

National Agromet Advisory Service Bulletin

Tuesday 16th September 2014

(For the period 16th to 19th September 2014)



Issued by

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



Monsoon Watch

- Southwest monsoon was active over Coastal Karnataka and Kerala.

Realised Weather on 16th September 2014

- **Rainfall:** (From 0830 to 1730 hours IST of yesterday): Rain/thundershowers occurred at isolated places over East Uttar Pradesh, Bihar, West Bengal & Sikkim, Odisha, northeastern states, Chhattisgarh, Goa, North Interior Karnataka, Telangana, Coastal Andhra Pradesh, Tamilnadu and Andaman & Nicobar Islands. Weather remained mainly dry / dry over rest parts of the country. The amounts of rainfall (1 cm or more) recorded at 1730 hours IST of yesterday were: Ballia 7; Gangtok, Bhubaneshwar, Jharsuguda & Jagdalpur 2 each and Nizamabad, Tuni, Shillong, Amraoti & Bhawanipatna 1 each.
- **Temperature:** Yesterday, the maximum temperatures were above normal by 2-4°C at a few places over northeastern states, Gangetic West Bengal, Odisha & Tamilnadu and at isolated places over Chhattisgarh, Jharkhand, Coastal Andhra Pradesh, Coastal Karnataka & Kerala. They were below normal by 2-4° C at a few places over Jammu & Kashmir & Madhya Pradesh; at isolated places over north Rajasthan, East Uttar Pradesh, rest Odisha, Sub-Himalaya West Bengal & Sikkim and Rayalaseema and near normal over rest parts of the country.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 19th September, 2014)

- Rain/thundershowers would occur at most places over Andaman & Nicobar Islands during the period.
- Rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim, Odisha, Coastal Andhra Pradesh, Coastal Karnataka and Kerala during the period.
- Rain/thundershowers would occur at many places over Jharkhand and Rayalaseema during next 48 hours and at a few places thereafter.
- Rain/thundershowers would occur at a few places over Arunachal Pradesh, Assam & Meghalaya during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at a few places over Nagaland, Manipur, Mizoram, Tripura, Gangetic West Bengal, Konkan & Goa, Telangana, Interior Karnataka, Tamil Nadu & Puducherry and Lakshadweep during the period.
- Rain/thundershowers would occur at a few places over Bihar during next 24 hours and over East Uttar Pradesh and Chhattisgarh during next 48 hours and at isolated places thereafter.
- Rain/thundershowers would occur at isolated places over Madhya Pradesh, Madhya Maharashtra, Marathwada and Vidarbha during the period.
- Rain/thundershowers would occur at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, East Rajasthan and Saurashtra & Kutch during next 24 hours and over West Uttar Pradesh and Gujarat region during next 48 hours and mainly dry thereafter.
- Mainly dry weather would prevail over Jammu & Kashmir and West Rajasthan during the period.

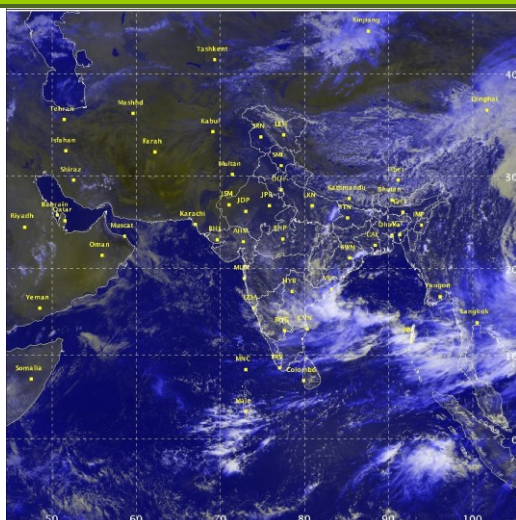
Weather Warning during next 3 days

- **16 September (Day 1):** Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Odisha, coastal Andhra Pradesh and Andaman & Nicobar Islands.
- **17 September (Day 2):** Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Odisha, Coastal Andhra Pradesh and Andaman & Nicobar Islands.
- **18 September (Day 3):** Heavy rainfall would occur at isolated places over Odisha, Jharkhand, Sub-Himalayan West Bengal & Sikkim.

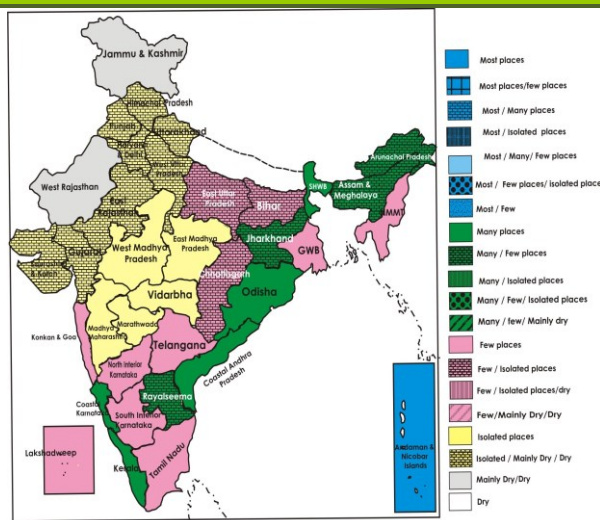
Weather Outlook for subsequent 4 days from 19th to 23rd September 2014

- Increase in rainfall activity over northeastern states.
- Rain/thundershowers would occur at many places over West Bengal & Sikkim, Odisha and peninsular India.
- Rain/thundershowers would occur at isolated places over rest part of the country outside parts of plains of northwest India where weather may be mainly dry.

