop growth. However, if irrigation facilities are not available, then put straw mulch in between rows for moisture conservation and to protect the crops from cold injury.
- Continue digging of matured potato crop as per maturity of tubers as dry weather is expected.
- Remove weeds from other standing vegetable crops and keep grass lying on the ground for conserving soil moisture. If pods of vegetable pea are ready, undertake harvesting and arrange for marketing.
- Apply need based irrigation to the standing vegetable crops like coriander, spinach, radish, mentha etc.
- Continue transplanting of earlier sown cocksfoot and perennial grasses in the nursery during this week on the bunds.
- Continue sowing of tomato varieties like VL Tomato-3, Pant T-3, Him Sona, Him Shikhar etc variety in nursery under optimum soil moisture. Farmers may go for sowing of capsicum with varieties like

California Vander, Pus Dipti, Anupam. Heera, Indira, Supriya & Bharat etc. under optimum soil moisture in nursery.

- Continue sowing of VL Bean-1 & VL Bean -2 varieties of french bean during this week. If pods of vegetable pea are ready then harvest and sent to the nearby market. Continue digging of potato crop on maturity of tubers and then take them to the market for selling.
- Apply irrigation in Onion & other vegetable crops like coriander, spinach, radish, menthe etc during this week.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - white rust in pea is possible, spray 0.5 % solution of Carbendazim immediately at an interval of 10 days.
 - aphids in mustard. If the aphids are seen in 10 % population, then spray 200 SL Emidachlorpid @ 3 ml per 10 litre of water.

Punjab

- **Realised Rainfall:** Dry weather prevailed over the State during last week.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi Crops with stage:** Wheat(early vegetative/tillering), raya, rapeseed and mustard (early vegetative/vegetative), potato(vegetative)
- **Advisory:** Farmers are advised to undertake the following measures to safeguard the crops from frost injury.
 - Apply light and frequent irrigation to the crops in the early morning.
 - Arrange for burning around the field using farm waste materials.
 - Farmers are advised apply second irrigation to wheat sown during November and first irrigation to wheat sown during December. Apply second dose of 55 kg urea per acre to wheat before first irrigation in late sown wheat.
 - Undertake intercultural operations in early sown wheat, raya, taramira, lentil and chickpea.
 - To early sown raya, apply 45 kg urea per acre with first irrigation.
 - Weeding operation in timely sown rape seed and mustard crops may be undertaken.
 - Farmers are advised to undertake the first cutting of Barseem. Conserve the surplus maize fodder as silage at milk dough stage.
- **Major Seasonal crop with stage:** Sugarcane (early vegetative/vegetative), vegetable crops (vegetative)
- **Crop Condition:** Good
 - **Advisory:** Farmers are advised to undertake sowing transplanting of gobhi sarson, which is more profitable than direct sowing. Complete transplanting of tomato seedlings. If the growers have not properly covered young trees as well as the newly planted fruit trees with thatches or kullies made of sarkanda or farm waste materials, then they may do so without any further delay to save them from frost. The South-west side should be left open to allow sufficient sunlight. Provide sarkanda/kahi/ rice straw to save the pea plants from frost.
 - Complete sowing of spring potato in the first fortnight and transplanting of onion seedling by the middle of this month.
 - This is the right time for sowing of English varieties of Radish (Japanese White, white Icicle), Turnip (Golden Ball), transplanting of 4 to 6 week old seedlings of cabbage, chinese cabbage and late season cauliflower.
 - Undertake transplanting of tomato. Pruning of deciduous fruit trees like peach, plum and pear may be carried out during this month. Protect the young plants from frost and mend thatches where required.
- **Advisory for Plant Protection:** Weather conditions are favourable for mild incidences of –
 - early and late blight of potato, spraying the crop with Dithane M 45 @ 500-700 g/acre.
 - powdery mildew in pea, spray the crop with Karathane @ 80 ml/acre or Suflex @ 600 g/acre.

- aphid in sarson/ raya, spray the crop with 40 g Actara 25 WG or 400 ml of Metasystox 25 EC in 100 litres of water per acre.
- **Animal Husbandry:** Provide dry bedding to animals helps to save them from cold. Keep your 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. Feed well chaffed Barseem mixed with wheat straw to avoid aphara(Tympany). To save teats of animals from cracking apply desi ghee or Vaseline. Provide the curtains at windows in poultry sheds. Suitable measures like doubling of curtains should be taken to avoid cold inside the sheds. Keep the chicks warm by giving them artificial heat according to age.

Haryana

- **Realised Rainfall:** Dry weather prevailed over the State during last week.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi Crops:** Wheat(early vegetative/tillering), raya and mustard(early vegetative/vegetative)
- **Advisory:**
 - Farmers are advised to undertake the following measures to safeguard the crops from cold injury.
 - Apply light and frequent irrigation to the crops in the early morning to overcome chilling injury.
 - Arrange for burning around the field using farm waste materials to reduce the impact of low temperature.
 - Apply the irrigation in timely sown raya/mustard crop.
- **Major Seasonal crop with stage:** Sugarcane (early vegetative/vegetative), vegetable crops (vegetative)
- **Crop Condition:** Good
- **Advisory:**
 - Continue sowing “desi” varieties of radish (Punjab Pasand & Punjab Safed), turnip (L-1 & 4-white) and carrot (No. 29 PC-34 and Sel. 21), pea, potato and palak (Punjab Green). Transplant fully developed seedlings (4-6 week old) of main season varieties of cauliflower. Sowing of late season varieties of cauliflower i.e. Snow-Ball-16, Pusa Snow ball 1 & Pusa Snow ball K-1 can be continued.
 - This is suitable time for planting of evergreen fruit plants like sweet orange, mandarin, lime, lemon, guava and ber. For checking pre-harvest fruit drop, spray the trees with 10 ppm of 2, 4-D and 0.3% of Zinc sulphate. In citrus, leaf miner can be checked by spraying 500 ml of Sumicidin 20 EC or 1000 ml Ripcord 10 EC or 1250 ml Hostathion 40 EC in 500 litres of water. In grapes, spray the vines with Bavistin @ 400g/400 litres of water to control anthracnose.
 - Farmers are advised to undertake weeding and hoeing in cotton and intercultural operations in tomato, onion and chilli.
- **Advisory for Plant Protection:** Weather conditions are favourable for mild incidences of –
 - white rust and saw fly in mustard, farmers are advised to monitor the crop and spray 600 grams Mankojeb/Dithane M-45 in 250 to 300 liters of water per acre to control white rust, if required. Spray Malathion 50 EC @ 200 ml or Endosulphan 35EC @ 400 ml in 200 lit. of water/acre to control saw fly.
 - bacterial blight in guar, farmers are advised to spray the crop with 400ml blitox and 30 grams of streptocyclin in 200 liters of water per acre.
- **Animal Husbandry:** Farmers are advised to protect animals against from cold winds. Farmers are advised to give the 50grams Iodized salt and 50 to 100 grams mineral mixture daily to keep them healthy.

