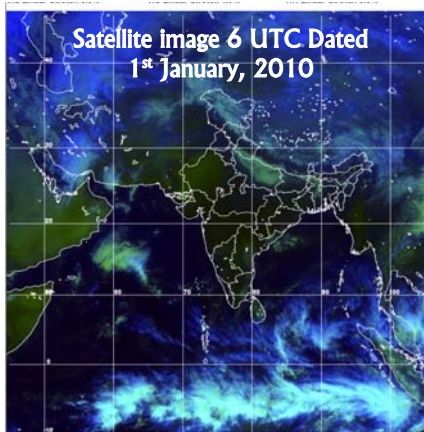




National Agromet Advisory Bulletin

Thursday, 31st December, 2009 (For the period 31st December, 2009 to 4th January, 2010)



Rainfall Forecast valid upto 1430 hours IST of 3rd January, 2010

- **Few Places:** Arunachal Pradesh, Assam & Meghalaya, Coastal Karnataka, South Interior Karnataka, Kerala and Lakshadweep,
- **Isolated Places:** Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu & Pondicherry North Interior Karnataka and Andaman & Nicobar Islands
- **Dry:** Gangetic West Bengal, West Uttar Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Punjab, Rajasthan, West Madhya Pradesh, Gujarat, Saurashtra, Kutch & Diu.
- **Mainly dry Weather:** Nagaland, Manipur, Mizoram & Tripura, Orissa, Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, East Uttar Pradesh, East Madhya Pradesh, Vidarbha, Chhattisgarh, Himachal Pradesh, Jammu & Kashmir, Coastal Andhra Pradesh, Rayalaseema and Telengana.

Major features of weather forecast (upto 1430 hours IST of 03rd January, 2010).

- **Isolated** rainfall activity is likely over extreme south peninsular India during next 48 hours.
- Cold wave conditions likely over isolated pockets of Punjab, Haryana and West Uttar Pradesh during next 1-2 days.
- No large change in minimum temperatures is likely over plains of northwest India and fall over east India during next 2 days.
- Fog/Shallow fog is likely over Indo-Gangetic plains during next 2 days.

Weather Outlook (upto 1430 hrs IST of 5th January, 2010)

- Isolated rainfall activity is likely over parts of extreme south peninsular India.
- Dry weather conditions are likely over remaining parts of the country.
- Temperature is likely to fall by 2-30 C over east India.

Salient advisories

- Farmers in Kerala and Karnataka are advised to postpone irrigation to standing crops as there was excess rainfall in most of the districts during last week.
- As there was no significant rain in most of the States during last week and mainly dry weather/no significant rain is likely to occur for next five days, farmers are advised to apply need based irrigation to the standing crops.
- Farmers in Uttarakhand, Punjab and Haryana are advised to provide light irrigation to wheat where the crops in crown root initiation stage.

Advisories for cold injury

- Farmers in Jammu & Kashmir, Rajasthan, Haryana, Himachal Pradesh, West Uttar Pradesh are advised to undertake the following measures to safeguard the crops from cold injury.
 - Apply light & 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.

Advisories for pest and disease

- Due to favourable weather condition, there are chances of pest and disease incidences in the following regions:
 - mal formation in mango, canker in lemon and fruit borer in tomato and brinjal in Uttar Pradesh.
 - leaf minor in citrus, downy mildew in cruciferous vegetables, root borer in apple in Himachal Pradesh
 - bacterial wilt in tomato and brinjal, blight in potato, aphid and saw fly in rapeseed and mustard crops and sigatoka leaf spot in banana in Assam
 - leaf rot, rhinoceros beetle, red palm weevil in coconut, sucking pest in cowpea and bittergourd, aphid, pseudo stem weevil, rhizome weevil in banana, tea mosquito bug and anthracnose incidence in cashew, mahali / fruit rot in arecanut, pollu beetle and quick wilt in pepper in Kerala
- Farmers are advised to undertake plant protection measures, if required.

Issued by

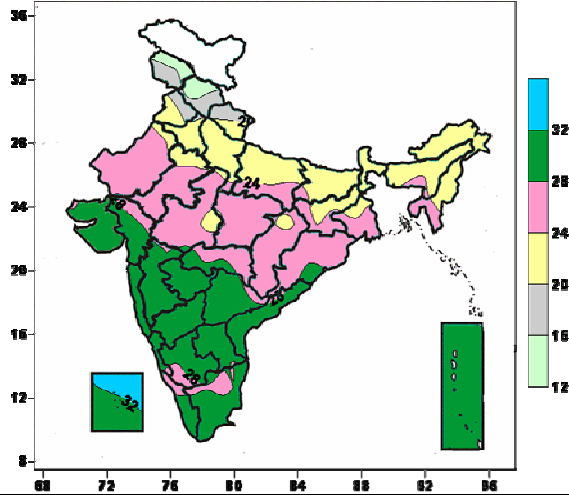
National Agrometeorological Advisory Service Centre,

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

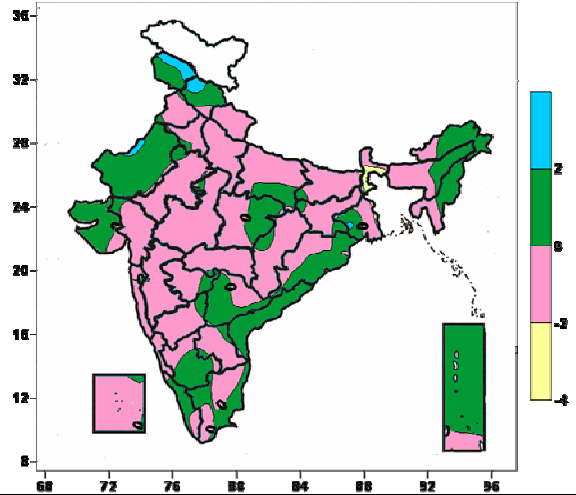
The bulletin is also displayed in the website (<http://www.imdagrimet.org>) of the Division

Contour maps for the week ending 30.12.09

Actual Mean Maximum Temperature (°C) in India for the week ending 30.12.09



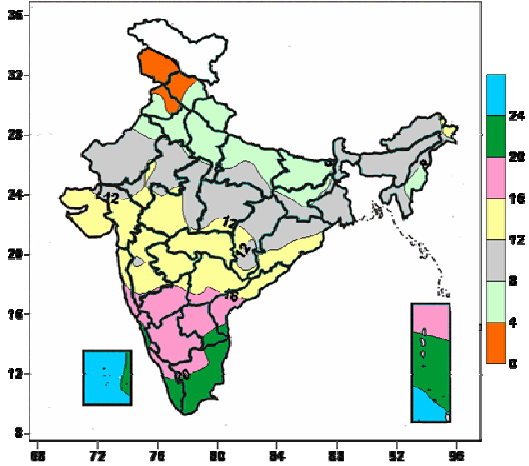
Maximum Temperature (°C) Anomaly in India for the week ending 30.12.09



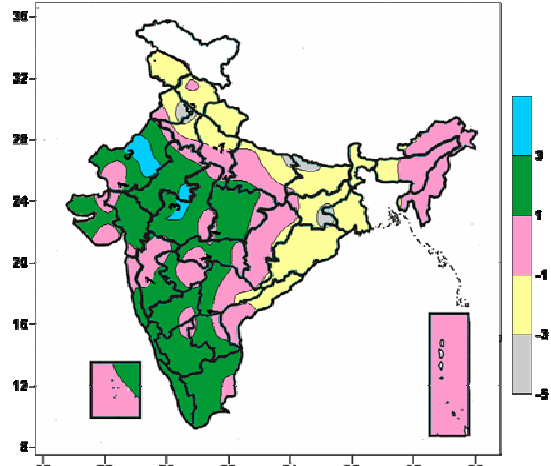
Actual Mean Maximum temperature ranged between 32°C and above over some parts of Lakshdweep Islands, 28 to 32°C over most parts of Saurashtra & Kutch, Gujarat, Konkan & Goa, Madhya Maharashtra, Marathwada, South India, some parts of Vidarbha, Orissa, 20 to 24°C over most parts of Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal, Sikkim, Northeast India, some parts of Uttarakhand, Rajasthan, Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, 16 to 20°C over some part of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, 12 to 16°C over some parts of Jammu & Kashmir, Himachal Pradesh, 24 to 28°C over remaining parts of the country.

