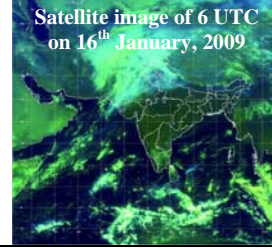




National Agromet Advisory Bulletin

Thursday, 15th January, 2009

(For the period 15th to 19th January, 2009)



Forecast for South India (valid upto 1430 hours IST of 18th January, 2009)

- Rain/thundershowers are likely at isolated places over Tamilnadu and south interior Karnataka.
- Mainly dry weather is likely over the rest region.

Advisories for Tamil Nadu

- As there was no sufficient rain during last few weeks in the state and rain/thundershowers is likely to occur at isolated places during next five days, farmers are advised to apply irrigation to the crops.
- Undertake land preparation and sowing of bitter gourd, pumpkin, snake gourd and water melon as conducive weather conditions prevail in north western zone.
- Sowing and transplanting of vegetable crops such as bhendi, tomato, cowpea, dolichos and chillies with irrigation facilities may be taken up.

Advisories for Kerala

- As there was no sufficient rain during last week in the state and mainly dry weather is likely to prevail over the state for the next five days, farmers are advised to apply irrigation to the crops.
- High wind speed leading to more evaporation is likely in and around Thiruvananthapuram, Thrissur and Kasaragod districts. Apply mulches in orchard trees to conserve moisture. Provide mechanical support to banana to prevent from lodging.
- Complete transplanting of pancha rice in Wayanad district. Undertake sowing of vegetable crops like Amaranthus, bottle gourd, bitter gourd, cucumber, water melon and snake gourd.
- Undertake nursery sowing of pancha rice in Malappuram, Kasargod, Kozhikode and Kannur districts.

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.
- Farmers in Krishna, West Godavari, Guntur and Prakasam districts of Andhra Pradesh are advised to undertake sowing of rice fallow maize and rice fallow pulse crops during these days. Farmers in high altitude regions of Srikakulam, East Godavari, Vijayanagaram, Visakappattinam and Khammam are advised to start transplanting the seedlings of rice and ragi.

Advisories for Northern India

- Due to low temperature cold injury may occur in the crops in Jammu and Kashmir, Punjab, Haryana, Delhi, Himachal Pradesh and Uttarakhand. Farmers are advised to arrange for smoking in these States to protect the crops from cold injury.
- As rain/snow is likely to occur at a few places during next 24 hours and many places thereafter in Jammu & Kashmir, postpone irrigation to the crops. Arrange for drainage facilities as isolated heavy snowfall is likely to occur during next 48 hours.







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

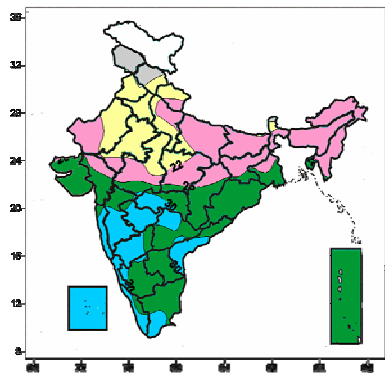
Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks					
Sub-division	Cumulative Rainfall (% Dep.) for the period				
	17 th December	24 th December	31 st December	7 th January	14 th January
A & N Islands	-98	-92	46	-14	-97
Arunachal Pradesh	-89	-32	-87	-62	-100
Assam and Meghalaya	-97	-86	-59	-90	-100
NNMT	-100	-100	15	-100	-100
SH West Bengal & Sikkim	-99	-89	163	-46	-96
Gangetic West Bengal	-100	-100	-100	-64	-51
Orissa	-100	-100	-100	-100	-99
Jharkhand	-100	-100	-100	-80	132
Bihar	-94	-95	-100	-68	-83
East Uttar Pradesh	-92	-100	-100	-99	-98
West Uttar Pradesh	-88	-100	-100	-97	-64
Uttarakhand	-50	-33	-100	-79	-100
Haryana, Chandigarh & Delhi	263	-100	-100	-94	-100
Punjab	-100	-66	-100	-85	-100
Himachal Pradesh	-100	122	-100	-11	-84
J & K	-100	173	-100	-36	-69
West Rajasthan	-99	52	-100	-99	-100
East Rajasthan	-99	-100	-100	-100	-100
West M. P.	-100	-100	-100	-100	25
East M. P.	-100	-100	-100	-82	71
Gujarat region	-100	-100	-100	-100	-100
Saurashtra & Kutch	-100	-100	-100	-100	-100
Konkan and Goa	-100	-100	-100	-100	-100
Madhya Maharashtra	-100	-100	-100	-100	-88
Marathwada	-100	-100	-100	-100	-100
Vidarbha	-100	-100	-100	-100	-100
Chhattisgarh	-100	-100	-100	-75	-77
Coastal A. P.	-100	-94	-80	-99	-100
Telangana	-100	-100	-100	-100	22
Rayalseema	-100	-100	-100	-100	-60
TamilNadu & Pondicherry	15	-72	-95	-88	-64
Coastal Karnataka	-100	-100	-100	-100	-100
N. I. Karnataka	-100	-100	-100	-100	-100
S. I. Karnataka	-100	-100	-100	-100	-90
Kerala	-47	-96	-100	-100	-97
Lakshadweep	207	290	-100	-77	-100

The sub divisions like Arunachal Pradesh, Assam & Meghalaya, Gangetic West Bengal, Orissa, Bihar, Uttar Pradesh, Uttarakhand, Punjab, East Rajasthan, Gujarat, Saurashtra & Kutch. Maharashtra, Chhattisgarh, Coastal Andhra Pradesh, Rayalaseema, Karnataka and Kerala received scanty / deficient rain in all the 5 weeks; Sub-Himalayan West Bengal and Sikkim, Nagaland, Manipur, Mizoram, Tripura, Jharkhand, Haryana, Chandigarh, Delhi, West Rajasthan, Madhya Pradesh, Telangana, Tamil Nadu & Pondicherry received scanty / deficient rain in 4 out of last 5 weeks; Andaman & Nicobar Islands, Himachal; Pradesh, Jammu & Kashmir and Lakshdweep 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.

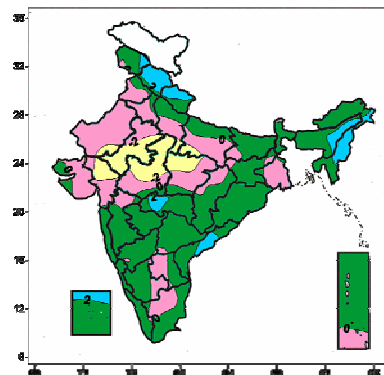
	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%)deficient rainfall		** Data not available

Contour maps for the week ending 14.01.09

Actual Mean Maximum Temperature (°C) in India for the week ending 14.01.09 Maximum Temperature (°C) Anomaly in India for the week ending 14.01.09

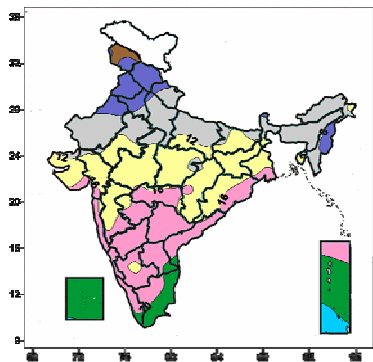


Actual Mean Maximum Temperature ranged between 30 to 34°C over most parts of Maharashtra and Lakshadweep, Coastal Andhra Pradesh, Coastal Karnataka, North Interior Karnataka and Kerala, some parts of Telangana, South Interior Karnataka and Tamil Nadu, 22 to 26°C over most parts of East Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal, Northeast India, and South Madhya Pradesh, some parts of Uttarakhand, West Uttar Pradesh, Rajasthan, Gujarat, Saurashtra & Kutch, Chhattisgarh and Gangetic West Bengal, 18 to 22°C over most parts of Punjab, Haryana, Delhi, Rajasthan, some parts of Himachal Pradesh, Uttarakhand, Uttar Pradesh and Madhya Pradesh, 14 to 18°C over most parts of Jammu & Kashmir, some parts of Himachal Pradesh and Sikkim and 26 to 30°C in remaining parts of the country.



