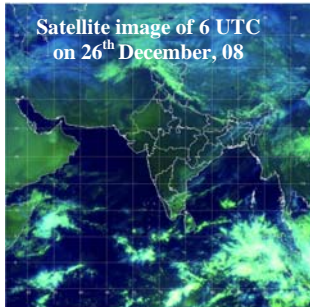




National Agromet Advisory Bulletin

24th December, 2008

(For the period 24th to 28th December, 2008)



Forecast for South India (valid upto 1430 hours IST of 27th December 2008)

- Rain/thundershowers are likely at isolated places over Nicobar Islands and Coastal Tamil Nadu.
- Mainly dry weather is likely over the rest region.

Status of Northeast Monsoon

Isolated to scattered rain/thundershower occurred over Tamil Nadu & Pudducherry, Kerala and Lakshadweep during first half of the week.

Advisories for Tamil Nadu

- As there was no significant rain during last week in most of the districts of the State and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to the crops.
- Undertake land preparation and transplanting of onion seedlings and sowing and transplanting of vegetable crops such as bhindi, tomato, cowpea, dolichos bean and chillies.
- Ranikhet and E. coli incidences may spread among the poultry birds during these days in and around Namakkal. Consult veterinarian and undertake vaccination to prevent further spread.

Advisories for Kerala

- As there was no significant rain during last week in the State and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to the crops.
- As weather condition is favourable, complete sowing of *puncha* rice and undertake sowing of water melon and vegetable crops like bitter gourd, snake gourd and cowpea.
- Protect young seedlings of coconut and areca nut from sun scorching by providing thatches.

Advisories for Andhra Pradesh and Karnataka

- As there was no significant rain during last week in these States and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to the crops.

Advisories for Northern India

- Due to low temperature cold injury may occur in the crops in Jammu and Kashmir, Punjab, Haryana, Delhi, Himachal Pradesh, Uttarakhand, Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand and Sikkim. Farmers are advised to apply light and frequent irrigation to the crops as well as arrange for smoking in these States to protect the crops from cold injury.







Issued by

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

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

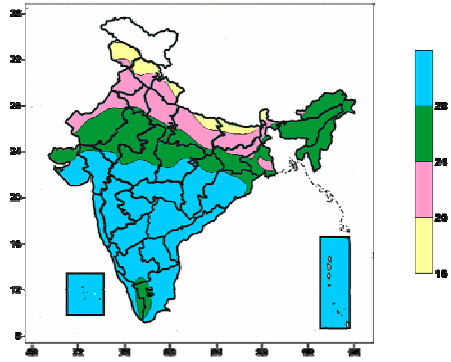
| Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks | | | | | |
|--|---|--------------------------|---------------------------|---------------------------|---------------------------|
| Sub-division | Cumulative Rainfall (% Dep.) for the period | | | | |
| | 26 th November | 3 rd December | 10 th December | 17 th December | 24 th December |
| A & N Islands | 35 | -55 | -60 | -98 | -92 |
| Arunachal Pradesh | -17 | -99 | -99 | -89 | -32 |
| Assam and Meghalaya | -65 | -99 | -99 | -97 | -86 |
| NNMT | -100 | -100 | -99 | -100 | -100 |
| SH West Bengal & Sikkim | -85 | -93 | -84 | -99 | -89 |
| Gangetic West Bengal | -100 | -100 | -100 | -100 | -100 |
| Orissa | -87 | -99 | -100 | -100 | -100 |
| Jharkhand | 12 | -100 | -100 | -100 | -100 |
| Bihar | -100 | -100 | -100 | -94 | -95 |
| East Uttar Pradesh | -98 | -100 | -100 | -92 | -100 |
| West Uttar Pradesh | 367 | -100 | -100 | -88 | -100 |
| Uttarakhand | 43 | -100 | -100 | -50 | -33 |
| Haryana, Chandigarh and Delhi | 159 | -100 | -100 | 263 | -100 |
| Punjab | -86 | -100 | -89 | -100 | -66 |
| Himachal Pradesh | -75 | -100 | -79 | -100 | 122 |
| J & K | -86 | -99 | 340 | -100 | 173 |
| West Rajasthan | -99 | -100 | 346 | -99 | 52 |
| East Rajasthan | -91 | -92 | -100 | -99 | -100 |
| West M. P. | -43 | -97 | -100 | -100 | -100 |
| East M. P. | -20 | -100 | -100 | -100 | -100 |
| Gujarat region | -100 | 93 | -100 | -100 | -100 |
| Saurashtra & Kutch | -100 | 2493 | -100 | -100 | -100 |
| Konkan and Goa | -98 | 31 | -66 | -100 | -100 |
| Madhya Maharashtra | -46 | -26 | -100 | -100 | -100 |
| Marathwada | 37 | -87 | -100 | -100 | -100 |
| Vidarbha | -82 | -87 | -100 | -100 | -100 |
| Chhattisgarh | -78 | -100 | -100 | -100 | -100 |
| Coastal A. P. | -42 | 1129 | -100 | -100 | -94 |
| Telangana | -59 | 281 | -100 | -100 | -100 |
| Rayalseema | -12 | 1018 | -100 | -100 | -100 |
| TamilNadu & Pondicherry | 307 | 415 | -35 | 15 | -72 |
| Coastal Karnataka | -97 | 221 | -100 | -100 | -100 |
| N. I. Karnataka | -46 | 505 | -100 | -100 | -100 |
| S. I. Karnataka | -49 | 291 | -99 | -100 | -100 |
| Kerala | -33 | 73 | -77 | -47 | -96 |
| Lakshadweep | 139 | -73 | 188 | 207 | 290 |

The sub divisions like Assam and Meghalaya, Nagaland, Manipur, Mizoram, Tripura, West Bengal & Sikkim, Orissa, Bihar, East Uttar Pradesh, Punjab, East Rajasthan, Madhya Pradesh, Vidarbha, Madhya Maharashtra and Chhattisgarh received scanty / deficient rain in all the 5 weeks; Andaman Nicobar Island, Arunachal Pradesh, Jharkhand, West Uttar Pradesh, Uttarakhand, Himachal Pradesh, Gujarat, Saurashtra & Kutch, Konkan & Goa, Marathwada, Coastal Andhra Pradesh, Telangana, Karnataka and Kerala received scanty / deficient rain in 4 out of last 5 weeks; Haryana, Chandigarh and Delhi, Jammu & Kashmir, West Rajasthan, and Ryalaseema received scanty / deficient rain in 3 out of last 5 weeks. Other subdivisions received normal or excess rain for at least 3 weeks out of last 5 weeks.

| | | | |
|---|----------------------------------|---|--------------------------------|
|  | (20% or more) excess rainfall |  | (-60 to -99 %) scanty rainfall |
|  | (-19 to +19%) normal rainfall |  | (-100%) no rainfall |
|  | (-20 to -59%) deficient rainfall |  | ** Data not available |

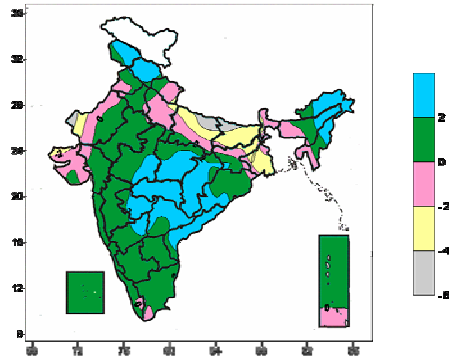
Contour maps for the week ending 24.12.08

Actual Mean Maximum Temperature (°C) in India for the week ending 24.12.08



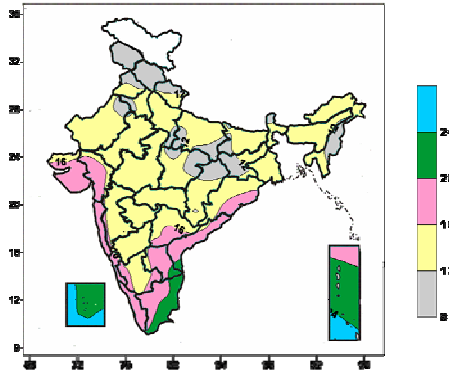
Actual Mean Maximum Temperature ranged between 24 to 28°C over most parts of Rajasthan, Northeast India, some parts of Haryana, Uttar Pradesh, Jharkhand, Madhya Pradesh, Chhattisgarh, Orissa, West Bengal, Gujarat, South Interior Karnataka, Kerala, Tamil Nadu, 20 to 24°C over most parts of Punjab, Haryana, Delhi, Uttar Pradesh, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Bihar, Jharkhand, West Bengal, Arunachal Pradesh, West Rajasthan, 18 to 20°C over some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Sikkim and 28 to 32°C in remaining parts of the country.

