

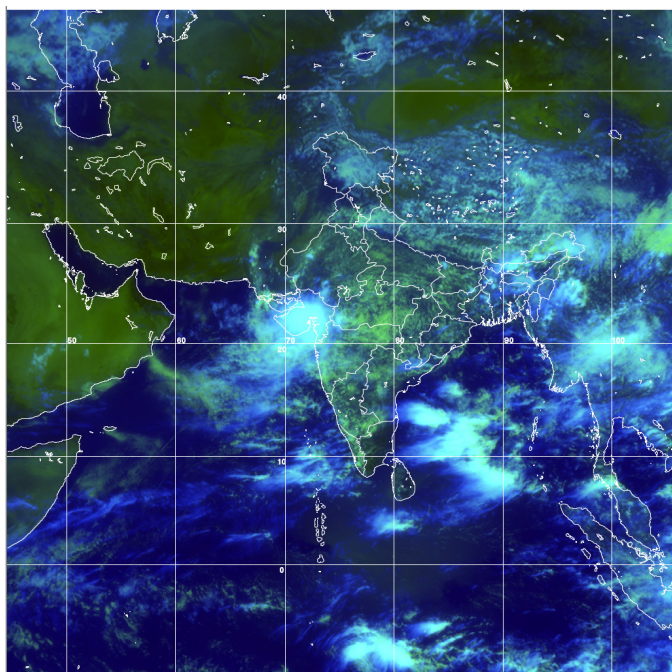


National Agromet Advisory Bulletin

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Executive Summary

Due to less rainfall during last few weeks moisture stress condition persists in most of the districts of Gangetic West Bengal, Bhadrak district of Orissa and East Singbhum district of Jharkhand. Many of the remaining districts of Bihar and Jharkhand did not receive good rain during last couple of weeks. However, utilising rainfall received during earlier weeks, farmers, who could not sow their crops during earlier part of *kharif* season or lost the crops due to deficient rain, are advised to sow the crops adopting recommended contingency measures. Crops, which were partially affected due to less rainfall during earlier part of the season in some districts of Uttar Pradesh, are in reasonably good condition due to receipt of good rainfall during last few weeks. Crop status in different States of the country and possible measures to manage adverse weather condition are given below.

In Gangetic West Bengal, there is chance of occurrence of rainfall during next few days which may help the already sown crops to get relief from moisture deficiency. Farmers in Coastal Saline Zone are advised to sow short duration less moisture requiring crops like tori, green gram, black gram, arhar and vegetable crops like tomato, okra, brinjal, cauliflower etc. In other regions of Gangetic West Bengal, farmers are advised to sow coriander, radish, green gram, black gram, sweet potato, September arhar, kulthi and leafy vegetables like spinach. Detailed contingency plan has been mentioned on page no. 6.

As rain is likely in Bihar during next few days, farmers in Bihar are advised to sow black gram and kulthi during this time. Tori, September arhar in upland areas as well as vegetables such as cauliflower, radish etc. can also be sown. Farmers are advised to transplant cauliflower and to sow brinjal at this time. Detailed contingency plan has been mentioned on page no. 7.

Farmers in Jharkhand are also advised to sow safflower, vegetable pea, toria, maize, potato and kulthi as a sole crop and also vegetable pea + maize (1:1), toria + vegetable pea (4:3), kulthi + safflower (2:4) as intercropping in medium land and only sweet potato in upland situation under contingency plan. No crop is recommended in low land area and the farmers are advised for early *rabi* crops depending on soil moisture status. Detailed contingency plan has been mentioned on page no. 7.

There is also report of some impact of heavy rainfall in different parts of the country. During last week, there was heavy rainfall on two days, in Imphal-West & Imphal-East districts of Manipur, which affected soybean, groundnut, ginger and turmeric crops slightly due to water logging mainly in low land areas. No major loss is reported.

Submergence of crops is also reported in some areas of the districts of Upper Bramhaputra Valley Zone of Assam. *Kharif* vegetables have been reported to be adversely affected (20-30%).

