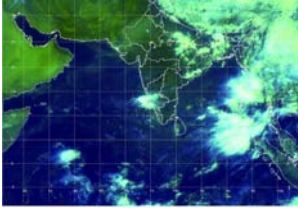




National Agromet Advisory Bulletin

Thursday, 28th May, 2009 (For the period 28th May to 1st June, 2009)

Satellite image of 6 UTC
on 29th May, 2009



Chief Synoptic Feature
(Based on 1430 hours IST
observations of 21st May
2009)

Analysis and interpretation of numerical weather prediction models indicate rain / thundershower activity at a few places over Indo-Gangetic plains during next 3-4 days. Maximum temperatures are likely to fall by 2-4°C over the region during this period.

**Advance of southwest
monsoon**



Till 25th May 2009, southwest monsoon has advanced over south Arabian Sea, entire Kerala & Tamil Nadu, southern parts of coastal Karnataka, most parts of Bay of Bengal, entire northeastern states, some parts of north coastal Orissa and most parts of West Bengal & Sikkim.

Salient Advisories

Advisories for Cyclone

- Heavy rainfall in association with high wind speed due to passage of cyclone AILA over West Bengal during this week damaged standing crops extensively in East Midnapore, Howrah, Hooghly, Burdwan, South 24 Parganas. Farmers in the affected areas are advised to drain out excess water from the field and also advised to wait for harvesting of matured crops like sesame, groundnut, black gram and green gram.

Advisories for sowing

- In Orissa farmers are advised to undertake land preparation for sowing of *kharif* crops like maize, cowpea, arhar, black gram, ragi, groundnut, sesame, rice bean, castor, pumpkin and sweet potato in rainfed uplands utilizing the monsoon showers received during last week
- In Karnataka, farmers in Bijapur district are advised to undertake sowing of *kharif* crops like green gram, red gram, bajra, sesamum, groundnut and jowar and farmers in Shimoga district are advised to undertake sowing of groundnut, maize, cotton and red gram by utilizing the first spell of monsoon showers during last week. Farmers in Raichur and Gulbarga are advised to arrange seeds and other inputs to undertake sowing of *kharif* crops like green gram, red gram, bajra, cowpea, cotton, groundnut and jowar as soon as monsoon arrives over these regions.
- Farmers in Assam, West Bengal and Sikkim are advised to continue land preparation and sowing of rice in the nursery utilizing the monsoon showers and start transplanting the seedlings at proper age.
- Farmers in Tamil Nadu are advised to undertake land preparation and complete nursery sowing of *kuruvai* rice in Cauvery deltaic areas by utilizing the monsoon showers at the earliest and start land preparation for transplanting of rice in the main field.
- Farmers in Kerala are advised to continue transplanting of *virippu* rice by utilizing monsoon showers. Farmers in Thiruvananthapuram and Kollam districts are advised to continue transplanting after draining out excess water from the fields due to heavy rainfall received during last week.
- Farmers in Andhra Pradesh and Uttarakhand are advised to start land preparation utilizing the rainfall during last week and arrange seeds and other inputs to undertake sowing of *kharif* crops as soon as monsoon arrives over these states.

Advisories for squall

- Protect the standing crops by providing mechanical support as thundersquall with hail is likely over some parts of Rajasthan, south Haryana, Delhi and Uttar Pradesh.

Advisories for irrigation

- As there was sufficient rainfall during last week in Arunachal Pradesh, West Bengal and Sikkim, farmers are advised to postpone irrigation to crops.
- As there was no significant rain in most of the remaining States of the country during last week and no significant rain is likely to occur for the next five days, farmers are advised to apply irrigation to the crops as and when required.

Advisories for pest and disease

- Weather conditions are favourable for the incidence of pests and diseases in the following States:
 - Fruit borer in tomato, brinjal and chilli and hopper in mango in Jammu.
 - Mealy bug in tea, aphids in cole crops and powdery mildew and early leaf fall in apple in Himachal Pradesh.
 - Canker in citrus, leaf spot in sapota and bacterial blight in pomegranate in Karnataka.
- Monitor the crops for the pest and disease incidences and undertake plant protection measures, as and when required.

Issued by

National Agrometeorological Advisory Service Centre,


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

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

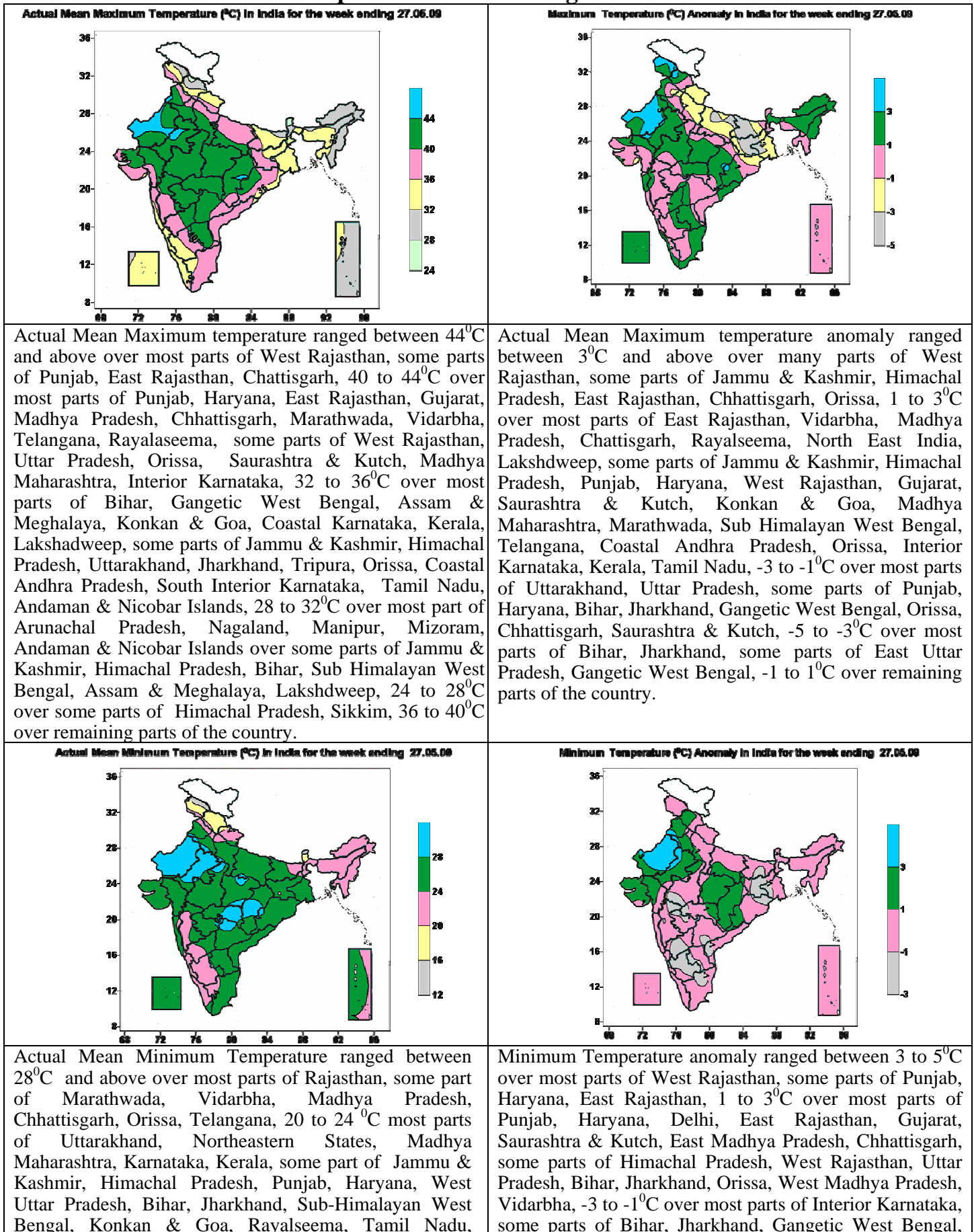
Comparison of weekly rainfall distribution (in % dep.) in different Met. Sub-divisions during past 5 weeks