Maximum Temperature (°C) Anomaly in India for the week ending 24.12.08



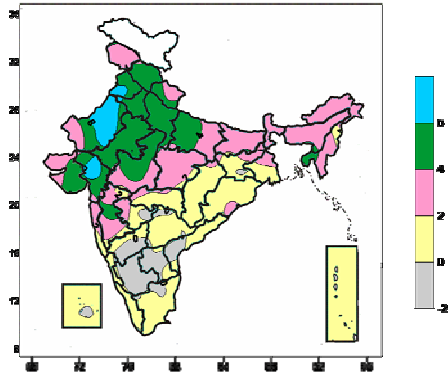
Maximum Temperature anomaly ranged between 2 to 4°C over most parts of Jammu & Kashmir, Himachal Pradesh, Vidarbha, Chhattisgarh, Coastal Andhra Pradesh, some parts of Northeast India, Jharkhand, Orissa, Madhya Pradesh, Marathwada, North Interior Karnataka, Telengana, -2 to 0°C over most parts of Saurashtra & Kutch, Sikkim, Tripura, some parts of Punjab, Haryana, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Assam, Mizoram, West Rajasthan, Kerala, Tamil Nadu, Andaman & Nicobar Islands, -4 to -2°C over most parts of the Bihar, Gangetic West Bengal, some parts of Uttarakhand, Uttar Pradesh, Jharkhand, West Rajasthan & Kutch, -6 to -4°C over some parts of East Uttar Pradesh, Bihar, West Rajasthan and 0 to 2°C over remaining parts of the country.

Actual Mean Minimum Temperature (°C) in India for the week ending 24.12.08



Actual Mean Minimum Temperature ranged between 24 to 28°C over some parts of Andaman Nicobar Islands, Lakshdweep, 20 to 24°C over most parts of Andaman & Nicobar Islands, some parts of Raylaseema, Coastal Andhra Pradesh, Tamil Nadu, Lakshdweep, 16 to 20°C over most parts of Gujarat, Konkan & Goa, Coastal Karnataka, Telangana, Kerala, Coastal Andhra Pradesh, over some parts of Madhya Maharashtra, Orissa, Rayalaseema, South Interior Karnataka, Tamil Nadu, Andaman & Nicobar Islands, 8 to 12°C over most parts of Himachal Pradesh, Sikkim, some parts of Jammu &

Minimum Temperature (°C) Anomaly in India for the week ending 24.12.08

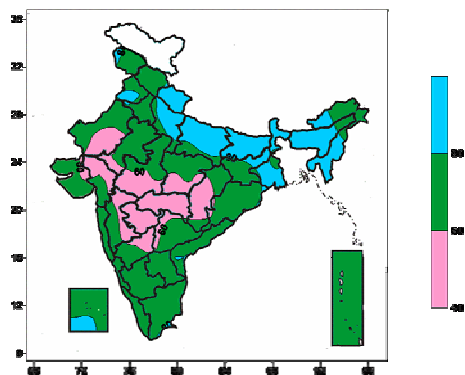


Minimum Temperature anomaly ranged between 6 to 8°C over some parts of Punjab, Haryana, West Rajasthan, Gujarat, 4 to 6°C over most parts Himachal Pradesh, Punjab, Haryana, Delhi, East Uttar Pradesh, East Rajasthan, some parts of Uttarakhand, East Uttar Pradesh, Assam, Tripura, West Rajasthan, Gujarat, West Madhya Pradesh, Madhya Maharashtra, 2 to 4°C over most parts of Bihar, Sub Himalayan West Bengal, Sikkim, Northeast India, East Madhya Pradesh, over some parts of Jammu & Kashmir, Uttarakhand, East Uttar Pradesh, Gangetic West Bengal, Jharkhand, Orissa,

Kashmir, Punjab, Haryana, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, Nagaland, Manipur, West Rajasthan, Madhya Pradesh, Chhattisgarh, and 12 to 16°C over remaining parts of the country.

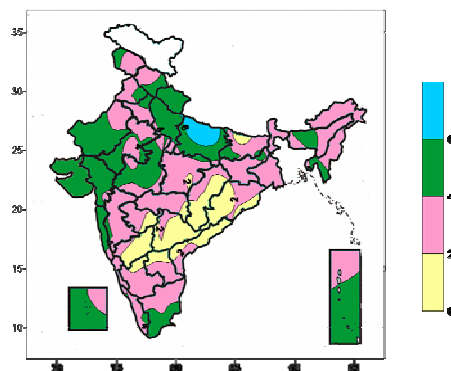
West Rajasthan, Saurashtra & Kutch, Maharashtra, West Madhya Pradesh, Chhattisgarh, -2 to 0°C over most parts of Interior Karnataka, some parts of Jharkhand, Marathwada, Andhra Pradesh, Tamil Nadu, Lakshadweep, and 0 to 2°C over remaining parts of the country.

Relative Humidity (%) over India for the week ending 24.12.08



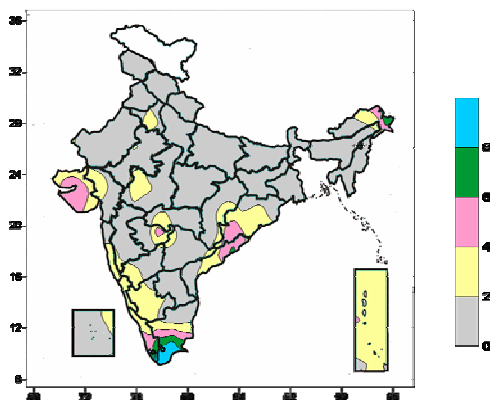
Relative humidity ranged from 80 to 100% over most parts of Uttarakhand, Uttar Pradesh, Bihar, West Bengal, Northeast India over some parts of Jammu & Kashmir, Punjab, Jharkhand, Coastal Andhra Pradesh, Lakshadweep, 40 to 60% over most parts of Marathwada, Vidarbha, some parts of Rajasthan, Gujarat region, Madhya Maharashtra, North Interior Karnataka, Telangana, South Madhya Pradesh, Chattisgarh and 60 to 80% over remaining parts of the country.

Cloud amount (okta) over India for the week ending 24.12.08



Cloud amount ranged from 6 to 8 okta over some parts of East Uttar Pradesh, 4 to 6 okta over most parts of Rajasthan, Gujarat region, Uttarakhand, Uttar Pradesh, Konkan & Goa, Lakshadweep, Andaman Nicobar Islands, over some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Madhya Pradesh, Bihar, Jharkhand, Assam & Meghalaya, Mizoram, Tripura, Madhya Maharashtra, Kerala, Tamil Nadu, 0 to 2 okta over most parts of Telangana, North Interior Karnataka, some parts of Bihar, East Madhya Pradesh, Chhattisgarh, Orissa, Marathwada, Vidarbha, Rayalaseema, Coastal Andhra Pradesh, South Interior Karnataka, 2 to 4 okta remaining parts of the country.

Wind speed (knots) over India for the week ending 24.12.08



Wind speed ranged between 8 to 10 knots over some parts of Tamil Nadu, 6 to 8 knots over some parts of Arunachal Pradesh, Tamil Nadu, Kerala, 4 to 6 knots over some parts of Saurashtra & Kutch, Marathwada, Orissa, Arunachal Pradesh, Coastal Andhra Pradesh, Kerala, Tamil Nadu, 2 to 4 knots over most parts of Coastal Karnataka, South Interior Karnataka, Orissa, Andaman Nicobar Islands, some parts of Haryana, Gujarat region, North Interior Karnataka, Tamil Nadu, Maharashtra, Chhattisgarh, Coastal Andhra Pradesh, Telangana, Kerala, Tamil Nadu, Lakshadweep, Arunachal Pradesh, 0 to 2 knots over remaining parts of the country .