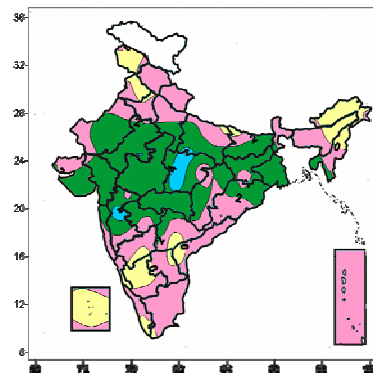
Maximum Temperature anomaly ranged between 2 to 4°C over most parts of Himachal Pradesh, some parts of Jammu & Kashmir, Uttarakhand, Northeast India, Vidarbha, Coastal Andhra Pradesh and Lakshadweep Islands, -2 to 0°C over most parts of Punjab, Haryana, Delhi, South Uttar Pradesh, West Rajasthan, Gangetic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

Actual Mean Minimum Temperature (°C) in India for the week ending 14.01.09



Actual Mean Minimum Temperature ranged between 24 to 28°C over some parts of Andaman & Nicobar Islands, 20 to 24°C over most parts of Coastal Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Coastal Andhra Pradesh, Rayalaseema and Kerala, 16 to 20°C over most parts of Konkan & Goa, Marathwada, Vidarbha, Andhra Pradesh, Karnataka and Kerala, some parts of Orissa, Gangetic West Bengal, Gujarat, Saurashtra & Kutch, Chhattisgarh, Madhya Maharashtra, Tamil Nadu and Andaman & Nicobar Islands, 8

Minimum Temperature (°C) Anomaly in India for the week ending 14.01.09

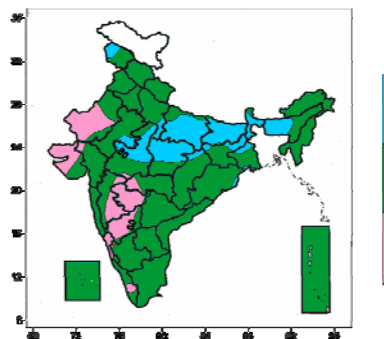


Minimum Temperature anomaly ranged between 4 to 6°C over some parts of East Uttar Pradesh, East Madhya Pradesh and Madhya Maharashtra, 0 to 2°C over most parts of Himachal Pradesh, Uttarakhand, North Uttar Pradesh, Haryana, Delhi, Sub-Himalayan West Bengal & Sikkim, South Orissa, Andhra Pradesh, Tamil Nadu, Kerala and Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Bihar, Jharkhand, Northeast India, Rajasthan, Gujarat, Saurashtra & Kutch, Konkan & Goa,

to 12 °C over most parts of Uttar Pradesh, Northeast India, West Rajasthan and Sub-Himalayan West Bengal, some parts of Uttarakhand, Bihar, Sikkim, East Rajasthan, Gujarat, Saurashtra & Kutch, Madhya Pradesh and Chhattisgarh, 4 to 8 °C over most parts of Himachal Pradesh, Punjab, Haryana, Nagaland and Manipur, some parts of Jammu & Kashmir, West Rajasthan, West Uttar Pradesh and Sikkim, 0 to 4°C over most parts of Jammu & Kashmir and 12 to 16°C over remaining parts of the country.

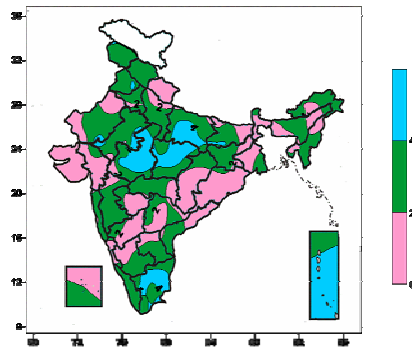
Madhya Maharashtra, Marathwada, East Madhya Pradesh, Chhattisgarh, Karnataka, and Lakshadweep Islands, -2 to 0°C over most parts of Jammu & Kashmir, Arunachal Pradesh, Nagaland and Lakshadweep Islands, some parts of Punjab, Haryana, East Uttar Pradesh, Bihar, Assam, Andhra Pradesh, Karnataka, Kerala and Tamil Nadu 2 to 4°C over remaining parts of the country.

Relative Humidity (%) over India for the week ending 14.01.09



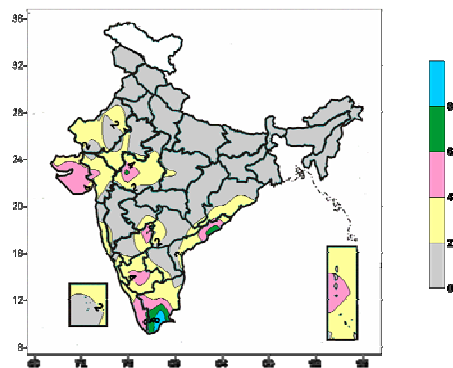
Relative humidity ranged from 80 to 100% over most parts of East Uttar Pradesh, Bihar, Sub Himalayan West Bengal, North Madhya Pradesh, some parts of Jammu & Kashmir, East Rajasthan, Chattisgarh, Orissa, Jharkhand, Gangetic West Bengal, Assam & Meghalaya, 40 to 60% over most parts of Saurashtra & Kutch, West Rajasthan, Marathwada, Coastal Karnataka, North Interior Karnataka, East Madhya Maharashtra, some parts of Gujarat region, Vidarbha, West Madhya Pradesh, Kerala and 60 to 80% over remaining parts of the country.

Cloud amount (okta) over India for the week ending 14.01.09



Cloud amount ranged from 4 to 6 okta over most parts of Madhya Pradesh, Andaman Nicobar Islands, some parts of Punjab, Rajasthan, East Uttar Pradesh, Bihar, Tamil Nadu, 2 to 4 okta over most parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Sikkim, Konkan and Goa, Madhya Maharashtra, Vidarbha, Kerala, Rayalaseema, some parts of Gujarat, Marathwada, Gangetic West Bengal, North East India, Central India, Andhra Pradesh, Interior Karnataka, Tamil Nadu, Lakshadweep Islands, 0 to 2 over remaining parts of the country.