Sub-division	Cumulative Rainfall for the period									
	29 th April		6 th May		13 th May		20 th May		27 th May	
	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.	Normal (mm)	% Dep.
A & N Islands	27	-86	56	-45	57	-84	90	-47	117.7	14
Arunachal Pradesh	67	-77	61	-61	52	-41	70	-59	61.2	-16
Assam and Meghalaya	55	-65	86	-9	84	-43	89	-83	88.6	-31
NMMT	41	-92	53	-27	50	-75	47	18	49.2	59
SH West Bengal & Sikkim	33	-90	53	-19	50	-11	58	-69	67.2	158
Gangetic West Bengal	15	-97	18	-28	23	62	18	137	21.0	507
Orissa	10	-97	11	-53	14	-54	14	-3	12.2	184
Jharkhand	6	-100	8	-14	12	-5	9	-1	9.8	91
Bihar	7	-100	10	-51	13	48	11	-49	12.5	54
East Uttar Pradesh	1	-100	3	48	4	12	4	8	3.4	228
West Uttar Pradesh	1	-100	2	-89	3	-74	3	-51	2.6	182
Uttarakhand	8	-100	10	-18	16	-73	16	-91	11.8	-59
Haryana, Chandigarh & Delhi	1	-100	2	-8	4	-97	3	-95	3.3	-31
Punjab	2	-100	2	-14	5	-99	4	-88	3.2	-79
Himachal Pradesh	13	-98	14	75	18	-30	16	-76	12.6	-64
J & K	23	-98	17	61	22	-52	16	-50	18.2	-51
West Rajasthan	1	-100	1	-65	2	-100	22	-100	3.1	-93
East Rajasthan	1	-100	1	-96	2	-83	22	-66	3.0	-90
West M. P.	**	-100	1	179	1	-79	21	154	1.8	-60
East M. P.	1	-100	1	-99	1	-100	12	-11	1.7	-70
Gujarat region	**	-100	**	-100	1	-100	1	-100	2.0	-100
Saurashtra & Kutch	**	-100	**	-100	1	-100	1	-100	0.5	-100
Konkan and Goa	1	-100	3	-100	1	-100	5	-99	14.0	-73
Madhya Maharashtra	3	-100	5	-100	3	-91	6	38	10.6	-72
Marathwada	1	-100	2	-100	2	-96	4	-4	8.0	-88
Vidarbha	1	-100	2	-100	2	-100	2	102	2.4	248
Chhattisgarh	3	-100	5	-84	5	-100	55	-46	3.5	-52
Coastal A. P.	6	-75	8	120	17	-94	14	-68	15.4	-14
Telangana	4	-31	4	-16	6	-95	8	6	7.3	35
Rayalseema	5	-68	7	-50	7	-66	16	-23	16.7	100
TamilNadu & Pondicherry	11	-67	12	-49	14	-41	20	15	14.0	-1
Coastal Karnataka	10	-21	17	-77	11	-16	30	3	52.8	-13
N. I. Karnataka	9	-67	9	-74	8	-88	14	81	18.0	11
S. I. Karnataka	15	-40	19	-46	16	-74	27	87	26.0	-18
Kerala	34	-59	39	-51	36	-29	67	-40	78.7	23
Lakshadweep	11	-81	18	-78	19	-61	36	65	61.1	28

The subdivisions like Rajasthan, Gujarat, Saurashtra & Kutch, Konkan & Goa, Chhattisgarh, received scanty / deficient rain in all the 5 weeks; Andaman & Nicobar Island, Arunachal Pradesh, Assam & Meghalaya, West Uttar Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Punjab, Himachal Pradesh, Jammu & Kashmir, East Madhya Pradesh, Madhya Maharashtra, Marathwada, Rayalaseema and Kerala received scanty / deficient rain in 4 out of last 5 weeks; Nagaland-Manipur-Mizoram-Tripura, Orissa, Bihar, West Madhya Pradesh, Vidarbha, Coastal Andhra Pradesh, Tamil Nadu & Pondicherry, Interior Karnataka, and Lakshdweep Islands received scanty / deficient rain in 3 out of last 5 weeks. Remaining States received normal / excess rain in 2 or more weeks during 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

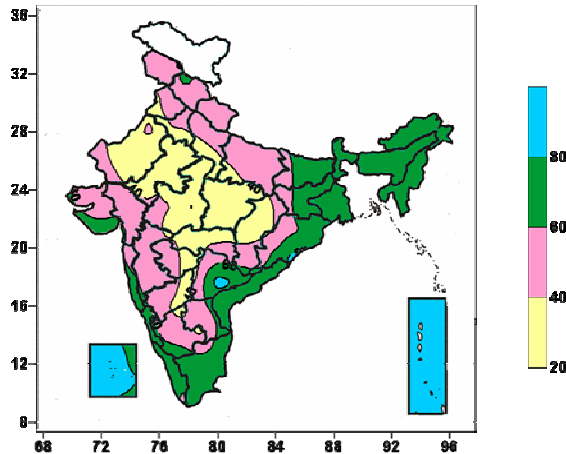
Contour maps for the week ending 27.05.09



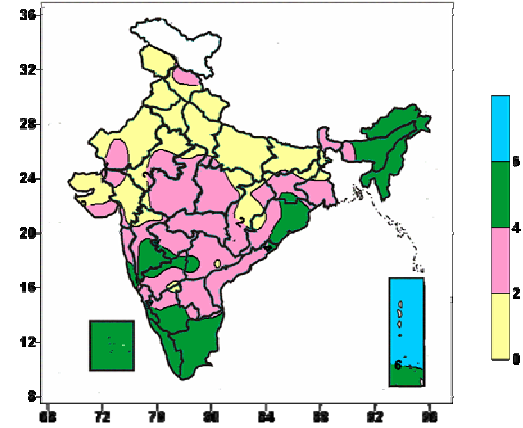
Andaman & Nicobar Islands 16 to 20°C over most parts of Himachal Pradesh, some parts of Jammu & Kashmir, Uttarakhand, Sikkim, 12 to 16°C over some parts of Jammu & Kashmir, Sikkim, 24 to 28°C over remaining parts of country.

Orissa, West Madhya Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, Coastal Karnataka, Andhra Pradesh, Tamil Nadu, -1 to 1°C over remaining parts of the Country.

Relative Humidity (%) over India for the week ending 27.05.09



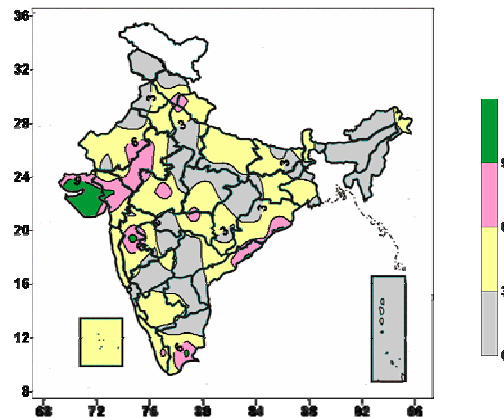
Cloud amount (okta) over India for the week ending 27.05.09



Relative humidity more than 80% over most parts of Lakshdweep, Andaman & Nicobar Islands, some parts of Orissa, Telengana, 60 to 80% over most parts of Bihar, Jharkhand, West Bengal, Sikkim, Northeast India, Orissa, South Saurashtra & Kutch, Konkan & Goa, Coastal Karnataka, Coastal Andhra Pradesh, Telengana, Kerala, Tamil Nadu, some parts of Himachal Pradesh, Chhattisgarh, Madhya Maharashtra, Rayalaseema, South Interior Karnataka, Lakshdweep Islands, 20 to 40% over most parts of Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, some parts of Punjab, Haryana, Uttar Pradesh, Marathwada, Interior Karnataka, 40 to 60 % over remaining parts of the country.