Actual Mean Maximum temperature anomaly ranged between 2°C and above over some parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan, 0 to 2°C over most parts of Himachal Pradesh, West Rajasthan, Saurashtra & Kutch, Arunachal Pradesh, Assam, Nagaland, Manipur, Gangetic West Bengal, Coastal Orissa, Coastal Andhra Pradesh, Telengana, South Interior Karnataka, Kerala, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Haryana, East Uttar Pradesh, East Rajasthan, Gujarat, Bihar, Jharkhand, Mizoram, Madhya Pradesh, Chhattisgarh, Marathwada, Vidarbha, North Interior Karnataka, Rayalaseema, Tamil Nadu, Lakshdweep Islands, -2°C and below over some parts of Sub-Himalayan West Bengal, -2 to 0°C over remaining parts of the country.

Actual Mean Minimum Temperature (°C) in India for the week ending 30.12.09



Minimum Temperature (°C) Anomaly in India for the week ending 30.12.09



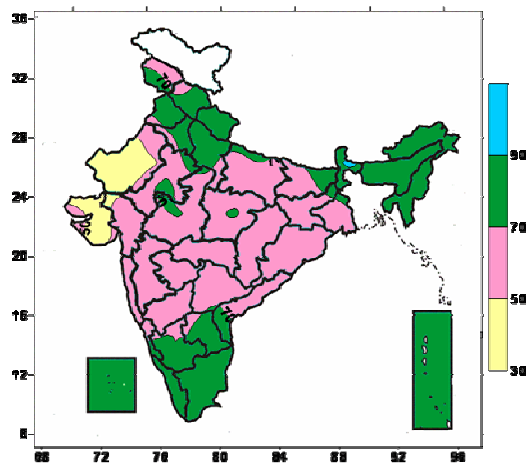
Actual Mean Minimum Temperature ranged between 24°C and above over most parts of Lakshadweep Islands, some parts of Andaman & Nicobar Islands, 20 to 24°C over most parts of Tamil Nadu, Andaman & Nicobar Islands, some parts of Coastal Andhra Pradesh, Rayalaseema, Coastal Karnataka, Kerala, Lakshdweep Islands, 16 to 20°C over most parts of Goa, Karnataka, Rayalaseema, some parts of Konkan, Madhya Maharashtra, Coastal Andhra Pradesh, Telengana, Kerala, Tamil Nadu, Andaman & Nicobar Islands, 8 to 12°C over most parts of Rajasthan, East Madhya Pradesh, Chhattisgarh, Orissa,

Minimum Temperature anomaly ranged between 3°C and above over some parts of Rajasthan, West Madhya Pradesh, -1 to 1°C over most parts of Uttar Pradesh, Northeast India, Chhattisgarh, Lakshdweep, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Punjab, Haryana, Rajasthan, Bihar, Jharkhand, Madhya Pradesh, Gujarat, Saurashtra & Kutch, Maharashtra, Interior Karnataka, Andhra Pradesh, Tamil Nadu, -3 to -1°C over most parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Bihar, Jharkhand, West Bengal, Sikkim, Orissa, some parts of Punjab, Haryana, Uttar Pradesh, Assam & Meghalaya,

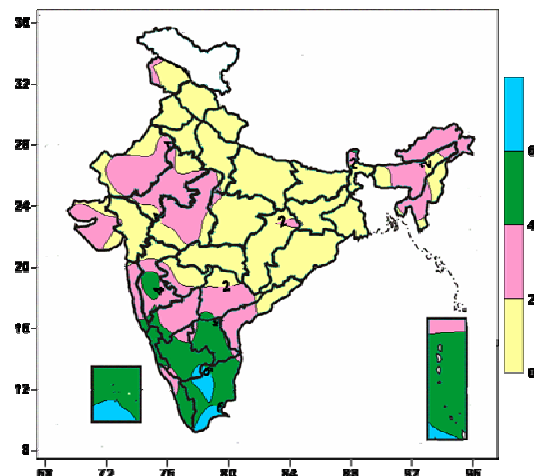
West Bengal, Sikkim, Northeast India, some parts of Uttar Pradesh, Jharkhand, Gujarat, West Madhya Pradesh, Madhya Maharashtra, 4°C to 8°C over most parts of Punjab, Haryana, Delhi, Uttarakhand, Uttar Pradesh, Bihar, Manipur, some parts of Himachal Pradesh, Rajasthan, Jharkhand, 0°C to 4°C over most parts of Jammu & Kashmir, some parts of Himachal Pradesh, Punjab, 12°C to 16°C over remaining parts of the country.

Chhattisgarh, Coastal Andhra Pradesh, Telangana, -3°C and below over some parts of Punjab, Haryana, East Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, 1 to 3 °C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 30.12.09



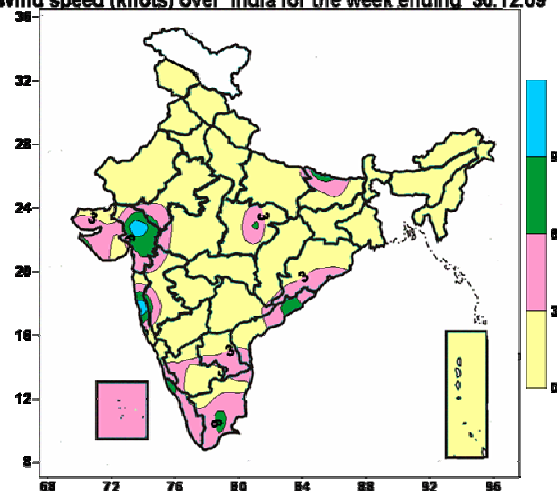
Cloud amount (okta) over India for the week ending 30.12.09



Relative humidity between 90% and above over some parts of Sub-Himalayan West Bengal, 70 to 90 % most parts of Punjab, Haryana, Delhi, Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Northeast India, Rayalaseema, Tamil Nadu, Kerala, Coastal & South Interior Karnataka, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, East Rajasthan, Madhya Pradesh, East Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Coastal Andhra Pradesh, Telangana, 30 to 50% over most parts of West Rajasthan, Saurashtra & Kutch, some parts of Gujarat, 50 to 70% over remaining parts of the country.

Cloud amount 6 okta and above over some parts of Tamil Nadu, South Interior Karnataka, Andaman & Nicobar & Lakshadweep Islands, 4 to 6 okta over most parts of Coastal & South Interior Karnataka, Rayalaseema, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Madhya Maharashtra, North Interior Karnataka, Telangana, 2 to 4 okta over most parts of Rajasthan, West Madhya Pradesh, Northeast India, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, North Interior Karnataka, Telangana, Coastal Andhra Pradesh, some parts of Jammu & Kashmir, Haryana, Sikkim, East Madhya Pradesh, Chhattisgarh, South Interior Karnataka, Mararathwada, Kerala, Andaman & Nicobar Islands, 0 to 2 okta over remaining parts of the country.