Due to continuous rains in North East Dry Zone (Gulbarga and Yadgir districts) in Karnataka, green gram crop was affected at harvesting stage. Coupled with alternate bright sunshine for the last 15 days, pod shattering is also observed leading to severe loss of crop. As there are chances of rainfall again, arrange for proper storage facilities for the harvested produce to avoid germination of green gram seeds.

Due to excess rainfall, water logging condition is reported in Southern Telangana Zone (Hyderabad, Medak, Rangareddy and Nalgonda districts). Farmers are advised to drain out excess water from the fields. Topdressing with urea @ 25-30 kg per acre in rainfed crops like maize and cotton after draining out excess water is advised.

Chilli and tomato crops have been adversely affected by heavy rainfall in Nagaland. Fruit rot in chilli and bacterial blight in tomato have adversely affected the yield of respective crops.

Report of yellow vein mosaic in pulses has also been reported from Bundelkhand Zone of Uttar Pradesh due to high RH.

Overall crop condition is almost normal in remaining parts of the country and good production of crops is expected due to receipt of well distributed rainfall in most of the States.

Distribution of rainfall (% departure from normal) receiving subdued rainfall of the districts in Bihar, Jharkhand, Orissa, Uttar Pradesh, and Gangetic West Bengal for last five Weeks