Cloud amount ranged from 6 to 8 okta over most parts of Andaman & Nicobar Islands, 4 to 6 okta over most parts of Northeast India, Coastal Orissa, South Konkan & Goa, South Madhya Maharashtra, South Interior Karnataka, Kerala, Tamil Nadu, Lakshdweep Islands, some parts of Andaman & Nicobar Island, Jharkhand, Marathwada, Telengana, Coastal Karnataka, North Interior Karnataka, 2 to 4 okta over most parts of Jharkhand, West Bengal, Sikkim, Konkan, Marathwada, Central India, North Interior Karnataka, Andhra Pradesh, some parts of Himachal Pradesh, Assam, Rajasthan, Orissa, Saurashtra & Kutch, Gujarat, Madhya Maharashtra, Coastal & South Interior Karnataka, 0 to 2 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 27.05.09

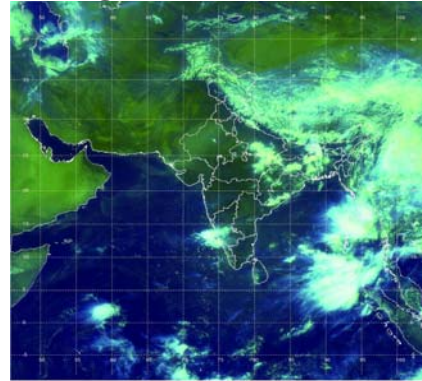


Wind speed ranged between 9 to 12 knots over most parts of Saurashtra & Kutch, some parts of Gujarat, Madhya Maharashtra, 6 to 9 knots over most parts of Gujarat, some parts of Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Rajasthan, Orissa, Madhya Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, Coastal Andhra Pradesh, Kerala, Tamil Nadu, 0 to 3 knots over most parts Jammu & Kashmir, Punjab, Northeast India, Chhattisgarh, North Interior Karnataka, Telengana, Rayalaseema, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Haryana, Rajasthan, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Orissa, Madhya Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, Coastal Andhra Pradesh, Coastal Karnataka, South Interior Karnataka, Tamil Nadu, 3 to 6 knots over remaining parts of the country.

**Chief Synoptic Feature (Based on 1430 hours
IST observations of 28th May, 2009)**

The current meteorological analysis and interpretation of numerical weather prediction models indicate rain/thundershower activity at a few places over Indo-Gangetic plains during next 3-4 days. Under this scenario maximum temperatures are likely to fall by 2-4⁰C over the region during this period.

Satellite image of 6 UTC on 29th May, 2009



Zone-wise Forecast (Forecast valid upto 1430 hours IST of 31st May, 2009)

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

- Isolated rain/thundershowers over Jammu & Kashmir, Himachal Pradesh and Uttarakhand.
- Isolated thunderstorm accompanied with squall/hail over north Rajasthan, south Haryana, Delhi and Uttar Pradesh.
- Mainly dry weather over the rest region.

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

- Isolated rain/thundershowers over the region during next 24 hours and increase thereafter.

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

- Rain/thundershowers at a few places over the region.

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

- Rain/thundershowers at many places over Andaman & Nicobar Islands.
- Rain/thundershowers at a few places over Kerala, Karnataka and Lakshadweep during next 48 hours and increase thereafter.
- Isolated rain/thundershowers over the rest region.

WEST INDIA [GOA, MAHARASHTRA (OTHER THAN VIDARBHA), GUJARAT REGION, SAURASHTRA & KUTCH]

- Isolated rain/thundershowers over south Konkan & Goa and south Madhya Maharashtra.
- Mainly dry weather over the rest region.

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

- Isolated rain/thundershowers over Chhattisgarh and Madhya Pradesh.
- Mainly dry weather over the rest region.

WARNING: (For next 48 hours)

- Isolated Heavy rainfall over Andaman & Nicobar Islands during next 48 hours.

Weather Outlook from 1430 IST of 31st May, 2009 to 1430 IST of 2nd June, 2009 (Based on numerical weather products):

- Increase in rainfall activity along west coast and northeastern States.
- A fresh western disturbance is likely to affect northwest India from 1st June onwards.

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), potato (planting / vegetative), cabbage, cauliflower and broccoli (head formation), pea (pod formation / early maturity / maturity), leafy vegetables like lettuce, methi, palak, dhania etc. (vegetative), apricot, peach, pear and plum (fruit development).
- As there was no significant rain in most of the districts during last week over the State and no significant rain is likely to occur for next five days, apply irrigation to the standing crops. Apply mulch in the orchards for conservation of moisture.
- In areas of High Hill Temperate Dry Zone where snow has melted from the apple orchards, basin forming operation should be carried out and required fertilizers should be added in the basin.
- As the weather is opening up & snow is almost gone in Hill Temperate Dry Zone, the sowing season is about to commence. Therefore, plough the fields and leave them as such for control of soil borne pests by sun exposure. It will mitigate the losses by soil borne pests at later stages.
- Complete transplanting of french bean, cucumber and bitter melon in sub-mountain low hills sub tropical zone. Prepare the nurseries for sowing of cabbage, cauliflower, broccoli, lettuce and other varieties.
- Provide mulch in the tree basins (apricot, peach, pear and plum) with straw or UV Sheet to reduce evaporation and moisture conservation.
- Harvest the ripened or half ripened strawberry fruits and store them at 15-20^o C as high temperature may hamper the fruit quality and juice contents.
- Plucking of tea leaves may be continued at 7-8 days interval in Mid Hills Sub Humid zone.
- To have green fodder in summer, it is optimum time for sowing of chari, bajra and maize in low hills of Mid Hills Sub Humid zone. Also sow maize for green cobs.
- This is optimum time for sowing of *ageeti* bhindi and french bean in the fields in Mid Hills Sub Humid zone. It is also advised for nursery sowing of khira, summer squash, bitter melon, tori, tomato, chilli, capsicum, brinjal and pepper in poly houses.
- Undertake sowing of summer flowers like china aster, glardia, rudbeckia, kochia, african marigold, french marigold, portulaca, tithonia, torinia and cleome etc. in Mid Hills Sub Humid zone.
- Details of crop varieties are mentioned in Annexure I.

Plant protection

- Weather is favourable for attack of peach leaf curl disease in peach and pear fruit plants where fruit bearing has started, spray Nuvan 1 ml + 3 g Blitox per litre of water.
- There is report of infestation of mealy bug in tea in Mid Hills Sub Humid zone and there is also chance of increase of infestation, for control spray Deltamethrin (Decis 2.8 EC) @ 1340 ml in 750 litres of water for one hectare.
- Aphids are appearing in the seed crop of cole crops in Mid Hills Sub Humid zone, for control spray rogor 1 ml per litre of water. For the control of powdery mildew in seed crop of peas spray sulfex @ 25 g per 10 litres of water or Karathene 5 ml per 10 litres of water.
- As there is chance of occurrence of powdery mildew, early leaf fall etc. in apple, apply Carbendazim @ 100 g or Hexaconazole @ 100 ml or Shield @ 600 ml in 200 liters of water.

Poultry

- Replace the poultry houses with fresh litter to avoid wetting. Give clean water to birds. For precautionary measures spray formaline 40% @ one litre in 9 litres of water outside or surrounding the farm.
- Also do not allow human and birds from outside. This will help in protection from bird flu.