Wind speed (knots) over India for the week ending 30.12.09

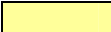




Wind speed ranged between 9 knots and above over some parts of Gujarat, Konkan, 6 to 9 knots over some parts of Gujarat, Kutch, Konkan & Goa, Kerala, Tamil Nadu, Coastal Andhra Pradesh, Coastal Orissa, East Madhya Pradesh, Bihar, 3 to 6 knots over most parts of Saurashtra & Kutch, Kerala, Tamil Nadu, Lakshadweep Islands, some parts of East Uttar Pradesh, East Rajasthan, Bihar, Madhya Pradesh, Orissa, Chattisgarh, Konkan & Goa, Madhya Maharashtra, Andhra Pradesh, Coastal & South Interior Karnataka, 0 to 3 knots over remaining parts of the country.

Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks

Sub-division	Cumulative Rainfall for the period									
	2 nd December		9 th December		16 th December				30 th December	
	Normal (mm)	(%) Dep.	Normal (mm)	(%) Dep.	Normal (mm)	(%) Dep.	Normal (mm)	(%) Dep.	Normal (mm)	(%) Dep.
A & N Islands	41.6	-54	47.5	10	47.0	-63	19	-62	26.3	-88
Arunachal Pradesh	10.4	-95	4.8	95	11.3	-98	4	-75	10.9	-97
Assam and Meghalaya	4.5	-99	1.6	-50	4.3	-98	1	-64	2.8	-55
NMMT	5.3	-100	0.9	-100	4.7	-100	1	-100	2.0	-100
SH West Bengal & Sikkim	3.7	-99	1.4	-85	3.9	-100	2	-73	1.9	-97
Gangetic West Bengal	3.7	-100	0.9	-100	2.5	-100	1	-86	1.9	-100
Orissa	1.8	-100	0.8	-100	2.1	-100	1	-65	1.0	-100
Jharkhand	2.2	-100	0.5	-100	1.2	-100	1	149	1.7	-100
Bihar	1.5	-100	0.1	-100	0.5	-100	1	-100	2.0	-100
East Uttar Pradesh	0.8	-100	0.6	-100	0.6	-96	1	-62	3.1	-69
West Uttar Pradesh	1.0	-100	0.8	-100	1.2	-86	1	-52	3.0	-74
Uttarakhand	1.8	-100	1.9	-100	6.3	-96	5	-100	7.9	-100
Haryana, Chandigarh & Delhi	1.4	-100	0.6	-100	1.4	-85	2	-100	2.7	-100
Punjab	1.3	-100	1.1	-100	3.9	-100	4	-100	5.7	-100
Himachal Pradesh	5.1	-100	4.1	-100	10.5	20	11	-100	17.5	-100
J & K	9.2	-86	6.6	-94	20.8	-49	16	-68	37.5	-100
West Rajasthan	0.5	-100	0.2	-100	0.6	-94	**	-100	0.6	-100
East Rajasthan	1.2	-100	0.9	-100	0.9	-94	1	-84	0.5	-99
West M. P.	3.6	-100	1.4	-100	1.8	-100	2	534	1.3	-21
East M. P.	3.0	-100	1.9	-99	2.0	-100	1	506	2.3	-86
Gujarat region	1.4	-100	0.3	-100	0.8	-95	1	-100	0.1	-100
Saurashtra & Kutch	0.5	-100	0.1	-100	0.9	-100	**	-95	0.0	-100
Konkan and Goa	1.6	-100	1.3	-100	1.9	-100	1	-100	0.1	-100
Madhya Maharashtra	3.5	-100	1.2	-100	2.4	-100	2	145	0.5	-64
Marathwada	4.7	-100	1.6	-100	2.2	-100	1	423	1.0	57
Vidarbha	3.5	-100	1.2	-100	1.7	-100	1	156	2.3	19
Chhattisgarh	2.3	-100	0.9	-100	1.6	-100	1	-87	1.0	-100
Coastal A. P.	11.7	-100	8.5	-14	9.9	-75	3	270	1.9	-99
Telangana	2.3	-100	1.3	-100	1.5	-100	**	-84	0.7	159
Rayalseema	8.4	-100	11	-69	5.8	44	2	352	2.8	-93
TamilNadu & Pondicherry	26.4	-69	32.6	-51	16.7	140	14	203	11.1	-79
Coastal Karnataka	6.4	-75	3.5	-1	5.3	-100	1	-27	1.2	1842
N. I. Karnataka	3.3	-100	1.7	-100	2.2	-100	1	113	1.0	1500
S. I. Karnataka	3.8	-95	5.5	-70	3.5	-72	1	20	1.8	1202
Kerala	13.8	-53	19.2	-49	9.3	-88	5	20	4.2	519
Lakshadweep	19.7	-94	20.9	52	12.3	-96	9	48	9.9	730

 (20 or more) excess rainfall
 (-19 to +19) normal rainfall
 (-20 to -59) deficient rainfall

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

Zonewise Agromet Advisories

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

Himachal Pradesh

- **Realised Rainfall:** There was no rainfall in the State during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State
- **Major Rabi Crops:** Wheat(crown root initiation), gram, lentil(early 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.
 - Undertake weeding and apply first irrigation in early sown wheat, gram and lentil. It is time for planting of planting of late sown rainfed wheat in the mid hills of the State. H.S- 295, HPW -42 varieties are suitable for the late sown conditions. Against fungal disease, seed treatment with 2.5g bavistin or sevin / kg of seed should be done before sowing. Termite affected plots may be treated with 80 ml chloropyriphos mixed with 1 kg of sand and spread over one kanal area of plot. In the timely planted wheat crop where weeds are 2-3 leaves stage, spray isoproturon @ 80 gram per 30-32 litres of water in one kanal for the control of weeds.
 - The sowing of gram and lentil in lower belt may also be completed.
 - To protect the wheat seed from fungal disease, seed treatment with 2.5g bavistin or sevin / kg should be done before sowing.
- **Major Seasonal Crop:** Fruit crops, Flower crops and Vegetables
- **Advisory:**
 - Farmers are advised to prepare the pits for planting the winter plants like peacunut, walnut, almond plum and peach. Farmers are advised to undertake field preparation and planting for new orchards.
 - Training and pruning work can be completed in the 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.
 - It is optimum time for nursery sowing of onion. Undertake planting of seed crop of onion plant bulbs at 45 x 45 cm apart directly in filed. It is also time for sowing of peas (var. agad, lincoln and priya).
 - 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 flowers beds free from the weeds. To control the aphids, spray malathion @ 0.05% for the control. 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.
 - Undertake weeding, intercultural operations and top dressing of fertilizers.
 - It is also an optimum time for transplanting of strawberries in raised beds.
 - 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 seed with 2.5 g Sevin or bavistin per kg of seed 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 rainfall in the State during last week and no significant rainfall is likely to occur in the State, the farmers are advised to apply need based irrigation to vegetable and floricultural crops.
 - Sowing of gobhi sarson may be completed.
 - **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - leaf minor in citrus, spray 10 ml Matasystox or Malathion 10 ml in 10 litre of water. Spray Streptocycline Sulphate 500 ppm solution for control of citrus canker. Remove the shoots below the graft or bud unions.
 - downy mildew in cruciferous vegetables, for control spray ridomil MZ @ 25 g per litres 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.
- **Animal Husbandry:** Feed pregnant and lactating cows and buffaloes with balance feed including mineral mixture. The night temperature is falling and the newly born calves may be protecting from the cold. Provide the mineral mixture to the milch animals as per the schedule of 1 kg feed+50g mineral mixtures per 2 litres of milk. This schedule will maintain the reproductive ability of animals. It has been observed that dairy animals are deficient in minerals elements which are the sole reason of repeat breeding and other gene related diseases in animals. So ensure to give 50 g mineral mixture to animals daily. Ensure cleanliness in cows having advanced pregnancy to avoid mastitis.