Wind speed (knots) over India for the week ending 14.01.09



Wind speed ranged between 8 to 10 knots over some parts of Tamil Nadu, 6 to 8 knots over some parts of Coastal Andhra Pradesh, Kerala and Tamil Nadu, 4 to 6 knots over most parts of Saurashtra and Kutch, Kerala some parts of West Madhya Pradesh, Coastal Andhra Pradesh, Tamil Nadu, Interior Karnataka, Kerala, Andaman and Nicobar Islands, 2 to 4 knots over most parts of Rajasthan, Gujarat, West Madhya Pradesh, Konkan & Goa, Coastal Karnataka, South Interior Karnataka, Coastal Andhra Pradesh, Andaman Nicobar Islands, some parts of East Madhya Pradesh, Saurashtra & Kutch, Orissa, Telangana, Rayalaseema, North Interior Karnataka, Lakshadweep, 0 to 2 knots over remaining parts of the country.

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

***Most Stress

State/Districts	17/12/08	24/12/08	31.12.08	07.01.09	14.01.09
Karnataka					
Coastal Karnataka					
Dakshin Kannada	-100	-100	-100	-100	-100
Udupi	-100	-100	-100	-100	-100
Uttar Kannada	-100	-100	-100	-100	-100
North Interior Karnataka					
Bagalkote	-100	-100	-100	-100	-100
Belgaum	-100	-100	-100	-100	-100
Bidar	-100	-100	-100	-100	-100
Bijapur	-100	-100	-100	-100	-100
Dharwad	-100	-100	-100	-100	-100
Gadag	-100	-100	-100	-100	-100
Gulbarga	-100	-100	-100	-100	-100
Haveri	-100	-100	-100	-100	-100
Koppal	-100	-100	-100	-100	-100
Raichur	-100	-100	-100	-100	-100
South Interior Karnataka					
Bangalore Rural	-100	-100	-100	-100	-100
Bangalore Urban	-100	-100	-100	-100	-100
Bellary	-100	-100	-100	-100	-100
Chamarajnanagar	-100	-100	-100	-100	-100
Chickmagalur	-100	-100	-100	-100	-100
Chitradurga	-100	-100	-100	-100	-100
Davangere	-100	-100	-100	-100	-100
Hassan	-100	-100	-100	-100	-100
Kodagu	-100	-100	-100	-100	-100
Kolar	-100	-100	-100	-100	-91
Mandya	-100	-100	-100	-100	-100
Mysore	-100	-100	-100	-100	-100
Shimoga	-100	-100	-100	-100	-100
Kerala					
Alappuzha	-23	-100	-100	-100	-100
Kannur	-75	-100	-100	-100	-100
Ernakulam	188	-100	-100	-100	-100
Idukki	-100	-100	-100	-100	-100
Kasaragod	0	-100	-100	-100	-100
Kollam	-100	-58	-100	-100	-73
Kottayam	150	-100	-100	-100	-100
Kozhikode	-3	-100	-100	-100	-100
Malappuram	-100	-100	-100	-100	-100
Palakkad	-100	-95	-100	-100	-100
Pathanamthitta	-100	-100	-100	-100	-100
Thiruvananthapuram	-72	-93	-100	-100	-100
Thrissur	-89	-100	-100	-100	-100
Wyanad	-100	-100	-100	-100	-100
Tamil Nadu					
Coimbatore	-18	-96	-100	-100	-100
Cuddalore	112	-100	-99	-100	-42
Dindigul	57	-94	-100	-100	-100
Erode	1	-100	-100	-100	-100
Kanyakumari	-51	-70	-100	-100	-100
Karur	56	-100	-100	-100	-100
Krishnagiri	-100	-100	-100	-100	-82
Madurai	26	-99	-100	-100	-100
Namakkal	-32	-100	-100	-100	-100
Nilgiris	14	-100	-100	-100	-92
Perambalur	77	-100	-100	-100	-32
Pudukottai	76	-98	-98	-100	-99
Salem	-59	-100	-94	-100	-47
Sivaganga	108	-67	-100	-100	-100







Thanjavur	119	-95	-93	-76	-73
Theni	-27	-95	-100	-100	-100
Tiruvarur	76	-94	-81	-100	-32
Trichy	164	-100	-100	-99	-100
Vellore	-100	-100	-100	-100	-61
Villupuram	-76	-100	-100	-100	-67
Virudhunagar	-34	-78	-100	-100	-100
Andhra Pradesh					
Coastal Andhra Pradesh					
Krishna	-100	-100	-100	-100	-100
Nellore	-100	-100	-100	-100	-98
Sirkakulam	-100	-100	-100	-100	-100
Visakhapatnam	-100	-100	-100	-100	-100
Vizianagram	-100	-100	-100	-100	-100
West Godavari	-100	-100	-100	-100	-100
Telangana					
Hyderabad	-100	-100	-100	-100	-100
Karimnagar	-100	-100	-100	-100	-100
Khammam	-100	-100	-100	-100	-100
Mehabubnagar	-100	-100	-100	-100	-100
Medak	-100	-100	-100	-100	-100
Nalgonda	-100	-100	-100	-100	-100
Nizamabad	-100	-100	-100	-100	-100
Rangareddy	-100	-100	-100	-100	-100
Warangal	-100	-100	-100	-100	-100
Rayalaseema					
Chittoor	-100	-100	-100	-100	-62
Cuddapah	-100	-100	-100	-100	-86
Kurnool	-100	-100	-100	-100	-83

****More Stress**

State/Districts	17/12/08	24/12/08	31.12.08	07.01.09	14.01.09
Ramanathapuram	212	77	-79	-79	-97
Tirunelveli	2	-5	-100	-100	-92
Tuticorin	-22	17	-99	-96	-100
Andhra Pradesh					
Coastal Andhra Pradesh					
East Godavari	-100	1200	-67	-100	-100

***Stress**

State/Districts	17/12/08	24/12/08	31.12.08	07.01.09	14.01.09
Andhra Pradesh					
Coastal Andhra Pradesh					
Guntur	-100	-100	383	-100	-100

	(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)

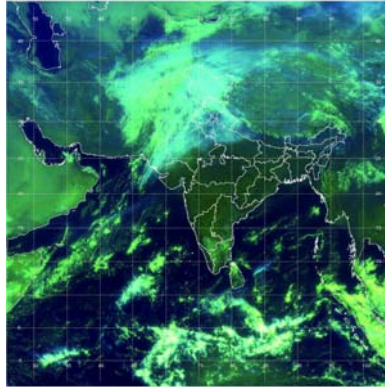
**More stress (3 weeks continuously deficient to no rain)

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

Chief Synoptic Feature (Based on 1430 hours IST observations of 15th January, 2009)

- Under the influence of an approaching western disturbance, fairly widespread precipitation activity is likely over western Himalayan region during 16-18 January.
- Isolated to scattered rain/thundershower is also likely over plains of northwest India during the same period.
- Minimum temperatures are above normal by 4-6⁰C over Rajasthan, Gujarat and Madhya Pradesh. They are likely to increase further by 2-4⁰C over northwest India till 18th January and fall thereafter.
- The lowest minimum temperature of 4.0⁰C was recorded at Sarsawa (west Uttar Pradesh) in the plains of northwest India.

Satellite image of 6 UTC on 16th January, 2009



Zone-wise Forecast

NORTHWEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, WEST UP]
(Forecast valid upto 1430 hours IST of 18th January, 2009)

- Rain/snow is likely at a few places over Jammu & Kashmir during next 24 hours and at many places thereafter.
- Mainly dry weather is likely over Himachal Pradesh and Uttarakhand during next 24 hours and rain/snow at a few places likely thereafter.
- Isolated Rain/thundershowers are likely over Punjab, Haryana and Chandigarh including Delhi during next 24 hours and at a few places likely thereafter.
- Mainly dry weather is likely over the rest region during next 48 hours and isolated rain/thundershowers is likely thereafter.