Districts experiencing stress condition (% Departure of weekly rainfall) in South India

| *** Most Stress District | | | | | |
|-------------------------------|----------|----------|----------|----------|----------|
| State/Districts | 26/11/08 | 03/12/08 | 10/12/08 | 17/12/08 | 24/12/08 |
| Kerala | | | | | |
| Malappuram | -61 | -21 | -100 | -100 | -100 |
| Palakkad | -76 | -89 | -100 | -100 | -95 |
| Thrissur | -96 | -36 | -99 | -89 | -100 |
| Wyanad | -65 | -39 | -100 | -100 | -100 |
| Andhra Pradesh | | | | | |
| Coastal Andhra Pradesh | | | | | |
| Sirkakulam | -100 | -100 | -100 | -100 | -100 |
| Visakhapatnam | -100 | -57 | -92 | -100 | -100 |
| Vizianagram | -100 | -100 | -100 | -100 | -100 |
| Telangana | | | | | |
| Adilabad | -95 | -95 | -100 | -100 | -100 |
| Karimnagar | -17 | -100 | -100 | -100 | -100 |
| Nizamabad | -100 | -21 | -100 | -100 | -100 |
| Warangal | -100 | -87 | -100 | -100 | -100 |

| ** More Stress District | | | | | |
|---------------------------------|----------|----------|----------|----------|----------|
| State/Districts | 26/11/08 | 03/12/08 | 10/12/08 | 17/12/08 | 24/12/08 |
| Karnataka | | | | | |
| Coastal Karnataka | | | | | |
| Dakshin Kannada | -91 | 695 | -100 | -100 | -100 |
| Udupi | -99 | 254 | -100 | -100 | -100 |
| Uttar Kannada | -100 | 10 | -100 | -100 | -100 |
| North Interior Karnataka | | | | | |
| Bagalkote | -23 | 223 | -100 | -100 | -100 |
| Belgaum | -100 | 605 | -100 | -100 | -100 |
| Bidar | -98 | -2 | -100 | -100 | -100 |
| Bijapur | -9 | 213 | -100 | -100 | -100 |
| Dharwad | -96 | 1086 | -100 | -100 | -100 |
| Gadag | -86 | 1485 | -100 | -100 | -100 |
| Gulbarga | 46 | 421 | -100 | -100 | -100 |
| Haveri | -100 | 342 | -100 | -100 | -100 |
| Koppal | -1 | 169 | -100 | -100 | -100 |
| Raichur | -13 | 38 | -100 | -100 | -100 |
| South Interior Karnataka | | | | | |
| Bangalore Rural | 26 | 127 | -100 | -100 | -100 |
| Bangalore Urban | 66 | 823 | -100 | -100 | -100 |
| Bellary | -8 | 176 | -100 | -100 | -100 |
| Chamarajinagar | -22 | 362 | -91 | -100 | -100 |
| Chickmagalur | -98 | 324 | -100 | -100 | -100 |
| Chitradurga | -81 | 459 | -100 | -100 | -100 |
| Davangere | -85 | 695 | -100 | -100 | -100 |
| Hassan | -51 | 312 | -99 | -100 | -100 |
| Kodagu | -70 | 56 | -100 | -100 | -100 |
| Kolar | -30 | 292 | -100 | -100 | -100 |
| Mandya | -57 | 279 | -99 | -100 | -100 |
| Mysore | -84 | 111 | -100 | -100 | -100 |
| Shimoga | -100 | 53 | -100 | -100 | -100 |
| Tumkur | -32 | 407 | -100 | -100 | -100 |
| Kerala | | | | | |
| Alappuzha | 58 | 108 | -48 | -23 | -100 |
| Kannur | -95 | 51 | -100 | -75 | -100 |
| Idukki | -48 | 1 | -86 | -100 | -100 |

| | | | | | |
|-------------------------------|------|------|------|------|------|
| Kollam | 39 | 99 | -62 | -100 | -58 |
| Pathanamthitta | 29 | 398 | -51 | -100 | -100 |
| Thiruvananthapuram | 101 | 270 | -57 | -72 | -93 |
| Tamil Nadu | | | | | |
| Chennai | 137 | 475 | -89 | -99 | -100 |
| Dharmapuri | 27 | 746 | -97 | -100 | -100 |
| Kanchipuram | 118 | 561 | -61 | -99 | -100 |
| Kanyakumari | 157 | 166 | -39 | -51 | -70 |
| Krishnagiri | -4 | 586 | -97 | -100 | -100 |
| Namakkal | 206 | 788 | -71 | -32 | -100 |
| Salem | 120 | 753 | -74 | -59 | -100 |
| Theni | 98 | 55 | -81 | -27 | -95 |
| Tiruvallur | 112 | 652 | -88 | -100 | -100 |
| Tiruvannamalai | 123 | 978 | -67 | -99 | -100 |
| Vellore | 3 | 819 | -96 | -100 | -100 |
| Villupuram | 327 | 741 | -28 | -76 | -100 |
| Virudhunagar | 290 | 43 | -55 | -34 | -78 |
| Andhra Pradesh | | | | | |
| Coastal Andhra Pradesh | | | | | |
| Guntur | -91 | 2268 | -100 | -100 | -100 |
| Krishna | -89 | 1587 | -100 | -100 | -100 |
| Nellore | 23 | 904 | -100 | -100 | -100 |
| Prakasam | -30 | 2656 | -100 | -100 | -100 |
| West Godavari | -89 | 345 | -100 | -100 | -100 |
| Telangana | | | | | |
| Hyderabad | -84 | 650 | -100 | -100 | -100 |
| Khammam | 44 | 367 | -100 | -100 | -100 |
| Mehabubnagar | -100 | 580 | -100 | -100 | -100 |
| Medak | -56 | 106 | -100 | -100 | -100 |
| Nalgonda | -100 | 1142 | -100 | -100 | -100 |
| Rangareddy | -98 | 600 | -100 | -100 | -100 |
| Rayalaseema | | | | | |
| Anantapur | -25 | 760 | -100 | -100 | -100 |
| Chittoor | 5 | 907 | -100 | -100 | -100 |
| Cuddapah | -2 | 1003 | -100 | -100 | -100 |
| Kurnool | -98 | 3317 | -100 | -100 | -100 |

| * Stress District | | | | | |
|-------------------|----------|----------|----------|----------|----------|
| State/Districts | 26/11/08 | 03/12/08 | 10/12/08 | 17/12/08 | 24/12/08 |
| Tamil Nadu | | | | | |
| Pondicherry | 345 | 241 | 62 | -43 | -97 |

| | |
|--|--|
|  (20% or more) excess rainfall |  (-60 to -99 % scanty rainfall) |
|  (-19 to +19%) normal rainfall |  (-100% no rainfall) |
|  (-20 to -59%) deficient rainfall |  ** Data not available |

*** Most stress (more than 3 weeks continuously deficient to no rain)

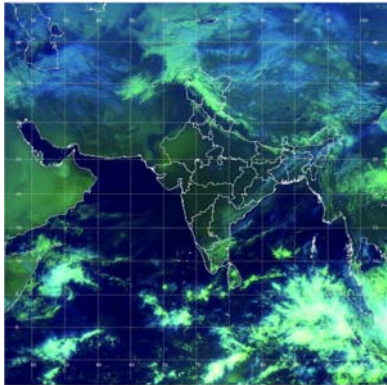
**More stress (3 weeks continuously deficient to no rain)

*Stress (2 weeks continuously deficient to no rain).

Chief Synoptic Feature (Based on 1430 hours IST observations of 24th December, 2008)

- Minimum temperatures have become near normal over most parts of north, central and adjoining east India. They are likely to fall further by 2-3⁰C over central and east India and become below normal by 2-3⁰C over the region.
- Fog conditions prevailed over Punjab, parts of Haryana, isolated pockets of West Uttar Pradesh and northeastern states.
- The lowest minimum temperature of 2.8⁰C was recorded at Amritsar (Punjab) in the plains of the country.

Satellite image of 6 UTC on 26th December 08



Zone-wise Forecast

NORTHWEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, WEST UP] (Forecast valid upto 1430 hours IST of 27th December, 2008)

- Mainly dry weather is likely over the region.

Quantitative District Weather Forecast for next five days:

- Mainly dry weather is likely over the region.

EAST INDIA [EAST UP, JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM] (Forecast valid upto 1430 hours IST of 27th December, 2008)

- Mainly dry weather is likely over the region.
- Fall in minimum temperatures by 2-3⁰C are likely over the region.

Quantitative District Weather Forecast for next five days:

- Mainly dry weather is likely over the region.

NORTHEAST INDIA [Arunachal Pradesh, NMM & T, Assam, Meghalaya] (Forecast valid upto 1430 hours IST of 27th December, 2008)

- Rain/thundershowers are likely at isolated places over Assam & Meghalaya and Arunachal Pradesh.
- Mainly dry weather is likely over rest region.

Quantitative District Weather Forecast for next five days:

- Light rainfall is likely to occur over Assam & Meghalaya and Arunachal Pradesh and mainly dry weather is likely over rest region.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS] (Forecast valid upto 1430 hours IST of 27th December, 2008)

- Rain/thundershowers are likely at isolated places over Nicobar Islands and Coastal Tamil Nadu.
- Mainly dry weather is likely over the rest region.

Quantitative District Weather Forecast for next five days:

- Light rain is likely to occur over Nicobar Islands and Coastal Tamil Nadu and mainly dry weather is likely over the rest region.

WEST INDIA [GOA, MAHARASHTRA (OTHER THAN VIDARBHA), GUJARAT, RAJASTHAN] (Forecast valid upto 1430 hours IST of 27th December, 2008)

- Mainly dry weather is likely over the region.
- Fall in minimum temperature by 2-3⁰C over Maharashtra region.

Quantitative District Weather Forecast for next five days:

- Mainly dry weather is likely over the region.

CENTRAL INDIA [M.P., CHHATTISGARH, VIDARBHA] (Forecast valid upto 1430 hours IST of 27th December, 2008)

- Mainly dry weather is likely over the region.
- Fall in minimum temperatures by 2-3⁰C are likely over the region.