Uttarakhand

- **Realised Rainfall:** There was no rainfall during last week in the State.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi crops:** Wheat(early vegetative), mustard, lentil, pea, chickpea, rajmash(early vegetative)
- **Advisory:**
 - Due to expected dry weather conditions during this week, farmers having irrigation facilities are advised to give second irrigation in wheat crop.
 - As dry weather is expected during this week, hence farmers are advised to harvest matured toria crop.
 - Due to expected dry weather condition, farmers are also advised to complete sowing of lentil with available varieties under sufficient moisture in soil.
 - Provide irrigation, weeding and thinning in mustard crop and top dress 1/2 kg Urea per Nali if not done so far.
 - Undertake weeding and intercultural operations in other standing crops like pea, chickpea, rajmash etc. for their better growth.
- **Major Seasonal Crop with stage:** Sugarcane ratoon (planting/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.
 - 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 then plug them and sent to the nearby market. Apply irrigation in crops including coriander, spinach, radish, menthe etc. under low soil moisture.
 - Apply need based irrigation to the standing vegetable crops like coriander, spinach, radish, mentha etc.
- **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:** There was no rainfall during last week in the State.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi Crops with stage:** Wheat(Crown root initiation/early vegetative), toria(seed formation), raya, rapeseed and mustard (early vegetative), potato(vegetative)
 - As cold wave conditions continue to prevail over isolated pockets of the State and dry weather is likely for the next five days, the farmers are advised to apply light and frequent irrigation to the standing *rabi* crops.
 - Undertake sowing of late sown varieties and the late sown wheat may be given 25 percent less nitrogen than the recommended dose.

- Farmers are advised to give light irrigation to the wheat crop. Apply second dose of 55 kg urea per acre to wheat before first irrigation.
- 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.
- Complete harvesting of matured crops of toria.
- Farmers are advised to undertake the first cutting of Barseem. Conserve the surplus maize fodder as silage at milk dough stage.
- Farmers are advised to undertake sowing transplanting of gobhi sarson, which is more profitable than direct sowing. Complete transplanting of tomato seedlings. Provide sarkanda/ kahi/ rice straw to save the plants from frost. 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.
- Complete sowing of autumn potato crop particularly for seed production during this period. Before sowing treat the potato tubers in 0.25% solution of Emisan or Monceren (250 g or ml in 100 litres of water) for 10 min. to black scurf of potato. Discard and destroy late blight infected tubers. Keep the soil wet at tuberization to minimize the scab infection.
- 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.
- **Advisory for Plant Protection:** Weather conditions are favourable for mild incidences of –
 - Aphid in potato. Keep watch on aphid population as soon as it reaches 20 aphids per 100 leaves build up, the haulms should be cut down. Keep the soil wet at tuberization to minimize the scab infection.
 - aphid in sarson/ raya, spray the crop with 40 g Actara 25 WG or 400 ml of Metasystox 25 EC or Rogor 30 EC or Thiodan 35 EC or Ekalux 25 EC or 600 ml of Dursban 20 EC in 100 litres of water per acre.
- **Animal Husbandry:** Watch the animals in the early and late hours of the day especially at the time of milking. Provide clean, dry and good bedding especially for young calves to protect from cold weather. Keep the animals in dry place and change the bedding material. Provide clean, dry and good bedding especially for young calves and newly born should be given care in cold weather, keep them warm. Keep the animals under roof at night time and in the sun during day. The protein in the concentrate can be reduced 2-3 percent. Deworming should be done in the calves especially against Ascariasis/Malap

Haryana

- **Realised Rainfall:** The State received no rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi Crops:** Wheat(Crown root initiation/early vegetative), raya and mustard(early vegetative)
- **Advisory:**
 - As cold wave conditions continue to prevail over isolated pockets of the State and dry weather is likely for the next five days, the farmers are advised to apply light and frequent irrigation to the standing *rabi* crops.
 - 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.
 - Complete planting of winter sugarcane, varieties: COH 56, COH 64, COH 99, COH 119, CO 7717 and COS 8436. Apply 45 kg Urea or 80 kg Kisan Khad and 125 kg Single Super Phosphate.
 - Complete the sowing of barley with certified seed of BG-25, BH-75 and C-164 under timely sown irrigated conditions and C-138 in rainfed conditions as earliest.
 - Apply the irrigation in timely sown raya/mustard crop.

- Complete the sowing of late sown wheat crop with seed treatment by Bavistin or Benvalerate @ 2 g/kg.
- **Major Seasonal crop with stage:** Spring sugarcane (early vegetative/vegetative), vegetable crops (vegetative), cotton (boll formation)
- **Crop Condition:** Good
- **Advisory:**
 - Undertake hoeing and weeding and apply the remaining dose of nitrogen fertilizer to the sugarcane.
 - The weather conditions are ideal for sowing early varieties. 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 & 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 –
 - Saw fly and burgada (Dholia) in younger plants of mustard, to control spray 200 ml malathion 50 EC or 400 ml endosulphan 35EC in 200 lt. of water/acre.
 - 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:** Possibility of fall in temperature, farmers are advised to protect 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 normal rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi Crops:** Wheat (vegetative); vegetable crops (vegetative)
- **Advisory:**
 - Farmers are advised to undertake intercultural operations in early sown crops like wheat, winter oilseeds, pulses and cole vegetable crops like cauliflower, cabbage
 - Trees on agriculture lands may be pruned to open up canopy for light penetration before crop sowing. Weed biomass and leguminous tree leaves may be chopped and used for composting

Uttar Pradesh

- **Realised Rainfall:** The most of the district received no significant rainfall in the State except Hardoi, Kanpur, Etawah which received excess rainfall, Barabanki, Lucknow, Unnao, Jalaun received normal rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Rabi crops:** Wheat (crown root initiation/early vegetative), maize, gram, pea, and lentil(early vegetative).
 - Farmers in West Uttar Pradesh 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.
 - As cold wave conditions continue to prevail over isolated pockets and dry weather is likely for the next five days, the farmers are advised to apply light and frequent irrigation to the standing *rabi* crops.

- Weeding and hoeing, and top dressing of recommended amount nitrogen may be done in early sown wheat and to control broad leaf weeds apply 2, 4 – D sodium salt @ 625gm/ hectare. To control Gehunsa / Jangali Jai, use Isoproturon 50% @ 1.5 kg/ hectare and apply fertilizers on the basis of soil testing and use bio fertilizers Azetobactar and P.S.B to increase the fertility of soil.
- Complete the sowing of late varieties of gram at earliest.
- Undertake weeding, intercultural operation and top dressing in barley, gram, pea, and lentil.
- **Major Seasonal Crop with stage:** Sugarcane (grand growth) and 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.
 - 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.
 - Complete the sowing of recommended varieties of gram, pea and lentil and other pulses crops in sufficient moisture at the earliest.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
 - 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 in water.
 - fruit borer in tomato and brinjal, spray the solution of Carbaryl @ 2 g / litre of water.