Quantitative District Weather Forecast for next five days:

- Light to rather moderate rain is likely to occur over Jammu & Kashmir, light rain is likely to occur over Himachal Pradesh, Uttarakhand, Punjab, Haryana, and Chandigarh.
- Mainly dry weather is likely over the rest region during next 48 hours and light rain is likely to occur thereafter.

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EAST INDIA [EAST UP, JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]
(Forecast valid upto 1430 hours IST of 18th January, 2009)

- Mainly dry weather is 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 18th January, 2009)

- Mainly dry weather is likely over the region.

Quantitative District Weather Forecast for next five days:

- Mainly dry weather is likely over the region.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS] (Forecast valid upto 1430 hours IST of 18th January, 2009)

- Rain/thundershowers are likely at isolated places over Tamilnadu and south interior Karnataka.
- Mainly dry weather is likely over the rest region.

Quantitative District Weather Forecast for next five days:

- Light rain is likely to occur over Tamil Nadu and South Interior Karnataka.
- 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 18th January, 2009)

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

Quantitative District Weather Forecast for next five days:

- Light rain is likely to occur over Rajasthan.
- Mainly dry weather is likely over the rest region.

CENTRAL INDIA [M.P., CHHATTISGARH, VIDARBHA] (Forecast valid upto 1430 hours IST of 18th January, 2009)

- Mainly dry weather is 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 18th January, 2009 to 1430 IST of 20th January, 2009 (Based on numerical weather products):

- With the likely moving away of western disturbance, decrease in precipitation over northwest India is expected.

Zonewise Agromet Advisories

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

Himachal Pradesh

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), wheat (early vegetative / CRI / tillering), barley, oat and oil seeds (early vegetative / vegetative), cabbage, cauliflower and broccoli (early vegetative / vegetative), pea and knoll khol (early vegetative / vegetative), carrot, radish, turnip and the leafy vegetables like lettuce, methi, palak, dhania etc. (early vegetative / vegetative).
- As low minimum temperature is prevailing, arrange for smoking against cold injury.
- Under prevailing weather conditions, undertake sowing of potato in mid hills region. Procure the healthy and disease free bulbs for planting.
- The transplanting of onion may be finished within this week. Drench the crop field with Dithane M-45 @ 2 g and Bavistin @ 1 g for the control of damping off. It is also optimum time for sowing of radish.
- The nursery sowing of chilli and bringal may be taken up in the poly houses. The plantation of pome and stone fruits like peach, pear, plum almonds, apricot and apple may be also carried out.
- It is also optimum time for transplanting of strawberry in raised beds.
- Weather is congenial for production of white button mushroom in the closed room. Maintain room temperature at 18-22⁰C and relative humidity around 85% for successful cultivation. For Oyster mushroom 16-22⁰C temperature may be maintained.
- Under prevailing weather condition there is possibility of infestation of powdery mildew. For control of powdery mildew in peas spray sulfex @ 25 g per 10 litres of water or karathane @ 5 ml per 10 litres of water.
- Weather condition is also congenial for downy mildew in cruciferous vegetables. For control spray Redomil M-Z @ 25 g per litre of water at 15 days interval.
- 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

- Replace the poultry houses with fresh litter to avoid wetting and keep the houses clean and ensure clean drinking water to the birds.
- Raise the temperature of the poultry enclosures using bhukhari, otherwise chances of death of birds increases as the birds mount each other and increase the poultry food by 10%.

Honeybees

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

Animal Husbandry

- The night temperature is very low and the newly born calves may be protected against the cold as the weather is conducive for white scour, naval ill and pneumonia. Feed pregnant and lactating cows and buffalos with balanced feed including mineral mixture.

Uttarakhand

- **Major Standing Crops:** Sugarcane (harvesting), wheat (tillering) and mustard(vegetative), chickpea, potato, pea and lentil (vegetative).

- Farmers are advised to protect the seedlings of potato and onion crops from cold injury by arranging smoking around the field. Protect small trees of mango, guava, litchi and lemon from cold injury by covering them with rice straw.
- Farmers are advised to complete transplanting of onion and chilli seedlings. Undertake sowing of potato, mustard, and fodder crops.
- Undertake intercultural operation and application of fertilisers in gram, pea and lentil on a non rainy day.
- Undertake harvesting of *toria* before rainfall as rainfall is likely at a few places after 24 hours.
- Farmers are advised to undertake field preparation and sowing of sunflower. Sow certified seeds of high yielding varieties like MSFS-8, NSFH-9, Ranjha, Heer, Badshah etc.(hybrids), Morden and Paradobic.
- Provide balanced feed to animals and continue to keep them inside the shed to protect them from cold.

Punjab

- **Major Standing Crops:** Horticultural crops (vegetative), sugarcane (harvesting), *spring* sugarcane (early vegetative), potato (early vegetative / vegetative) and wheat (tillering/jointing), gram and lentil (early vegetative / vegetative), pea and vegetable crops like chilly, tomato, brinjal and onion(seedling/transplanting/early vegetative), oilseeds(flowering).
- Continue harvesting of matured crops of sugarcane.
- In view of fall in temperature, cold injury may occur in vegetables, potato, sugarcane and *rabi* oilseeds. Provide rice straw / polythene cover to save the plants from cold injury. Also arrange for smoking around the field to protect the crops against the cold injury.
- Farmers are advised to continue sowing of chilly, tomato, brinjal and onion.
- Undertake layering of litchi trees and side grafting of mango for their propagation.
- The weather is congenial for attack of mustard aphid, spray the crop with Metasystox 25 EC @ 250 ml or 375ml Dursban/ Coroban 20 EC in 100 litres of water per acre on a non rainy day. Repeat application whenever economic threshold level attack is noticed.
- Farmers are advised to provide bedding to calves and adult animals. Density of the ration may be increased by adding grains and oils. In view of expected fall in temperatures, farmers are advised cover the side of poultry sheds to maintain the temperature inside the shed.

Haryana

- **Major Standing Crops:** Sugarcane (harvesting), spring sugarcane (early vegetative), Horticulture crops (vegetative), wheat (tillering).
- In view of fall in temperature, cold injury may occur in sugarcane and vegetables. Provide rice straw / polythene cover or arrange for smoking around the field to save the plants from cold injury. Due to low temperature the germination and growth rate of seedling is poor so the farmers are advised to cover the nursery beds by polythene sheets for better growth.
- Continue planting of spring sugarcane. Prepare the land for sowing of barseem.
- Complete transplanting of tomato and continue transplanting of onion.
- Farmers are advised to provide bedding to calves and adult animals. In view of expected fall in temperatures, farmers are advised to manage animal sheds for protection against cold and give 50 g iodised salt along with 50 to 100 gm mineral mixture daily to keep them healthy.

Delhi

- **Major Standing crops:** Vegetables (vegetative), mustard (flowering / capsule formation), potato (vegetative / tuber formation), gram (vegetative / flowering), wheat (CRI / tillering), *rabi* onion and very late maturing cauliflower (transplanting).
- As minimum temperature is low during these days and there is chance of drop in minimum temperature after 18th January and also dry weather is prevailing for last few weeks and no significant rain is also likely to occur 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. Also arrange for smoking for protecting the crops from cold injury. Protection of newly transplanted crops of vegetable with rice straw and wherever possible with polyethylene is recommended.