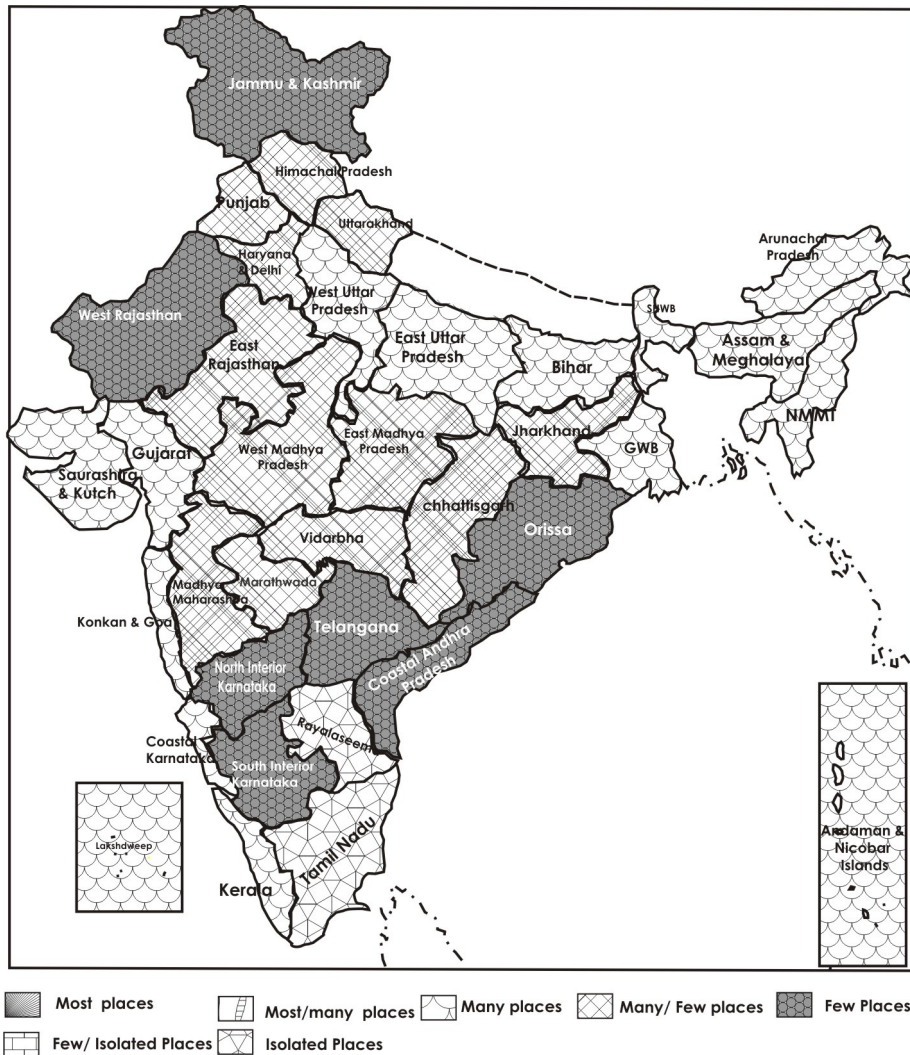
Bihar	11.08.10	18.08.10	25.08.10	01.09.10	08.09.10
3 weeks continuously deficient to no rain					
Khagadia	-93	2	-31	-71	-100
Madhubani	-91	36	-35	-93	-94
Siwan	-100	36	-46	-99	-93
Supaul	-100	-6	-45	-97	-49
Vaishali	-98	41	-37	-100	-95
2 weeks continuously deficient to no rain					
Araria	-98	34	-2	-89	-59
Aurangabad	-99	-6	-14	-77	-93
Begusarai	**	-69	140	-100	-100
Bhabua	-90	-16	16	-99	-87
Bhagalpur	-98	-76	153	-72	-99
Bhojpur	-95	-68	24	-95	-85
Buxar	-97	42	323	-96	-99
Darbhanga	-94	101	39	-70	-93
East Champaran	-69	4	139	-27	-69
Gaya	-81	-33	73	-100	-81
Jahanabad	-73	-9	56	-89	-100
Jamui	-100	2	143	-77	-100
Kathihar	-90	-82	21	-86	-92
Monghyar	-68	9	-10	-55	-99
Muzaffarpur	-91	7	55	-92	-95
Nalanda	-91	73	129	-100	-100
Patna	-81	12	76	-100	-92
Rohtas	-93	23	7	-82	-96
Saharsha	-96	39	-10	-37	-63
Samstipur	-48	-54	81	-100	-99
Saran	-96	-17	12	-96	-93
Sitamarhi	-75	23	6	-96	-68
Jharkhand	11.08.10	18.08.10	25.08.10	01.09.10	08.09.10
More than 3 weeks continuously deficient to no rain					
East Singbhum	-72	-27	-48	-83	-61
Ranchi	-71	-58	-30	-59	-54
West Singbhum	-54	-61	-65	-43	-29
2 weeks continuously deficient to no rain					
Bokaro	-82	16	98	-66	-50
Chatra	-65	-54	37	-73	-98
Dhanbad	-77	-46	49	-81	-69
Giridih	-49	-48	143	-90	-73
Godda	-45	-15	65	-100	-100
Hazaribagh	-53	32	59	-90	-75
Lohardagga	-86	3	39	-24	-78
Pakur	-100	-62	66	-100	-100
Palamau	-89	-62	22	-96	-88
Sahebganj	-86	-88	19	-100	-100
Orissa	11.08.10	18.08.10	25.08.10	01.09.10	08.09.10
More than 3 weeks continuously deficient to no rain					
Bhadrak	-10	-60	-54	-44	-39
Jajpur	-3	-53	-79	-20	-40
Kendrapara	-40	-94	-72	-38	-57

LEGEND

- EXCESS 20% OR MORE
- NORMAL +19% TO - 19%
- DEFICIENT - 20% TO - 59%
- SCANTY - 60% TO - 99%
- NO RAIN - 100%
- DATA NOT AVAILABLE