Quantitative District Weather Forecast for next five days:

- Mainly dry weather is likely over the region.

Weather Outlook from 1430 IST of 27th to 1430 IST of 29th December, 2008 (Based on numerical weather products):

- A weak western disturbance is likely to affect Jammu & Kashmir region from 28th December onwards.
- Mainly dry weather conditions are likely to prevail over most parts of the country.

Zonewise Agromet Advisories

Himachal Pradesh

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), tea (plucking), wheat, barley, oat and oil seeds (land preparation / sowing / early vegetative), cabbage, cauliflower and broccoli (sowing / transplanting / early vegetative), pea and knoll khol (sowing / transplanting / early vegetative), carrot, radish, turnip and the leafy vegetables like letuce, methi, palak, dhania etc. (sowing / early vegetative).
- As there was sufficient rain in Kinnaur, Kullu, Lahaul and Spiti districts during last week, postpone irrigation to the crops in these districts. As remaining districts of the State received no significant rain during last few weeks and mainly dry weather is likely to prevail and there is also possibility of drop in temperature, apply light and frequent irrigation to the crops to reduce moisture stress as well as to save the crops from cold injury. Also arrange for smoking against cold injury.
- Under prevailing weather conditions, complete sowing of wheat, barley, oat and oil seeds without further delay, undertake sowing of radish, coriander, fenugreek, cauliflower, broccoli and Knol khol and transplanting of seedlings of cabbage, cauliflower and broccoli (if nurseries are 4-6 weeks old).
- The prevailing weather is conducive for the attack of leaf miner in Citrus. For its control, spray 10 ml Matasystox or Malathion in 10 litres of water.
- Weather condition is also congenial for downy mildew in cruciferous vegetables. For control spray Redomil M-Z @ 25 g per litre of water at 15 days interval.
- White wash the stems of the trees like apple and other orchard crops with 10 kg Chuna + 100 gm of Copper oxichloride + 25 liters of water to protect the plants from diseases and direct sun radiation.
- Details of crop varieties are mentioned in Annexure I.

Poultry

- Climate is congenial for attack of Diarrhea and coccidiosis, hence, consult the nearby veterinarian.
- 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.

Honeybees

- Due to winter season enough flora is not available for bees, therefore farmers are advised to give artificial feed of 50% sugar and 50% water solution to honey bees.
- Also ensure proper packing to the apiary to protect from cold.

Uttarakhand

- **Major Standing Crops:** Sugarcane (harvesting), wheat (CRI / tillering) and mustard (early vegetative / vegetative).
- As there was no significant rainfall in most of the districts during last few weeks and mainly dry weather is likely to prevail for the next five days, apply irrigation to the standing *rabi* crops.
- Farmers are advised to give first irrigation to wheat at 21-25 days after sowing i.e. CRI stage and top dress 35 Kg Urea per acre after 4 to 5 days of irrigation. Protect the germinating seedlings / young seedlings of potato and onion crops from cold injury in nursery by providing light and frequent irrigation.
- Due to foggy weather and low temperature conditions prevailed during last week and expected to prevail during this week, the growth of wheat crop in Udham Singh Nagar has been stunted and leaves are turning yellow in colour. In view of this, farmers are advised to spray a mixture of 2.5 kg Zinc Sulphate and 2 kg Urea dissolved in 400 litres of water / acre. The spraying must be done during noon hours when leaves are free from dew.
- Undertake sowing of potato, wheat, mustard, gram, pea and fodder crops in Haridwar, Dehradun and Pauri districts.
- Undertake intercultural operation and application of fertilisers in early sown *rabi* crops like wheat, gram, pea and lentil as favourable weather conditions prevail during these days.
- Continue harvesting of potato and *toria* as conducive weather prevails during these days.

Punjab

- **Major Standing Crops:** Horticultural crops (vegetative), sugarcane (harvesting), *spring* sugarcane (early vegetative), maize, groundnut (maturity), sunflower (seed formation / maturity), potato (early

- vegetative / vegetative) and wheat (CRI / tillering), gram and lentil (early vegetative / vegetative), pea and vegetable crops like chilly, tomato, brinjal and onion (nursery seedling).
- As there was no significant rainfall during last few weeks in most of the districts and no significant rainfall is likely for the next five days, farmers are advised to apply irrigation to the standing crops.
- Continue harvesting of matured crops of sugarcane.
- Complete late sowing of wheat with recommended varieties. Reduce dose of Nitrogen to 1/4th so that vegetative phase may be restricted and harvesting may not suffer. Treat seeds with Bavistin 2.5 g / kg for control loose smut / flag smut.
- Protect the germinating seedlings / young seedlings of vegetable crops from cold injury in nursery by providing light and frequent irrigation. In view of fall in temperature, cold injury may occur in sugarcane and *rabi* oilseeds. Apply light and frequent irrigation to prevent the young crops. Provide Sarkanda / Kahi / rice straw / polythene cover to save the plants from cold / frost injury. Also arrange for smoking around the field against the cold / frost injury.
- Farmers in Amristar, Fateihgar, Jalandhar, Ludhiana and Kapurthala districts are advised to undertake sowing of raya, pea and vegetable crops like chilli, tomato, brinjal, onion etc. African sarson PC-5 can also be sown during this month.
- Complete transplanting of sweet pepper, onion and indeterminate tomato.
- Details of crop varieties are mentioned in Annexure I.
- In view of expected fall in temperature farmers are advised to take care of animal sheds for protection against cold and give 50 gm iodised salt along with 50 to 100 gm mineral mixture daily to keep them healthy.

Haryana

- **Major Standing Crops:** Sugarcane (harvesting), *spring* sugarcane (early vegetative), Horticulture crops (vegetative), sunflower (seed formation / maturity), cotton (picking stage), early sown wheat (CRI / tillering).
- As there was no significant rainfall during last few weeks in most of the districts and no significant rainfall is likely for the next five days, farmers are advised to apply irrigation to the standing crops.
- In view of fall in temperature, cold injury may occur in sugarcane and vegetables. Apply light and frequent irrigation to the young crops to protect the young seedlings from cold injury. Provide Sarkanda / Kahi / rice straw / polythene cover or arrange for smoking around the field to save the plants from cold / frost injury.
- Farmers are advised to continue picking / harvesting of cotton, sunflower and bajra as favourable weather conditions prevail during these days.
- Continue planting of *spring* sugarcane in Eastern zone. Prepare the land for sowing of barseem.
- Complete transplanting of tomato in this month.
- Complete late sowing of wheat with recommended varieties. Reduce dose of Nitrogen to 1/4th so that vegetative phase may be restricted and harvesting may not suffer. Treat seeds with Bavistin 2.5 g / kg for control of loose smut / flag smut.
- Under prevailing weather farmers are advised to continue sowing of *desi* varieties of radish, peas, potato, palak and late season varieties of cauliflower and planting of fruit crops like sweet orange, lime, mango and guava with irrigation facilities.
- Details of crop varieties are mentioned in Annexure I.

Delhi

- **Major Standing crops:** Early maturing arhar (maturity / harvesting), Vegetables (vegetative), mustard, potato, gram (vegetative), wheat (sowing / CRI), *rabi* onion (transplanting).
- As there is chance of drop in temperature and also dry weather is prevailing for last few weeks and is also likely to prevail for next five days, farmers are advised to apply light and frequent irrigation to wheat, vegetables, mustard, potato, gram etc. to save the crops from cold injury.
- As dry weather is likely to prevail, the farmers, who have sown *toria* in time, are advised to harvest already matured crops. Harvesting of early maturing varieties of *arhar* is also advised. Symptoms of maturity of arhar are – two third pods turn from green to brownish black.
- Present weather conditions are highly congenial for transplanting of *rabi* onion. Maintain row to row distance of 15 – 20 cm and plant to plant distance of 10 cm.

- Due to drop in temperature, there is possibility of infestation of late blight in potato. Farmers are advised to apply Dithane M-45 @ 600 – 800 g mixed in 200 – 250 litres of water for one ha of land to control the disease. Repeat the spray at 10-15 days interval, if required.
- Prevailing weather is highly conducive for the appearance of young mealy bug in Mango crop. To prevent climbing of the bugs in the mango tree, farmers are advised to stick 25-30 cm wide polythene (500 gauge) at 0.5 metre above the ground. They are advised to remove the dried bark of the tree, then stick 5 cm thick Tar coal pad to the polythene on both the side and then stick the polythene to the tree trunk. This will prevent climbing of young bugs.
- Weather conditions are highly favourable for the infestation of white rust in rapeseed mustard. Preventive spraying with 0.2 % Ridomil is advised. If required, spraying can be repeated at 10 days interval.
- Details of crop varieties are mentioned in Annexure I.