- In view of prevailing fog during these days, farmers are advised to postpone the transplanting of onion seedlings till the end of this week. Also, they are advised to apply light irrigation to the recently sown crops.
- Due to continuous low minimum temperature there are chances of damage to brinjal and chilly crops, if it is transplanted recently. It is highly recommended to postpone transplanting till the end of this week.
- It is advisable for the farmers growing vegetable seedlings in polyethylene bags to maintain warm environment by using electric blower to maximize the germination rate.
- Since the low temperature also increases the chances of infestation of late blight in potato, regular monitoring of crop is recommended. Preventive spraying of Mancozeb (Indofil M-45 or Dithane M-45) @ 600-800 ml mixed in 200 – 250 litres of water is advised. If present weather conditions persist, the farmers are advised to repeat the spray at weekly intervals.
- Keeping in view the forecasted weather, farmers are advised to apply fertilizers and light irrigation to the orchards. Newly transplanted saplings need extra care. It is advised to cover the saplings with polyethylene sheets carefully.
- Farmers are advised to apply light irrigation to the mustard crop, as this is the transition stage from flowering to pod formation of the crop. Moisture stress conditions reduce the yield of the crop.
- In grapes, training and pruning should be done at the earliest.

Uttar Pradesh

- **Major Standing crops:** Sugarcane (grand growth / cane formation), mango (fruit setting), rai, mustard, potato, gram, pea and lentil (vegetative/flowering), 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. Protect the young crops from cold injury by providing light and frequent irrigation.
- 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 favourable weather conditions prevail during these days.
- Farmers are advised to prepare the field for sowing of Mentha crop.
- Sowing/transplanting of onion may be taken up.
- Farmers are advised to harvest the matured crops of sugarcane and toria.

J & K

- **Major Standing Crops:** Wheat (vegetative), pulses (vegetative), mustard (vegetative). This is proper time for sowing of very late varieties of wheat (lower belts) in Rajouri division and planting of spinach, beet and mongol in Leh
- As rain/snow is likely to occur at a few places during next 24 hours and many places thereafter, postpone irrigation to the crops.
- Arrange for drainage facilities as isolated heavy snowfall is likely to occur during next 48 hours.
- Protect vegetable crops, mustard and gram from frost due to decrease in minimum temperature by arranging smoke nearby the field. Provide thatches in young orchards of mango, litchi, guava, citrus and papaya.
- Undertake intercultural operations in brown sarson, pulses and wheat in Srinagar, mustard in Jammu division and mustard, berseem, pulses and vegetable crops in Rajouri division to keep the field weed free.
- Complete sowing of very late varieties of wheat in Rajouri division.

- Complete transplanting of onion and tomato seedlings in Jammu division.
- Undertake planting of beet, mongol and spinach in Leh division.
- Details of crop varieties are mentioned in Annexure I.
- 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.
- Weather conditions are congenial for mild incidences of
- aphids in mustard, collar rot in pulses and leaf eating caterpillar in vegetable crops in Rajouri division;
- wilt and rot in peas and late blight in potato in apple in Jammu division;
- monitor the crops for the pests and diseases and undertake plant protection measures.

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

Bihar

- **Major Standing Crops:** Sugarcane (vegetative), *rabi* maize, pulses, potato and sunflower (early vegetative / vegetative), Wheat (tillering).
- As there was no significant rainfall during last few weeks in most of the districts and mainly dry weather is likely for the next five days, apply irrigation to the standing crops. Apply 2nd irrigation to wheat crop which is in 40 to 45 days stage. Avoid moisture stress in wheat, potato and maize crop by maintaining adequate soil moisture as moisture stress at this stage affects the yield of these crops. Avoid irrigation to fruit crops during flowering.
- Undertake intercultural operations, application of fertilizers and pesticides in early sown maize, tomato, brinjal, cauliflower, cabbage etc.
- Farmers are advised to start the field preparation for planting of sugarcane crop.
- Weather is likely to be favourable for outbreak of powdery mildew disease in pea. Farmers are advised to spray sulphex or liquid sulphur @ 2 gm per litre of water against the outbreak of this disease.

Jharkhand

- **Major Standing Crops:** Arhar and maize (harvesting), wheat (tillering), *rabi* oilseeds (vegetative).
- As there was no significant rainfall during last few weeks in most of the districts and mainly dry weather is likely for the next five days, apply irrigation to the standing crops.
- Farmers are advised to apply second irrigation in wheat crop at 40 to 45 days after sowing and third irrigation at 60 to 65 days after sowing and top dressing of 22 kg Urea at optimum moisture level.
- Undertake transplanting of onion in the mainfield.
- Undertake sowing of bitter gourd, sponge gourd, ridge gourd and water melon.
- Farmers are advised to raise the nursery of summer rice. Select the varieties like IR36, IR64 and Lalat.
- After a week the mango bear flower in the tree so the farmer dug in front of the root area and apply Lindane dust to prevent mite and irrigate the crop. The shoot gall midge affected twig may be cut and spray monocrotophos @ 1.5 ml per litre of water.
- Farmers are advised to undertake weeding, intercultural operations in potato, oilseeds and wheat.

Orissa

- **Major Standing crops:** Sugarcane (harvesting), sunflower (flowering), vegetables (vegetative / flowering / fruiting), wheat (tillering), potato, onion (vegetative) and summer rice (seedling).
- As there was no significant rainfall in the State during last few weeks and mainly dry weather is likely for the next five days, apply irrigation to the standing *rabi* crops.
- Farmers are advised to undertake nursery sowing of ragi and sowing of groundnut in river banks. Details of crop varieties are mentioned in Annexure I.
- Continue sowing of maize, summer rice and undertake transplanting of summer rice. The growth of summer rice seedlings in early sown crops are affected due to low minimum temperature. For better growth of rice seedling, top dress urea @ 4 kg / 10 cent of nursery area.

- Undertake planting of marigold.
- Undertake planting of sugarcane. Dip the sugarcane seed material (sett) in Bavistin solution (1.5g/lit) for 20-30 minutes before planting.
- Undertake intercultural operations, application of fertilizers and pesticides in *rabi* crops.
- Weather may favour the infestation of aphid. Spray Metasystox or Rogor @ 2 ml/ litre of water.

West Bengal

- **Major Standing Crops:** Sugarcane (cane development), mustard, gram and lentil (branching / flowering / pod formation), wheat (CRI / tillering), potato (vegetative / tuber formation) and *boro* rice (transplanting).
- 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 during next five days, apply irrigation to mustard, gram, lentil, wheat, vegetables and potato.
- As there is no possibility of rainfall, farmers are advised to undertake intercultural operation to keep the fields weed free.
- Irrigate the seedbed of *boro* rice regularly to maintain 2-3 cm stagnant water in the bed. Undertake preparation of the main field for transplanting of *boro* rice. Start transplanting of 3-4 no. of seedlings together in 4-5 cm depth in the main field with a spacing of 20 x 10 cm. Maintain 1-2 cm stagnant water in the field.
- Under prevailing weather condition, undertake preparation of land for sowing of groundnut and sunflower in Coastal Saline Zone. Well filled kernels of groundnut should be selected and treated with 5 g of Thiram or 3 g of Captan per kg of kernels. 18-20 kg healthy and well developed pods of groundnut are required per bigha. 600 to 800 g of well filled plump seeds of sunflower are required to cover one bigha land.
- As the soil temperature is increasing day by day, there is a chance of lower tuber development in potato. To get higher yield, cover the field with rice straw mulch.
- In the foggy weather, attack of blight disease is becoming severe in New Alluvial zone. To control the disease, apply 2.5 gm Mancozeb per litre of water.
- Under the prevailing weather condition aphid infestation is remaining high in New Alluvial zone and Coastal Saline zone. Apply 1.5 ml metasystox per litre of water to control the pest.
- Details of crop varieties are mentioned in Annexure I.