Satellite image dated, 19.09.2014, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 19th September)



Salient Advisories

- In **Jammu & Kashmir**, arrange for extensive drainage facilities to remove excess water from fields wherever feasible and then apply top dressing of nitrogen @ 3.25 kg urea per kanal in rice and in maize. Monitor maize crop for the incidence of stalk rot. Apply Blitox @ 2g/ litre of water for controlling stalk rot. Apply urea to rice seedlings in the nurseries after receding of excess water.
- In Vindhya Plateau Zone and Jhabua Hill Zone of **Madhya Pradesh**, if *Kharif* crops are damaged due to heavy rain, farmers may undertake nursery sowing of onion, garlic and planting of short duration varieties of potato. The sowing may be done between 15th September to 15th October. Sowing of green gram (K-851, Jawahar Mung -721, Pant Mung- 4, T.J. M 3), black gram (Pant U-30, R.B.U.-38, Jawahar Urd-3, J. U-37) by ridge furrow method is recommended.
- In **Punjab**, in view of deficit rainfall, adopt moisture conservation practices like hoeing, weeding, mulching in crops like sugarcane, maize, cotton to reduce the evapotranspiration losses and to conserve moisture for *rabi* crops. De-tasselling in maize is advised to reduce transpiration losses.
- In **Madhya Maharashtra**, in fallow and already harvested fields of green gram and black gram, undertake sowing of *rabi* jowar and safflower utilizing the available soil moisture.

Detailed Zonewise Agromet Advisories

SOUTH INDIA [TAMIL NADU, TELANGANA, ANDHRA PRADESH, KARNATAKA, KERALA]



Rice



Sugarcane



Okra



Soybean

- **Realised Weather:** Rain/thundershowers occurred at isolated places over North Interior Karnataka, Telangana, Coastal Andhra Pradesh and Tamilnadu. Weather remained mainly dry / dry over rest parts of the region. Maximum temperatures were above normal by 2-4°C at a few places over Tamilnadu and at isolated places over Coastal Andhra Pradesh, Coastal Karnataka & Kerala. They were below normal by 2-4° C at a few places over at isolated places over Rayalaseema and near normal over rest parts of the region.

- **Weather Forecast:** Rain/thundershowers would occur at many places over Coastal Andhra Pradesh, Coastal Karnataka and Kerala during the period. Rain/thundershowers would occur at many places over Rayalaseema during next 48 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Telangana, Interior Karnataka, Tamil Nadu & Puducherry during the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Coastal Andhra Pradesh on 16th and 17th September.
- **Weather Outlook:** Rain/thundershowers would occur at many places over peninsular India.
- **Advisories:**
 - **Karnataka:**
 - As rain/thundershowers would occur at many places over Coastal Karnataka during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
 - Continue sowing of sunflower and fodder crops in some areas and undertake land preparation for *rabi* sowing utilizing the realized rainfall in the North Dry Zone of Karnataka.
 - In Eastern Dry Zone of Karnataka, continue sowing of ragi, cow-pea and field-bean and provide support to newly planted horticultural crops to prevent the crops from lodging.
 - Undertake land preparation for *rabi* sowing utilizing the realized rainfall. Nipping of growing shoot tip of cotton is advised in 90 days old crop to check excess vegetative growth and spray 2% DAP along with 1% MgSO₄ and Planofix (0.25 ml/lit of water) on a non rainy day to manage leaf reddening and square dropping in the North Transition Zone of Karnataka.
 - Undertake harvesting of black gram in the North East Transition and North East Dry Zone of Karnataka in clear weather.
 - Undertake normal sowings of short duration finger millets in the Central Dry Zone of Karnataka.
 - Due to prevailing humid weather, heliothis insect in jowar and sterility mosaic in pigeon pea was noticed in some areas of North East Transition Zone of Karnataka . Dusting of Malathion @ 8 kg per acre is advised on a non rainy day to manage heliothis. For control of sterility mosaic, rough out the affected plants followed by spraying of Docofol @ 2.5 ml/litre of water on a non rainy day.
 - **Kerala:**
 - As rain/thundershowers would occur at many places over Kerala during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
 - Undertake nursery preparation for second crop of rice in the Southern Zone of Kerala.
 - Present high humid weather condition is congenial for incidence of pink disease in rubber plant in the Problem Area Zone of Kerala. Brush the forking region with Bordeaux paste or Thiride mixed with rubberkote @ 10g/kg as a prophylactic measure on a non rainy day. Also to control foot rot in pepper , drench the basal portion of pepper vines with 2% pseudomonas solution followed by application of trichoderma enriched cowdung+ neem cake @1kg /vine to manage foot rot on a non rainy day.
 - High humidity is congenial for incidence of sucking insects in vegetables in the Central Zone of Kerala and it is likely to increase. Apply 2% neem oil-garlic-soap emulsion for control of aphids on a non rainy day.
 - Serpentine leaf miner in cowpea is noticed in the Southern Zone of Kerala due to humid weather. Spraying of neem oil – soap emulsion is used to manage the incidence.
 - **Telangana and Andhra Pradesh:**
 - As rain/thundershowers would occur at many places over Coastal Andhra Pradesh during the period along with heavy rainfall at isolated places on 16th &17th September and rain/thundershowers would occur at many places over Rayalaseema on 16th &17th September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops in Coastal Andhra Pradesh to remove excess water.
 - In Scarce Rainfall Zone of Rayalaseema, continue sowing of contingency crops like sorghum, bajra, foxtail millet, cowpea, sunflower, green gram, field bean, castor and horse gram utilizing the realised rainfall. Lay out dead furrows across the slope for every 3.6mts / 12 rows in groundnut fields for moisture conservation.
 - Prevailing moisture conditions are congenial for the incidence of stalk rot in maize, spodotera, helicoverpa etc,in maize and leaf sport diseases in cotton in the Southern Telangana Zone of Andhra Pradesh. Monitor the crops and take up timely control measures.
 - Continue direct seeding of chilli and gap filling in direct seeded rice. Apply biogyme, micronutrients and mineral mixture in cotton to recover from slow growth in the Krishna Godavari Zone of Andhra Pradesh after current spells of rain.
 - Due to cloudy and humid conditions, incidence of thrips and bacterial blight was observed in chilli and is likely to continue in the Scarce Rainfall Zone of Rayalaseema. Spray Pipronil @2ml/litre or Acetamprid @0.2g/litre to manage thrips incidence and copper oxy chloride @30g + Streptocyclin @1g in 10 litres of water after current spells of rain to manage bacterial blight.
 - **Tamil Nadu:**
 - Continue sowing and transplanting of *samba* rice and nursery sowing of Thaladi rice in the Cauvery Delta Zone of Tamil Nadu.