J & K

- **Realised Rainfall:** There was no rainfall in the State during last week.
- **Rainfall Forecast:** Dry weather is likely over the State.
- **Major Rabi crops:** Wheat, barley, brown sarson (early vegetative/vegetative) Vegetables (vegetative/ flowering/ fruited).
- **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.
 - As rainfall is not likely over the State during next 5 days, farmers are advised to apply irrigation to the standing crops.
 - Undertake sowing of very late sown wheat varieties (Raj 3077, PBW 226, PBW373, PBW435 & Raj 373) with increased seed rate i.e. 125 kg/ha under irrigated conditions. Apply 175, 110 and 42 kg /ha of urea, DAP, and MOP respectively. Out of this drill entire quantity of DAP, MOP and 50% of urea as basal dose at time of sowing. But before sowing seed should be treated with vitavax or bavistin or agrozim @ 2g/kg of seed against seed borne disease.
 - 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.
 - Farmers are advised to undertake late sowing of radish (var. Pusa Himani) and spinach (green prickly seed) in Jammu region. Nursery sowing of Tomato, brinjal and chilli crop at seed rate 500, 1.25 and 500 gm/ha.
 - Undertake top dressing of cauliflower, knoll-khol, potato, spinach, methi and garlic @ 60, 50, 20, 20, 20 and 20 kg/ha. Rouging of virus effected plants from brinjal, tomato, cauliflower and cabbage crop.
 - Harvest early variety of sweet orange. Remove the stock sprout, suckers and water sprout from budded/grafted plants.
 - Undertake transplanting of onion and garlic as the minimum temperature is expected to fall below 2 °C, which adversely affects the establishment of seedlings. As the weather is expected to remain clear,

hoeing and earthing up operation in potato, cabbage, cauliflower and main season knoll-khol should be taken up on priority. Harvesting of early sown knolkhol, spinach and methi should be done.

- Undertake hoeing and weeding in transplanted crops like cabbage, cauliflower, kale and other standing crops.
- Undertake hoeing and earthing up operation in potato, cabbage, cauliflower and main season knoll-khol after current spells of rain.

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:** vegetable crops (flowering / fruiting / harvesting)
- **Crop Condition:** Good
- **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.
 - As mainly dry/dry weather is likely over the next five days, apply irrigation to mustard crop.
 - 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.
 - To protect sensitive crops like mustard, Rajmash, potato, gram from frost attack, spray dilute sulphuric acid @ 0.1% (1 litre H₂SO₄ in 1000 litre water) or thiourea @ 500 ppm (500 gm thiourea in 1000 litre water) at flowering stage of these crops or on the day of forecast of frost or give light irrigation to these crops. Sudden drop in temperature, very low wind velocity and clear sky are indication of frost attack.
 - Right time for giving second irrigation in normal sown wheat crop at tillering stage (40-45 DAS) & first irrigation in late sown wheat at crown root initiation stage (20-23 DAS).
- **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 powdery mildew in vegetables and fruits crops; spray 1% kerathane or sulphur (WP) @ 2 gm/litre of water.
 - Due to cloudy weather in past week, mustard crop may be affected with aphid insect attack. Dust methyl parathion 2% or Endosulfan 5%, @ 25 kg per hectare. If facility of water exists, then spray Endosulfan 35 EC 1.5 ml per litre water. Repeat spray if problem persists.

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

Bihar

- **Realised Rainfall:** The State received no rainfall during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Rabi Crops:** Wheat (crown root initiation/early vegetative), maize, gram, pea, and lentil(early vegetative).

- As cold wave conditions continue to prevail over isolated pockets of West Bengal and dry weather is likely for the next five days, the farmers are advised to apply light and frequent irrigation to the standing *rabi* crops.
 - Weeding and hoeing, and top dressing of recommended amount nitrogen may be done in early sown wheat and to control broad leaf weeds apply 2, 4 – D sodium salt @ 625gm/ hectare. To control Gehunsa / Jangali Jai, use Isoproturon 50% @ 1.5 kg/ hectare and apply fertilizers on the basis of soil testing and use bio fertilizers Azetobactar and P.S.B to increase the fertility of soil.
 - Complete the sowing of late varieties of gram at earliest.
 - Undertake weeding, intercultural operation and top dressing in barley, gram, pea, and lentil.
- **Major Seasonal Crop with stage:** Sugarcane (grand growth) and 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.
 - 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.
 - Complete the sowing of recommended varieties of gram, pea and lentil and other pulses crops in sufficient moisture at the earliest.

Jharkhand

- **Realised Rainfall:** There was no rainfall during last week in the State.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major *Rabi* Crops:** rai, toria, gram, peas, potato, mustard(early vegetative)
- **Crop Condition:** Good
- **Advisory:**
 - As there was no rainfall in the State during last week and rainfall at no significant rainfall is likely over the State during next five days, apply irrigation to the already sown *rabi* crops.
 - Farmers are advised to complete sowing of rai, gram, peas, potato, mustard etc.
 - Undertake weeding, intercultural operations and top dressing in early sown *rabi* crops.
- **Major Seasonal Crop with stage:** Sugarcane (vegetative/grand growth)
- **Crop Condition:** Good
- **Advisory:**
 - Undertake sowing of Cabbage varieties in Early type – Golden acre, Early drum head, Pride of India. Late type – Late drum head Cauliflower Varieties are – Early – Pant Early, Pusa katki, Pusa Dipali. Seed rate is 600 – 700 gm/hactare.

Orissa

- **Realised Rainfall:** There was no rainfall during last week in the State.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major *rabi* Crops:** wheat(crown root initiation), pulses, mustard, sunflower, groundnut(early vegetative)
- **Advisory:**
 - Apply first top dressing @ 50 % N of the recommended dose at CRI stage of wheat.
 - As there was no rainfall in the State during last week and no significant rainfall is likely over the State during next five days, apply irrigation to the already sown *rabi* crops.
 - Undertake weeding, intercultural operations and application of fertilizers of *rabi* pulses like lentil, field pea and chickpea.
 - The current temperature is favourable for wheat sowing in inland districts. Select HYV like Sonalika, UP-262. Use 40 kg seed/acre. Before sowing the seeds should be treated with 3 g Captan or Thiram/kg of seeds. To avoid the infestation of loose smut disease, soak the seeds in water for 5-6 hours, dry it in

sun for 4-5 hours after draining out water then treat the seeds in the 2.5 g/kg of Bavistin of seeds before sowing. Sow the seeds in line at a row distance of 15 cm. Before sowing apply 15:20:20 kg NPK/acre. In termite prone areas, apply 1.5% Chloropyriphos @ 10 kg dust during the final land preparation.

- Complete sowing of mustard under irrigated condition.
- This is the optimum time for sowing of sunflower. Grow high yielding varieties like Morden, Sunrise, Surya and Hybrid varieties like KBSH-1, KBSH-3 and MSFH. Use 4 kg seeds/acre for high yielding varieties for rainfed condition, 3.5 kg for irrigated condition, 2-2.5 kg seeds/acre for hybrid varieties under rainfed condition and 1.5-2 kg seeds for irrigated condition. Sow the seeds in lines 30 cm apart.
- Go for weeding and hoeing in groundnut. Broadcast 100 kg Gypsum or side dress 50 Kg/ha. Irrigate the crop if required.
- Undertake nursery sowing of summer rice and complete transplanting within January. Select rice seeds of varieties like Khandagiri, Lalat and Surendra etc. 10 decimal area is sufficient for nursery sowing for one acre planting.
- **Major Seasonal Crop with stage:** Sugarcane (early vegetative), vegetables (fruiting / harvesting), onion (vegetative).
- **Crop Condition: Good**
- **Advisory:**
 - Cole crop seedlings are at 3-week stage in the nursery. Go for transplanting in the main field.
 - Undertake weeding, intercultural operations and application of fertilizers.
- **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:** There was no rainfall during last week in the State.
- **Rainfall Forecast:** Dry weather is likely to prevail over the State.
- **Major Crops:** Rice, vegetables
- **Crop Stage:** *aman* rice (grain development/harvesting), Sugarcane (vegetative), vegetable crops (transplanting). This is proper time for nursery sowing of boro rice.
- **Crop Condition: Good**
- **Advisory:**
 - Arrange for harvesting matured crop of paddy.
 - Prepare upland, light loam and well drained field for early potato (90 days). Select among varieties like Kufri Alankar and Kufri Chandramukhi. Suitable late varieties after harvesting the *kharif* rice are Kufri Jyoti and Phokraj.
 - Where irrigation water is available, start land preparation for boro paddy. The recommended varieties are IET – 1444, IET – 4786 (Satabdi), IET – 4094, Lalat, MTU – 1010, JGI -1798 etc.
 - After harvesting of the *kharif* crop, sowing of irrigated late variety such as DBW-14, HP-1744 (Rajeswari), NW-1014 & HW-2045 etc. can be done.
 - Undertake sowing of chilli in the nursery.
 - Mustard/wheat/linseed crop may be sown immediately in South Dinajpur with light irrigation. Crops already sown may need top dressing followed by light irrigation.
- **Plant protection:**
 - Weather conditions are favourable for the incidences of leaf folder and BPH in late transplanted *aman* paddy. To control leaf folder, apply Lamda cyhalothrin 5EC @ 0.5 ml and for BPH (If it cross 10 per hill) apply Buprofezin @ 1.5 ml per litre of water. In this weather Blast disease may be severe. To prevent the disease apply Tricyclazole 0.6 gm per litre of water.