Delhi

- **Realised Rainfall:** The State received no significant rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi Crops:** Wheat (tillering); pea and gram (flowering / pod initiation); vegetable crops (vegetative / flowering / fruiting).
- **Advisory:**
 - Irrigation is advised in late sown wheat crop of 22-25 days old. Application of final dose of nitrogen should be applied after 3-4 days of irrigation. Application of weedicide such as 2, 4-D @ 0.5-0.75 Kg / ha against wide leaf weeds is advised after 30-35 days of sowing.
 - If 20-25% pod has appeared in the field of gram, application of light irrigation is advised.
 - In present weather conditions late transplanting of healthy seedlings of cabbage, cauliflower, knolkhol etc. may be carried out. Intercultural operations are recommended in the early sown crops.
 - Sowing of spinach, coriander, fenugreek may be done in present weather conditions. Foliar spray of 20 kg urea per acre may be done to maintain foliage health.
 - Frequent light irrigation is advised to protect potato from cold injury. In seed crops, nipping of terminal buds should be done in between 20-26th January to protect the crops against vector of viral diseases.
 - Transplanting of onion should be done at the earliest as further delay will reduce the yield and cause severe infestation of thrips.
 - Intercultural operations should be undertaken in carrot, radish, turnip and sweet potato. To protect the seed crops of carrot, radish and turnip and also mustard and tomato against cold injury, light irrigation should be applied.
 - Light irrigation should be given after each harvest of berseem.
 - If the pea crop is in flowering stage or pods are appearing, light irrigation is highly recommended to protect the crop against the probable cold injury. Spraying of crop with 2 % urea is also advised.
 - Training and pruning should be done in grape. Protect new seedlings of papaya and mango from probable cold injury by providing shade with straw or other locally available materials.
 - To prepare seedlings of early cucurbitaceous crops, seedlings may be prepared in small polythene bags in poly houses. Summer chilli crop seedlings may also be prepared in polyhouse.
- **Plant Protection:**
 - As weather is dry and congenial for spraying, application of Chlorpyrifos @ 1 litre mixed in 50 kg of sand in the evening hours when weather is clear and subsequent irrigation is recommended for control of termite.
 - Weather conditions are favourable for mild incidences of –
 - pod borer in gram, installation of Pheromone trap @ 3-4 traps per acre is advised to monitor pod borer population if flowering has reached 10-15%. “T” shaped bird perches in and around crop field may be installed.
 - diamond back moth in cole crops, installation of Pheromone traps @ 3-4 traps per acre to monitor the pest population of diamond back moth is advised.
 - late blight in potato, in present weather conditions constant monitoring of crop against attack of late blight is advised. Spraying of Diethane M-45 @ 2 ml / litre of water is recommended.
 - purple blotch disease in onion, monitoring of crop against infection of purple blotch should also be done. Need based spraying of Diethane M -45 @ 3 grams per litre of water is advised (400-500 litres/ hectare).
 - aphids in root crops, foliar spray of Metasystox @ 2 ml per litre of water is advised.

- white rust in late sown mustard crops, removal of older leaves near surface and spraying of Sulfix is advised.
- pod bore in pea and fruit borer in tomato, constant monitoring of pea against pod borer and tomato against fruit borer with installation of pheromone traps @ 3-4 traps per acre is advised. Spraying of *Bt* formulation is advised.

Uttar Pradesh

- **Realised Rainfall:** Most of the districts of the State received scanty/no rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely over West and East Uttar Pradesh.
- **Major *rabi* crops:** Wheat (early vegetative/tillering), maize, gram, pea, and lentil (early vegetative).
 - As there was no rainfall in most of the districts and dry weather is likely for the next five days, the farmers are advised to apply irrigation to the standing *rabi* crops. Farmers are advised to save *rabi* crops from frost / fog and severe cold by arranging smoke around the field along with light watering and spray the solution of Bavistin.
 - Weeding and hoeing, and top dressing of recommended amount nitrogen may be done in wheat and to control broad leaf weeds apply 2, 4 – D sodium salt @ 625gm/ hectare.
 - Undertake weeding, intercultural operation and top dressing in barley, gram, pea, rai, mustard and lentil.
 - Weeding, hoeing, watering as per requirement, application of recommended fertilizers may be done in pea, lentil, winter vegetables, vegetable pea, turmeric, potatoes, mango, lemon, mustard, alsi crops.
- **Major Seasonal Crop with stage:** Sugarcane (grand growth), winter sown sugarcane(early vegetative), vegetables (vegetative/fruited), mango (fruit setting).
- **Crop Condition:** Good
- **Advisory**
 - Undertake weeding, intercultural operations and application of fertilizers in the standing crops like sugarcane, vegetables and mentha.
 - Undertake first cutting of fodder barseem.
 - Sowing of garlic may be done after purification of seeds at the seed rate 500- 700 kg seeds/ hectare at distance 15 x 7.5 cm.
 - Weeding, hoeing raise of soil use of recommended fertilizers along with watering as per requirement may be done in sown winter crops of Sugarcane.
 - Farmers are advised to make smoke around the mango garden along with light watering to save from frost / fog.
 - Harvesting of early varieties of potato and turmeric may be done and weeding, hoeing and watering as per requirement may be done.
 - Harvesting, marketing of winter vegetable may be done along with watering as per requirement.
 - Weeding, hoeing watering as per requirement in garlic in interval of 15 days may be done.
 - Transplant the ready seedlings of Onion in the main field.
 - Undertake interculturing by ploughing in between rows and watering as per requirement in interval of 15 days may be done in banana garden and to save from frost / fog make smoke around the garden along with light watering.
 - Undertake interculturing by ploughing in between rows and application of recommended fertilizers along with watering as per requirement may be done in mango garden and to save from frost/ fog make smoke around the garden along with light watering.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
 - sawfly in mustard, spray the solution of Endosulphon 35 EC @ 1.25 litre per hectare in 600 – 800 litre of water.

- mal formation disease in mango, spray the solution of Naphthalene Acetic acid @ 200 ppm or 4ml. Planofix in 9 litre of water.
- cankers disease in lemon, spray the solution of Blitox 3-4 gram/litre of water.
- fruit borer in tomato and brinjal, spray the solution of Carbaryl @ 2 g / litre of water.