- In the Western Zone of Tamil Nadu, undertake harvesting of groundnuts in clear weather and continue spraying NAA @ 40 PPM in 60 - 90 days after sowing. (40 mg of NAA dissolved in 1 liter of water will give the concentration of 40 PPM) to avoid flower shedding in cotton.
- Arrange farm inputs for dry land cultivation in the North East Monsoon season in the South Zone of Tamil Nadu. Select drought resistant varieties of cotton, maize, jowar, green gram, sunflower and pearl millet.
- Rising temperature is congenial for spiraling whitefly infestation in tapioca crops in the North Western Zone of Tamil Nadu. Spraying of Triazophos @1 ml/litre of water along with sticking agent (1 ml) on a non rainy day is advised to manage whitefly.
- **Animal Husbandry**
- Prevailing weather conditions are congenial for Anthrax and Enterotoxaemia in livestock in the Scarce Rainfall Zone of Andhra Pradesh. Vaccinate the animals to prevent the diseases.
- Vaccinate livestock against Foot and Mouth disease (FMD vaccination), Black Quarter disease (BC vaccination) and Haemorrhagic Septicaemia. Vaccinate sheep and goats with (ET vaccine) against Enterotoxemia in the North Dry Zone of Karnataka.
- Present weather conditions are congenial for respiratory infections in sheep and goat in the North Western Zone of Tamil Nadu. Keep the floor clean and dry, place curtains on the open sided wall of the house to prevent cold wind entering into the animal's house and do not allow any water stagnation around the farm to prevent illness.

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



Rice



Okra



Jute



Green Gram

- **Realised Weather:** Rain/thundershowers occurred at isolated places over northeastern states. Maximum temperatures were above normal by 2-4°C at a few places over northeastern states.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Arunachal Pradesh, Assam & Meghalaya during next 48 hours and at many places thereafter. Rain/thundershowers would occur at a few places over Nagaland, Manipur, Mizoram and Tripura during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Increase in rainfall activity over northeastern states.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - As rain/thundershowers would occur at many places over Assam, Meghalaya and Arunachal Pradesh on 18th September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
 - In Assam, continue sowing of green gram, black gram, sesame and nursery sowing of cole crops.
 - In Upper Brahmaputra Valley Zone of Assam, gap filling in rice in the main field may be done with seedlings of same age. Continue sowing of pulses like green gram and black gram, *kharif* vegetables and cole crops.
 - In Hill Zone of Assam, replanting of dead hills or gap filling with seedlings of *sali* rice of similar age should be done within 7-10 days of transplanting.
 - In Sub Tropical Hill Zone of Arunachal Pradesh, continue harvesting of *jhum* rice after current spells of rain.
 - In Meghalaya, continue nursery preparation/ sowing of vegetables like cabbage, cauliflower, carrot, radish, broccoli and French bean. Continue land preparation and planting of potato. Continue sowing of pea in high altitude areas of East Khasi Hills. Avoid water logging in ginger/turmeric to avoid rhizome rot and fungal disease.
 - Cloudy and humid weather is favourable for attack of leaf folder in rice in Upper Brahmaputra Valley of Assam, spray Chloropyriphos 20 EC @ 1 ml per liter of water after current spells of rain.
 - Due to cloudy and humid weather, there is chance of attack of rice hispa in *sali* rice at tillering stage in in Hill Zone of Assam, spray with Quinolphos @ 10 ml /5 litre of water. Also in cloudy weather, there is chance of attack of stem borer in maize, spray Fenitrotheon @ 1 litre in 200-250 litre of water per ha after current spells of rain.
 - Due to prevailing humid weather conditions, there is chance of attack of blast and leaf folder in *Sali* rice in Barak Valley Zone, North Bank Plain Zone and Lower Brahmaputra Valley of Assam. Spray Carbendazim @1g/litre of water against blast. Spray 0.02% Chloropyriphos 20 EC or Quinalphos 25 EC @ 2.5 ml per litre of water against leaf folder. Apply chemicals after current spells of rain.
 - In Central Brahmaputra Valley Zone of Assam, stem borer and caseworm infestation may occur in Sali rice which

may be controlled by draining out of excess water or spraying Chloropyriphos (20%) @ 2 ml/litre of water after current spells of rain.