Mayurbhanj	-42	-72	-53	-62	-25
Sambalpur	-74	-82	-49	-54	-54
2 weeks continuously deficient to no rain					
Deogarh	-84	-68	2	-38	-35
Sundargarh	-68	-57	-16	-36	-67
Uttar Pradesh					
State/Districts	11.08.10	18.08.10	25.08.10	01.09.10	08.09.10
2 weeks continuously deficient to no rain					
East Uttar Pradesh					
Allahabad	-90	-19	-6	-82	-30
Ambedkar Nagar	-100	-78	6	-100	-58
Azamgarh	-99	-4	73	-28	-21
Bahraich	-76	-73	149	-55	-40
Ballia	-88	-57	-11	-69	-63
Barabanki	-84	-81	296	-53	-41
Deoria	-90	-47	24	-80	-54
Gazipur	-90	66	76	-31	-72
Jaunpur	-100	-56	129	-79	-48
Kanpur City	-90	-96	-4	-92	-31
Lucknow	-100	-79	126	-52	-33
Mau	-85	-54	-10	-86	-44
Mirzapur	-83	-57	145	-92	-43
Pratapgarh	-100	-22	67	-25	-65
RaiBareilly	-87	-80	10	-68	-72
Sant Ravidas Nagar	-100	-77	26	-47	-100
Sultanpur	-99	-2	45	-34	-21
Varanasi	-87	-25	47	-94	-54
West Uttar Pradesh					
Ghaziabad	-99	25	103	-56	-21
Jalaun	-89	-70	79	-89	-98
Jhansi	-82	-63	-17	-55	-27
West Bengal	11.08.10	18.08.10	25.08.10	01.09.10	08.09.10
More than 3 weeks continuously deficient to no rain					
GWB					
Bankura	-62	-40	-74	-61	-40
Burdwan	-82	-82	-37	-55	-70
Hooghly	-74	-46	-33	-53	-45
Nadia	-79	-58	-72	-42	-72
West Midnapore	-36	-40	-58	-85	-55
3 weeks continuously deficient to no rain					
GWB					
Howrah	-35	118	-26	-91	-55
24 Pargana (N)	-61	-19	-23	-68	-76
24 Pargana (S)	-52	-12	-29	-61	-64
2 weeks continuously deficient to no rain					
GWB					
Purulia	-46	-77	90	-62	-53

Weather Forecast (Valid upto 1430 hours of 11th September, 2010)



Weather Outlook (upto 1430 hours IST of 13th September, 2010)

- Fairly widespread rainfall activity would occur over Gangetic plains, Sub-Himalayan West Bengal & Sikkim, northeastern states, Orissa and west coast.

Warning

- Isolated heavy rainfall would occur over Himachal Pradesh, Uttarakhand, west Uttar Pradesh, Haryana, Chandigarh, Delhi, southeast Rajasthan and coastal Karnataka during next 24 hours.
- Isolated heavy to very heavy rainfall would occur over Vidharbha, Madhya Maharashtra and south Madhya Pradesh during next 24 hours.
- Isolated heavy to very heavy rainfall would occur over Gujarat and Konkan & Goa during next 48 hours.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Birbhum district of Gangetic west Bengal, Coochbehar, Darjeeling, Jalpaiguri and Dinajpur (N) districts of Sub Himalayan West Bengal, Kishanganj, Purnea and West Champaran districts of Bihar, West Singbhum district of Jharkhand and most of the districts of Orissa and Sikkim received rain during last week.
- **Rainfall Forecast:** Rain is likely to occur at many places over Sub Himalayan West Bengal and Sikkim, Gangetic West Bengal, Jharkhand and Bihar and at a few places in Orissa during the period.
- **Major Crops:**
 - Early sown rice (grain formation), late sown rice (early tillering / tillering), maize (vegetative / flowering), sesamum, groundnut, soybean, green gram (vegetative / flowering / pod formation), black gram, castor, kulthi, tori, arhar and vegetables like cauliflower, brinjal etc. (sowing / early vegetative / vegetative) in Bihar.
 - Early sown rice (grain formation), late sown rice (early tillering / tillering), early sown maize (flowering / cob formation), sesame (vegetative / flowering / pod formation), groundnut (flowering / pegging / pod formation), urd, green gram, pegion pea, niger and short duration maize (vegetative / flowering), kulthi (sowing / early vegetative / vegetative) and safflower, potato and toria (sowing) and in Jharkhand.
 - Rice (early tillering / tillering / flowering / grain formation) and maize (flowering / cob formation), groundnut (flowering / pegging / pod formation), pulses, soybean, sesamum, ragi, cotton, vegetable crops (flowering / pod formation) in Orissa.
 - Sugarcane (cane development), vegetable crops (sowing / germination / early vegetative / vegetative / flowering / fruiting / harvesting), jute (end harvesting), *aus* rice (grain formation / early maturity / maturity), *aman* rice (early vegetative / tillering), pulses (sowing / germination / early vegetative / vegetative / flowering / pod formation), sesame (vegetative / flowering / pod formation) and groundnut (flowering / pegging / pod formation) in West Bengal.
 - Large cardamom (capsule maturity), orange (fruiting / fruit maturity), seed potato (harvesting), summer potato (harvesting), maize (harvesting), ginger (vegetative / late vegetative), rice (tillering / flag leaf initiation), *rabi* vegetable: sowing / nursery sowing in Sikkim.
- **Advisories:**
 - As rain is likely to occur at many places over Sub Himalayan West Bengal and Sikkim, Gangetic West Bengal, Jharkhand and Bihar during the period, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures in these regions.
 - Due to less rainfall during last few weeks moisture stress conditions persists in most of the districts of Gangetic West Bengal, Bhadrak district of Orissa and East Singbhum district of Jharkhand of this region. Many of the remaining districts of Bihar and Jharkhand did not receive good rain during last couple of weeks. However, utilising rainfall received during earlier weeks, farmers, who could not sow their crops during earlier part of *kharif* season or lost the crops due to deficient rain, are advised to sow the crops adopting recommended contingency measures.
 - In Gangetic West Bengal, life saving irrigation is advised to the standing crops. Other contingency plans for Gangetic West Bengal are as follows:
 1. Sow short duration less moisture requiring crops like tori, green gram, black gram, arhar and vegetables like tomato, okra, brinjal, cauliflower etc. in Costal Saline Zone.
 2. In lowlands, where rice has already been transplanted, apply life saving irrigation. Keep the land weed free, so that less water will be needed. Do not apply high nitrogenous fertilizer.
 3. Sow coriander, radish or leafy vegetables like spinach. These crops will be ready for harvesting within 50 to 60 days. So, farmers may get quick economic return.