J & K

- **Realised Rainfall:** There was no significant rainfall in the State during last week.
- **Rainfall Forecast:** Mainly dry weather is likely over the State during next 24 hours and rainfall is at isolated/few places thereafter.
- **Major Rabi crops:** Wheat, barley, brown sarson (vegetative), Vegetables (vegetative/ flowering/ fruiting).
- **Advisory:**
 - Farmers are advised to undertake the following measures to safeguard the crops from cold injury.
 - Apply light and frequent irrigation to the crops in the early morning to overcome chilling injury.
 - Arrange for burning around the field using farm waste materials to reduce the impact of low temperature.
 - In orchards cover fruit plants with sarkanda or other such materials in order to protect from cold/frost.
 - As no significant rainfall is likely over the State during next 5 days, farmers are advised to apply irrigation to the standing crops.
 - Undertake intercultural operations, application of fertilizers and pesticides in mustard, gram, field peas and other cole vegetable crops..
 - Weed control application in early sown wheat crop by hand hoe or apply isoproturon @ 0.75 a.i.+2,4-D ethyl ester @ 500ml /ha for control of both types of weed (broad & narrow leaves), when crop is 30-35 days old.
 - Undertake hoeing and weeding in transplanted crops like cabbage, cauliflower, kale and other standing crops.
- **Plant Protection:**
 - Due to dry weather conditions, there are chances of termite incidences in wheat and barley crop. To control spray Endosulphan 35 EC @ 2.285 liters/ha or Chloropyriphos 20EC @ 4.0 liters/ha.
 - The prevailing weather condition may likely to increase the infestation of aphid in early sown mustard crop. To control spray Metasystox @ 0.03 per cent or Chloropyriphous @ 0.05 per cent & repeat the spray after 15 –20 days interval.
 - Weather conditions are favourable for the incidences of cabbage butterfly, aphids and thrips in cole crops. Spray Malathion @ 0.2 % to control cabbage butterfly in cole crops and for controlling aphids and thrips, spray Metasystos @ 2 ml / litre of water.
 - The prevailing weather condition may likely to increase the infestation of aphids in early sown mustard crop; spray Metasystox @ 0.03 per cent or Chloropyriphous @ 0.05 per cent to control & repeat the spray after 15 –20 days interval.
- **Animal Husbandry:** Due to decrease temperature cover the poultry shed with gunny bags in order to protect the birds from cold weather. Protect the pregnant and milch animals from cold and feed them mineral mixture regularly

Rajasthan

- **Realised Rainfall:** Most of the districts of the State received no rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Seasonal Crop with stage:** wheat, gram, mustard (vegetative) vegetable crops (flowering / fruiting / harvesting)
- **Crop Condition:** Good
- **Advisory:**

- Undertake intercultural operations in sweet gourd, cucumber, pumpkin, bitter gourd, tinda, tomato and ladies finger.
- Sow seeds in nursery for raising seedling of autumn vegetables. Use following improved varieties for nursery sowing: Tomato: Pusa Rubi, Pusa Early and Vihar. Brinjal: Pusa Summer Prolific Round, Pusa Summer Prolific Long, Meghdoot, Navin and Arka Bahar, Cucumber: Balam and Pusa Sahyog. Smooth gourd: Chikni and Nasdar.
- Start weeding in gram and mustard crops.
- Start preparation of field for the sowing of cluster bean, cowpea & early cucurbits like muskmelon, watermelon, ridge gourds, bitter gourds etc.
- Mango hopper may attack mango plants. To control this insect spray Melation 50 EC @ 1.0 ml or Endosulfan 35 EC @ 1.5 ml per litre water.
- Vaccinate animals against FMD disease.
- **Animal Husbandry:**
 - To protect milch & infant animals from cold, cover the door of animal house and wrap jute beg around animal back. Keep litter dry everyday in Ajmer, Dausa, Tonk and Jaipur.
 - Due to fall in temperature there are chances of cold winds, protect animals by putting curtains in animal sheds. Vaccinate animals against FMD and BQ in consultation with local veterinarian. Arrange for curtains in poultry in Bharatpur region.
- **Plant Protection:** Weather conditions are favourable for
 - hopper in mango. To control this insect spray Melation 50 EC @ 1.0 ml or Endosulfan 35 EC @ 1.5 ml per litre water.
 - powdery mildew in vegetables and fruits crops; spray 1% kerathane or sulphur (WP) @ 2 gm/litre of water.
 - Aphids in mustard; spray Endosulfan 35 EC 1.5 ml per litre water. Repeat spray if problem persists.
 - pod borer attack in gram; dust Melathion 5% or Methyl Parathion 2% @ 20-25 kg/ha before flowering and pod formation.
 - Cutworm may cause serious damage to gram crop during night. Apply Clorophyrophos @2.5 lit/ha with irrigation water.

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

Bihar

- **Realised Rainfall:** Most of the districts of the State received scanty/no rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Rabi Crops:** Wheat (early vegetative/tillering), maize, gram, pea, and lentil(early vegetative/vegetative), potato(vegetative)
 - As there was no significant rainfall in most of the districts and dry weather is likely for the next five days, the farmers are advised to apply irrigation to the standing *rabi* crops.
 - Farmers are advised to provide second irrigation in early sown wheat for better growth of crop. For control of weeds, weeding may be done by hand weeding or spraying Isoproturon @ 1kg a.i./ha in 700 to 800 liters of water.
 - Undertake weeding, intercultural operation and top dressing in barley, gram, pea, and lentil.
 - Farmers are advised to provide first irrigation to wheat sown in 2nd week of December at CRI stage (21 to 25 days after sowing) and apply adequate nitrogenous fertilizer@ 40kg N/ha after first irrigation. For control of weeds spraying of Isoproturon @ 1kg a.i./ha dissolve in 700 to 800 liters of water is advised.
 - Farmers are advised to apply irrigation and last dose of nitrogen for better growth and yield of Oat.
 - Provide irrigation, weeding and earthing up in *rabi* maize crop.
 - Prepare the field and undertake sowing of spring planted sugarcane, vegetables and fodder crops.

- Farmers are advised to provide the irrigation in potato at the interval of 10 to 15 days to protect from cold weather.
- Prepare the field for sowing of sunflower, maize and transplanting of onion seedling.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
 - late blight in potato, spray Indofil M-45 or Ridomil @ 2gm/liter of water for control of late blight of potato.
 - aphid in mustard and rai, apply metasystox (25 EC), Monocrotophos @ 2gm per liter of water to protect the crop.
 - powdery mildew in peas. Apply Sulfex @2gm/liter of water or Bavistin @1gm/ liter of water or Kara than 1gm /liter of water for control of the disease.
 - stem borer, pod borer in peas, gram. Spray Endosulphan (35EC) @1.5 ml/liter of water at 15 days of intervals.
 - powdery mildew disease in mango, spray Metasystox @ 1.0 ml or Sulphex @ 2.0 gm per litre of water + Planofix @ 1.0 ml./4.5liter of water.
- **Major Seasonal Crop with stage:** Sugarcane (grand growth) and vegetables (vegetative/fruited), mango (fruit setting).
- **Crop Condition:** Good
- **Advisory**
 - Farmers are advised to prepare the field for spring planting of sugarcane, summer vegetables and fodder crops.
 - Undertake weeding, intercultural operations and application of fertilizers in the standing crops like sugarcane, vegetables and mentha.
 - Complete sowing Barseem at the earliest and undertake first cutting of fodder.
 - Sowing of garlic may be done after purification of seeds at the seed rate 500- 700 kg seeds/ hectare at distance 15 x 7.5 cm.