- Due to prevailing humid weather conditions, there is chance of attack of gundhi bug in early transplanted rice and blast in normal transplanted rice in Arunachal Pradesh. Dust with Malathion 5D @ 20 kg/ha for gundhi bug and undertake foliar spray of Hexaconazole 5% EC @ 2 ml/litre of water or Carbendazim 12 % WP+Mancozeb 63% WP @ 2 g/litre of water against blast after current spells of rain.
- In Meghalaya, due to cloudy weather & high humidity, there is chance of incidence of blast in direct seeded *ahu* rice. Spray Mancozeb @ 2g/litre or Carbendazim @1g/litre. Also present weather is congenial for development of late leaf spot in groundnut. Spray Carbendazim (0.05%) + Mancozeb (0.2 %) after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Manipur, maintain water level of 5-8cm in *kharif* rice and weeding may be done before top dressing. Continue main field preparation for transplanting of cole crops.
- In Mizoram, continue nursery preparation for cole crops like cabbage, cauliflower, broccoli and knolkhol.
- In Mizoram, due to continuous wet condition, there is chance of leaf spot on ginger & turmeric, spray Dithane M-45 @ 2.5 g/litre of water or Bavistin @ 1g/litre of water or Blitox @ 3 g/litre of water. Also spray Monocrotophos 36 WSC @ 1.5 ml/litre against gundhi bug infestation in rice. Insecticide application should be done if the population reaches ETL. Apply the chemicals on a non rainy day.
- In Mild Tropical Plain Zone of Tripura, there is chance of attack of blast in *aman* rice due to prevailing cloudy and humid weather. Apply Tricyclazole 75 WP @ 0.6 g/litre of water or Carbendazim 50 WP (Bavistin) @ 1 g per litre of water. Also, in the present weather, there may be attack of downy mildew in bitter gourd and pointed gourd. Redomil –MZ @2 g per litre may be applied to manage the attack. Apply the chemicals on a non rainy day.
- **Animal Husbandry**
- In Meghalaya, in rainy season, litter should be changed periodically to avoid dampness and prevent disease development like coccidiosis in poultry. During day time sufficient ventilation should be provided to reduce the humidity inside the sheds.
- In Tripura, damp litter and high moisture may cause Coccidiosis in the chicken, so avoid dampness in the deep litter. Prevailing high humidity may cause ammonia fumes which irritate the respiratory tract and eyes in poultry. Provide good ventilation in poultry sheds.
- In Manipur, provide clean drinking water to livestock. Avoid water logging around the sheds as it may help in mosquito breeding.

EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]



Sugarcane



Jute



Onion



Rice

- **Realised Weather:** Rain/thundershowers occurred at isolated places over Bihar, West Bengal & Sikkim, Odisha and Andaman & Nicobar Islands. Weather remained mainly dry / dry over rest parts of the region. Maximum temperatures were above normal by 2-4°C at a few places over Gangetic West Bengal, Odisha and at isolated places over Jharkhand. They were below normal by 2-4° C at isolated places over rest Odisha, Sub-Himalaya West Bengal & Sikkim and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Andaman & Nicobar Islands; at many places over Sub-Himalayan West Bengal & Sikkim, Odisha and at a few places over Gangetic West Bengal during the period. Rain/thundershowers would occur at many places over Jharkhand during next 48 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Bihar during next 24 hours and at isolated places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim and Odisha during the period and over Jharkhand on 18th September.
- **Weather Outlook:** Rain/thundershowers would occur at many places over West Bengal & Sikkim and Odisha and at isolated places over rest part of the region.
- **Advisories:**
 - As rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim and Odisha along with isolated heavy spells during the period, rain/thundershowers at many places over Jharkhand on 16th & 17th

along with isolated heavy spells 18th September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.

▪ **West Bengal:**

- In New Alluvial Zone of West Bengal, keep 5-7cm water in *aman* rice fields at the time of tillering stage. Continue seedbed / land preparation for early winter vegetables like radish, broccoli etc. and sowing of onion, cabbage, cauliflower etc. in the nursery bed.
- In Old Alluvial Zone of West Bengal, continue sowing of black gram and land preparation for transplanting of 4-6 weeks old seedlings of cole crops like cauliflower and cabbage after spells of heavy rain.
- In Old Alluvial Zone, due to cloudy and humid weather, there is chance of occurrence of stem borer, leaf folder and blast in *aman* rice, apply Chlorpyrifos @ 2.5 ml/litre of water or Cartap Hydrochloride 50WP @ 1 g/litre of water against stem borer and leaf folder. To prevent the attack of blast, spray Tricyclazole @ 0.5 g/litre of water. Apply the chemicals after current spells of rain.
- In Coastal Saline Zone, there is chance of sheath blight in *aman* rice due to occasional rain and high humidity. Spray Kopiconazole@1.5ml/litre of water on a non rainy day. Also spray a mixture of Bavitin@1g/litre of water and Diethane against of water stem rot or blunt rot in vegetables.
- Due to cloudy and high humid weather conditions, there is chance of attack of blast in *aman* rice in New Alluvial Zone and Laterite and Red Soil Zone. For control, apply Carbendazim + Mancozeb @ 2.5g/litre of water against blast. Apply Redomil -MZ (@2 g per litre to control downy mildew and mosaic in bitter and pointed gourd. Spray Difenthiuron @ 0.75g per litre of water against thrips and mites in chilli. Apply the chemicals on a non rainy day.
- Due to humid condition, there is chance of sheath blight in Terai Zone. Spray Propiconazole 1 ml/litre of water after current spells of rain. Avoid water stagnation to prevent rhizome rot in turmeric & ginger.

▪ **Andaman and Nicobar Islands:**

- As rain/thundershowers would occur at most places over Andaman and Nicobar Islands during the period along with isolated heavy spells on 16th & 17th, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- In North and Middle Andaman, spray Chlorpyrifos@2 ml/litre of water to control leaf folder in rice after current spells of rain.