4. Farmers may also opt for cultivation of crops like green gram, black gram and sweet potato. Black gram (Navin) and sweet potato can be sown upto 20th September if some soil moisture is available.
 5. September sown Arhar can be sown with 30 cm spacing in lowlands or in medium lands.
 6. Kulthi as sole crop or as mixed cropping with sweet potato can be undertaken upto 20th September.
- Contingency measures for the farmers who could not sow the crops till date or lost the crops in Bihar and Jharkhand, are given below:
 - Following contingency plan may be continued by the farmers in Bihar utilising likely occurrence of rain.
 1. Urd should be sown now. Kulthi can also be taken at this time.
 2. Vegetables such as cauliflower, radish etc. can also be sown. Farmers are advised to transplant cauliflower and to sow brinjal at this time.
 3. In upland areas where rice could not be transplanted owing to deficit rainfall, farmers are advised to take up tori and September arhar.
 - Following contingency measures may be continued in Jharkhand utilizing rain likely to occur.
 1. In case of dry condition under upland situation during earlier weeks, due to low water holding capacity, even under intermittent rainfall situation, at this point of time, no crop is recommended except sweet potato which can be safely transplanted upto September.
 2. If the crops could not be sown till date, the farmers are advised to adopt the following measures in medium land situation.
 - Safflower, a deep rooted crop with very less water requirement, should be sown as a sole crop even on the residual moisture.
 - The farmers may also undertake the crops like vegetable pea, toria, maize, potato and kulthi as a sole crop and also vegetable pea + maize (1:1), toria + vegetable pea (4:3), kulthi + safflower (2:4) as intercropping.
 - Raising seedlings of cabbage, cauliflower, tomato etc. as well as cultivation of marigold and gladiolus as a sole crop may be adopted by the farmers near urban areas.
 3. For low lands, the following advisories may be followed:
 - No fresh transplanting of rice is recommended now.
 - No direct sown rice or any other direct sown crop of even short duration is recommended as in case of moderate to heavy rain in Aug-Sept, submergence would cause almost complete failure of the crops. Hence, farmers are advised for early *rabi* crops depending on soil moisture status.
 - Recommended varieties of crops to be sown in different States of the region are mentioned in Annexure I.
 - Due to high temperature and humidity beetle vine plants may be attacked by *Phytophthora* disease in South 24 Parganas district of West Bengal. To prevent this disease, spray Metalaxyl 75 WP @ 1.5 g / litre or 1% Borduax mixture or Copperoxychloride @ 0.15% solution after current spells of rain.
 - Due to high humidity and cloudy weather, damping off and circular spots of brown colour appear on the leaves of brinjal in Purba Midnapur district of West Bengal. Spray the crop with Difoltan 80 WP @ 2 g / litre of water when symptom of disease appears. Apply plant protection measures after current spells of rain.