Jharkhand

- **Realised Rainfall:** There was no significant rainfall during last week over the State.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Rabi Crops:** Wheat(early vegetative/tillering), rai, toria, gram, peas, potato, mustard(vegetative)
- **Crop Condition:** Good
- **Advisory:**
 - As there was no significant rainfall in most of the districts and dry weather is likely for the next five days, the farmers are advised to apply irrigation to the standing *rabi* crops.
 - Apply second irrigation to crops sown in the month of November and third irrigation may be given at the interval of 15 to 20 days. Rest of the urea may be given before flowering.
 - Undertake weeding, intercultural operations and top dressing in early sown *rabi* crops.
- **Major Seasonal Crop with stage:** Sugarcane (vegetative/grand growth), vegetables(vegetative)
- **Crop Condition:** Good
- **Advisory:**
 - Farmers are advised to spray ammonium molybdate 1gm/litre of water in cauliflower to manage the deficiency of molybdenum and to maintain the quality of flower. Apply required irrigation in morning.
 - Farmers who seeded potato crops in early November may apply urea 50 kg /acre. Farmers are advised to give irrigation at 10 to 15 days interval. Farmers who have taken early potato may go for onion in fallow land after harvesting of potato. Irrigate the crop to protect the crops from cold.

- At the time of flowering of mustard, apply urea 20 to 25 kg/acre. Apply first irrigation at the time of flowering and second irrigation at pod formation.
- Farmers are advised to stop irrigation and digging of potato may be done, if potato is in matured condition.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
 - aphid in mustard and rai, apply metasystox (25 EC), Monocrotophos @ 2gm per liter of water to protect the crop.
 - powdery mildew in early pea. Spray Cairathane @ 1ml/litre of water or sulfex 3gm/litre of water.
 - blight disease in tisi, spraying of mancozeb @ 2ml/litre of water is recommended.
 - leaf folder in arhar, spray Endosulfan @ 2ml/litre of water. To protect the plant from aphid spray the plant with Methyl Demeton @ 1.0 ml/litre of water.
 - tikka disease in late sown groundnut. Farmers are advised to spray Sitara @ 1 ml/ litre of water.

Orissa

- **Realised Rainfall:** There was no significant rainfall during last week over the State.
- **Rainfall Forecast:** Dry weather is likely over the State during next five days.
- **Major *rabi* Crops:** wheat (tillering/jointing), pulses, sunflower, groundnut (vegetative), mustard(vegetative/flowering)
- **Advisory:**
 - As there was no rainfall in the State during last week and mainly dry weather is likely for the next five days, apply irrigation to the *rabi* crops.
 - Apply first top dressing @ 50 % N of the recommended dose at CRI stage of wheat.
 - Undertake weeding, intercultural operations and application of fertilizers of *rabi* pulses like lentil, field pea and chickpea.
 - Undertake field preparation for sowing of summer maize, groundnut and sunflower. Select composite varieties like Navjot, Dhabal and Vijay and hybrids like Ganga, Deccan -105, Deccan, Kargil 633. Use 6 kg seeds per acre. Apply the recommended dose of fertilizer at the time of final land preparation. Sow the seed in line at keeping 45 cm. row distances.
 - Undertake nursery sowing of summer rice and complete transplanting within January. Select varieties among Khandagiri, Lalat and Surendra etc. 10 decimal area is sufficient for nursery sowing for one acre planting.
 - Undertake intercultural operations, top dressing and earthing up followed by light irrigation in sunflower. Apply gypsum @ 2.5 q/ha to sunflower, if it is not applied at the time of sowing.
 - **Major Seasonal Crop with stage:** Sugarcane (early vegetative), vegetables (fruiting / harvesting), onion (vegetative).
- **Crop Condition: Good**
- **Advisory:**
 - Undertake transplanting of cole crops at 3-week stage.
 - Undertake weeding, intercultural operations and application of fertilizers.
- **Plant protection:** Weather conditions are favourable for mild incidence of
 - aphid in pulses and mustard. Apply 4 ml Neem based pesticide or 2 ml Metasystox per each litre of water to control aphids.
 - leaf eating caterpillar in vegetable crops. Spray Endosulfan @ 2 ml/l to control.
 - diamond back moth, mustard saw fly and borer in cole crops, spray Malathion @ 2ml/l of water.
 - late blight in potato, spray with 2 kg Dithane-M-45 in 500 l of water thoroughly.
 - powdery mildew in mustard, spray Blitox 50 @ 3g/litre of water.

- **Animal Husbandry:** calf and kids are susceptible to respiratory infection mostly pneumonia. Provide warm and comfortable housing to animals. Now-a-days, poultry birds are prone to respiratory infection and CRD (Chronic Respiratory Diseases). Provide comfortable warm housing and good ventilation. In case of disease outbreak, therapeutic measures are to be taken up. Vaccination for FMD (Foot and Mouth Disease) of animals is to be taken up. In case of disease outbreak, strict isolation of affected animals should be done.

West Bengal

- **Realised Rainfall:** Mainly dry weather prevailed during last week in the State.
- **Rainfall Forecast:** Mainly dry weather is likely to prevail over the State.
- **Major Crops:** *Boro* rice, vegetables, mustard.
- **Crop Stage:** Sugarcane (vegetative), vegetable crops (vegetative / flowering / fruiting), mustard (flowering / pod formation), *boro* rice (seedling / transplanting), potato (vegetative / tuber formation).
- **Crop Condition: Good**
- **Advisory:**
 - The seedlings of *boro* rice are ready for transplanting within five to six weeks (4-5 leaves stage). 100 kg of FYM or compost per bigha is spread uniformly after first ploughing and 9 kg of urea (two splits), 54 kg of SSP and 11 kg of MOP per bigha should be incorporated into the soil after seven days of first ploughing. Two to three seedlings may be planted at 20 x 15 cm spacing and in the depth of 5 cm in the main field. The level of water is maintained at a depth of 2-3 cm during transplanting.
 - As night temperature is low, the young seedlings of *boro* rice should be applied with irrigation water during night to protect the seedlings from low temperature and fog and drain out the water in the next morning. To avoid the cold injury in seed bed, drag the rope in the early morning to drop down the dew from leaf canopy.
 - Two percent urea or DAP (20 g of urea or DAP per litre of water) should be sprayed at the time of pod formation stage to increase the yield of pulse crops (gram, lentil and *Lathyrus*).
 - After 21 days of planting of potato, 15 kg urea and 8 kg MOP per bigha should be applied as top dressing followed by earthing up and irrigation.
 - As there was no significant rain during last week and mainly dry weather is likely to prevail, apply irrigation to wheat and mustard crop at flowering stage.
 - For vegetables like ridge gourd, bitter gourd and pumpkin, weeding should be done and soil should be loosened. Then topdressing with nitrogen fertilizer along with a light irrigation is also recommended. For those crops about to bear fruits, make the soil loose at the base of the plant followed by weeding. In fruit dropping case of chilli, brinjal and tomato, spray Planofix @ 1 ml per 4 litres of water.
- **Plant protection:**
 - Due to high humidity and fog, pulses (gram, lentil and *Lathyrus*) may be infected by blight and rust diseases. Farmers are advice to spray the crop with *Tricoderma* @ 5gm / litre of water, if the disease symptoms appear.
 - High humidity and fog during last few days may cause incidence of late blight disease in potato. If disease symptoms appear, spray the crop thoroughly with Copper oxichloride @ 4 g or Mancozeb @ 2.5 g or Cymoxnil 8 % + Mancozeb 64% @ 2.5 g or Metalaxil 8% + Mancozeb 64% @ 2.5 g or Samskil 8 % + Mancozeb 64 % @ 2.5 g per litre of water at 10-12 days intervals. After 21 days of planting of potato, 15 kg urea and 8 kg MOP per bigha should be applied as top dressing followed by earthing up and irrigation.
 - Weather conditions are favourable for mild incidences of –
 - downy mildew in pointed gourd, apply 2 gm crilexyl or ridomil per litre of water during late afternoon.