▪ **Odisha:**

- In East and South Eastern Coastal Plain Zone of Odisha, continue land preparation and sowing of pre *rabi* crops like green gram, black gram, horse gram, cow pea and sesame in fallow upland and medium uplands after spells of heavy rain.
- In North Central Plateau Zone of Odisha, continue planting of lemon and mango.
- In Western Undulating Zone of Odisha, waterlogged conditions with high humidity (75-80%) favours buildup of scale insect, whitefly and Pyrrilla in sugarcane. Spray Imidacloprid @ 1 ml / 4 litres of water after current spells of rain.
- In East and South Eastern Coastal Plain Zone and North Central Plateau Zone of Odisha, prevailing temperature may favour egg laying of stem borer in rice. To attract the borer butterflies, place 4 Pheromone Traps/acre, collect the adults and destroy them by burying them under soil or by burning and spray Prophenophos @ 2 ml per litre water after current spells of rain.
- In North Central Plateau Zone of Odisha, in the prevailing temperature, there are chances of occurrence of Yellow vein mosaic disease in arhar. Spray Dimethoate @ 300g a.i./Ha or Methyl Demeton @ 250g a.i./ha to control the insect vector after current spells of rain.
- In East and South Eastern Coastal Plain Zone of Odisha, current temperature and humidity may favour the infestation of tikka disease and root rot in groundnut. To control these, spray Saaf, Companion or Sixer @ 2 ml per litre of water after current spells of rain.
- In Western Undulating Zone of Odisha, there is chance of Red rot disease in sugarcane at grand growth stage. Bunding of affected field should be done to avoid movement of rain or floodwater from affected field to non affected fields. Destroy trashes from the infected plant by burning and spray Carbendazim @2g/litre of water after current spells of rain. Severely affected plants or canes should be uprooted and destroyed.
- In North Eastern Coastal Plain Zone of Odisha, current temperature and humidity favours attack of stem borer on rice. Install pheromone traps to monitor the adult population. If the damage is above ETL, spray Lambda-Cyhalothrin or Triazophos @ 400 ml/acre or apply Cartap hydrochloride SP @ 400g/acre after current spells of rain.

▪ **Bihar:**

- In North West Alluvial Plain Zone of Bihar, complete sowing of pigeon pea and urad in upland areas and planting of Shakarkand. Continue nursery sowing of cabbage and cauliflower. Undertake top-dress with nitrogen in the rice crop which is in booting stage.
- In North East Alluvial Plain Zone of Bihar, maintain optimum water level in rice. Undertake sowing of September arhar. Complete transplanting of early autumn vegetable viz cauliflower, cabbage and brinjal etc.

- In South Bihar Alluvial Zone, complete sowing of *rabi* pigeon pea up to mid September also complete sowing of kulthi in upland areas. Maintain 5 cm water in rice fields.
- **Jharkhand:**
- In Western Plateau Zone of Jharkhand, in upland areas, continue sowing toria and continue field preparation for cultivation of early potato and green peas after spells of heavy rain. Maintain optimum water level in rice.
- In South Eastern Plateau Zone of Jharkhand, in fallow slopy lands, complete sowing of September Pigeonpea, Kulthi, Niger, Lobia and Rice bean after spells of heavy rain. Continue land preparation for the cultivation of short duration early potato. In fallow land undertake sowing of green pea and toria after spells of heavy rain.
- In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of tomato, cabbage and cauliflower in raised seed bed. Conserve rain water by repairing the broken bunds of the rice fields.
- In South Eastern Plateau Zone of Jharkhand, due to high humidity and extended leaf wetness, there are chances of Blast in rice crop, spray Tricyclazole @ 6 g per litre of water after current spells of rain.
- Due to prevailing humid weather conditions, there is chance of attack of gundhi bug in timely sown rice in Western Plateau Zone of Jharkhand. To control the insects, dusting of Chlorpyrifos / Quinolphos / Methyl parathion dust @ 10 kg per acre after current spells of rain. As an alternative method (in the case of unavailability of the insecticides), dusting of coal / wood ash mixed with kerosene.
- Suitable varieties are given in Annexure I.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane



Rice



Okra



Green Gram

- **Realised Weather:** Rain/thundershowers occurred at isolated places over Chhattisgarh. Weather remained mainly dry / dry over rest parts of the region. Maximum temperatures were above normal by 2-4°C at isolated places over Chhattisgarh. They were below normal by 2-4° C at a few places over Madhya Pradesh.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Chhattisgarh during next 48 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Madhya Pradesh during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over Central India.
- **Advisories:**
 - **Madhya Pradesh:**
 - In Vindhya Plateau Zone of Madhya Pradesh, if *Kharif* crops are damaged due to heavy rain, farmers may undertake nursery sowing of onion, garlic and planting of short duration varieties of potato. The sowing may be done between 15th September to 15th October. Sowing of green gram (K-851, Jawahar Mung -721, Pant Mung- 4, T.J. M 3), black gram (Pant U-30, R.B.U.-38, Jawahar Urd-3, J. U-37)) by ridge furrow method is recommended.
 - Due to cloudy weather, there are chances of attack of semilooper, tobacco caterpillar and girdle beetle in soybean, moong and urad in Jhabua Hill Zone of Madhya Pradesh, Spray Profenophos @ 2 ml per litre of water.
 - Due to cloudy and humid weather, there are chances of incidence of stem borer and fruit borer in chilli, tomato, brinjal and okra in Gird Zone of Madhya Pradesh. For control, spray Dimethoate @ 1 g per litre of water.
 - Due to heavy rain there are chances of stem rot in ginger and turmeric in Vindhya Plateau Zone of Madhya Pradesh, spray Blitox 50 E. C. @ 2.5gm per litre of water.
 - Due to humid weather, there is possibility of attack of yellow mosaic virus in urad and soybean in Bundelkhand Zone of Madhya Pradesh, spray Methyl dameton @2.0 ml. or Imedachloprid@ 0.5 ml. per litre of water.
 - **Chhattisgarh:**
 - In Plain Zone and North Hill Zone of Chhattisgarh, in fallow upland, sowing of horse gram and Niger may be undertaken upto mid September. Undertake intercropping operations in vegetables for moisture conservation.
 - Due to cloudy weather, there are chances of attack of blast in rice in North Hill Zone and Plain Zone of Chhattisgarh, apply Tricyclazole @ 120 g per acre on a non rainy day.
 - Due to cloudy weather there are chances of incidence of leaf blight in maize in Bastar Plateau Zone of Chhattisgarh, spray Mencozeb @ 2 g per litre of water on a non rainy day.
- **Animal Husbandry**
 - In Madhya Pradesh, provide clean water and concentrate feed mixed with dry and green fodder to cattle.