Animal husbandry

- It is high time for vaccination of animals against FMD as animals are shifting from plain to higher reaches.

Fishery

- Temperature is good for breeding of the minor carp in Mid Hills Sub Humid zone. Monitor the physicochemical parameters and growth rate of cultivable fish in ponds. Supplement the feed @ 2% of the body weight stocked twice a day. The cloudy day or warmer part of day is to be avoided for stocking. Give feed 4% of their body weight up to 15 days and after that reduce to 3% of their body weight.

Uttarakhand

- **Major Standing Crops:** Sugarcane ratoon (early vegetative), cabbage, garlic, tomato (vegetative), onion (maturity), summer sunflower, moong, urd (vegetative/flowering), maize, French bean (early vegetative).
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as soon as monsoon arrives over the state.
- Farmers are advised to undertake sowing of rice, ragi and bhindi in Nainital district sowing of rice in the nursery in Pauri district.
- Farmers in Dehra Dun are advised to undertake planting of sugarcane.
- As there was no significant rainfall during last week in most of the districts in the State and no significant rainfall is likely to occur for next five days, apply irrigation to the crops.
- Farmers are advised to go for deep ploughing of their fields for increasing its soil physical condition, controlling insects, pests, diseases.
- Undertake weeding, intercultural operations and top dressing in ratoon sugarcane, early sown chaiti dhan, maize, French bean and vegetable crops.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- fruit borer in tomato, shimla mirchi etc., spray Prophenophos 50 EC @ 1 ml per litre of water.
- armyworm in sugarcane, if the damage is more than 10%, farmers are advised to submerge the field with 4 inch water, if still insects are seen, then spray Endosulphan 36 EC @ 1 ml per litre of water in the evening after 4 pm for effective control.

Punjab

- **Major Standing Crops:** Spring sugarcane (early vegetative/vegetative), vegetable crops like chilli, tomato, brinjal, bhindi and onion (vegetative), summer pulses (pod formation), sunflower (head formation), groundnut (seedling), cotton and berseem (early vegetative)
- As there was no significant rain during last few weeks and mainly dry weather is likely to prevail over the State for the next five days, apply irrigation to the crops.
- Start preparation of the land and nursery rising of rice during this week. Soak the seeds in 10 litres of water containing Emisan @ 5 g and Streptocycline @ 1g for 8 to 10 hours before sowing. Details of crop varieties are mentioned in Annexure I.
- Undertake weeding, intercultural operations in sugarcane. Irrigate the sugarcane crop if required as dry weather is expected in the coming days. Provide straw mulching in between the rows to conserve the soil moisture.
- Undertake sowing of fodder crops in mixture i.e. maize + cowpeas. For getting good growth of fodders, provide irrigation at regular interval.
- As dry weather is expected in coming days, irrigate the fruit plants at regular intervals. Avoid planting of deciduous fruit plants since temperature has increased and also irrigate newly planted orchards at 3-4 days interval.
- To protect the fruit tress from scorching effect, lower portion of the exposed trunks should be white washed with a thick lime solution (slaked lime 25 kg, copper sulphate 500 g, gum 500 g and water 100 litres) during these days.
- Make arrangements to protect the animals and poultry birds from summer stress. The sheds should be properly ventilated and comfort. The fodder crops may be sown to avoid scarcity of fodder in

coming months. Vaccinate the animals immediately against gal ghotu, black quarter, if not already done.

- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- black bug in sugarcane, spray 350 ml of Dusban or Lethal or Massban 20 EC in 400 liters of water per acre. Direct the spray into the leaf whorl.
- red spider mite on cucurbits. Apply rogor @200 ml per acre in 200 litre water.
- fruit borer in bhindi. Apply Sevin 500g or Hexavin or Sumicidin 100 ml per acre in 100-125 litres of water.
- Weather is suitable for multiplication of mealy bug in cotton. Farmers are advised to keep check on the mealy bug breeding sites.

Haryana

- **Major Standing Crops:** Spring sugarcane (early vegetative/vegetative), vegetable crops (vegetative), summer pulses (pod formation), sunflower (head formation), cotton and berseem (vegetative).
- As there was no significant rain during last few weeks and no significant rainfall is likely to occur over the State for the next five days, apply irrigation to the crops.
- Continue preparation of the land and nursery rising of rice during this week.
- Apply 45 kg urea or 80 kg CAN/acre to sugarcane. In ratoon crop, apply 65 kg urea/acre. Undertake hoeing and weeding and conserve soil moisture by application of mulches. Irrigate the crop at 10-15 days interval for getting better growth of the crop.
- Farmers are advised to prepare the field for cotton sowing and continue the sowing of *desi* cotton and american cotton. Details of crop varieties are mentioned in Annexure I.
- Undertake intercultural operations in tomato, onion and chilli.
- As temperature is high and humidity is low, the farmers are advised to whitewash the trunks of fruit tress, provide shelter to young tree and give frequent irrigation to protect fruit trees.
- Farmers are advised to feed the animals with 50 to 100 grams good quality mineral mixture. Vaccinate against sheep pox as per veterinarian advice.

Delhi

- **Major Standing crops:** Vegetables (vegetative / flowering / fruiting / harvesting), onion (maturity / harvesting), pigeon pea, beans, maize, cluster bean, ladies finger (sowing).
- As there was no significant rain over the State during last few weeks and no significant rain is likely to occur for next five days, apply irrigation to *lobia*, green gram and the vegetables like bhindi, brinjal, chilli etc.
- Present weather conditions with low temperature and rain are highly favourable for sowing of *kharif* maize (which otherwise is sown in the middle of June). Farmers are advised to procure quality seeds and start sowing.
- Arrange for seeds for sowing of fodder jowar.
- Under present temperature and humidity condition, farmers are advised for sowing of pigeon pea, beans, cluster bean and *kharif* ladies finger.
- In view of no rain forecasted till 31st, farmers are advised to harvest the matured onion crop without further delay. After harvest corms should be spread in an open room for drying. Cut or damaged corms should be sorted out and destroyed as they will invite disease to the lot.
- Present weather conditions are highly conducive for starting seed bed and field preparation for early cauliflower. Keeping in view of clear weather conditions, farmers are advised to carry out solarization of prepared nursery beds by covering with thin plastic sheets of 20-30 um thickness. This operation will help in reducing microbes responsible for disease development in seedlings. It is also advised to go for shed nets, which reduces 40-50 % of light and thereby helps in reducing soil borne disease and thus producing healthy seedlings.
- Because of the rains, farmers are advised to do intercultural operations in cotton crop.

- In the present weather conditions, farmers are advised to harvest spinach at regular interval because a delay will lead to growth of middle stalk which reduces the market value.
- High humidity and low temperature are highly favourable weather parameters for growth and development of insect pests and diseases in vegetable crops. Farmers are advised to start spraying with any neem based formulation.
- Previous weeks' rain and forecasted cloudy conditions are highly favourable for incidence of soil borne disease in nurseries. Farmers are advised to make proper drainage and start drenching of nurseries.
- Solarization of fallow fields should be taken up to kill insect pests and destruction of weed seeds beneath the soil. Deep ploughing / discing in fallow lands is advised after harvesting of *rabi* crop.