- aphid in mustard in Old Alluvial Zone, apply Rogor @ 1.5 ml / litre of water.
- stem rot in brinjal, spray tricyclagel @ 0.5 g / litre of water.
- aphids and jassids in chilli, brinjal and tomato, spray Imidachlorpid @ 1 ml / 7 litres of water and Dimethoate @ 1.5 ml / litre of water to prevent the attack of aphids and jassids in chilli, brinjal and tomato only after weeding.
- **Fisheries:**
 - For fish cultivation, lime should be applied @ 40kg / bhigha in the pond.

Sikkim

- **Realised Rainfall:** The State received no significant rainfall during last week.
- **Rainfall Forecast:** Mainly dry weather is likely over the State during the period.
- **Major crops: High hills (1500 to 2000 m): Large Cardamom:** Vegetative, **Rabi Vegetables:** fruiting/harvesting, **Wheat:** Active Tillering/Flowering; **Medium hills (1000 to 1500 m): Large Cardamom:** Vegetative, **Rabi Vegetables:** fruiting/harvesting, **Mustard:** Flowering/Grain formation, **Wheat:** Active Tillering/ Flowering; **Low Hills (Below 1000 m): Large Cardamom:** Vegetative **Rabi Vegetables:** fruiting/harvesting, **Mustard:** Flowering/Grain Formation. **Wheat:** Tillering
- **Crop Condition:** Good
 - **Advisory:**
 - Harvesting of cardamom may be completed Maturity may be assessed when the capsule of the top most spike turn dark brown and when the capsule come out easily while pulling.
 - Undertake intercultural operations in wheat, mustard and potato to keep the field weed free.
 - Harvesting of orange fruits should be done by tree fruit harvester or by hand plucking without damaging the trees.
- **Plant protection:**
 - Chirke and Foorkey infected cardamom plants may be destroyed by uprooting and buried in the pits at regular intervals.
 - Regular inspection may be carried out to observe caterpillar/shoot borer/shoot fly incidence, if any, and may be hand picked and destroyed mechanically.

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

Assam

- **Realised Rainfall:** Dry weather prevailed during last week.
- **Rainfall Forecast:** Mainly dry weather is likely to prevail over the State.
- **Major Rabi Crops:** Wheat (crown root initiation / tillering), potato (vegetative / tuber formation), pea and mustard (vegetative / flowering / pod formation), vegetables (vegetative / flowering / fruiting).
- **Advisory:**
 - Soaking and incubation of *boro* rice seeds will take time due to low temperature. Sow sprouted seeds in nurseries under low plastic tunnel because of fall in temperature. As night temperature is low, the young seedlings of *boro* rice should be applied with irrigation water during night to protect the seedlings from low temperature and drain out the water in the next morning. Transplant the seedlings in main field at 3-4 leaf stage. While preparing main field apply fertilizer @ 18 kg Urea, 27 kg SSP, 6 kg MOP per bigha.
 - Apply irrigation to wheat at crown root initiation stage as the period will continue to be dry. First topdressing is to be done 3 days after irrigation.
 - Second earthing up should be done in 75-80 days old potato crop. This should be followed by adequate irrigation.
 - Top dressing with nitrogenous fertilizer should be done in late planted cabbage and cauliflower crops. The crop should be irrigated as there is no rain for last few weeks.

- As there was no significant rain during last few weeks, apply irrigation to tomato, mustard, pea etc.
- Due to prevailing dry weather arrange for Pitcher drip irrigation in coconut and areca nut for the ensuing period. Alternately after irrigation, mulch the base of the palm with dry hyacinth or with dry straw.
- This is ideal time for sowing of late cole crop seedlings. Some of the popular varieties of late Cole crops are Pusa Snow Ball K-1 and Snow Ball 16 for cauliflower, Drum Head for Cabbage and Purple Viena for Knol khol.
- Land preparation for early summer vegetables like ladies finger, ridge gourd etc. should be started during this period.
- Under rainfed condition optimum time of sowing of squash is mid January to mid February. Suitable varieties are long white, pointed green, round white etc. Seed should be sown @ 10.5 Kg / bigha maintaining a spacing of 2-3 m (row to row) and 1-2 m (plant to plant). Pit size should be 15 cm x 15 cm x 15 cm. After planting the row should be covered with a thin layer of rice straw for better conservation of moisture.
- Farmers are advised to collect the high yielding varieties such as Pratap (SG-1) for green gram and Pant-U-19 for black gram. Seeds should be sown January onwards to March. 3 kg seeds / bigha are required for line sowing in the spacing of 30 cm (row to row) and 10 cm (plant to plant).
- **Major Seasonal Crop:** sugarcane (vegetative / maturity).
- **Crop Condition:** Good
- **Advisory:**
 - Matured sugarcane may be harvested during this period.
- **Plant protection:**
 - Chances of late blight infestation is less in tomato as the weather is relatively dry and the sky is clear for several weeks. Hence, spraying of pesticide should be restricted.
 - Weather conditions are favourable for mild incidences of –
 - loose smut disease of wheat, infected plants should be rouged out and burnt or buried, away from the field.
 - blight in potato, spray Mancozeb 75% a.i.(2.5g/l) at an interval of 7 days.
 - aphids in the rapeseed and mustard crop, spray Dimethoate 30 EC @ 2 ml / litre or Chloropyriphos 20 EC @ 2 ml / litre or Rogor 30 EC @ 1-1.5 ml / liter of water. Spraying should be done during afternoon to protect the pollinators like honeybee.
- **Fishery:** As the water level of ponds are going down, the fishery owners may arrange for partial harvesting of marketable sized fish (>700gm). Measures to be taken to prevent EUS disease through liming. To control EUS, dip treatment in 500 ppm potassium permanganate solution may be practiced.
- **Animal Husbandry:**
 - Vaccination to control the Ranikhet & Gumboro diseases of poultry may be done during this period. Artificial lighting may be provided in the poultry house to raise the temperature and to keep the house comfortable for the birds.
 - Dry paddy straw for hay making and preserve for future use.

Arunachal Pradesh

- **Realised Rainfall:** Mainly dry weather prevailed over the State during last week.
- **Rainfall Forecast:** Dry weather is likely over the State during next 24 hours and mainly dry weather thereafter.
- **Major rabi Crops:** Pea, maize, potato
- **Crop Stage:** Pea(vegetative/pod formation), maize(vegetative), potato(tuber formation)
- **Crop Condition:** Good.