NORTH INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]



Rice



Sugarcane



Bottle Gourd



Onion

- **Realised Weather:** Rain/thundershowers occurred at isolated places over East Uttar Pradesh. Weather remained mainly dry / dry over rest parts of the region. Maximum temperatures were below normal by 2-4° C at a few places over Jammu & Kashmir; at isolated places over north Rajasthan, East Uttar Pradesh and near normal over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over East Uttar Pradesh during next 48 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, East Rajasthan during next 24 hours and over West Uttar Pradesh during next 48 hours and mainly dry thereafter. Mainly dry weather would prevail over Jammu & Kashmir and West Rajasthan during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather may be mainly dry over plains of northwest India.
- **Advisories:**
 - **Jammu & Kashmir:**
 - In Jammu & Kashmir, arrange for extensive drainage facilities to remove excess water from fields wherever feasible and then apply top dressing of nitrogen @ 3.25 kg urea per kanal in rice and in maize. Monitor maize crop for the incidence of stalk rot. Apply Blitox @ 2g/ litre of water for stalk rot. Apply urea to rice seedlings in the nurseries after receding of excess water.
 - Drain out excess water from pulses and vegetable fields in Valley Temperate Zone, Sub-Tropical and Intermediate Zone of Jammu & Kashmir. Monitor the pulse crops for root/shoot rot. Apply Bavistin @ 1g/litre of water if observed.
 - Due to humid weather conditions, there is attack of aphids on vegetable crops in Cold Arid Zone of Jammu & Kashmir. To control apply Malathion @ 1ml/litre of water, on a non rainy day and repeat after 12 days of interval.
 - Due to high humid weather conditions, there is chance of attack of sheath blight and blast on rice in Intermediate Zone of Jammu & Kashmir. Monitor the crop and apply Bavistin @ 2 g/lit of water or Propiconazole 25 EC @ 1 ml/litre of water after receding of flood water.
 - **Himachal Pradesh:**
 - Continue sowing of radish, turnip, carrot and leafy vegetable like spinach and fenugreek in mid hill areas and early varieties of pea in Sub-Montane and Low Hills Sub-Humid Tropical Zone and Bilaspur district of Mid Hills Sub-Humid Zone of Himachal Pradesh. Nursery sowing of cauliflower (late group), cabbage, knol khol, broccoli and Chinese cabbage and direct sowing of radish, carrot, turnip, spinach and fenugreek and planting of onion (30X 10 cm spacing) can also be undertaken in mid hill areas. Continue transplanting of mid season cauliflower in low hill areas.
 - Undertake intercultural operation like weeding in peas in High Hill Temperate Dry Zone of Himachal Pradesh, Spray Glycel @ 5ml per liter of water for weed control.
 - In Montane and Low Hills Sub-Humid Tropical Zone and Bilaspur district of Mid Hills Sub-Humid Zone of Himachal Pradesh, for control of rice blast, spray Bavistin 0.01or Beam 75 WP 0.06% and repeat at an interval of 10-15 days. For rice hispa and leaf folder, spray Cypermethrin 10 EC @ 1ml or Chloropyriphos 20 EC @ 2.5ml per litre of water.
 - Due to prevailing humid weather condition, there are chances of attack of white fly in tomato in Mid Hills Sub-Humid Zone of Himachal Pradesh Use yellow trap one trap/100m² to prevent the attack and spray Imidacloprid (Confidor) @ 7.5ml or Malathion @ 22.5ml or Metasystox @ 15ml in 15litres of water.
 - Due to prevailing humid weather conditions, there are chances of attack of aphids in cabbage and cauliflower in High Hill Temperate Dry Zone of Himachal Pradesh. Spray Cypermethrin @ 1ml per litre of water.
 - Weather is congenial for attack of Anar butter fly and incidence of fruit rot in Anar in Mild Hills Sub Humid Zone of Himachal Pradesh. Spray Quinalphos @ 500ml per 200 litres of water against attack of Anar butter fly and Captan @ 600g per 200 litres of water to prevent fruit rot in Anar.

▪ **Uttarakhand:**

- Continue sowing of mustard, phalak, methi, raddish and continue sowing of early toria, pea in Hill Zone of Uttarakhand.
- In Sub humid Sub Tropical Zone of Uttarakhand, as rice crop is at active tillering stage, maintain 5cm water level and apply second dose of Urea at this stage.
- Under present weather conditions, there may be attack of leaf hopper on vegetables like brinjal and okra in Sub humid Sub Tropical Zone of Uttarakhand. To control, apply Dichlorvas @ 1ml/liter of water.
- Due to low rainfall and slight increase in temperature conditions, there are chances of incidence of yellow mosaic disease on soybean in Bhabar and Tarai Zone of Uttarakhand. If the white fly population is more than 10 %, then spray Trizophos 40 EC @ 250 ml dissolved in 200 liters of water per acre.