Uttar Pradesh

- **Major Standing crops:** Summer sugarcane (grand growth), mango (fruit setting), *rabi* rai, mustard, potato, gram, pea and lentil (vegetative), early sown wheat (CRI / tillering).
- As there was no significant rainfall in most of the districts during last few weeks and mainly dry weather is likely to prevail for the next five days, apply irrigation to the standing *rabi* crops and sugarcane.
- As dry condition is prevailing, harvest the matured crops of *toria*. Continue picking of vegetable crops depending upon the market demand.
- Undertake weeding, intercultural operations, application of fertilizers and pesticides in the standing crops like gram, pea, lentil, rai, mustard, garlic, onion and potato as conducive weather conditions prevail during these days.
- Complete sowing of late varieties of wheat with seed rate of 125 kg / hectare after seed treatment with Carbendazim or Thiram.
- Transplanting of onion in main field may be taken up.
- Details of crop varieties are mentioned in Annexure I.

J & K

- **Major Standing Crops:** Wheat (vegetative), pulses (vegetative), mustard (vegetative). This is proper time for sowing of wheat and barley (lower belts) and planting of vegetable crops in Jammu and Kashmir divisions, planting of spinach, beet and mongol in Leh and sowing of wheat in Rajouri.
- As there is possibility of drop in minimum temperature, protect the crops from frost and cold injury by arranging smoke around the field.
- As dry weather is likely to prevail, farmers are advised to carry out intercultural operation in wheat, mustard, gram, peas, field peas and vegetables to keep the field weed free.
- As dry weather is likely to prevail, farmers are advised to harvest already matured *toria* crops.
- As there is sufficient moisture in the soil, farmers are advised to sow late sown wheat varieties without any further delay under irrigated and rainfed condition in Jammu division with seed rate 125 kg / ha. Condition is also favourable for application of first dose of urea (25%) as top dressing in timely (November) sown wheat crop in Jammu as well as Kashmir division if crop is 25 – 30 days old both in irrigated as well as rainfed areas.
- Under prevailing weather condition and soil moisture status, farmers in Jammu division are advised to continue sowing of barley, undertake direct sowing of radish and spinach, beet with seed rate 10-12 kg and 35 kg / ha, respectively. Nursery sowing of tomato, chilies and brinjal with seed rate of 500g, 1.25 kg and 500 g, respectively can also be done during this time in this division.
- Details of crop varieties are mentioned in Annexure I.
- Provide cover or thatches to young evergreen plants in order to protect them from frost or cold injury. But the cover or thatches should be open in eastern side to allow sufficient sunlight and air to the plants.

Apiculture

- Keep bee colonies at a place where sunlight is properly received.

Animal husbandry

- Due to decrease in minimum and maximum temperature protect the pregnant and milch animals from cold and feed them mineral mixture regularly. Cover the poultry shed with gunny bags in order to protect the birds from cold weather.

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

Bihar

- **Major Standing Crops:** Sugarcane (vegetative), *rabi* maize, pulses, potato and sunflower (early vegetative / vegetative), Wheat (crown root initiation / tillering).
- As there was no significant rainfall during last few weeks in most of the districts and mainly dry weather is likely to prevail for the five days, apply irrigation to the standing crops.

North West alluvial plain zone:

- Farmers are advised to complete sowing of late sown wheat. Continue sowing of rapeseed and mustard.
- As dry condition is prevailing, undertake intercultural operations in early sown rapeseed, mustard and wheat crop.
- Avoid moisture stress in wheat and maize crop by maintaining adequate soil moisture as moisture stress at this stage affects the yield of the crops.
- Details of crop varieties are mentioned in Annexure I.

North East alluvial plain zone:

- Farmers are advised to complete late sowing of wheat.
- Undertake intercultural operations, application of fertilizers and pesticides in early sown maize, rai, toria and mustard as favourable weather conditions likely to prevail during these days.
- Give first irrigation in wheat and November sown maize.
- Protect seedlings of *boro* rice nursery from cold by maintaining stagnant water in the nursery bed especially for the night-time..

South Bihar:

- The farmers, who have not sown wheat, are advised to sow the late varieties of wheat immediately, as the same can be sown only up to 30th December.
- The wheat crop sown 20 -25 days earlier is in crown root initiation stage. During this stage light irrigation is essential for proper growth, tillering and yield. So irrigate the crop and top dress with Urea @ 88 kg / ha. Before irrigation remove weeds from the crop manually or by spraying with chemical like Isoproturon i.e. @ 1 kg / ha dissolved in 700 – 800 liter of water.
- Maize, potato and sunflower sown 30 to 35 days earlier should also be top dressed with urea @ 88 Kg / ha and earthing up must be done for proper growth. After earthing up, irrigate the crop in such a manner that only 2/3rd of the ridge could wet.
- Undertake intercultural operations, irrigation, application of fertilizers and pesticides in early sown maize, pulse, sunflower and vegetable crops like tomato, brinjal, cauliflower and cabbage etc. as per the need.

Jharkhand

- **Major Standing Crops:** Arhar and maize (grain formation / maturity), wheat (crown root initiation / tillering), *rabi* oilseeds (early vegetative / vegetative).
- As there was no significant rainfall during last few weeks in most of the districts and mainly dry weather is likely to prevail for the next five days, apply irrigation to the standing crops.
- As weather condition is favourable, farmers are advised to complete late sowing of wheat.
- Farmers are advised to undertake weeding, intercultural operations in potato, oilseeds and early sown wheat as dry condition is likely to prevail.

Orissa

- **Major Standing crops:** *Kharif* rice (harvesting), Sugarcane, sunflower (vegetative), vegetables (vegetative / flowering / fruiting), wheat (CRI / tillering), potato (germination / early vegetative / vegetative).
- As there was no significant rainfall in most of the districts during last few weeks and mainly dry weather is likely to occur for the next five days, apply irrigation to the standing *rabi* crops.
- The wheat crop is at CRI stage. The crown root initiation stage is the most critical period for irrigation. Care should be taken for irrigating the crop. First top dressing should be given with 50% Nitrogen of the recommended dose of fertilizer after irrigation.
- Undertake nursery sowing of summer rice within last week of December.

- Undertake nursery raising of cole crops for late planting. Short duration varieties are suitable for delayed crops.
- The farmers interested in *Dalua* rice, may go for land preparation for raising nursery.
- Details of crop varieties are mentioned in Annexure I.
- Undertake intercultural operations, application of fertilizers and pesticides in early sown *rabi* crops.
- Weather conditions are congenial for infestation of aphid and *Crociodolomia* in rainfed mustard. To control *Crociodolomia* and saw fly spray 200 ml Ithofenprox or Deltamethrin per acre.
- Weather conditions are favourable for the infestation of aphids in pulses, *Dolichos* bean etc. Spray 50 ml Imidacloprid or 400 ml Dimethoate or Metasystox in 200 lit water / acre.

West Bengal

- **Major Standing Crops:** Sugarcane (cane development), mustard, gram and lentil (vegetative / branching), wheat (early vegetative / CRI / tillering), potato (early vegetative / vegetative) and *boro* rice (nursery sowing).
- As there was no significant rain during last few weeks in most of the districts of the State and mainly dry weather is likely to prevail over the State during next five days, apply irrigation to mustard, gram, lentil, wheat, vegetables and potato.
- As there is no possibility of significant rainfall, farmers are advised to undertake intercultural operation to keep the fields weed free.
- As weather condition is favourable, undertake wet nursery bed preparation of *boro* rice near an assured source of irrigation. Seeds should be treated with Agrosan @ 100 g per 50 kg seeds to prevent seed borne diseases.
- To protect the seedlings from cold, cover the nursery bed of *boro* rice with polythene or keep stagnant water in the nursery bed especially for the night-time. Irrigate the nursery bed regularly. Keep 2 to 3 cm stagnant water.
- Start preparation of the main field for transplanting of *boro* rice.
- The farmers, who like to cultivate potato after harvesting of *aman* rice, are advised to complete planting immediately. The seed weight varies from 200 – 270 kg per bigha according to the size of the seed tuber.
- Under prevailing weather condition, there is possibility of incidence of early blight disease in potato. Thus spray the crop with Copper oxichloride @ 4g / litre of water at 7-10 days intervals, if disease symptom is appeared.
- In the present situation, some black spot in the leaves are observed in potato which may be caused by mite or thrips. To control this apply Acephate-75%WP @ 0.75 gm per litre of water.
- Details of crop varieties are mentioned in Annexure I.