Sikkim

- **Major Standing Crops:** Orange (maturity/picking), large cardamom (vegetative), *rabi* wheat (tillering), mustard (late vegetative), vegetable crops (late vegetative/flowering/fruiting/ harvesting), potato (tuber formation)
- As there was no significant rainfall during last week in the state and mainly dry weather is likely to prevail over the state for the next five days, apply irrigation to the vegetable crops, wheat, orange and large cardamom.
- Undertake intercultural operations in mustard, wheat and vegetable crops like 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.
- Maintain large cardamom sucker nursery; apply FYM and undertake intercultural operations.
- **Plant Protection:** Weather conditions are congenial for mild incidences of
- Chirkey and Foorkey disease and shoot borer in large cardamom
- fruit fly and trunk borer in orange.
- Monitor the crop/tree and undertake plant protection measures to control the pests and diseases.

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

Assam

- **Major Standing crops:** Arhar (pod formation / maturity), sugarcane (harvesting), vegetables (vegetative / flowering / fruiting), mustard, lentil and pea (flowering / pod formation), wheat (crown root initiation / tillering stage), potato (vegetative / tuber formation) and *boro* rice (nursery preparation / transplanting).
- As there was no significant rain over the State during last few weeks and mainly dry weather is likely for next five days, farmers are advised to apply irrigation to arhar (at pod formation stage) and vegetable crops like cauliflower, cabbage, radish, brinjal, tomato, knolkhol, onion and carrot and also to wheat, mustard, lentil, pea and potato.
- As there is no possibility of occurrence of rain, farmers are advised to undertake intercultural operation to keep the fields weed free. Second earthing up should be done in case of two months old crop of potato.
- Under prevailing dry weather condition, farmers are advised to undertake harvesting of sugarcane.
- As the temperature is favourable for germination, complete preparation of nursery bed and sowing of *boro* rice seeds in nursery bed. Transplanting of *boro* rice may also be undertaken if the seedlings are ready.
- Under prevailing weather condition farmers are advised to undertake planting of late varieties of cauliflower, cabbage and knoll khol and sowing of sunflower.
- Prevailing weather condition is favourable for the infestation of leaf curl virus and late blight in potato. Crop should be sprayed with Malathion 50 EC @ 2 ml / litre of water against insect vector of leaf curl virus and Dithane M 45 @ 2.5 g / litre against late blight disease.
- As weather condition is favourable, farmers should be vigilant for the attack of aphids at flowering stage of rapeseed and mustard. If the number of aphids is more than 30 in the main shoot, then application of either Malathion 50 EC @ 2 ml / litre or Dimethoate 30 EC @ 1 ml / litre is essential to control the pest.
- Details of crop varieties are mentioned in Annexure I.

Poultry

- Considering the occurrence of bird flu in different districts of lower, upper and central 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. Vaccine for Ranikhet disease of poultry birds may be given during this period.

Fishery

- Under present weather condition fishes may suffer from a disease that cause decay in patches in different parts of the body. To protect from the disease apply Potassium permanganate @ 2.5 Kg / bigha. Moreover, application of 1 Kg turmeric powder and 13 Kg lime can save the fishes from the disease.

Arunachal Pradesh

- **Major Standing crops:** *Rabi* vegetables (fruiting/harvesting), wheat (tillering / vegetative), mustard (flowering), pea (pod formation), *rabi* maize (flowering) and potato (vegetative/tuber formation).
- As there was no significant rainfall in most of the districts during last few weeks and mainly dry weather is likely during next five days, apply 2nd irrigation to wheat and also apply irrigation to *rabi* vegetables, mustard, pea, *rabi* maize and potato.
- Farmers are advised to apply top dressing, intercultural operations in late sown crops.
- Regular monitoring for powdery mildew attack in pea may be carried out.
- Undertake harvesting of matured vegetables.

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

Andhra Pradesh

- **Major Standing Crops:** sugarcane (grand growth), gram (grain formation/development/maturity), wheat, mustard and sunflower (grain/seed formation/development) and chilly (fruit formation/development)
- Apply irrigation to the crops as there was no rainfall during last week and mainly dry weather is likely to prevail over the state for the next five days.
- Farmers in Srikakulam, Vijayanagaram and Visakappattinam are advised to continue harvesting of sugarcane. After the harvest, allow ratoon or undertake new planting of sugarcane. Undertake thinning and intercultural operations in rice fallow maize.
- Farmers in Krishna, West Godavari, Guntur and Prakasam districts are advised to undertake sowing of rice fallow maize and rice fallow pulse crops during these days. Details of varieties are given in Annexure I.
- Farmers in Anantapur are advised to undertake intercultural operations in rice and groundnut.
- Farmers in high altitude regions of Srikakulam, East Godavari, Vijayanagaram, Visakappattinam and Khammam are advised to complete harvesting of red gram. Start transplanting the seedlings of rice and ragi.
- **Plant Protection:** Weather conditions are favourable for mild incidences of thrips in chilly, 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 to control the pests and diseases.

Karnataka

- **Major Standing Crops:** Annual sugarcane (grand growth). Early sown *rabi* crops (grain development/maturity/harvesting). This is proper time for sowing of summer crops and rice fallow crops.
- As there was no significant rainfall during last few weeks in the state and rain/thundershowers is likely to occur at isolated places over South Interior Karnataka and mainly dry weather is likely to prevail over rest areas of the state for the next five days, apply irrigation to the crops.
- Farmers in Bidar region are advised to continue sowing of water melon in the main field.
- Farmers in Raichur are advised to undertake harvesting of red gram and early sown sunflower due to dry weather conditions prevail during these days. Arrange proper storage for harvested produce.
- After the harvest of rabi crops, farmers are advised to undertake deep ploughing to conserve moisture and to control weeds and soil borne pathogens.
- Continue harvesting/picking onion and chilly during these days in Dharwad.
- Farmers in Shimoga are advised to undertake harvesting of rice and maize. Arrange proper storage for harvested produce.
- Farmers in Udupi and Dakshin Kannada districts are advised to undertake intercultural operations and application of fertilizers and pesticides in plantation crops.
- Undertake harvesting of rice in Uttar Kannada as conducive weather conditions prevail. After the harvest of rice, undertake sowing of rice fallow pulses like green gram, black gram and cowpea.
- **Animal Husbandry:** Due to cold weather in and around Dharwad and Bijapur sneezing is noticed indicating respiratory problem. Keep the animals under warm condition.
- **Plant Protection:** Weather conditions are favourable for mild incidences of:
 - *Heliothis* in gram and red gram, thrips and mites in sorghum and jassids and powdery mildew in mango in Dharwad;
 - sucking pests and powdery mildew in tomato, brinjal and chilly in Bidar,
 - blight and anthracnose in pomegranate, *Sigatoka* leaf spot in banana and sucking pests in mango in Bijapur;
 - undertake plant protection measures.