Uttar Pradesh

- **Major Standing crops:** Summer sugarcane and vegetables (vegetative), mango (fruit setting), *zaid* maize (cob development/maturity), urd, moong (pod formation).
- Undertake harvesting of matured crops like maize and vegetables.
- As there was no significant rain during last few weeks and no significant rainfall is likely for the next five days, apply irrigation to the crops.
- Continue field preparation and sowing of nursery of early and medium varieties of rice in irrigated areas.
- Undertake weeding, intercultural operations and application of fertilizers in the standing crops like sugarcane and mentha.
- Continue field preparation and planting of turmeric and ginger.
- Undertake sowing of dhaincha as green manure crop.
- Undertake digging of pits for plantation of new garden of fruit crops.
- To save the mango fruits from falling, spray the solution of Naphthalene acetic acid @15 ppm.
- **Plant Protection:** Weather conditions are favourable for mild incidences of fruit borer in tomato and brinjal, spray the solution of Carbaryl @ 2 g / litre of water. Monitor the crops for the pests and undertake plant protection measures to control the pests.

J & K

- **Major Standing Crops:** This is proper time for sowing of rice in the nursery and maize and transplanting of solanaceous vegetable crops.
- As there was no significant rain during last week and no significant rainfall is expected during next five days over the State, apply irrigation to the crops.
- Undertake sowing of rice in the nursery and maize in the main field in Jammu, Kathua, Kashmir, Rajouri, Udampur, Kathua, Doda and Srinagar divisions.
- Complete sowing of brinjal in the nursery in Jammu and Kathua regions. Start transplanting in the main field when the seedlings are ready.
- Details of varieties are given in Annexure I.
- Undertake intercultural operations, irrigation, application of fertilizers and pesticides in vegetable crops like brinjal, tomato, chilli, capsicum, bhindi, beans, cucurbits and pumpkin in Doda, Udampur, Kathua and Rajouri divisions.
- **Plant Protection:** Weather conditions are congenial for mild incidences of fruit fly in vegetables in Jammu division. Undertake plant protection measures.
- fruit borer in tomato, brinjal and bhindi crop in Jammu, Kathua and Kashmir, spray Endosulphan @ 0.07%, or carbaryl @0.1% or DD Chlorvos @0.03%.
- mango hopper in mango in Jammu, Kathua and Kashmir, spray the crop with Dimethoate 30 EC @ 0.03% in 500 litres of waters.
- downy mildew in onion in Srinagar region, spray metalaxyl @ 0.2% solution

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

Bihar

- **Major Standing Crops:** Sugarcane (vegetative/grand growth), summer moong, urd (maturity/harvest), sunflower, sesame (seed formation/development), summer maize (cob formation/maturity), summer vegetables (vegetative/flowering), fodder maize, jowar, lobia and sudan grass (vegetative).
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as monsoon is approaching fast over the state.
- As there was no significant rain during last few weeks in most of the districts and no significant rainfall is likely for next five days over the State, apply irrigation to the crops.
- Harvest the matured crops of maize and moong on a non rainy day.
- Undertake field preparation for sowing *kharif* rice in nursery. Select varieties such as Rajshri, DPT 52-04, Rajendra Monsuri & Pravat for kosi region.
- Undertake intercultural operations, application of fertilizers and pesticides in summer vegetables, like tomato, brinjal, cauliflower and cabbage and sugarcane on a non rainy day.
- Farmers are advised to prepare the nursery for flower cultivation in *kharif* season.

Jharkhand

- **Major Standing Crops:** Sugarcane (vegetative/grand growth), summer maize (cob formation/maturity), moong (maturity/harvest), summer vegetables (vegetative/flowering).
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as monsoon is approaching fast over the state.
- As there was no significant rain during last few weeks and no significant rainfall is likely over the State for the next five days, apply irrigation to the crops.
- Farmers are advised to undertake sowing of flower crops like rose, ixora, gulfrena, balsam, amaranthus, cosmos, torenia and zenea and bulbous flower plants like achemenus, glory lily, ukeres, jacobian lily, japhranthus lily and terin lily etc. Spread 3 inches layer of well rotten farm yard manure or plant waste materials in furrows to conserve soil moisture.
- Farmers are advised to undertake weeding, intercultural operations in sugarcane and vegetables on a non rainy day.
- Maintain continuous standing water of 5 – 7 cm depth in summer rice field.
- Site selection of new orchard and digging of pit for mango, jackfruit, litch), guav), papaya and banan) may be undertaken.
- Continue planting of *Colacasia* as the weather is favourable and it is the right time for the cultivation of *Colocasea* crop on upland.
- Undertake planting of turmeric and ginger.
- Rinderpest disease is common in goat during summer season. TPR vaccine @ 1 ml subcutaneous should be vaccinated except for those goats that are less than 3 months of age and are pregnant.

Orissa

- **Major Standing crops:** Sugarcane (early vegetative), vegetables (fruiting / harvesting), onion (vegetative) and summer rice (grain formation/maturity), summer sunflower (head formation), summer sesame (flowering / pod formation), pulses like cowpea (pod formation), summer green gram (pod formation/maturity), summer maize (cob formation) and summer groundnut (pod formation/maturity), jute (early vegetative).
- As no significant rainfall is likely for the next five days, apply irrigation to the crops. Sprinkler irrigation should be provided to the orchard crops and vegetables.
- Protect the fruits and trees through hail nets, as thunder squall accompanied with hail is likely during next 48 hours.
- Harvest the matured crops of summer rice, groundnut and green gram as the weather is favourable for undertaking harvesting.
- Digging of pits may be done before onset of monsoon to undertake planting of fruit trees on receipt of rain.

- This is the optimum time for sowing of green manuring crops like sesbania and sunhemp in the areas receiving convectional rain in the state.
- Farmers are advised to go for summer ploughing in places received soaking rainfall to reduce weed infestation, to destroy eggs and larvae of hibernated soil insects and to increase soil profile recharge.
- Undertake land preparation for sowing of *kharif* crops utilizing the rainfall received during last week. Some of the promising crops for rainfed uplands are maize, cowpea, arhar, blackgram, ragi, groundnut, sesame, rice bean, castor, pumpkin and sweet potato. Arrange good quality certified seeds. Details of crop varieties are mentioned in Annexure I.
- Harvest all the cultured fish from the pond and drain out water from it for complete drying. In perennial ponds where water draining is impossible, apply Mahua oil cake 1 t/acre to kill all the predatory and weed fishes. Clear the aquatic weeds from the pond and strengthen the embankments.
- **Plant Protection:** Weather conditions are favourable for mild incidence of –
- leaf spot in bhindi. Spray Blitox 50 @ 2.5gms/litre of water on a non rainy day.

West Bengal

- **Major Standing Crops:** Sugarcane (vegetative), sesame (early maturity / maturity / harvesting), green gram (pod formation / early maturity / maturity), groundnut (early maturity / maturity / harvesting) and jute (seedling / early vegetative / vegetative).
- Due to the cyclone AILA during last week, crop damage has been reported in East Midnapore, Howrah, Hooghly, Burdwan, South 24 Parganas and Kolkata.
- Drain out excess water standing in the field due to heavy rain and wait for drying up for harvesting of matured crops of sesame, groundnut, black gram and green gram.
- Postpone irrigation to the standing crops as there was heavy rain during last week and drain out excess water from the crop fields. Farmers are also advised to postpone intercultural operation.
- Drain out excess water and with the help of recent rainfall, undertake the sowing operation of *aus* rice. Apply 25 Kg SSP and 6.5 Kg MOP per bigha before sowing. Sow 11 to 12 kg of seeds in rows at a distance of 8 inch apart.
- Continue sowing of rice in the nursery for *kharif* rice.
- As there is chance of rain at isolated places during next 24 hours which is likely to increase thereafter, farmers are advised to apply plant protection measures on a non-rainy day.
- Under prevalent weather situation, there is chance of attack of jute apion in New Alluvial Zone. To control it spray Methayl Parathion 50% @ 1 ml / litre of water on a non rainy day.
- Fruit and shoot borer in brinjal is very severe in maximum places of New Alluvial Zone and there is possibility of increase of infestation. Apply Triazophos 40 EC @ 1.5 ml, Spinosad 45 EC @ 0.2 ml or Cartap Hydrochloride @ 0.75 g per litre of water alternatively on a non rainy day.
- Under current weather situation, attack of stem rot may be increased in pointed gourd in New Alluvial Zone. Apply Bavistin or Benlate (1 g per litre of water) on a non rainy day to control the disease.