Sikkim

- **Major Standing Crops:** Orange (early maturity / harvesting), large cardamom (harvesting and vegetative). This is proper time for sowing of mustard (vegetative), vegetable crops (late vegetative / flowering / fruiting), wheat(CRI / tillering), potato(vegetative / tuber formation).
- As there was no significant rainfall during last week in the state and mainly dry weather is likely to prevail for the next five days, apply irrigation to the vegetable crops, wheat, orange and large cardamom.
- Undertake intercultural operations in early sown mustard, wheat and vegetable crops like potato, cabbage, cauliflower, carrot, chinese cabbage, knol-khol, garden peas, radish, turnip, lettuce, celery, spinach, etc. in medium and low hills as conducive weather prevails during these days.
- Continue harvesting of large cardamom as conducive weather prevails during these days.
- After the harvest of capsules of large cardamom, maintain sucker nursery; apply FYM and undertake intercultural operations.
- **Plant Protection:** Weather conditions are congenial for mild incidences of
- Caterpillar / shoot borer / shoot fly incidence in large cardamom; hand pick and destroy the larva mechanically. Spray 1% Bordeaux mixture or Copper oxy chloride @ 3 g / litre of water to protect from fungal diseases.
- fruit fly and trunk borer in orange. Monitor the trees and undertake plant protection measures to control the pests.
- bacterial wilt in ginger in medium and low hills; collect and destroy the affected plants completely to prevent further spread of the disease.

Assam

- **Major Standing crops:** Arhar (pod formation / maturity), *Sali* rice, sugarcane (harvesting), cauliflower, cabbage, raddish, brinjal, tomato, knolkhol, onion and carrot (vegetative / flowering / fruiting), mustard, lentil and pea (vegetative), wheat (crown root initiation / tillering stage), potato (early vegetative / vegetative) and *boro* rice (nursery preparation / transplanting).
- As there was no significant rain over the State during last few weeks and no significant rain is expected for next five days, farmers are advised to apply irrigation to arhar (at pod formation stage) and vegetable crops like cauliflower, cabbage, raddish, brinjal, tomato, knolkhol, onion and carrot and also to wheat (at CRI stage), mustard, lentil, pea and potato.
- As there is less possibility of occurrence of rain, farmers are advised to undertake intercultural operation to keep the fields weed free.
- Under prevailing dry weather condition, farmers are advised to complete harvesting of matured crops of *sali* rice and undertake harvesting of sugarcane.
- As the temperature is favourable for germination, undertake nursery bed preparation and sowing of *boro* rice seeds in nursery bed. Transplanting of *boro* rice may also be undertaken if the seedlings are ready.
- Due to favourable weather saw fly infestation may be seen in *toria* crop. To control the pest Endosulphon 35 EC @ 1 ml/lit of water or Malathion 50 EC @ 2 ml/lit of water may be sprayed.

Poultry

- Considering the occurrence of bird flu in different districts of lower Assam, poultry farmers are advised to be extra vigilant. Any unnatural and sudden death of their poultry birds should immediately be reported to veterinary officials.

Arunachal Pradesh

- **Major Standing crops:** *Rabi* vegetables (vegetative / flowering / fruiting), millets (harvesting), wheat (CRI / tillering), mustard (vegetative), pea (vegetative / flowering), *rabi* maize (vegetative) and potato (vegetative).
- As there was no significant rainfall in most of the districts during last few weeks and no significant rain is likely to occur during next five days, apply irrigation to wheat (CRI stage), *rabi* vegetables, mustard, pea, *rabi* maize and potato.
- Farmers are advised to apply first top dressing in early sown potato followed by earthing up.
- Regular monitoring for powdery mildew attack in pea may be carried out.

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

Andhra Pradesh

- **Major Standing Crops:** Groundnut, jowar, bajra, ragi and maize (harvesting), sugarcane (grand growth), gram (flowering), Chilly (late vegetative).
- Apply irrigation to the crops as there was no rainfall during last week and mainly dry weather is likely to prevail for the next five days.

Coastal AP

Plain Land

- Farmers in West Godavari, Krishna, Guntur and Praskasam districts are advised to undertake intercultural operations in *rabi* pulse crops like green gram. Apply 25 kg urea and 10 kg potash per acre to cotton if sufficient moisture is available in the soil.
- Farmers in Krishna, West Godavari, Guntur and Praskasam districts are advised to undertake sowing of rice fallow maize and rice fallow pulse crops during these days.
- Details of varieties are given in Annexure I.

Plant Protection: Weather conditions are congenial for the incidences of

- blast and cut worm in rice, ring spot and rust in sugarcane, *Spodoptera* in cabbage and cauliflower, thrips and mites in chilly and tea mosquito bug in cashew in Srikakulam, Vishakappattinam and Vijayanagaram districts; undertake plant protection measures.
- white fly in cotton, stem borer in maize, pod borer in red gram, white fly, mites and fruit rot in chilly spotted pod borer in black gram and green gram in Krishna, West Godavari, Guntur and Prakasam districts; undertake plant protection measures.

High Altitude Areas

- Farmers in high altitude regions of Srikakulam, East Godavari, Vijayanagaram, Visakappattinam and Khammam are advised to undertake intercultural operations in *rabi* crops like wheat, mustard, gram and sunflower to conserve moisture in the soil.
- Farmers are advised to complete harvesting of rice, rajma and red gram.

Rayalaseema

- Undertake intercultural operations and application of fertilizers and pesticides in *rabi* crops like sunflower, maize and Bengal gram in Anantapur and in rice in Chiththoor as conducive weather conditions prevail.

Plant Protection: Weather conditions are congenial for the incidences of

- blast and sheath blight in rice, pod borer in red gram and downy mildew in ber; undertake plant protection measures.

Telangana

- Farmers in Karimnagar, Nizamabad and Adilabad districts are advised to undertake intercultural operations in early sown *rabi* crops as conducive weather conditions prevail.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- thrips in chillies, leaf spot in turmeric, wilt in chick pea, stem and fruit borer in brinjal, late BPH in rice and necrosis in onion in Karimnagar, Nizamabad, Warranagl and Medak districts; undertake plant protection measures.

Karnataka

- **Major Standing Crops:** Annual sugarcane (grand growth), early sown *rabi* crops (vegetative).
- As there was no significant rainfall during last week in the state and mainly dry weather is likely to prevail for the next five days, apply irrigation to the crops.

North Interior Karnataka

- Farmers in Bidar region are advised to undertake transplanting of vegetable crops like brinjal, tomato, cabbage and cauliflower in the main field.
- Farmers in Dharwad, Bijapur and Raichur are advised to undertake intercultural operations in *rabi* crops like wheat, gram and safflower.
- Farmers in Raichur are advised to undertake harvesting of red gram and early sown sunflower. Arrange proper storage for harvested produce.

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

- *Heliothis* in gram and red gram in Dharwad and Raichur; undertake plant protection measures.
- **Animal Husbandry:** Due to cold weather in and around Dharwad sneezing is noticed indicating respiratory problem. Consult with the nearby veterinary doctor.

South Interior Karnataka

- Farmers in Bangalore, Kolar, Tumkur, Chitradurga and Shimoga are advised to undertake intercultural operations and application of fertilizers in early sown crops.
- Farmers in Shimoga are advised to undertake harvesting of rice and maize. Arrange proper storage for harvested produce.

Plant Protection: weather conditions are favourable for

- leaf spot in sugarcane, *Sigatoka* leaf spot in banana, powdery mildew in bhindi and grey blight in coconut in Shimoga; undertake plant protection measures.

Coastal Karnataka

- Farmers in Udupi and Dakshin Kannada districts are advised to undertake intercultural operations and application of fertilizers and pesticides in plantation crops.

Kerala

- **Major Standing Crops:** *Mundakan* rice (tillering / panicle initiation) and vegetables (vegetative / flowering). This is proper time for sowing *summer* vegetable crops.
- As there was no significant rain during last week in the state and mainly dry weather is likely to occur for the next five days, farmers are advised to apply irrigation to the crops.
- Complete sowing of *puncha* rice in Kottayam and particularly in Kuttanad area. Undertake nursery sowing of summer rice in Wayanad district.
- Undertake sowing of water melon and vegetable crops like bitter gourd (Preethi), snake gourd (Baby and Manusree) and cowpea (Lola and Anaswara) in and around Thrissur.
- Protect young seedlings of coconut and arecanut from sun scorching by providing thatches in Thrissur.
- Undertake intercultural operations and application of fertilizers and pesticides in rice in Kottayam, banana in Thrissur and in coconut and banana in Thiruvananthapuram and plantation crops (coconut, arecanut, pepper and cashew) in general, as conducive weather conditions prevail.

Plant Protection:

- Weather conditions are favourable for the attack of
- white stem borer in coffee, thrips in cardamom and burrowing nematode, pollu beetle and quick wilt in pepper in Wayanad.
- leaf roller and sheath blight in rice and downy mildew in vegetables in Thiruvananthapuram.
- *mahali* disease in arecanut in Thrissur, Malappuram, Kasargod, Kozhikode and Kannur districts; apply 1% Bordeaux mixture.
- tea mosquito bug in cashew in Thrissur.
- red palm weevil, rhinoceros beetle, bud rot and stem bleeding in coconut in Kasaragod and Wayanad.
- white fly and aphids, fruit and shoot borer in bhindi and brinjal in Kottayam.
- Undertake plant protection measures.
- **Animal Husbandry:** Flies menace may occur in cattle due to present weather conditions in Kasaragod, Kozhikode, Kannur and Malappuram. Maintain sanitation and consult veterinarian to prevent flies attack. Protect young animals from decrease in temperature.