Kerala

- **Major Standing Crops:** *Mundakan* rice (grain formation), vegetable (vegetative/ flowering) and plantation crops (Coconut, Arecanut, Pepper and Cashew). This is proper time for sowing *rice fallow/summer* vegetable crops.
- As there was no sufficient rain during last week in the state and mainly dry weather is likely to prevail over the state for the next five days, farmers are advised to apply irrigation to the crops.
- High wind speed leading to more evaporation is likely in and around Thiruvananthapuram, Thrissur and Kasaragod districts. Apply mulches in orchard trees to conserve moisture. Provide mechanical support to banana to prevent from lodging.
- Complete transplanting of *puncha* rice in Wayanad district. Undertake sowing of vegetable crops like *Amaranthus*, bottle gourd, bitter gourd, cucumber, water melon and snake gourd.
- Undertake nursery sowing of *puncha* rice in Malappuram, Kasargod, Kozhikode and Kannur districts.
- Undertake sowing of *summer/rice fallow* pulses in and around Thrissur. Also undertake raising of coconut nursery.
- Provide thatches to young plants of arecanut in Wayanad and coconut in Thiruvananthapuram to prevent from sun scorching.
- Start harvesting/plucking of arecanut, coconut, pepper, banana, ginger, cardamom and coffee in Wayanad and turmeric, ginger and pepper in Thrissur as conducive weather conditions prevail during these days.
- Undertake intercultural operations and application of fertilizers and pesticides in 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
- shoot and fruit borer in brinjal in Wayanad.
- stem borer in rice and aphids and mealy bug in vegetables in Thiruvananthapuram.
- fruit fly and powdery mildew in gourds and bacterial wilt in chilly, tomato and brinjal in Malappuram, Kasargod, Kozhikode and Kannur districts;
- jassids and leaf spot in vegetables and tea mosquito bug in cashew in Thrissur.
- Undertake plant protection measures.

Tamilnadu

- **Major Standing Crops:** Special season sugarcane (grand growth stage), Cotton (boll maturity/ picking stage). *Rabi* crops like rice, pulses, millets and oilseeds are at grain formation stage.
- As there was no sufficient rain during last few weeks in the state and rain/thundershowers is likely to occur at isolated places during next five days, farmers are advised to apply irrigation to the crops.
- Undertake land preparation and sowing of bitter gourd, pumpkin, snake gourd and water melon as conducive weather conditions prevail in north western zone.
- Undertake sowing of irrigated groundnut in Coimbatore district.
- Sowing and transplanting of vegetable crops such as bhendi, tomato, cowpea, dolichos and chillies with irrigation facilities may be taken up.
- Continue harvesting jowar, maize, cotton, sunflower and pulses in Virudunagar district, pulses in Tuticorin district and cereals and pulses in Erode district as conducive weather prevails during these days. Arrange for proper storage after the harvest of crops.

Plant Protection: Present weather is conducive for mild incidences of

- leaf spot in turmeric in Erode;
- blast in rice in Namakkal;
- Undertake plant protection measures.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT, RAJASTHAN]

Maharashtra

- **Major Standing Crops:** Sugarcane (pre-seasonal & *suru*) (cane maturity / harvesting), *rabi* jowar (flowering / grain formation in Pune, Nashik divisions & flowering in other divisions), *rabi* sunflower (floral bud initiation / head formation), maize (vegetative / tasseling & silking), gram (flowering / pod formation in Nashik, Pune, & Kolhapur divisions and branching / flowering in other divisions), wheat (CRI / tillering, early sown crop is at ear head emergence stage in Nashik, Pune & Kolhapur divisions), safflower (flowering / seed formation).
- As there was no significant rain in all the districts of the State during last few weeks and mainly dry weather is likely to prevail during next five days, apply irrigation to the standing crops.
- As dry weather is prevailing, farmers are advised to undertake harvesting of sugarcane.
- Apply second dose of Nitrogen @ 60 kg / ha followed by irrigation to late sown wheat crops after 25 to 30 days from sowing.
- Apply second dose of Nitrogen @ 50 kg / ha followed by irrigation to onion crops after 30 days from transplanting.
- As weather condition is favourable, planting of sugarcane (*suru*) may be carried out in Madhya Maharashtra & Marathwada. Sugarcane setts may be treated with 100 g Bavistin + Rogar 30 % @ 265 ml in 100 liters of water for 5-10 minutes. 15 to 20 cm distance may be kept between two cane setts.
- Planting of water melon & musk melon may also be carried out in Central Maharashtra Plateau Zone.
- As weather condition is favourable, transplanting of summer rice and ragi may be completed with 30 to 35 days old seedlings at a distance of 20 x 20 cm or 15 x 15 cm in Sindhudurga district. Also complete sowing of groundnut at 30 x 10 cm distance in this district.
- Details of crop varieties are mentioned in Annexure I.
- **Plant protection**
- Present weather condition is favourable for increase in infestation of thrips on onion crop in Western Maharashtra scarcity zone. For control spray Trizophos + Deltamethrin @ 20 ml or 25 % Cypermethrin @ 5 ml in 10 liters of water.
- Under prevailing weather condition, there is possibility of increase in incidence of hoppers and powdery mildew on newly emerged inflorescence of mango. Spray Imidacloprid 17.8 EC @ 3 ml per 10 liters of water against hoppers. Mix water soluble Sulphur @ 20 g or Hexaconazole @ 5 g during insecticidal spray for controlling powdery mildew.

Gujarat

- **Major Standing Crops:** Sugarcane (maturity / harvesting), *Kharif* cotton (boll formation / boll maturity / picking), castor (spike formation / maturity / picking), mustard (flowering / pod formation), vegetables (vegetative / flowering / fruiting), potato (vegetative / tuber formation) and wheat (CRI / tillering).
- As there was no significant rain during last few weeks over the State and mainly dry weather is likely to prevail for next five days, apply irrigation to *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.
- As weather condition is favourable, farmers are advised to prepare land and complete nursery sowing of summer rice. Also undertake transplanting in the main field if seedlings are ready in nurseries.
- Under prevailing weather condition farmers are advised to prepare land and undertake sowing of summer groundnut and pearl millet in middle Gujarat region.
- As dry weather is likely to prevail, farmers are advised to apply top dressing of Nitrogen @ 40 kg / ha in late sown wheat followed by light irrigation.

- As weather condition is favourable for fruit borer in vegetable crops like brinjal and okra, the farmers are advised to spray Endosulphan @ 20 ml in 10 liters of water.
- As there is chance of attack of pod borer in gram in South Gujarat and Saurashtra region due to favourable weather condition, apply Endosulphan 35 EC or Monocrotophos 35 EC @ 20 ml in 10 liters of water for effective control of pod borer.
- Under prevailing weather condition there is chance of attack of early blight and late blight diseases in potato in North Gujarat region. Spray Mancozeb 0.25% (Dithane M-45 or Indofil M-45) @ 30 g for early blight and Metalaxil MZ (Ridomil gold) @ 20 g in 10 litres of water for late blight. Spray second dose after 10 to 15 days.

Poultry

- To protect the poultry birds from cold wind cover the poultry house with plastic / sunhemp sheets.