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

- **Realised Rainfall:** Most of the districts of Assam (except Dhubri, Goalpara, Golghat, Hailakandi, Karbi Analog, Kokrajhar, Morigaon, N.C.Hills, Sibsagar and Sonitpur districts) and Arunachal Pradesh received rainfall during last week.
- **Rainfall Forecast:** Rain is likely to occur at many places over the region during the period.
- **Major Crops:**
 - Vegetables (flowering / fruiting / harvesting), sugarcane (cane development), maize (cob formation), jute and mesta (maturity), *sali* rice (transplanting / early vegetative / seedling / tillering / panicle

initiation), *ahu* rice (transplanted summer rice) (grain formation / early maturity / maturity), arhar (vegetative / flowering), sesamum (vegetative / flowering / pod formation) and black gram and green gram (sowing / germination) in Assam.

- Rice (grain formation / early maturity), pulses (pod formation / maturity), sesame (flowering / pod formation / early maturity), vegetables (vegetative / flowering / fruiting), maize (cob maturity), orange (fruiting) and sugarcane (cane development) in Arunachal Pradesh.
- Upland rice (grain formation / early maturity), *aman* rice (tillering) and vegetables (sowing / early vegetative / vegetative / flowering / fruiting) in Tripura.
- *Sali* rice (transplanting / early vegetative / tillering / panicle initiation), potato (planting / early vegetative / vegetative), vegetables (sowing / germination / early vegetative / vegetative / flowering / fruiting), maize (cob formation) in Meghalaya.

- **Advisory:**

- As rainfall is likely to occur at many places over the States of this region, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures to the standing crops. Also arrange for draining out excess water from the fields to protect the crops from water logging.
- Farmers in Assam are advised to undertake sowing of black gram and green gram, radish and tomato in Diphu Hills Zone, transplanting of finger millet and early cabbage, sowing of black gram and green gram and nursery sowing of brinjal in Lower Bramhaputra Valley Zone, transplanting of short duration varieties of rice and sowing of early cauliflower, radish, knolkhol and brinjal and pulses like black gram and green gram in Upper Bramhaputra Valley Zone, transplanting of short duration varieties of rice and sowing of early brinjal and vegetables in Barak Valley Zone, transplanting of short duration varieties of rice and sowing of *kharif* pulses and early vegetables like early cauliflower and radish in Central Bramhaputra Valley Zone and sowing of green gram and black gram vegetables like cauliflower, cabbage, knolkhol, radish and tomato in North Bank Plain Zone.
- Transplanting of *sali* rice is affected in some districts of Assam by stagnant water in the field due to heavy rainfall. Farmers of these areas are advised to transplant or sow short duration HYV rice varieties like Luit, Kapili, Kolong, Dishang etc. within 2nd week of September.
- Farmers in Arunachal Pradesh are advised to raise nursery of hybrid tomato, cauliflower and cabbage in present weather conditions.
- System of Rice Intensification (SRI)* method may be adopted in Ri-Bhoi, East Khasi, West Khasi and South Garo District of Meghalaya. It is also optimum time for planting of potato in mid hills region of Ri-Bhoi, East Khasi and West Khasi hill Districts.
- Recommended varieties of major crops to be sown in different States of the region are mentioned in Annexure I.
- Due to rainy season, weed infestation may increase in all the districts of Meghalaya. Regular weeding may be done after current spells of rain.
- Present weather is favourable for infestation of the coconut tree by stem bleeding in North Bank Plane Zone of Assam. Infected portion of stem should be scraped out completely and apply Bordeaux paste or coal tar.
- Under excessive moisture in soil, there is possibility of infestation rhizome rot in ginger and turmeric in Arunachal Pradesh. To manage the disease, provide adequate drainage and apply *Trichoderma harzianum* @ 50 g / bed along with FYM or neem cake.
- Infestation of Jassids in okra and cowpea may occur during this period in Ri-Bhoi, east Khasi, South Garo and Jaintia district of Meghalaya. To prevent this insect attack, 2-3 spraying of Imidachloprid @ 0.3 ml / litre of water may be done immediately.
- High humidity and continuous rainfall is congenial for the development of scab disease in khasi mandarin orange in Mizoram. Pruning and destruction of the diseased leaves, twigs, branches and fruits followed by spraying with 1 % Bordeaux mixture (1 kg copper sulphate + 1 kg quick unslaked lime + 100 liters of water) are recommended.