Tamilnadu

- **Major Standing Crops:** Special season sugarcane (grand growth), Cotton (boll maturity / picking). *Rabi* crops like rice, pulses, millets and oilseeds (vegetative).
- As there was no significant rain during last week in the state except in Ramanathapuram district and no significant rainfall is likely for the next five days, farmers are advised to apply irrigation to the crops. Postpone irrigation in Ramanathapuram district as there was excess rainfall during last week.
- Undertake land preparation and transplanting of onion seedlings as conducive weather conditions prevail in north western zone.
- Field preparation i.e. first ploughing can be taken up for sowing garden land crops in Kanchipuram and Thiruvannamalai districts. Sowing and transplanting of vegetable crops such as bhindi, tomato, cowpea, dolichos bean and chillies can be taken up.
- Undertake intercultural operations, application of fertilizers and pesticides in rice, banana, sugarcane, cotton, maize, sorghum and pulse crops.
- Continue harvesting of cereals and pulses in Erode district as conducive weather prevails during these days. Arrange for proper storage after the harvest of crops.
- Due to fall in temperature in Nilgiris, protect the crops from cold injury by providing thatches.

Plant Protection: Present weather is conducive for mild incidences of

- Leaf folder and stem borer attack in rice in Namakkal; spray 5% neem seed kernel extract.
- Stem borer in rice in Coimbatore; spray Monocrotophos @1 litre / ha.
- Sucking pests in cotton, maize and jowar. Spray Imidachlorpid @ 0.5ml / litre of water.

Animal Husbandry:

- Ranikhet and *E. coli* incidences may spread among the poultry birds during these days in and around Namakkal. Consult veterinarians and undertake vaccination to prevent further spread.

Maharashtra

- **Major Standing Crops:** Sugarcane (pre-seasonal & suru) (cane maturity / harvesting), irrigated & *kharif* cotton (picking), *tur* (pod maturity), *rabi* jowar (flowering / grain formation in Pune, Nashik, Kolhapur & Aurangabad divisions & vegetative / flag leaf initiation in other divisions), *rabi* sunflower (floral bud initiation in Kolhapur & Vegetative in other divisions), maize (vegetative), gram (flowering / pod formation in Pune & Kolhapur divisions and branching / flowering in other divisions), wheat (crown root initiation / tillering), safflower (head formation / flowering in Kolhapur, Pune & Aurangabad divisions and head formation in other divisions).
- As there was no significant rain in all the districts of the State during last few weeks and no significant rain is likely to occur during next five days, apply irrigation to the standing *rabi* crops.
- As dry weather is prevailing, farmers are advised to undertake harvesting of sugarcane and complete the picking of fully opened cotton boll.
- As there is no possibility of rainfall, farmers in Madhya Maharashtra & Marathwada are advised to complete final earthing up in 16 to 20 weeks old *adsali* sugarcane crop and also to apply 160 kg N, 85 kg P₂O₅ & 85 kg K₂O / ha at the time of earthing up followed by light irrigation.
- Apply second dose of Nitrogen @ 60 kg / ha at the time of irrigation to early sown wheat crops.
- Banana & grape orchards may be protected from cold by arranging smoke around the field during night.
- As weather condition is favourable, transplanting of summer rice and ragi may be carried out with 30 to 35 days old seedlings at a distance of 20 x 20 cm or 15 x 15 cm in Sindhudurga district.
- Sowing of groundnut may be done at 30 x 10 cm distance in Sindhudurga district.
- Details of crop varieties are mentioned in Annexure I.
- **Plant protection**
- As weather condition is favourable, onion crop is likely to be affected by blast in pockets. For the control, spray Dithane M-45 @ 1250 gm / ha in 500 liters of water.
- Grapes are likely to be affected by downy mildew in Osmanabad & Solapur districts due to cloudy weather conditions prevailed during earlier weeks. For the control, spray Mancozeb fungicide @ 25 gm in 10 liters water.
- Cucumber, tomato, *Wal* vegetables are likely to be affected by looper in Western Maharashtra scarcity zone due to cloudy weather condition prevailed during last two weeks. For control spray 4% Neem extract or Triazophos @ 20 ml in 10 liters water.
- Under prevailing weather condition gram is likely to be infested by pod borer in Sub Montane zone & Western Maharashtra Plain zone. For control spray 35 EC Endosulphan @ 15 ml in 10 litres of water for the control of pod borer in early sown crops.

Gujarat

- **Major Standing Crops:** Sugarcane (maturity / harvesting), *Kharif* cotton (boll formation / boll maturity / picking), castor (spike formation / maturity / picking), mustard (vegetative), vegetables (early vegetative / vegetative / flowering), potato (early vegetative / vegetative), wheat (early vegetative / CRI / tillering) and cumin (early vegetative / vegetative).
- As there was no significant rain during last few weeks over the State and mainly dry weather is likely to prevail for next five days, apply irrigation to *kharif* cotton, castor, mustard, wheat, potato and vegetables.
- As there is no possibility of rain, undertake intercultural operation in above mentioned crops to keep the fields weed free.
- Prevailing weather is conducive for harvesting of already matured crops of castor and picking of *kharif* cotton.
- Under prevailing weather condition farmers are advised to apply top dressing of Nitrogen @ 10 kg / ha in coriander at 30 days after sowing in Middle Gujarat zone.

Rajasthan

- **Major Standing Crops:** This is proper time for sowing *rabi* crops. Early sown *rabi* crops (wheat, mustard, gram, vegetable crops, etc.) are at vegetative stage.
- As there was no significant rainfall during last week in the state and mainly dry weather is likely to occur for the next five days, apply irrigation to the crops.

- Cold wave conditions prevailed over some parts of Churu district during early part of this week. It is likely to extend in more parts of Jaipur and Bikaner divisions (Jhunjhunu, Sikar, Alwar, Bharatpur Dausa, Jaipur districts). Minimum temperature likely to be 4⁰ C or below in these districts and consequently ground frost may occur over some part of these areas. Farmers are advised to apply light and frequent irrigation to the standing crops. Also arrange for smoking around the field.

East Rajasthan

- Undertake intercultural operations in mustard, gram, onion and garlic in Alwar, Bharatpur, Dholpur, Karauli and Sawai Madhepur districts as conducive weather conditions prevail.
- Undertake land preparation and sowing of cumin, fenugreek, isabgol, garlic and radish in Ajmer, Dausa, Jaipur and Tonk districts.
- Farmers in Banswara district are advised to complete sowing of wheat and maize at the earliest as suitable temperature is prevailing for sowing. Undertake thinning in early sown crops and maintain optimum plant population.
- Complete land preparation and planting of fodder oats slips.
- Farmers in Alwar, Dholpur, Bharatpur, Karauli and Sawai Madhepur districts are advised to complete sowing of wheat. Also complete sowing of radish and cauliflower.
- Details of varieties are given in Annexure I.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- white fly and jassids in cotton in Alwar and Dholpur; spray Dimethoate or Methyl Demeton @ 1 litre / ha.
- cut worm in gram in Alwar, Dholpur, Bharatpur, Karauli and Sawai Madhepur districts, dust Endosulphan 4 % or Methyl Parathion 2%.
- aphids attack in mustard, barley, cauliflower and radish in Ajmer, Dausa, Tonk and Jaipur districts; spray Dimethoate 30 EC or Methyl Demeton 25 EC @ 1 litre per hectare.
- pod borer in pea (at pod formation stage) in Ajmer, Dausa, Tonk and Jaipur districts; spray Endosulfan 35 EC or Melathion 50 EC @ 1 ml per litre water.
- blight, white rust and powdery mildew in mustard, in Ajmer, Dausa, Tonk and Jaipur districts; spray Blitox-50 @ 3 gm or Mencozeb 2 g per litre of water.
- loose smut in wheat, stem borer in maize, aphids in mustard, pod borer in gram and leaf spot, blight and black rot in cauliflower and cabbage in Banswara. Undertake plant protection measures as conducive weather conditions prevail.