▪ **Punjab, Haryana and Delhi:**

- In Punjab, in view of deficit rainfall, adopt moisture conservation practices like hoeing, weeding, mulching in crops like sugarcane, maize, cotton to reduce the evapotranspiration losses and to conserve moisture for rabi crops. De-tasselling in maize is advised to reduce transpiration losses
- In Western Plain Zone of Punjab, continue field preparation and sowing of short duration hybrid maize (PMH 2) utilizing the realised rainfall.
- In Western Plain and Undulating Plain Zone of Punjab, continue nursery sowing of mid-season cauliflower, desi varieties of radish, carrot and turnip.
- In Central Plain Zone of Punjab, continue sowing of desi varieties of carrot, radish and turnip crops and undertake transplanting of rainy season tomato. Continue sowing of potato, palak and nursery sowing of cauliflower.
- In Undulating Plain Zone of Punjab, complete new plantation of fruit crops as weather of this period is favourable for the establishment and growth of small plants. Higher humidity due to intermittent rainfall may lead to sheath blight in rice, spray Tilt @ 0.1% on the disease spots. Present weather condition is very congenial for attack of fruit rot in chilli, spray Indofil M45 @ 390 g/acre in 100-200 litres of water.
- Due to cloudy weather, there are chances of occurrence of sucking pests viz. white fly and Jassids in cotton in Western Zone of Punjab. Monitor the crops and spray Oberon @ 200 ml/acre for white fly and Ulala 80g/acre on a non rainy day for the management of Jassids.
- In Western Zone of Haryana, complete sowing of fodder crop jowar mixed with cowpea to increase the nutritive value for continuous supply of green fodder. Undertake plantation of new orchard.
- In Delhi, continue transplanting of onion seedling in the prepared fields and undertake planting of early potato. In the present weather conditions, false smut may appear in rice crop, Apply Blitox @ 500 grams per acre at 10 days interval (2-3 times).

▪ **Uttar Pradesh:**

- Undertake second top dressing of urea @ 60 kg or Nitrogen @ 18 kg per hectare in rice after formation of tillers and urea @ 85-105 kg per hectare in bajra in Central Plain Zone of Uttar Pradesh. Also apply two to three times Thirum at rate of 0.15 % at the time of flowering at the interval of 7-10 days.
- Undertake transplanting of cauliflower (60x60 cm row spacing), brinjal (75x60 cm row spacing), cabbage, tomato and chilli and planting of fruit crops in Barabanki, Faizabad, Ambedkarnagar districts of Eastern Plain Zone of Uttar Pradesh utilizing the realized and expected rainfall.
- Undertake sowing of toria @ 4kg seed per hectare in Fatehpur, Pratapgarh, Allahabad, Chitrakut, Kaushambi , Agra, Mathura, Lucknow and Kanpur districts of Central Plain Zone; varieties like Sangam, TL-17, 67 in Western Plain Zone and continue sowing of toria (T-9, T-36, Bhavani, Pant -30,303, 507) at a row spacing of 30 cm in Deoria, Basti and Ballia districts of Eastern Plain Zone and Central Plain Zone of Uttar Pradesh.
- Continue transplanting of cauliflower, cabbage, tomato, chilli and brinjal and sowing of palak, cucumber, methi, ageti carrot and planting of fruit crops like mango, papaya, lemon, amla, etc. in Jhansi district of Bundelkhand Zone of Uttar Pradesh. Undertake second top dressing of urea @ 20 kg + Zinc Sulphate @ 5 kg per ha in rice.
- Under prevailing humid weather condition, there are chances of incidence of tikka diseases in groundnut in Central Plain Zone of Uttar Pradesh. Spray Zinib 75% @ 2.5kg per hectare or Thirum 27% liquid @ 3 liter per hectare 2-3 times after 10 days interval.
- Under prevailing humid weather condition, there are chances of incidence of blast disease in rice in Western Plain Zone of Uttar Pradesh. For control of rice blast, spray Beem @ 120 g per 200 litres of water. For control of leaf eating caterpillar in vegetable, spray Di-corovas @ 1ml per litre of water.
- Due to humid weather condition, there are chances of incidence of yellow mosaic in urad and moong in Raibareilly, Amethi and Sultanpur districts of Eastern plain Zone and in Central Plain Zone of Uttar Pradesh. Spray Dimethoate 30 E.C. or Methyl-O-Dimetone 25 E.C. @ 1 litre in 1000 litres of water per hectare on a non rainy day and repeat at an interval of 8-10 days.
- Due to prevailing humid weather condition, there are chances of attack of Gundhi bug in rice in Agra, Mathura, Kanpur, Lucknow districts of Central Plain Zone of Uttar Pradesh. Spray Methyl Parathion 2% @ 20 kg or Malathion 5% @ 20-25 kg per hectare.
- Due to prevailing humid weather condition, there are chances of attack of beetle in banana in Central Plain Zone of Uttar Pradesh. Spray Monocrotophos @ 125 ml per litre of water or add 3-4 g Carbofuron in soil. For control of Mosaic or Anthracnose disease in banana, spray Copper Oxychloride @ 3ml per litre of water.