- **Advisory:**
- Farmers are advised to undertake the following measures to safeguard the maize, pea and potato crops from frost injury in Tawang district.
 - Apply light and frequent irrigation to the crops in the early morning.
 - Arrange for smoke by burning around the field using farm waste materials.
 - Undertake weeding, intercultural operations and top dressing of fertilizers in pea, maize and potato.
- **Major Seasonal Crop:** Vegetables
 - As there was no rainfall in the State during last few weeks, apply irrigation to the *rabi* crops.
 - Matured fruits of orange, guava and pineapple may be harvested for sale and avoid over maturity.
 - Transplanted vegetables may be provided with proper irrigation and weeding be done followed by fertilizer application.
- **Plant Protection:** Weather conditions are favourable for mild incidence of
 - blight in potato, may be protected by spraying the metalaxyl containing fungicide @ 2g/lit water.
 - aphids in pea, spray Endosulfan @ 2 ml/lit of water to protect from pea aphids.
- **Animal Husbandry:** Vaccination and deworming from time to time for gastrointestinal parasites be done with mineral mixture supplement in feed.

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

Andhra Pradesh

- **Realised Rainfall:** Most of the districts received excess rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the state.
- **Major Crops:** Cotton, Sugarcane and Vegetables
- **Crop Stage:** boll development (cotton). Early sown *rabi* crops are at vegetative stage.
- **Crop Condition:** Good.
- **Advisory:**
 - As there was no rainfall during last week, farmers are advised to apply irrigation to standing *rabi* crops like groundnut.
 - Third split dose of fertilizer ie, 35 kg urea and 15 kg MOP per acre is to be applied for cotton in Krishna, Guntur and Prakasam districts. Spraying 2% urea or 2% KNO₃ should be taken up two times at weekly intervals.
 - Farmers are advised to undertake intercultural operations in *rabi* crops to keep the fields weed free.
 - Harvesting and threshing of the paddy and ragi crops can be completed.
 - Arrange for harvesting Bengalgram as the crop is at maturity stage.
- **Plant protection:** Present weather conditions are congenial for the incidence of
 - stem borer and leaf folder in paddy; to control leaf folder, spray Chlorpyrifos @ 2.5 ml or Cartap hydrochloride @ 2 g per litre of water. To control stem borer, adopt the following IPM measures.
 - Do not apply high dose of nitrogen fertilizers.
 - Arrange 4 pheromone traps per acre to monitor the pest.
 - Spray Cartap hydrochloride @ 2 g or Phosphomidon @ 2 ml per litre of water if 5 % dead hearts or 1 adult or egg mass is noticed per square meter area.
 - blast in *rabi* rice nursery. To control, spray Tricyclazole @ 0.6 g per litre of water, after noticing the disease symptoms.
 - late leaf spot in *rabi* groundnut in Anantapur. To control Late Leaf Spot, spray Contaf @ 2.0 ml or Dithane M-45 @ 2gm+ Carbendizem @ 1 g per litre of water.
 - To control flower drop in mango spray planofix @ 1ml per 4.5 litres of water.

- **Husbandry:** The prevailing weather conditions are congenial for the occurrence of
 - haemorrhagic septicemia in cattle
 - ET and sheep pox in sheep
 - ranikhet disease in poultry
 - To prevent the diseases, vaccinate the animals
 - To prevent blue tongue disease in sheep, farmers are advised to keep the sheep in sheds during night time.

Karnataka

- **Realised Rainfall:** Most of the districts received excess rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Crops:** Wheat (Ear head emergence), Pigeonpea (maturity), Sunflower (maturity), Vegetables (Flowering/fruitletting), Rabi Sorghum (Ear head emergence), Bengalgram (Pod filling), Safflower (Flower emergence).
- **Advisory:**
 - Farmers are advised to provide irrigation to rabi crops as dry weather is likely to prevail for the next five days and there was no significant rainfall during last week.
 - Harvesting of pigeonpea crop can be continued. Deep ploughing in black soil is advised in pigeon pea harvested fields.
 - Farmers in Bidar are advised to undertake transplanting of brinjal seedlings in the main field.
 - Sowing of sunflower and transplanting of onion under irrigated condition can be continued in Bijapur.
 - Farmers are advised to undertake intercultural operations in sugarcane and *rabi* vegetable crops like brinjal, cabbage, cauliflower, capsicum and tomato to keep the fields weed free.
 - In view of prevailing, low minimum temperatures, apply Dormix @ 30 ml per litre of water on pruned branches for obtaining better bud break on grapes.
- **Plant protection:** Present weather conditions were congenial for the incidence of
 - leaf eating caterpillar in Bengalgram. To control the pest, spray the crop with 4 g carbaryl or 1 ml Methyl parathion or 2 ml Chlorpyrifos dissolved in one liter of water.
 - leaf spot in Banana. Farmers should take up spraying of DM-45 @ 1.7 ml/lit of water to control it.
 - thrips in Groundnut. To control farmers are advised to spray the Dimethoate @ 3g/lit of water.
 - pod borer in gram; spray Profenophos or Indoxacarb @ 0.3/l or Spinosad @ 0.2 ml or Acephate @ 1 g per liter of water.
 - aphids in Safflower crop in Raichur. For effective control of aphids spray Dimethoate 30 EC @ 1.7ml/liter of water.

Kerala

- **Realised Rainfall:** Most of the districts of the state received excess rainfall during last week.
- **Rainfall Forecast:** Rainfall is at isolated places for next 48 hours and decrease thereafter.
- **Major Rabi Crops:** Rice (second crop at panicle initiation stage)
- **Crop Stage:** seedling/early vegetative (*mundakan* rice).
- **Crop Condition:** Good.
- **Advisory:**
 - Farmers are advised to undertake intercultural operations in rice to keep the fields weed free.
 - Farmers in Wayanad are advised to undertake harvesting of rice crop.
 - Farmers are advised to apply nitrogenous fertilizer to rice crop in Pathanamthitta district as rice is at panicle initiation stage.