Sikkim

- **Major standing crops:** (a) **High hills: Off-Season Vegetable crops** Transplantation/Vegetative; **Seed Potatoes:** Vegetative/Tuberization; (b) **Medium hills: Orange:** Nursery/Transplanting of Saplings (new crop) / Flowering/Early Fruiting (existing crop); (c) **Medium & Low Hills: Paddy:** Nursery Sowing & land preparation for transplanting; **Kharif Vegetables:** Transplanting / Vegetative; **Maize:** Vegetative; **Large Cardamom** Transplanting of saplings (new crop) / Secondary Flowering (existing crop).
- As there was sufficient rain during last week over the State, postpone irrigation to the crops.
- Continue nursery sowing and preparation of land for transplanting paddy in mid hills by utilizing the monsoon rains.
- Continue planting of orange sapling in May. Deshooting/debugging of newly planted to 1 – 4 years old trees upto a basal height of 40 – 50 cm should be done on monthly basis.

- Top dressing of ginger with organic manures and mulching to be done on a non rainy day. Proper drainage to be maintained and weeding to be done.
- The loose soil of kharif vegetable seedlings transplanted in mid upper terraces should be tightly packed and enough shade be provided during bright sunshine. Climbing plants in lower terrace must be given proper supporting structure. Weeding and topdressing with FYM/Compost should be done on monthly basis.
- All the disease/pest infected suckers in the nursery and all the aged/diseased/unproductive plants in the field of large cardamom crop may be removed/uprooted and destroyed (for replanting/gap filling operations).
- Trenches of width 30 cm and depth 45 cm with convenient length may be opened with 30 cm interspacing. Trenches to be filled by mixture of FYM and soil. Disease free high yielding grown up large cardamom shoots with emerging buds may be planted at 45 cm apart in the trenches within May/June. Base may be mulched with forest leaves. Bamboo/wooden support stakes may be provided for suckers. Overhead pandals may be erected immediately after planting of suckers
- Application of 1% Bordeaux mixture to the cardamom on a non rainy day will help to control the fungal diseases. Chirke and Foorkey infected cardamom plants may be destroyed by uprooting and buried in the pits at regular intervals.

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

Assam

- **Major Standing crops:** vegetables (vegetative / flowering / fruiting / harvesting), early *ahu* rice (tillering), direct seeded regular *ahu* rice (early vegetative / early tillering), transplanted regular *ahu* rice (transplanting), jute (germination / early vegetative / vegetative), maize (early vegetative / vegetative) and sugarcane (vegetative).
- Undertake earthing up in sugarcane on a non-rainy day. Apply Urea and MOP in the field @ 26 kg per bigha and 7.5 kg per bigha prior to earthing up.
- March planted ginger crop should also be top dressed on a non-rainy day with urea @ 2.5 Kg per bigha.
- Farmers are advised to collect quality seeds of medium duration *sali* rice varieties for preparation of nurseries. Plough the fallow land where *sali* rice will be raised. This will control the intensity of stem borer in the crop in due course.
- Undertake intercultural operation and fertilizer application in jute on a non-rainy day.
- Maintain 3-5 cm stagnant water in early *ahu* rice and direct seeded regular *ahu* rice field.
- This is proper time for planting of coconut in high land. 1 year old seedlings with 5-6 leaves should be used for planting. Time is also suitable for planting of banana, pineapple, papaya, arecanut etc.
- There is chance of attack of fruit fly, red pumpkin beetle and epilechna beetle in summer gourds. Spray endosulphon or malathion 50 EC @ 1 ml per litre of water on a non-rainy day in the field to control these insects.

Animals

- The cattle, goat and pigs should be vaccinated against foot and mouth disease as well as anthrax disease. They should be fed with anti worm drugs.

Fishery

- Prepare the fingerling rearing tanks and nurseries by cleaning them and applying agricultural lime @ 65-70 gm of basic per sq.m. for raising fingerlings. Apply cow dung @ 500 gm per sq m. at least 15 days ahead of releasing fingerlings into the tanks.

Arunachal Pradesh

- **Major Standing crops:** Maize, millet (vegetative), ginger, summer vegetables (vegetative), *jhum* rice (vegetative/early tillering), WRC rice (seedling/transplanting)
- As there was sufficient rainfall in most of the districts over the State during last week except in East Slang, Changlang and Lohit, farmers are advised to postpone irrigation to the crops. Apply irrigation in the above districts as there was no significant rainfall during last week.
- Continue transplanting of rice with monsoon showers. Transplanting may be done when seedlings are 20-25 days old at the spacing of 20 x10cm.
- Undertake weeding, intercultural operations in early sown crops on a non rainy day.
- Prophylactic measure for protection of seed ginger rhizome from fungal disease may be taken. Water logging in the field must also be avoided.

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

Andhra Pradesh

- **Major Standing Crops:** sugarcane (cane development), vegetable crops (fruiting/harvesting) and chilli (fruit development/picking).
- Arrange seeds and other inputs to undertake sowing of *kharif* crops as monsoon is approaching fast over the state.
- Undertake sowing of sunflower in Anantapur area on receipt of monsoon rains.
- Foot and mouth disease in cattle, sheep pox in sheep and ranikhet disease in poultry may occur under prevailing weather. To prevent the diseases, vaccinate the animals and poultry.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- early shoot borer in sugarcane; release parasitic complex *Trichogramma chelonis* @ 20,000 per acre at 30 days after transplantation, 4 times at 10 days interval.
- yellow and red spider mites in sugarcane. To control, spray Wettable Sulphur @ 3 g per litre of water to cover the under surface of the leaves.
- thrips and mites in chilli in Guntur, Krishna, Prakasam and West Godhavari districts; spray Acephate @ 1.5 g per litre of water for thrips and Phosalone @ 2 ml per litre of water to control the pests.

Karnataka

- **Major Standing Crops:** Annual sugarcane (cane development/maturity), green gram, black gram and cowpea (pod maturity/harvesting), groundnut (pod development/ maturity).
- Undertake sowing of *kharif* crops like green gram, red gram, bajra, sesamum, groundnut and jowar in Bijapur, groundnut, maize, cotton and red gram in Shimoga as there was sufficient rainfall during last week over the state.
- Undertake sowing of rice in the nursery in Bidar.
- Undertake sowing/planting of rice, sugarcane and pulses in Mysore, Mandya and Chamraj Nagar districts.
- Undertake planting of ginger and turmeric and dry sowing of rice in Uttar Kannada.
- Arrange seeds and other inputs to undertake sowing of *kharif* crops like green gram, red gram, bajra, cowpea, cotton, groundnut and jowar in Raichur and Gulbarga as soon as monsoon arrives over the region.
- Continue planting of seed-nuts for coconut and arecanut in nursery in Sirsi region.
- Foot and mouth disease in cattle may occur under prevailing weather. To prevent the disease, vaccinate the animals.
- **Plant Protection:** Weather conditions are favourable for mild incidences of –
- bacterial blight in pomegranate and citrus canker in Bijapur and leaf spot in sapota in Dharwad; Undertake plant protection measures may be continued after spells of rain over Coastal and South Interior Karnataka and on a non rainy day in North Interior Karnataka.