▪ **Rajasthan:**

- Undertake harvesting of mature bajra and jowar in Flood Prone Eastern Plain Zone of Rajasthan.
- Undertake nursery raising of tomato, brinjal, chillies, cabbage etc. in Transitional Plain Zone of Inland Drainage of Rajasthan, utilizing recent rainfall.
- Continue nursery sowing of cauliflower (Japanese, Pusa hybrid-2 and Himjoyti) and radish (Pusa Chetki) and undertake sowing of rainfed Taramira, Toria and Mustard in Semi Arid Eastern Plain Zone of Rajasthan utilizing realised rainfall.
- Continue nursery sowing of mid season cauliflower (Japanese, Pusa hybrid-2 and Himjoyti) and sowing radish (Pusa Chetki) in Arid Western Plain Zone of Rajasthan. Apply remaining half dose of nitrogen *i. e.* 30 kg/ha through urea in 25-30 days old pearl millet crop.
- In Arid Western Plain Zone of Rajasthan, forecasted weather conditions may increase the chances of attack of sucking pests as jassids and thrips on cluster bean. To control spray of Dimethoate @ 1.25 l/ha or Imidachloprid 17.8 SL @ 320 ml/ha.
- Due to humid and cloudy conditions, there are incidence of bollworm and jassids in cotton in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, to control apply Karberil 50% dust @ 2.5 kg/ha.

• **Animal Husbandry:**

- The weather is suitable for the attack of pink eye disease in newly born calves in Sub-Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh. For control prepare the solution of 1% boric acid in boiled water and wash the eyes at regular interval of three hours.
- Under prevailing humid weather condition, there are chances of attack of ticks and mites on animals also in Flood Prone Eastern Plain Zone of Rajasthan. For control spray Butox @ 2.0 ml per litre of water. Clean the cowshed with phenyl and keep the animal sheds dry and clean.
- Under prevailing humid weather condition, there are may be attack of parasite diseases like Babesia & Thelaria in animals in Semi Arid Eastern Plain Zone of Rajasthan. Treat the animals immediately.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Rice



Sugarcane



Okra



Soybean

- **Realised Weather:** Rain/thundershowers occurred at isolated places over Goa. Weather remained mainly dry / dry over rest parts of the region. Maximum temperatures were near normal over the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Konkan & Goa; at isolated places over Madhya Maharashtra, Marathwada and Vidarbha during the period. Rain/thundershowers would occur at isolated places over Saurashtra & Kutch during next 24 hours and Gujarat region during next 48 hours and mainly dry thereafter.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over the region.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, maintain water level upto 5-8 cm in rice fields. Undertake fertilizer application and intercultural operations in rice, finger millet, vegetable fields and mango and cashew orchards.
 - In Madhya Maharashtra, maintain the water level of 5 cm in transplanted rice field. Undertake intercultural operations like weeding and fertilizer application in sugarcane, vegetables and in late sown cotton, red gram and sunflower. In fallow and already harvested fields of green gram and black gram, undertake sowing of rabi jowar and safflower utilizing the available soil moisture.
 - In Marathwada, undertake intercultural operations in cotton, soybean, red gram and sunflower. Continue plucking of already matured green gram and black gram pods. Soybean is in flowering stage. For better growth, spray Urea @ 20 g per 10 litres of water.
 - In Vidarbha, apply fertilizers and undertake intercultural operations in cotton and red gram. Maintain water level up to 5 cm in already transplanted rice field in East Vidarbha. Continue plucking of already matured green gram and black gram pods in West Vidarbha. Prepare the field for sowing of safflower in the harvested field of green gram and black gram. To avoid floral bud dropping in cotton, spray Planofix @ 4.5 ml per 10 litres of water.
 - Due to rise in temperature in Western Maharashtra Scarcity Zone, there may be attack of mealy bug and sap sucking pest in cotton; spray Verticillium Lecanii @ 40 g per 10 litres of water.

- Under prevailing temperature (around 25-26OC) in South Konkan, there may be attack of brown hopper in rice in low lying area; spray 50EC Melathion @10 ml per 10 litres of water on a non rainy day.
- Due to prevailing humid and cloudy weather in East Vidarbha, there may be attack of green semilooper and tobacco leaf eating caterpillar in soybean; spray Quinalphos 25EC @ 20 ml per 10 litres of water from the lower sides of the leaf.
- **Gujarat:**
 - Undertake intercultural operations in castor and fennel in Bhal and Coastal Zone. Drain out excess water from *kharif* (castor, cotton, vegetables) crop fields.
 - Avoid water logging in low lying areas of cotton, sesame, groundnut, castor and pulses in North Gujarat Zone.
 - Undertake hand weeding and intercultural operation in late sown castor and pulses in South Gujarat Heavy Rainfall Zone.
 - Drain out excess water from maize, sugarcane, green gram, black gram, ginger, turmeric and vegetable crop fields in South Gujarat Zone as stagnant water in the root zone is harmful to these crops.
 - Due to humid weather, there is chance of infestation of powdery mildew disease in sesame; spray Hexaconazole 5 % EC @ 20 ml in 10 liters of water to prevent it.
- **Animal Husbandry**
 - In Gujarat, keep fodder in safe place to avoid spoilage due to rain and take care of animals during rain. Keep animal sheds hygienic and clean to avoid flies and mosquitoes.

Annexure I

List of varieties

Bihar

Shakarkand: Rajendra Shakarkand- 5, Rajendra Shakarkand-35, Rajendra Shakarkand-43, Rajendra Shakarkand-47, Kalmegh and Rajendra Shakarkand-92.

Pigeon Pea: arhar: Bahar, Pusa 9, Narendra Arhar 1

Urd: T-9, Pant U-19, Pant Urd 31, PDU-1

Radish: Pusa Chetki, Pusa Himani, Pusa Rashmi, Japani Saphed

Pointed gourd: Rajendra Parwal-1, Rajendra parwal-2, FP1 and 3

Jharkhand:

Urd: T 9, Pant U 19, 30, 35 and Birsa urd 1

Moong: Pusa Vishal, S M L 668, K 885, P S 16, Pant Moong 2 and P D M 11.

Arhar: Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days),

Maize: short duration variety: Birsa Vikas Maize-2 and medium duration variety: Birsa Maize-1.