West Rajasthan

- Farmers in Bikaner and Jaisalmer are advised to complete sowing of *rabi* crops like wheat, oats and methi crops.
- Undertake sowing of sweet gourd, cucumber, pumpkin, bitter gourd, tinda, tomato and ladies finger in Barmer, Churu, Jalore and Jodhpur. Also undertake sowing of cumin.
- Farmers in Pali are advised to complete sowing of wheat and cumin at the earliest
- Farmers in Jodhpur, Barmer, churu, Jalore and Pali are advised to undertake planting of onion.
- Details of varieties are given in Annexure I.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- leaf eating caterpillar in fruits and vegetable crops in Barmer, Churu, Jalore and Jodhpur; spray Qunalphos @ 1.5 kg or Endosulphan @ 4.25 kg/hectre.
- white fly in sugarcane in Sriganganagar and Hanumangarh; undertake plant protection measures.
- fruit fly in ber in Pali; spray Monocrotophos @ 1 ml + Endosulphan @ 1 ml / litre of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Major Standing Crops:** Sugarcane (grand growth), soybean (pod development / maturity), maize (cob formation / maturity), cotton (boll formation) and vegetable crops (transplanting / vegetative). This is proper time for sowing of *rabi* crops.
- As there was no significant rainfall during last week and dry weather is likely to prevail over the state for the next five days, apply irrigation to the standing crops. Apply light and frequent irrigation to the young crops to protect the young seedlings from cold injury.

- Complete land preparation and planting of vegetable crops like mid cauliflower, cabbage, radish, onion and carrot and sowing of coriander in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- Farmers in Indore, Mandsaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh are advised to undertake planting / sowing of potato, onion, garlic and pea. Also undertake sowing of wheat with late varieties in areas where wheat crop could not be sown earlier.
- Farmers in Sehore, Bhopal, Damoh, Raisen, Sagar and Vidisha are advised to undertake planting of sugarcane.
- Undertake sowing of potato, berseem, garlic, pea, coriander, spinach and methi in Chhindwara and Betul districts with irrigation facilities. Also undertake planting of autumn sugarcane and onion.
- Due to favourable weather conditions, farmers in Tikamgarh, Datia and Chattarpur are advised to complete land preparation and sowing of wheat and alsi. Do seed treatment before sowing. Undertake transplanting of radish, carrot, spinach, methi, onion and cabbage.
- Farmers in Jhabua are advised to undertake land preparation and sowing of *rabi* crops like wheat, gram and maize
- Also undertake transplanting of winter vegetables i.e. tomato, brinjal, chilli, cauliflower, cabbage etc. berseem and sowing of vegetable pea (Arkil) in Jhabua.
- Details of varieties are given in Annexure I.
- **Plant Protection:** Weather conditions are favourable for
- agathi in tomato in Chhindwara and Betul districts. Spray Dithane-M-45 @ 2.5 g/litre of water.
- red pumpkin beetle in cucurbits, sucking pest and powdery mildew in vegetables in Indore, Mandsaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh districts. Apply Methyl parathion @ 2% dust before fruiting to control red pumpkin beetle, spray Dimethoate @ 1.5 ml/litre of water to control sucking pests and spray Carbendazim @ 1 g/litre of water to control powdery mildew in vegetables.
- pacheti zalsa in potato in Morena, Bhind, Gwalior, Shivpuri, Guna, Sheopur and Ashoknagar districts; spray Mancozeb @ 2 kg in 600 lit water.
- agathi zalsa in potato and powdery mildew in peas in Damoh, Bhopal, Sagar, Raisen, Sehore and Vidisha districts. Spray Diethane M-45 @ 2.5 – 3 g / litre mixed in 500-600 litres of water per hactre in a span of 15 days to control agathi zalsa in potato and Sulphex or mixed sulphur 3 g or Carbedazim 2-2.5 g / litre of water to control powdery mildew in peas.
- fruit fly in ber in Pali; spray Endosulphan 35 EC in 2 ml/lit of water.
- Leaf eating caterpillar in mango in Jhabua and Dhar districts. Spray 0.1 Melathion or 0.05 Endisulphon 35 E.C.
- **Animal Husbandry:** Provide proper ventilation and clean water to cattle and arrange for vaccination to save them from infectious disease in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts. Create smoke during the night in cattle shed to protect cattle from mosquitoes and bees.
- Undertake vaccination in cattle against Anthrax, Galgotu, Black quarter and FMD in Indore, Mandsaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh. Also undertake deworming.

Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative), pigeon pea (early maturity / maturity), wheat (germination / CRI / tillering), gram, pea, mustard, berseem, pigeon pea and linseed (germination / early vegetative / vegetative), potato (early vegetative / vegetative), vegetables (early vegetative / vegetative).
- As there was no significant rain during last few weeks over the State and mainly dry weather is likely to prevail during next five days, apply irrigation to the standing crops.
- As dry condition is likely to prevail, undertake intercultural operation to keep the fields weed free.
- Wheat crop sown during November is at crown root initiation / tillering stage. These stages of the crop are critical for moisture and nutrient stress. Hence, as dry condition is likely to prevail, farmers are advised to go for first top dressing of N and irrigate the fields.
- Presently early sown mustard and gram are at branching stage. Irrigation at this stage is required for proper vegetative growth of these crops. Avoid water logging in the fields. Use of sprinkler should be encouraged for irrigation.
- Weather conditions are favourable for sowing of Sunflower. Sowing of leafy vegetables can also be done during this week.
- Weather conditions are favorable for incidence of Diamond Back Moth in Cole crops. Hence it is advised to spray Endosulphan or Trizophos @ 1.5 ml / litre of water to control the insect.

Annexure I

Crop varieties of Delhi

- **Onion:** Pusa Red, Pusa Madhabi, Agrifound Light Red.

Crop varieties of West Bengal

- **Boro rice:** IET - 1444, IET – 4786 (Satabdi), IET – 4094, Lalat, MTU - 1010, JGI –1798 etc.
- **Potato after aman rice:** Kufri Jyoti, Kufri Asoka, Kufri Pokrag.
- **Late varieties of potato:** Kufri Badsa, Kufri Sindhuri, Kufri Kanchan.

Crop varieties of Himachal Pradesh

- **Wheat:** HPW-89, 147, VL-738 and HS-240.
- **Barley:** HBL-316 and Dolma.
- **Oat:** Palampur-1.
- **Cabbage:** Snow ball K-1, Palam Uphar, Golden Acre.
- **Knol khol:** White Viena.
- **Broccoli:** Palam Kanchan, Palam Vichitrta and Palam Samridhi.
- **Cauliflower:** Pride of India.
- **Raddish:** Japani white, Early Mino White, Chinese Pink and Plamp Hriday.
- **Peas:** Lincoln and Palm Priya.

Crop varieties for Jammu

- **Late varieties of wheat:** Raj-3077, PBW-226, Raj 3765, WH-542, PBW-373 & PBW-435.
- **Radish:** Pusa Himani.
- **Tomato:** RR, S-1, PC.
- **Chilies:** NP-46A & Pusa Jawala.
- **Brinjal:** PPR, PK, PPL.

Crop varieties for Maharashtra

- **Groundnut:** Improved varieties like TG-26, TG-37, TAG-24

Punjab

- **Wheat:** PBW 373, 1210 for irrigated areas.
- **Raya:** PBR-210, RLM-619, PBR-91, RL-1359 under irrigated conditions and PBR-97 under rainfed conditions.
- **Pea:** Punjab –87, P6-88, P6-89 and Mitthi Phalli.

Haryana:

- **Wheat:** PBW 373, 1210 for irrigated areas.

Crop varieties for Uttar Pradesh:

- **Wheat:** Maliviya-234, Narendra-236, Twt-373, K-8020, Triveni, K-7903 and Halna

Crop varieties for Bihar

- **Wheat:** HD 2643, HP 1744, PBW 373, HUW 234, DBW 14, NW 2036 and NW 1014
- **Rape seed and mustard:** Rajendra rai, Pichheti, Rajendar, Anukul and Rajendar Sufalam.

Crop varieties for Orissa:

- **Cabbage:** Drum head, Sri Ganesh Gol
- **Cauliflower:** Pusa Snow ball and Pusa Hybrid-2.

Crop varieties for Rajasthan

East Rajasthan:

- **Fenugreek:** RMT 1 and RMT 14
- **Cumin:** RS 1, RZ 209 and RZ 19
- **Garlic:** G-1, G-41, G-50, G-282 and G-313
- **Radish:** Pusa Deshi and Japoni White
- **Cauliflower:** Pusa Hybrid-2, Pusa Snowball-1, Pusa Snowball K- 1 and Pusa Snowball K-25
- **Wheat:** Lok-1, Raj-1972, HD-2236, HD-2329, WH-147, PBW-343 and CPAN-3004 (Alwar, Dholpur, Bharatpur, Karauli and Sawai Madhepur districts).

West Rajasthan:

- **Wheat:** Raj 3765, Raj 3077A and KRL 19 (Pali)
- **Cumin:** RC 19 and GC 4
- **Wheat:** Raj-3765, Raj-3077 , HD-2285 and PBW-373 (Sriganganagar and Hanumangarh districts).

Crop varieties Madhya Pradesh:

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

Crop varieties Andhra Pradesh:

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

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