Sikkim

- **Realised Rainfall:** The State received no significant rainfall during last week.
- **Rainfall Forecast:** Mainly dry weather is likely over the State.
- **Major crops: (a) High hills (1500 to 2000 m): Large Cardamom:** Harvesting/ Nursery Sowing, **Rabi Vegetables:** Late Vegetative, **Wheat:** Tillering/Active Tillering. **(b) Medium hills (1000 to 1500 m): Large Cardamom:** Harvesting/ Nursery Sowing, **Rabi Vegetables:** Late Vegetative, **Ginger:** End Harvesting, **Rabi Potatoes:** Vegetative/Tuberization, **Mustard:** Vegetative/ Flowering, **Wheat:** Tillering/Active Tillering. **(c) Low Hills (Below 1000 m): Large Cardamom:** Nursery Sowing, **Rabi Vegetables:** Late Vegetative, **Ginger:** End Harvesting, **Rabi Potatoes:** Vegetative/Tuberization, **Mustard:** Vegetative/Flowering **Wheat:** Crown Root Initiation..
- **Crop Condition:** Good
 - **Advisory:**
 - Harvesting of cardamom may be continued in high altitude area .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:** There was no significant rainfall in the State except Golaghat, Morigaon, Nalbari, Sonitpur which received excess rainfall, Kamrup district received normal rainfall during last week.
- **Rainfall Forecast:** Rainfall at isolated places is likely over the State during next 24 hours and mainly dry weather thereafter.
- **Major Rabi Crops:** Wheat (crown root initiation/early vegetative), potato, pea vegetables and mustard (early vegetative).
 - Undertake land preparation and seed sowing of late sown wheat. Undertake weeding and apply light irrigation in early sown wheat.
 - Undertake weeding in 20-25 days old wheat crop followed by top dressing with urea. Apply irrigation to the crop as there is no rain for last few weeks.
 - Undertake weeding and thinning in early sown rape seed and mustard.
 - Plant quality tubers of late potato variety like Kufri Megha. Depending up on weather, irrigate the crop and spray Indofil M-45 @ 0.25 % (2.5 g/l of water) against late blight.
 - Complete sowing of toria varieties like M27, TS 36, TS 38 and TS 46 and niger. Collect quality seeds of field peas like Rasna, Arpana and Pant 14 and sowing can be done by this week.
 - Farmers are advised to prepare nursery bed for sowing of recommended *boro* paddy varieties like Joymati, Bishnu prasasad, Swarnabh, Dinanath etc. in nursery beds may be taken upto mid December. Light irrigation may be done in early sown boro paddy seedbeds. Frequent monitoring is necessary for thrips infestation. Main field preparation should be started for transplanting of *boro* paddy seedlings at proper age (45 days).
- **Major Seasonal Crop with stage:** Vegetables (vegetative / flowering / fruiting / harvesting), and sugarcane (vegetative).
- **Crop Condition:** Good
- **Advisory:**
 - Seeds of cabbage, cauliflower, knoll khol, tomato, brinjal etc., can be sown in nursery beds.
 - Continue land preparation for sowing of onion and garlic under well drained, sandy loam condition.

- Earthing up should be done in 45-60 days old potato crop. Malathion 5% Dust @5kg /bigha should be incorporated into the soil during earthing up. This should be followed by adequate irrigation.
- Top dressing with recommended dose of nitrogenous fertilizer may be done in 30-35 day old cabbage and cauliflower.
- **Plant protection:** Weather conditions are favourable for mild incidences of –
 - bacterial wilt in tomato and brinjal. Infected plants should be burned and the remaining plants should be sprayed with Agrimycin or Streptomycin to soak the soil of root zone.
 - blight in potato, spray Mancozeb 75% a.i.(2.5g/l).
 - aphid and saw fly in the rapeseed and mustard crop. Spray Dimethoate 30 EC @2ml/l. or Chloropyrifos 20 EC @2ml/l.
 - sigatoka leaf spot in banana, spray calixin (1 ml/l) along with sticker.
 - late blight in tomato, *phytophthora* rot in onion and bacterial wilt and *phytophthora* fruit rot in brinjal is observed, spray Equation-pro (1 ml/l) or Acrobat (2 g/l) for their control. For purple blotch disease of onion, spray Dithane M-45 or Kavach (2 g/l).

Arunachal Pradesh

- **Realised Rainfall:** There was no rainfall in the State except Kameng which received excess rainfall during last week.
- **Rainfall Forecast:** Rainfall at isolated places is likely over the State during next 24 hours and mainly dry weather thereafter.
- **Major rabi Crops:** Pea, maize, potato
- **Crop Stage:** Pea, maize, potato(vegetative)
- **Crop Condition:** Good.
- **Advisory:**
 - Undertake weeding, intercultural operations and top dressing of fertilizers in pea, maize and potato.
- **Major Seasonal Crop:** Vegetables
 - As there was no significant rainfall in the State during last week and no significant rainfall is likely during next five days over the State, apply irrigation to the standing 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:** Prophylactic measure for protection of seed ginger rhizome from fungal disease may be taken.

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

Andhra Pradesh

- **Realised Rainfall:** Coastal Andhra Pradesh and Rayalaseema received scanty /no rainfall during last week except few districts of Telangana received excess rainfall.
- **Rainfall Forecast:** Mainly dry/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 the early sown crops.
 - Third split dose of fertilizer ie, 35 kg urea and 15 kg MOP per acre is to be applied for cotton crop. (Krishna, Guntur and Prakasam). 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.
 - Undertake transplanting of rabi vegetable crops like brinjal, cabbage, cauliflower, capsicum and tomato.