- High temperature and high humidity may favour the development of sigatoka leaf disease in banana in Mizoram. Pruning and burning of infected leaves is recommended; in case of severe infestation mancozeb @ 0.01% may be applied.
- Prevailing high relative humidity and night temperature of 21-23⁰C for few hours may favour infestation of blast disease in rice in Mizoram. Spray Mancozeb @ 0.25% to manage the disease.
- As there is chance of rain at many places over the region, farmers are advised to apply plant protection measures after current spells of rain.
- In present weather conditions, special care should be taken against attack of maggots in the wounds of animals in Arunachal Pradesh. Application of turpentine oil in the wounds followed by application of antibiotics for five days is advised.
- As the weather conditions are favourable for the development of hemorrhagic septicaemia in animals, farmers are advised to take precautions. While infected, the animals will show symptoms of high fever, profuse nasal discharge, difficulty in respiration, swelling of the throat and death within 10-72 hrs.

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

- **Realised Rainfall:** Rain occurred in most of the districts of Himachal Pradesh(except Lahul and Spiti and Kangra districts), Haryana(except Bhiwani, Fatehabad, Jhajar and Sirsa districts), Amritsar, Bhatinda, Faridkot, Gurdaspur, Hoshiarpur, Moga, Nawashahar and Ropar districts of Punjab, Delhi, East Uttar Pradesh(except Ballia, Sant Ravidas Nagar, Gazipur and RaiBareilly), West Uttar Pradesh, Uttarakhand, East Rajasthan, West Rajasthan(except Barmer, Hanumangarh and Sri Ganganagar), Anantnag, Doda, Jammu, Kathua and Udhampur districts in Jammu & Kashmir during last week. No significant rainfall occurred in most of the remaining districts of Jammu& Kashmir and Punjab
- **Rainfall Forecast:** Rainfall is likely to occur at many/few places over East Uttar Pradesh, West Uttar Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Himachal Pradesh, East Rajasthan and at a few places over and Jammu & Kashmir and West Rajasthan during next three days. Isolated heavy rainfall would occur over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Haryana, Delhi and southeast Rajasthan during next 24 hours.
- **Major Crops:**
 - Rice (tillering/vegetative), jowar and maize(vegetative/flowering), pigeon pea(vegetative), vegetable crops (flowering/fruited) in Delhi
 - Rice (tillering), vegetables (transplanting / vegetative / flowering) in Himachal Pradesh.
 - Vegetable crops (flowering / fruited / harvesting), rice (tillering/panicle initiation), maize, groundnut and sunflower (vegetative / flowering) in Jammu & Kashmir.
 - Sugarcane (vegetative), rice (tillering), soyabean, jowar, bajra, pigeon pea and groundnut (early vegetative / vegetative) in Uttarakhand.
 - Sugarcane (vegetative), cotton, maize (vegetative), rice (tillering/panicle initiation), mung, mash (vegetative/flowering) in Punjab.
 - Sugarcane (vegetative), cotton (vegetative), rice(tillering), guar and bajra (vegetative) in Haryana.
 - Rice(tillering), sugarcane (vegetative), vegetable crops (transplanting / vegetative / flowering), black gram, green gram, sesamum, lobia, maize, pigeon pea + pulses, groundnut and sesamum(early vegetative / vegetative / flowering) in Uttar Pradesh.
 - Sugarcane (vegetative), vegetable crops (flowering / fruited / harvesting), maize, soybean, bajra, jowar, mung, cluster bean, sesamum and groundnut (vegetative) in Rajasthan.
- **Advisory:**
 - As there was good rainfall during last week and rainfall is likely at many places during the period in Himachal Pradesh, Punjab, Haryana, East Uttar Pradesh, West Uttar Pradesh, Uttarakhand, Delhi, Rajasthan and at a few places over and Jammu & Kashmir during next three days, farmers are advised to postpone irrigation to the standing crops. Also arrange to provide drainage facilities as isolated heavy