Kerala

- **Major Standing Crops:** vegetable (vegetative / flowering / fruiting) and plantation crops (coconut, arecanut, pepper and cashew). Summer crops (maturity/harvesting). This is proper time for sowing of rice and vegetable crops in the nursery.
- As there was sufficient rain during last week over the State, postpone irrigation to plantation crops.
- Undertake nursery sowing of *virippu* rice. Also plant tubers of Dioscoria, ginger, turmeric and tapioca in Thrissur, Ernakulam and Palakkad.
- Sowing/transplanting of rice and vegetables may be continued in Kannur, Kasargod, Malappuram and Kozhikode districts.
- Undertake sowing of vegetable crops for transplanting during monsoon.
- Continue planting of pepper and cardamom in Wayanad.
- Undertake wet sowing of rice in *kari* soils in Kottayam.
- Avoid sowing of *virippu* rice as heavy rainfall received during last week in Kollam and Thiruvananthapuram districts; planting of coconut for seed nuts may be continued with proper care to prevent the seed bed from soil erosion. Prevent banana from strong winds by providing mechanical support.
- Intercultural operations and mulching may be continued in plantation crops. Conserve moisture by preventing evaporation due to high temperature.

Tamilnadu

- **Major Standing Crops:** Sugarcane (cane maturity) and cotton (picking stage). This is proper time for raising nursery for *kuruvi* rice and vegetable crops.
- As there was no significant rain during last week and no significant rainfall is expected during next five days over the State, apply irrigation to the crops.
- Complete nursery sowing of *kuruvai* rice in Cauvery deltaic areas at the earliest. Start land preparation for transplanting of rice in the man field.
- Undertake land preparation for sowing of crops like cotton in Thirunelveli, Thooththukkudi and Virudhunagar districts.
- Details of varieties are given in Annexure I.
- Undertake earthing up operations in sugarcane in Thirunelveli district
- Undertake sowing of vegetable crops in nursery for transplanting during monsoon in Kanyakumari district.

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

- leaf spot in rice in Coimbatore, leaf folder in rice in Erode and leaf spot in banana in Kanyakumari districts; undertake plant protection measures to control the pests.
- boll worm, mealy bug and stem weevil in irrigated cotton, thrips in chilli and aphids in maize in Thirunelveli, Thooththukkudi and Virudhunagar districts; undertake plant protection measures to control the pests.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT, RAJASTHAN]

Maharashtra

- **Major Standing Crops:** Summer rice (grain maturity / harvesting in Konkan, grain maturity in East Vidarbha), summer groundnut (pod maturity / harvesting), summer maize (cob maturity / harvesting), summer sunflower (seed maturity / harvesting) and summer bajra (grain maturity / harvesting in Pune, Nashik & Aurangabad divisions).
- As there was no significant rain in most of the districts of the State during last week and no significant rainfall is likely to occur during next five days, apply irrigation to the standing crops.
- As dry weather is prevailing, continue harvesting of already matured summer crops & complete the harvesting as early as possible.

- Land preparation may be done for new plantation of fruit crops like mango, cashew, coconut, arecanut, etc. in south konkan. Dig the pit for plantation of mango at the spacing of 10 x 10 m or 5 x 5 m and for cashew at 7 x 7 m. Pit size should be 1 x 1 x 1 m for mango and 0.6 x 0.6 x 0.6 m for cashew.
- For preparation of seedlings of onion, tomato, brinjal and chilli prepare raised beds of suitable size. Sowing of improved varieties may be done with the help of pre-monsoon showers.
- Sowing of *kharif* (drill) rice should be done in last week of May in Sub Montane zone. Before sowing treat rice seeds with 3% Brine solution for 5 – 10 minutes and apply fungicide Thirum @ 3 – 5 g per kg of seeds. Prepare a nursery bed for rice seedling.
- Complete preparatory tillage with the help of pre-monsoon showers. Planning for *kharif* season i.e. selection of crops & varieties, arrangement of seeds and fertilizers should be done before the onset of monsoon.

Plant protection

- There is possibility of infestation of powdery mildew on *Bhindi* and *Guar*. For avoiding damage spray Sulphur @ 2 g in 1 liter water. Next spraying should be within 10 to 12 days.
- There is chance of infestation of shoot borer in sugarcane. For the control spray Endosulfan 35 EC @ 15 ml in 10 liters of water.
- **Fishery**
- Feed management of brackish water shrimps may be followed. Water level in the pond may be maintained at 1.5 m.

Gujarat

- Major Standing Crops: Sugarcane (vegetative), vegetables (vegetative / flowering / fruiting / harvesting), groundnut (seed formation / seed maturity), summer rice (grain maturity / harvesting), pearl millet (grain formation / maturity) and green gram, black gram, cow pea, cluster bean (pod formation / maturity).
- 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 the standing crops.
- Undertake harvesting of matured crops of rice, groundnut, green gram, pearl millet etc. as prevailing dry condition is favourable for harvesting.
- As there is no possibility of rain, undertake intercultural operation to keep the fields weed free.
- As dry condition is prevailing, farmers are advised to undertake intercultural operation and apply nitrogen fertilizer (87.5 kg nitrogen / ha) followed by earthing up in sugarcane. Provide straw mulching to conserve soil moisture.
- There is also chance of infestation of fruit fly in mango. To control fruit fly, destroy affected fruits, arrange Methyl usanol trap each for 10-12 trees, spray Fenthion @ 10 ml + 150 g Jaggery / 10 liter of water with big nozal on stem.
- As there is chance of infestation of thrips in chilli in North Sourashtra region, to control thrips and associated leaf curling, spray trisophos @ 15 ml / 10 litres of water.
- Harvest the matured fruits of vegetable crops in the morning hours.
- Provide mulching with wheat or mustard straw around the mango tree to reduce evaporation and conserve soil moisture.
- Undertake deep ploughing to prepare the land for *kharif* sowing. This will help for natural control of soil borne pathogens and pest.

Animal Husbandry

- Make arrangements for shade with proper ventilation to protect the animals from sunlight and temperature.

Poultry

- Put curtains on west direction in poultry shed and spray water on them during noon hours to avoid heat stress.

Rajasthan

- **Major Standing Crops:** vegetable crops (flowering / fruiting).
- As there was no significant rain during last few weeks and no significant rainfall is expected during next five days over the State, apply irrigation to the crops.
- Protect the standing crops by providing mechanical support/hail net as thundersquall with hail is likely over north Rajasthan.
- Undertake intercultural operations bajra, jowar, sweet gourd, cucumber, pumpkin, bitter gourd, tinda, tomato and ladies finger in Pali, Barmer, Churu, Jalore and Jodhpur.
- Undertake field preparation for sowing of cotton in Bhiwara, Chittorgarh, Sirohi and Udaipur.
- Undertake sowing of groundnut in Bikaner and Jaisalmer, cotton in Sriganganagar and Hanumangarh and transplanting of chilli in Bhiwara, Chittorgarh, Sirohi and Udaipur.
- Undertake sowing of chili. Select Varieties are Pusa Jwala, N.P.46-A, Pant C-2, Pusa Sadabahar, G-3, G-5 and RCH-1. Varieties for Shimla Mirch are yellow wonder, California wonder, Bulnose and Arka Mohini.
- Details of varieties are given in Annexure I.