- In High Altitude Tribal Zone of Vishakhapatnam paddy crop is in nursery to transplanting stage, Farmers are advised to follow these management methods in the nursery
 - In this region to protect the paddy seedlings from low temperature cover the nurseries with polythene sheets during night time and open it in the day time.
 - In the transplanted fields recommended fertilizers of Urea(25 kg), SSP(150 kg) and MOP(15 kg) per acre is applied in the puddle fields
 - Harvesting and threshing of the paddy and ragi crops can be taken up.
 - Farmers are suggested to go for matured Niger crop.
 - Farmers are suggested to dry well the produce before storage to prevent the fungal affect.
- **Plant protection:** Present weather conditions were congenial for the incidence of
 - Aphids and whitefly in Cotton. To control them, spray Monocrotophos @ 1.5 ml or Methyl Demeton @ 2 ml or Acetamaprid @ 0.2 g or Acephate @ 1.5 g per litre of water.
 - leaf spots in Cotton. To control, spray Mancozeb @ 2.5 g or Copper-Oxy-Chloride @ 3g or Cuman-L @ 4 ml per litre of water 4-5 times at 15 days interval.
 - white fly in sugar cane. To control, spray Endosulphon or Malathion @ 2 ml per litre of water.
 - leaf miner in rabi Groundnut. To control leaf miner, spray Imidacloprid @ 0.4 ml or Monocrotophos @ 1.6 ml or Acephate @ 1.5 g/litre of water.
 - hoppers and Powdery mildew in Mango orchards. To control, spray Carbaryl @ 3 g + Carbendizem @1g per litre of water.
 - thrips in Sweet orange, Pomegranate and Onion. To control, spray Spinosad @0.25 ml/litre of water.
 - powdery mildew in grape. To control, spray Wettable Sulphur @ 2 g or Hexaconazole @ 1 ml or Tridemiphos @ 1 g per litre of water.
 - scale insect, mealy bug and Pyrilla in Sugarcane. To control, de trash the basal leaves and spray Dimethoate @ 1.7 ml or Malathion @ 3 ml per litre of water. To control Pyrilla, spray Endosulfan or Malathion @ 2 ml per litre of water.
 - thrips is noticed in onion. To control, spray Imidacloprid @ 0.4 ml or Fipronil @ 2 ml per litre of water.
 - shoot and fruit borer is noticed in brinjal and bhendi. To control, install pheromone traps @ 4 per acre, clip the infested shoots and destroy, spray Endosulfan or Profenophos @ 2 ml per litre of water.
 - mites is noticed in chillies. To control thrips, spray Acephate @ 1.5 g or Fipronil @ 2 ml per litre of water and to control mites, spray Phosolone @ 2 ml per litre of water.
- **Animal 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:** Rain/thundershowers like at a few/isolated places over the State.
- **Major Rabi Crops:** Wheat (6 - 8 leaf emergence), Bengal gram (vegetative), *rabi* Sorghum (vegetative), Pigeonpea (maturity), Sunflower(maturity)
- **Advisory:**
 - Farmers in Uttar Kannada district are advised to take up the sowing of pulses like Black gram, Green gram and also the green manure crop sunhemp to utilize residue moisture after harvest of the paddy. Select among varieties like PS-16 (Green gram), C-152, TVX-944 (Cow pea), T-9, TAU-1 (Black gram), PHG-9 (Horse gram).
 - It is right time to give 2nd dose of fertilizer to plantation crops. For the four year old and above tree or vine, the below mentioned dose of N: P: K fertilizer can be given as the 2nd dose. 1) Arecanut:- 50:20:70

gm per tree. 2) Black pepper:- 50:20:70 gm per vine. 3) Banana: 90:54:113 gm per plant. 4) Coconut: 250:165:600 gm per tree. 5) Cardamom: 250:60:60 gm per tree.

- Farmers in Shimoga and Hassan districts are advised to undertake planting of banana. Select healthy and disease free suckers and apply 500 grams neemcake and 20grams Carbofuran per plant before planting.
- Farmers in Hiriyr district are advised to undertake sowing of Rabi crops like maize and Onion under irrigated condition.
- Provide one irrigation as the wheat crop is in crown root initiation (CRI) stage which is critical stage for irrigation.
- Carry out nipping operation in the Bengal gram as it helps in spreading of the crop and produce more side branches. Take up the spraying of 2 % urea. This will helps for better establishment of vegetative growth.
- **Major Seasonal Crop:** Sugarcane, vegetables, ginger (Nursery), onion (5 - 6 leaf emergence)
- **Advisory:**
 - Farmers are advised to undertake intercultural operations in sugarcane and vegetables to keep the fields weed free.
 - Raise the nurseries of *rabi* vegetable crops like brinjal, cabbage, cauliflower, capsicum and tomato.
 - 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.

Kerala

- **Realised Rainfall:** Most of the districts of the state received excess rainfall during last week.
- **Rainfall Forecast:** Rain/thundershowers is likely to prevail at a few places for the next 24 hours and decrease thereafter.
- **Major Rabi Crops:** Rice (second crop at tillering stage)
- **Crop Stage:** seedling/early vegetative (*mundakan* rice).
- **Crop Condition:** Good.
- **Advisory:**
 - Farmers are advised to undertake intercultural operations in rice on a non rainy day to keep the fields weed free.
 - Farmers in Wayanad are advised to undertake harvesting of rice crop.
- **Major Seasonal Crop:** Vegetables and plantation crops (coconut, arecanut, pepper and cashew). Time for planting of coffee and arecanut
 - 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.
 - Farmers are advised to mulch the basins of coconut palms with green / dry leaves. Mulching adds organic matter to the soil and helps to regulate the soil temperature. 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
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - leaf rot, rhinoceros beetle, red palm weevil in coconut. To control spray crowns and leaves with 1% Bordeaux mixture / 0.5 % copper oxychloride formulation / 0.4% mancozeb as a prophylactic measure

against leaf rot disease. In the leaf rot affected plants, remove the rotten parts from the spear and two adjacent leaves and pour 300ml of fungicide solution at the base of the spear which can be prepared by mixing Hexaconazol 5EC 2 ml or mancozeb 3 gm in 300 ml of water. To control rhinoceros beetle leaf axil filling with 25 gm Sevidol 8G and 200gm fine may be done. To control red palm weevil pheromone trap can be used @ one trap per two ha. Spraying of 2% neem oil & garlic emulsion may be done as a prophylactic measure against eriophid mite in the crown & bunches(2nd to 7th bunches from top avoiding unpollinated inflorescence).

- 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. This solution should be diluted 40 times for spraying purpose.
- aphid, pseudo stem weevil, rhizome weevil in banana, To control the aphids which act as a vector for bunchy top disease apply 12.5 gm phorate 10G or 10gm Carbofuran 3 G /plant in leaf axil or 25gm phorate or 20gm Carbofuran / pit in soil 70 days and again 165 days after planting. For the control of pseudostem weevil and rhizome weevil adopt strict field sanitation. If the attack is severe, spray quinalphos 0.05%. Spraying /drenching may be done on the leaf axils, rhizome, surrounding soil and all around the entire pseudostem inserting the nozzle of the sprayer through the bore holes made by the larvae.
- tea mosquito bug and anthracnose incidence in endemic area in cashew, to control spraying of Quinalphos (2 ml) and mancozeb (2g) together per litre of water.
- Mahali / fruit rot in arecanut, spray 1% Bordeaux mixture (two to three times) to control Mahali disease.
- Pollu beetle and quick wilt in pepper. Mulch the field for conserving moisture. Apply Ecalux @ 2 ml/litre if the attack of pollu beetle is found severe. Drench the soil with 1% Bordeaux mixture as a prophylactic measure to control quick wilt disease. Application of *Trichoderma viride* on the sides of standards will also control the disease.
- Spray the pesticides on a non rainy day.

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:** Rainfall is likely at isolated places during the period.
- **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.
 - This is the right time to take up sowing of cotton in Kovilpatti. Select the varieties like KC 2, KC 3, PA 255, SVPR 2, Bt cotton etc. which are suitable for rainfed tracts.
 - Farmers are advised to sow the paddy seeds in mat nursery for SRI method of transplanting.
 - Undertake intercultural operations and application of fertilizers in *thaladi* rice and vegetables and sugarcane.
 - Rainfed farmers of Tuticorin district are advised to top dress 8 kg of N fertilizer to the Millet crops.
 - 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
 - blast, bacterial leaf spot, leaf blight, sheath blight, sheath rot and bacterial Leaf streak diseases in rice. To control blast and leaf spot diseases, spray Carbendazim or Tricyclozole @ 200 ml in 200 L of water.
 - capitulum borer in sunflower crop under rainfed conditions. To control, farmers are advised to spray phosalone 400 ml / acre or endosulfan 400 ml / ac.