- This is the proper time for puncha (third season) seed bed preparation in Kannur district. Farmers are advised to apply FYM or compost to increase the water holding capacity.
- **Major Seasonal Crop:** Vegetables and plantation crops (coconut, arecanut, pepper and cashew). Time for planting of coffee and arecanut
 - Irrigate the coconut crop frequently depending on the soil condition to reduce the nut fall and to increase the nut setting. Farmers are advised to mulch the basins of coconut palms, black pepper with green / dry leaves. Mulching adds organic matter to the soil and helps to regulate the soil temperature. Farmers are advised to irrigate Nendran banana @ 40 litres at an interval of 3 days. Apply 210 g of Urea, 350 g of super phosphate, 250 g of potash to the two months old nendran banana. Apply 210 g of Urea, 250 g of potash to the four months old nendran banana
 - Farmers are advised to prepare the land by burning stubbles of previous crop for summer cultivation of vegetables, Treat vegetable seeds with Bavistin @ 2g/kg of seed before sowing.
 - Farmers are advised to apply FYM @ 25t/ha and urea, rajphos and MOP to the tune of 163 kg, 555 kg and 105 kg /ha, respectively, at the time of transplanting of cabbage and cauliflower,. The spacing for the same is 45 cm x 45 cm.
 - Farmers in Kottayam are advised to undertake transplanting of vegetable crops under irrigated conditions.
 - Planting of arecanut seedling can be continued in Kannur, Kasaragod, Kozhikode and Malappuram districts. Srimangla, sumangla and Mohitnagar are best suited and high yielding varieties.
 - Fresh planting of banana can be continued during this period in Ernakulam.
 - Farmers in Wayanad are advised to undertake harvesting of arecanut, pepper, cardamom and coffee.
 - Farmers are advised to undertake intercultural operations, plant protection measures, weeding, earthing up and harvesting.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - sucking pest in cowpea and bittergourd, spray the plants with neem oil emulsion. For this, dissolve 60g of bar soap on half litre of water and mix the emulsion with 1 lit of neem oil by vigorous stirring. The solution should be diluted 40 times for spraying purpose.
 - aphids and mealy bugs in vegetables. Spraying of tobacco decoction can effectively control these sucking pests. Steep 500g of tobacco waste in 4.5 litres of water for 24 hours. Dissolve 120g ordinary bar soap in 500 ml of water separately in another vessel Add the soap solution to tobacco decoction and stir well. Dilute this stock solution 6-7 times with water and use for spraying
- **Animal Husbandry:**
 - Cattle should be provided with drinking water since dry conditions are being expected. In the case of poultry bred under deep litter system, farmers are advised to see that the litter is not damp. Damp litter will lead to several fungal diseases.

Tamil Nadu

- **Realised Rainfall:** Most of the districts received scanty/no rainfall during last week except few districts like Coimbtore, Nilgiri which received excess rainfall.
- **Rainfall Forecast:** Mainly dry/dry weather is likely to prevail over the State.
- **Major Rabi Crops:** Groundnut, pulses and *thaladi* rice, sugarcane, banana and vegetables.
- **Crop Stage:** rice (tillering), pod development (pulses), picking (cotton)
- **Crop Condition:** Good
- **Advisory:**
 - As there was no significant rainfall during last week, farmers are advised to apply need based irrigation to the crop.

- Farmers in Thanjavur, Trichy, Nagappattinam and Thiruvarur are advised to undertake sowing of rice fallow pulses; black gram and green gram in harvested samba field. The varieties ADT 3 and 4 in Black gram and ADT 3 in Green gram are suitable rice fallow pulses in Cauvery delta zone.
- Undertake intercultural operations and application of fertilizers in thaladi rice and vegetables and sugarcane.
- In vegetable belt area, farmers are advised to spray NAA (Growth hormone) for controlling of flower dropping and increase fruit setting.
- To avoid the evaporative loss of soil moisture after receiving the rain, farmers are advised to go for mulching the inter row spacing with crop residues or weed biomass.
- **Plant Protection:** Weather conditions are favourable for
 - brown plant hopper and stem borer incidence in rice in Coimbatore. Monitor the pest load using light trap or spray neem seed kernel extract @ 5%. Also mealy bug incidence in cotton, papaya and mulberry. Look out for the incidence and spray fish oil rosin soap @ 4%
 - leaf folder infestation in paddy in Namakkal; spray Chloropyrifos @ 2 ml/litre of water
 - powdery mildew disease in blackgram. To control farmers are advised to undertake spraying of wettable sulphur at 1 kg per acre.
 - Due to humid conditions, incidences of wilt may occur in banana in Kanyakumari district. To control this remove all the affected plant along with the sucker from the field and to prevent further infection inject 2% carbendazim @ 3ml per sucker.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Maharashtra

- **Realised Rainfall:** Dry weather prevailed over State during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail all over the State during the period.
- **Major *kharif* Crops:** cotton and *tur*.
- **Major *rabi* Crops:** *jowar*, safflower, sunflower, linseed, gram, wheat, mustard and vegetables.
- **Major summer crops:** summer rice, groundnut.
- **Crop Stage:** cotton (picking in final stage), *tur* (maturity / harvesting), *rabi* *jowar* (flowering / grain formation), safflower (flowering / head formation), sunflower (floral bud initiation / head formation), gram (branching / flowering / pod formation), wheat (tillering / ear emergence), mustard (vegetative / flowering / pod formation), linseed (vegetative / floral bud initiation), vegetables and rice (germination / seedlings in Konkan), summer groundnut (sowing / germination in Konkan).
- **Crop Condition:** Satisfactory.
- **Advisory:**
 - Conserve moisture in the crop field at maturity stage of *kharif* crops.
 - Undertake planting of sugarcane (*suru*).
 - Undertake transplanting of summer rice in Konkan. Maintain 2-3 cm water level for 8 to 10 days in transplanted rice field.
 - Apply second dose of Nitrogen (50 kg N / ha) to brinjal, tomato and cucurbitaceous vegetables one month after sowing in Konkan.
 - Apply 1 kg Urea or 2 kg Ammonium Sulphate per 1 R of rice / nagli nursery in Konkan where age of the seedling is of 15 days.
 - Protect orchards from cold in East Vidarbha by making smoke on bund of orchards. Apply well irrigation in the evening, if possible.
 - Apply protective irrigation to standing crops.
- **Major Seasonal Crop:** Fruit crops and Sugarcane (pre-seasonal) (tillering), Sugarcane (*Suru*) (planting).
 - Undertake spraying, fertilizer application in the standing crops.

- Complete picking of fully opened cotton bolls and continue harvesting of already matured red gram.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - wilt disease in onion and the thrips, for thrips, spray Deltamethrin 1 EC +Trizophos 35 EC 20ml per 10 litres of water at 15 days interval and for wilt, spray Dithane M-45 @ 40 g in 15 litres of water at an interval of 2 weeks for 2 to 3 times.
 - *Helicoverpa* in gram, use 5 pheromone traps or nuclear polyhydrosis virus per ha. Prepare solution of 500 crushed caterpillars in water, filter it and mixed in 500 litres of water and apply for one ha.
 - downey mildew in cabbage, cauliflower and broccoli crops, spray Metalaxyl MZ-72 @ 2 g per litre of water.
 - powdery mildew in cucurbitaceous crops, creeping vegetable crops, pea, chilli, spray water soluble sulphur powder @ 2 g per litre of water. For cucurbitaceous crops, spray Denocap @ 1 ml per litre of water.
 - powdery mildew along with round black spot & anthracnose disease in mango, for control of anthracnose, spray Copper oxychloride @ 2.5 g per litre of water and for powdery mildew, spray water soluble 80% sulphur powder.
 - thrips and red mites in rose, spray Confidor @ 0.5 ml per litre of water at an interval of 8 to 10 days.
 - rust and blight in wheat, spray Diathane M-45 @ 2.5 g / liter of water.
 - tea mosquito and thrips in cashew, spray Endosulfan 35 EC @ 15 ml or Carbaryl 50 WP @ 20g per 10 litres of water for tea mosquito and Profenophos 50 EC @ 10 ml or lambda cyhalothrin 5 EC @ 6 ml per 10 litres of water for thrips.
- **Fish:**
 - Besides natural feed, use groundnut cake, rice husk or wheat husk in same proportion. Mix this feed in water for feeding two times a day.
 - Sampling of fish with the small net may be done fortnightly. Feeding of the fish may be given at 6% of body weight of the fish during initial stocking period.
 - Water quality analysis may be carried out at regular interval. The following parameters should be checked – date and time of sampling, water temp., dissolved oxygen, pH etc. If any uneven changes occur, necessary measures need to be taken.
 - Necessary pre-stocking management may be carried out by ornamental fish farmers.