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

- mango hopper in mango tree at flowering stage in Ajmer, Dausa, Jaipur and Tonk districts, spray Melathion 50 EC @ 1.0 ml or Endosulfan 35 EC @ 1.5 ml per litre water.
- powdery mildew in mango and vegetables in Banswara, spray Karathane @ 1 ml or Sulphur Fungicide @ 2.5 g / litre of water.
- termite in onion in Ajmer, Dausa, Jaipur and Tonk districts; spray Endosulfan 35 EC or Chlorpyrifos 25 EC @ 4 litre per hectare.
- stem borer in okra in Udaipur, Bhilwara and Chittorgarh districts; spray Endosulfan 35 EC @ 1.5 ml / lit of water.
- mites in cucurbit, brinjal, tomato in Sikar, Fatehpur and Jhunjunu, spray formothyon 25 EC or Methyldematon 25 EC @ 1000 ml/ha or Dicopal 18.5 EC @ 1250 ml /ha.
- collar rot in tomato, okra, chilli and vegetable guar in Ajmer, Dausa, Tonk and Jaipur. Broadcast Blitox-50@8 kg/ha near roots and immediately provide light irrigation.
- bark eating caterpillar in mango, ber & aonla in Ajmer, Dausa, Tonk and Jaipur spray Endosulfan @ 1.5 ml per litre water.
- fruitborer in tomato, brinjal and bhindi in Banswara, spray 2 ml Endosulphan per litre of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

Madhya Pradesh

- **Major Standing Crops:** Sugarcane (cane development), cotton (boll development/maturity) and vegetable crops (vegetative).
- As there was no significant rain during last few weeks and no significant rainfall is likely to occur for the next five days over the State, apply irrigation to the crops.
- Undertake planting of chilli in Indore, Mandasaur, Ratlam, Neemuch, Shajapur, Ujjain and Rajgarh districts.
- Undertake planting of sugarcane in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.
- Undertake sowing of ginger in Jhabua and Dhar.
- Details of varieties are given in Annexure I.
- Undertake intercultural operations in early sown in maize, sorghum, jowar, moong, urad, sunflower and vegetables like ladies finger, cow-pea, tomato, brinjal, chilli and cucurbitaceous crops in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts. for raising summer season crops.
- **Animal Husbandry:** Provide proper ventilation and clean water to cattle and arrange for vaccination to save them from infectious diseases in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts.

- To control ticks and mite in cattle, sheep and goat, apply butox / deltox @ 4 ml / litre of water on the body in Jabua and Dhar districts.
- foot and mouth disease in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts, use Potassium Permanganate @ 5ml per litre of water for infected animals.

Plant Protection: Weather conditions are favourable for-

- sucking pest in okra in Jabua and Dhar; spray Mithyl Dimetron 25 EC @ 1 ml / litre of water.
- mealy bug in mango in Khargone, Khandwa and Harda, spray 25 gm Esiphet and 30 ml Prophenophos.
- sucking pests in moong and urad in Bhopal, Sagar, Damoh, Vidisha, Raisen, Sehore, spray Ethophenprox 10 EC in 1 Litre or Dimethoyte 30 EC 750 ml per hectre in 600 to 700 Litre of water
- caterpillar in pomegranate in Sehore, Bhopal, Sagar, Vidisha, Damoh, Raisen districts; spray Melathion 50 EC @ 1 ml / lit water;
- powdery mildew in cucurbitaceous crops in Jabalpur, Katni, Panna, Rewa, Satna, Seoni and Sidhi districts, Spray of karothane in open weather conditions.

Chattisgarh

- **Major Standing Crops:** Sugarcane (vegetative), vegetables (flowering / fruiting / harvesting), summer rice (grain maturity / harvesting), groundnut, sunflower and sesame (early maturity / maturity / harvesting), and green gram (pod formation / early maturity / maturity).
- As there was no significant rain during last few weeks over the State and no significant rain is likely to occur for next five days, farmers are advised to apply irrigation to the crops. Farmers, who have drip irrigation system, are also advised to regulate the discharge rate of the system for proper water management.
- Wherever irrigation facilities are available, farmers are advised to irrigate the fields so that the nursery sowing of rice can be done after first week of June.
- As the *kharif* season is approaching, farmers are advised to ensure the arrangement of inputs like seed fertilizers etc., before the onset of monsoon. Farmers are also advised to use certified seeds of improved / high yielding varieties for sowing of *kharif* crops for higher production.
- After harvesting of rice, sunflower, groundnut etc., summer ploughing is advised wherever sufficient moisture is available in the fields. It will help in effective pest / weed management for the coming *kharif* crops due to soil solarisation.
- Intercultural operation, weeding, earthing up, application of nitrogen and irrigation in summer maize and sugarcane is advised at knee height stage of the crops.

Annexure I

Crop varieties

Himachal Pradesh

- **Ageti bhindi:** P-8, Prabhini kranti, Arka anamika.
- **French bean:** Contender.
- **Brinjal:** Arka Nidhi, PPC.
- **Capicum:** California Wonder.
- **Peper:** Surjmukhi.

Uttarakhand

- **Chiatee Dhan:** VL-Dhan-206, Majdera-7 etc.
- **Bhindi:** VL Bhindi-1

Punjab

- **Rice:** PAU 201, PR 120, PR 118, PR 116, PR 114, PR 113, PR 111, PR 115 etc.

Haryana

- **Cotton:** desi cotton varieties: HD 107, HD 123 and AAH 1, american cotton with varieties: HS6 & H1117.
- **Rice:** PAU 201, PR 120, PR 118, PR 116, PR 114, PR 113, PR 111, PR 115 etc.

Delhi

- **Fodder jowar:** Pusa Chari-9, Pusa Chari-6.
- **Cauliflower:** Pusa Megha and Pusa Kranti Sankar.
- **Beans:** Pusa Beans -3.
- **Cluster bean:** Pusa Sadabahar and Pusa Navbahar.
- **Pigeon pea:** Pusa 2001, Pusa 991 and Pusa 992, Paras manak, UPAS 120

Uttar Pradesh

- **Rice :** Aswani, Manhar, Saket-4, Govind, Narendra-118, Narendra-97

J & K

- **Maize:** GS-2, Vijay, Mansar, C-5 and C-8.

Jharkhand

- **Ginger:** Reo-de-genero, Nadia, China, Samastipur, Suprava, Suruchi
- **Turmeric:** Suravi, Rajendar, Roma

Orissa

- **Jute:** JRC-212, JRC-321, JRC-9442, JRC-4444.KC-1, For up land: JRD-632, JRD-878, JRD-5204
- **Rice:** Early varieties - Parijat, Khandagiri, Vandana, Jogesh, Siddant, Medium varieties - MTU-1001, MTU1010, Pratikshya, Tapaswini, Konark, Surendra, Lalata, Kharavela, Naveen, Surendra, Late varieties-CR-1009, CR-1018, Ranidhan, Swarna, RGL-2837, Ketakijoha, Moti, Padmini, Kanchana, Mahanadi, Jagabandhu.

Assam

- **Transplanted *ahu* rice:** Lachit, Chilarai, Govind, IR-50, Rachi, Jaya etc.
- ***Sali* rice:** Mahsuri, Ranjit, Bahadur, Vasundhara, Kushal, Piyoli, Moniram, Rangali, Bhogali, Ketkijaha etc.

Tamilnadu

- **Cotton:** MCU 5, SVPR 2 and LRA 5166
- **Black gram:** Vamban-4, and Vamban-5
- **Green gram:** Co-7, Vamban-2
- **Bajra:** WCC 75, Co 7

Rajasthan

- **Groundnut:** TG-37 A, TBG-39, HNG-10, PG-1, GG-20 and Chandra.
- **Narma Cotton:** RS 2013, RS 810, RS 875 and MRT 9.
- **Chilli:** Pusa Jwala, N.P.46-A, PantC-2, Pusa Sadabahar, G-3, G-5 and RCH-1.
- **Shimla Mirch:** Yellow wonder, California wonder, Bulnose and Arka Mohini.

Madhya Pradesh

- **Sugarcane:** Co Jawahar-86141, Co Jawahar-86572, Co Jawahar-86600, Co 86032.