- powdery mildew disease in blackgram. To control farmers are advised to undertake spraying of wettable sulphur at 1 kg per acre.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Maharashtra

- **Realised Rainfall:** Mainly dry weather prevailed all over the State during last week.
- **Rainfall Forecast:** Isolated rain is likely over Konkan, Madhya Maharashtra, Marathwada & Vidarbha during next 24 hours & mainly dry weather thereafter.
- **Major Kharif Crops:** cotton, Vegetables, tur
- **Major Rabi Crops:** jowar, safflower, sunflower, linseed, gram, wheat, mustard, vegetables.
- **Crop Stage:** Red gram(pod maturity), *Kharif* & irrigated cotton(boll maturity / picking), and *rabi* jowar(flag leaf initiation/ flowering), safflower(vegetative growth/ flowering) sunflower(vegetative growth/ floral bud formation), gram (branching / flowering), wheat (crown root initiation/ early tillering), mustard (seedling/ early vegetative growth)
- **Crop Condition:** Satisfactory.
- **Advisory:** Conserve moisture in the crop field at maturity stage.
 - Start preparatory tillage for sowing of rabi groundnut, sunflower, mustard in south Konkan.
 - Start planting of sugarcane (*suru*) may be done in January.
 - Thinning and weeding may be done.
 - Apply second dose of Nitrogen @ 50 kg/ha to onion after 30 to 35 days from transplanting.
 - Apply second dose of Nitrogen @ 60 kg/ha to wheat after 21 days of sowing.
 - 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.
 - As night temperatures are likely to fall in Vidarbha & parts of North Madhya Maharashtra, farmers are advised to protect orchards from cold by making smoke on bund of orchards.
 - Apply protective irrigation to standing crops.
- **Major Seasonal Crop:** Fruit crops, Sugarcane and vegetables.
 - Undertake spraying, fertilizer application in the standing crops.
 - Continue picking of fully opened cotton bolls and start harvesting of already matured red gram.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - white fly on tomato, brinjal and chilli. For control spray, nimark 4 % or Oxydematon methyl @10 ml or Thiyamethoczam @ 4 gm per 10 lit of water.
 - powdery mildew disease on pea crop. For control, spray water soluble Sulphur powder 7 % @ 25 gm or Dinocap @10 ml per 10 lit of water at 10 days interval.
 - Tea mosquito and Thrips in cashew crop on inflorescence in Konkan. For control spray Endosulfan 35 % @ 15ml /10liter of water with 10gm of urea /10liter water. If the attack is on fruit setting, then for control spray Carbaryl 20% @20gm or Prophanophos 50% @10ml. or Lamdacylotrin 5% @6ml per 10 liter of water

Gujarat

- **Realised Rainfall:** There was no rainfall in the State during last week.
- **Rainfall Forecast:** Dry weather is likely over Gujarat region and Saurashtra and Kutch.
- **Major Rabi Crops:** wheat, potato, mustard.
- **Crop Stage:** wheat (crown root initiation/early vegetative stage), mustard (early vegetative), gram(flowering).
- **Crop Condition:** Crop condition is satisfactory
- **Advisory:**
 - Apply irrigation during crown root initiation stage (20 days after sowing) and tillering stage (35-40 days after sowing) of early sown wheat crop. Farmers are advised to continue sowing of wheat and select among GW-496, 366, 322, Lok-1 certified seed @ 100 kg /ha keeping 30 x 10 cm distance. Apply irrigation immediately after sowing.

- Undertake weeding, intercultural operations in early sown mustard crop. After that apply first irrigation to the crop.
- Undertake land preparation operations for sowing of potato.
- Farmers are advised to apply irrigation to gram crop as it is in flowering stage.
- Undertake sowing of garlic with variety Gujarat Garlic-1, Gujarat Garlic-10 or Gujarat Garlic-2 recommended @ 600-700 kg claws/ha.
- **Major Seasonal Crop:** Fruit crops, Sugarcane and vegetables
 - Undertake intercultural operation and application of fertilizer and plant protection measures. Undertake planting of different fruit crops like mango, sapota, pomegranate, lemon, guava, custard apple etc.
 - Farmers are advised for sowing of fodder sorghum.
 - Undertake top dressing in castor.
 - Continue sowing of clusterbean varieties like GC – 1, 2 at 30 cm spacing.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
 - downey mildew in fennel. Spray 300 mesh sulphur @ 20 kg/ha during early morning hours to manage the disease.
 - blight disease in cumin. Spray mencozeb @ 30gm adding in 10 litre water with 20 gm desi soap solution to control the disease.
 - mealy bug in cotton; to control uproot the affected plants and burn and eradicate parthenium weed as it is host plant.
 - Powdery mildew and downey mildew in cucurbits. For control of powdery mildew two to three spray of wettable Sulphur @ 25 gm. /10 lit of water at weekly interval. For control of downey mildew spray copper fungicide @ 40 gm. /10 lit of water at an 8 to 10 days interval.
 - Color rot in groundnut, spray carbendazim @ 0.2 %.
 - mealy bug on cotton, uproot the affected plants then burn and eradicate weeds surrounding field as it is host plant and spray Emidaclopride @ 5 ml + Prophenofos @ 15 ml in 10 litre of water + adding solution of oil soap @ 10 gram. Dust Methyl parathion 2 % powder surrounding the crop stem.
 - mealy bug in orchard, dust Methyl Parathion 2 % powder in soil after digging near the stem and Spray Emidaclopride @ 5 ml + Prophenofos @ 15 ml in 10 litre of water + adding solution of oil soap @ 10 gram surrounding the tree stem.
 - On cotton alternaria leaf spot disease, spray mencozeb + chlorothanolin @ 25 gm in 10 liters of water, for thrips spray triazophos 20 ml or methyl-o-demeton 5 ml or dimethoate 10 ml in 10 liters of water and for the control of leaf blight, spray Mencozeb 25 gm or copper oxychloride 30 gm in 10 liters of water.
 - semi looper in castor, spray chlorpyripos 20 ml or endosulphan 20ml or quinalphos 20 ml in 10 liters of water.
 - Shoot borer in brinjal, remove and destroy infested shoot and arrange to put at least 12 to 15 pheromone trap /ha. and spray endosalphan @ 21 ml or DDVP @ 5 ml/10 lit of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Realised Rainfall:** There was no significant rainfall in the State except Betul, Bhind, Datia, Gwalior, Morena, Jabalapur districts which received excess rainfall during last week..
- **Rainfall Forecast:** Mainly dry weather 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 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 infectious 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 kernel 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.

Chattisgarh

- **Realised Rainfall:** Mainly dry weather prevailed over the State during last week.
- **Rainfall Forecast:** Mainly dry weather is likely to prevail during the period.
- **Major Rabi Crops:** Wheat (crown root initiation), gram (early vegetative).
- **Crop Condition:** Good
- **Advisory:**
 - As mainly dry weather prevailed over the State during last week and no significant rainfall is likely during next five days, apply irrigation to wheat (at CRI stage) and other standing crops.
 - Undertake weeding and intercultural operations in gram and safflower.
 - Present weather conditions are suitable for the transplanting of raised seedlings of onion.
- **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 powdery mildew in pea, early blight in potato, pod borer in arhar and aphids in mustard.
 - To protect pea from powdery mildew spraying of sulfex is recommended.
 - To protect potato from early blight spraying of Dithane M 45 is recommended.
 - To protect arhar from pod borer spraying of chlorpyrifos is recommended.
 - To protect mustard from aphids, spraying of methyl demeton is recommended.