Gujarat

- **Realised Rainfall:** Dry weather prevailed over the State during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Rabi Crops:** wheat, potato, mustard.
- **Crop Stage:** wheat (tillering), mustard (flowering / pod formation), gram (flowering / pod formation) and vegetables (vegetative / flowering / fruiting / harvesting).
- **Crop Condition:** Crop condition is satisfactory.
- **Advisory:**
 - Apply irrigation to wheat at tillering stage as dry condition is prevailing over the State during last few weeks. Also apply 60 kg N / ha at tillering stage in presence of sufficient moisture.
 - Farmers are advised to apply irrigation to gram and mustard as the crops are at flowering / pod formation stage.
 - Wherever seedlings are ready, farmers are advised to prepare main field and start transplanting of summer rice.
 - Farmers are also advised to start sowing of summer groundnut. Procure seeds of early maturing varieties like GG-2, 4 and 26.
 - This is proper time for sowing of summer ladies finger. For sowing of summer ladies finger select varieties like Pusa Savani, Parbhani Kranti and Guj. Okra -2.

- Farmers are also advised to apply irrigation to pigeonpea, isabgul and vegetable crops like brinjal, tomato, chilli, fenugreek and garlic as dry weather is prevailing for last few weeks.
- Carry out weeding and apply 25 kg / ha N as split dose to the isabgul crop at sufficient moisture condition.
- Cut maize at tasseling stage for fodder purpose.
- **Major Seasonal Crop:** Fruit crops and Sugarcane (vegetative / harvesting).
 - Cut inflorescences of young mango plants (less than 3 years) for better vegetative growth.
 - Pluck fully matured fruits of papaya, ber, guava, pomegranate and citrus and take them to market after sorting and grading.
- **Plant Protection:**
 - As weather is dry, application of Chlorpyrifos @ 1.25 liters per hectare is recommended with irrigation water to control termite in wheat crop.
 - Weather conditions are favourable for mild incidences of –
 - gram pod borer, spray Endosulphan @ 20 ml or Monocrotophos @ 12 ml or Chlorpyrifos @ 20 ml in 10 litres of water.
 - aphids in mustard, spray Methyl-o-demeton 10 ml or Dimethoate 10 ml or Phosphamidon 3 ml in 10 litres of water.
 - sucking pests in ladies finger, spray Rogor or Nuvan @ 0.015 % in 10 liters of water.
 - thrips in cotton, apply Endosulfan 35 EC @ 20 ml / 10 litres of water whenever population reach at ETL of 15 nymphs / leaf.
 - blight in cumin, spray Mancozeb @ 25 g /10 litres of water, four times at an interval of 10 days.
 - powdery mildew in mango, spray Carbendazim @ 10 g or Wettable Sulphur 30 g / 10 liters of water.
 - shoot borer in brinjal, remove and destroy infested shoot. Arrange to put at least 12 to 15 pheromone traps / ha and spray Endosulphan @ 21 ml or DDVP @ 5 ml /10 litres of water.
 - thrips causing leaf curl in chilly, spray Triezophos 40 EC @ 10 ml or Acephate 75 SP @ 10 g / 10 litres of water at 10 to 12 days interval.
- **Animal Husbandry:** Provide warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress. Vaccinate animals for diseases in consultation with local veterinarian.

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Realised Rainfall:** There was no significant rainfall over the State during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Rabi Crops:** wheat, pulses, gram (vegetative), sugarcane (cane development), cotton (boll development/ maturity) and vegetable crops (late vegetative)
- **Crop Condition:** Satisfactory.
- **Advisory:**
 - Farmers are advised to undertake the following measures to safeguard the crops from cold injury.
 - Apply irrigation to the crops in the early morning to overcome chilling injury.
 - Arrange for burning around the field using farm waste materials to reduce the impact of low temperature.
 - Farmers are advised to undertake intercultural operations and irrigation in early sown wheat crop at 21 days after sowing and give nitrogen fertilizer 1/4th recommended dose by urea as top dressing.
 - Also undertake sowing of coriander and fenugreek.

- Undertake pit preparation for planting of new orchard crops.
- Farmers are advised that suitable time for transplanting of onion.
- **Animal Husbandry:** Protect calves from cold. Cattle should be vaccinated to save them from infections diseases like Black Quarter and FMD etc. The animals should be dewormed. Take care the pregnant animals and feed them balance diet. Provide the animal's clean water and balance and nutrients rich food.
- **Plant Protection:** Weather conditions are favourable for-
 - leaf eating caterpillars in gram; spray neem seed kernal Extract (5%), use pheromone traps (4 in one acre), Use Trichoderma culture or Endosulphan 35 EC 2 ml / liter in Gram.
 - aphids in safflower; spray Roger @ 750 ml / ha for the control of. Apply split dose of nitrogen fertilizer in wheat. Irrigate Wheat crop if water is available.
 - pod borer in arhar; spray Quinalphos 25 EC @ 2 ml/litre. Spray neem seed kernal extract (5%), use pheromone traps (4 in one acre).
 - aphids in safflower; spray Rouger @ 750 ml / ha for the control.
 - early blight in potato; spray Diethen M45 @ 2-3 gm/liter (use 500-600 lit. water).

Chattisgarh

- **Realised Rainfall:** Mainly dry weather prevailed over the State during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Rabi Crops:** Wheat (tillering), gram (flowering / pod initiation), mustard (flowering / pod formation).
- **Crop Condition:** Good.
- **Advisory:**
 - Wheat crop is at crown root initiation stage. This stage of the crop is critical for moisture and nutrient stress. Hence, farmers are advised to go for first top dressing of N and then irrigate the fields. To control broad leaved weeds spray 2, 4-D Sodium salt @ 0.80 kg/ha.
 - Presently mustard and gram are at flowering / pod formation stage. Irrigation at this stage is required for proper growth of these crops. Avoid water logging in the fields. Use of sprinkler should be encouraged for irrigation.
 - Seedlings of cucurbitaceous crops may be prepared in polythin bags, so that crops may be sown whenever there will be congenial weather condition.
- **Major Seasonal Crop with stage:** Sugarcane (vegetative), vegetables (flowering / fruiting / harvesting).
- **Advisory:**
 - Undertake weeding and intercultural operations in sugarcane.
- **Plant Protection:** Present weather conditions may be favourable for the infestation of late blight in potato and pod borer in arhar.
 - Apply Redomil to control late blight in potato.
 - Apply chlorpyriphos to control pod borer in arhar.