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 rain/thundershowers is likely to occur at isolated places for the next five days, apply irrigation to the crops.

East Rajasthan

- Undertake intercultural operations in mustard, gram, onion and garlic in Alwar, Bharatpur, Dholpur, Karauli and Sawai Madhepur districts and in cumin, fenugreek, isabgol, garlic and radish in Ajmer, Dausa, Jaipur and Tonk districts as conducive weather conditions prevail.
- **Plant Protection:** Weather conditions are favourable for mild incidences of
- cut worm in gram in Alwar, Dholpur, Bharatpur, Karauli and Sawai Madhepur districts, dust Endosulphan 4 % or Methyl Parathion 2%.
- aphids 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. Mealy bug in mango, guava and pomogranate, spray Quinophose 1.5% or Endosulphon 4% powder in 50-100g per tree.

West Rajasthan

- 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/hectare. Also pod borer in gram, spray Endosulphon or Methyl parathion powder 20-25 kg/ha
- 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/litr of water.
- sucking pest (mahu) in mustard and cumin in Barmer, Jodhpur, Pali, Churu and Jalore districts, spray Endosulphon 35 EC 2ml/lit water or Melathion 50 E.C. or Methyl Dematon 1ml in 1 lit water.

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Major Standing Crops:** Sugarcane (grand growth), soyabean (pod maturity), maize (cob development/maturity), cotton (boll development) and vegetable crops (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.
- Undertake planting of cauliflower, cabbage, tomato, chilly, onion and brinjal in Chindwara and Betul.
- Details of varieties are given in Annexure I.
- **Animal Husbandry:** Provide proper ventilation and clean water to cattle and arrange for vaccination to save them from infectious disease in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts. Create smoke during the night in cattle shed to prevent 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.
- Cattle should be kept in aeration condition and in dry place, provide balanced and nutrient rich feed having protein, carbohydrate, fat vitamins and antibiotics in Jhabua
- **Plant Protection:** Weather conditions are favourable for
- 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 Carbendazime @ 1 g/litre of water to control powdery mildew in vegetables.
- army worm in wheat and red gram in Damoh, Bhopal, Sagar, Raisen, Sehore and Vidisha districts. Spray Quinolphos 1 litre or Propanophose one and half litre in 500-600 litre water. Spray Quinolphose one and half % or Methyl parathion 2% 25 kg powder per ha by spraying machine.
- agathi or pacheti and zulsa in potato in Morena, Bhind, Gwalior, Shivpuri, Guna, Sheopur and Ashoknagar districts; spray Mancozeb @ 2 kg in 600 lit water.
- agathi in potato in Damoh, Bhopal, Sagar, Raisen, Sehore and Vidisha districts. Spray diethane M-45 2^{1/2} – 3 g/lit 500-600 litre water per hactre in a span of 15 days .
- powdery mildew in peas in Damoh, Bhopal, Sagar, Raisen, Sehore and Vidisha districts. Spray Sulphex or mixed sulphur 3 g or Carbedaziem 2-21/2 g/lit.
- fruit fly in ber in Pali; spray Endosulphan 35 EC in 2 ml/lit of water.
- aphid in pea, mustard & vegetable crops if attack use dusting of Methyl Parathian 2% dust 20-25 kg/ha in Jhabua and Dhar districts.
- leaf cutting weevil in mango; spray 0.1% Malathion or 0.05% Endosulphan 35EC in Jhabua and Dhar districts.
- zulsa in potato in Chindwara and Betul, spray Dithane M-45
- powdery mildew in peas in Chindwara and Betul, spray Kerathane 0.15 % or Sulphex 0.2 %

Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative), pigeon pea (pod maturity), wheat (CRI / tillering), gram, pea, mustard, berseem, pigeon pea and linseed (vegetative / flowering / pod formation), potato (vegetative / tuber formation), vegetables (vegetative / flowering / fruiting).
- 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 mainly dry condition is likely to prevail, undertake intercultural operation to keep the fields weed free. Apply top dressing of Nitrogen to potato followed by earthing up and irrigation. Fertilizer application followed by irrigation should also be carried out in sunflower after weeding.

- Wheat crop sown during second fortnight of December is at crown root initiation stage. These stage 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 followed by irrigation.
- Presently mustard and gram are at branching / flowering stage. Irrigation at this stages is required for proper growth of these crops. Avoid water logging in the fields. Use of sprinkler should be encouraged for irrigation.
- Weather conditions are favourable for planting of onion. Hence planting should be done at the earliest.
- Weather conditions are favourable for sowing of leafy vegetables and transplanting onion during this week.
- There is possibility of infestation of leaf curl virus in chilli under prevailing weather condition. Farmers are advised to apply Metasystox or Rogor.
- Under present weather conditions incidence of powdery mildew may occur in oilseed and pulses. For effective control of powdery mildew spray Calexine @ 1 ml / litre (200 ml / acre) or Sulfex @ 3g / litre (600 g / acre). At least 200 litre of solution should be used for one acre of area.
- Under present weather condition, the disease of wilt and other similar diseases may appear in gram crop. Chemical control of such disease is not effective in standing crop. It was also observed that the disease rapidly spread after irrigation. Hence, it is advised not to irrigate the crop wherever wilt like symptoms are seen in the fields.

Annexure I

Crop varieties

Orissa:

- **Summer rice:** Parijat, Khandagiri, Naveen, MTU-1010, Lalat, etc.
- **Maize:** Hybrid varieties-MRM-3838, MRM-3765, Shaktiman 1, Bio 9681, Cargil 633, Deccan 105, K.H. 510 , Composite varieties – Navjot, Arun, Kiran
- **Ragi:** Subhra, Varabi, Dibyasing, Nilachala, Godavari and Chilika

Assam

- **Boro rice:** Jyotiprasad, Bishnuprasad, Jaymoti, Kanaklata, Boro-1 and Boro-2.
- **Sunflower:** Jalamukhi.
- **Late varieties of:**
 - **Cauliflower:** Snow Ball K-1.
 - **Cabbage:** Drum Head.
 - **Knol khol:** Purple Vienna.

West Bengal

- **Boro rice:** IET - 1444, IET – 4786 (Satabdi), IET – 4094, Lalat, MTU - 1010, JGI –1798 etc.
- **Ground nut:** A.K. 12-24, J.L.-24, Girnar-1, Somnath, ICGS-11, ICGM-44, T.J.-3 etc.
- **Sunflower:** Morden, UC-68414 / 68415 and hybrid varieties like Jwalamukhi, Arun, B.S.H.-1, M.S.H.F.-17, Surya-52.

Himachal Pradesh

- **Raddish:** Pusa Himani.

Maharashtra

- **Groundnut:** Improved varieties like TG-26, TG-37, TAG-24.
- **Sugarcane (Suru):** Co-86032, Co-94012, Co-M-0265.
- **Water melon:** Sugar baby, HW-11, MSW-7.
- **Musk melon:** Hara madhu, Panjab sunhara.

Jammu

- **Late varieties of wheat:** Raj-3077, PBW-226, Raj 3765, WH-542, PBW-373 & PBW-435
- **Radish:** Japanese white and Minowase
- **Beans** Contender and Arka Komal
- **Potato** Kufri Jyoti and Kufri Badshah

Andhra Pradesh:

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

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

West Rajasthan:

- **Cumin:** RC 19 and GC 4

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.

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