rainfall would occur over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Haryana, Delhi and southeast Rajasthan during next 24 hours.

- Farmers in Uttar Pradesh are advised to spray solution of 5 kg zinc sulphate & 20 kg urea in 1000 lit. of water per acre if symptoms of *khaira* disease are seen (yellow / red leaves) in rice in rainfall deficit areas of Ballia, Sant Ravidas Nagar, Gazipur and RaiBareilly districts. Undertake sowing of toria in fallow lands utilizing the rainfall realised during last week.
- Farmers in Delhi are advised to drain out excess water from vegetable crop fields to avoid damage of crops. Farmers are advised to undertake sowing of sweet corn, baby corn, carrot, early pea, radish, spinach and coriander etc. (varieties in Annexure I) utilizing the rainfall during last week.
- Farmers in Bhabar and Tarai zone (high hills in Nainital district) in Uttarakhand are advised to undertake sowing of early vegetable pea and field preparation for sowing of garlic and undertake planting of litchi (Uttam Singh Nagar), turnip, raddish, salad vegetables, beet root and sowing / transplanting of cabbage and broccoli in medium hilly region of hill zone (Tehri Gharwal, Rudraprayag, Champawat, Uttarkashi, Pitorgarh, Bageshwar and Almora districts).
- Farmers in sub tropical zone (Reasi district) and intermediate zone (Doda, Rajouri and Udhampur) in Jammu & Kashmir are advised to undertake transplanting of cabbage, cauliflower and knol khol and sowing of cole crops in polyhouses, transplanting of off season onion and cauliflower in sub montane and low hills sub tropical zone (Chamba, Hamirpur, Una and Kangra districts).
- Farmers in Rajasthan are advised to undertake sowing of ashwaghandha and ajwain utilizing the realized rainfall during last week in Sub Humid Southern Plain and Aravalli Hill Zone (Chittorgarh, Rajsamand and Udaipur district) and sowing of radish, carrot in Semi Arid Eastern Plain Zone (Dausa, Ajmer, Tonk, Jaipur)
- Farmers in Eastern zone (Bhiwani, Fatehabad, Hissar, Jhajjar, Mahendragarh, Mewat, Rewari, Rohtak and Sirsa districts) in Haryana are advised to undertake transplanting of fruit crops.
- Farmers in Western Plain Zone (Ferozepur and Faridkot districts) and western zone (Bathinda, Moga, Muktsar, Mansa, Sangrur districts) of Punjab are advised to undertake sowing of radish, carrot and turnip utilizing the realised rainfall during last week.
- Undertake spraying, application of fertilisers and intercultural operations after current spells of rain in Himachal Pradesh, Punjab, Haryana, East Uttar Pradesh, West Uttar Pradesh, Uttarakhand, Delhi and East Rajasthan. The above mentioned operations may be carried out on a non rainy day in West Rajasthan and Jammu & Kashmir.

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

- **Realised Rainfall:** All the districts in Coastal Karnataka, Bidar and Gulbarga districts in North Interior Karnataka and Chikmagalur, Kodagu and Shimoga districts in South Interior Karnataka, Kannur, Kasaragod, Kozhikode, Malappuram, Thrissur and Wyanad districts in Kerala, all the districts in Andhra Pradesh except Nellore, Prakasam, Anantapur, Chittoor and Cuddappah districts and Nilgiris district in Tamil Nadu.
- **Rainfall Forecast:** Rain is likely to occur at many places in Coastal Karnataka and Kerala, at a few places over Coastal Andhra Pradesh, Telangana and Interior Karnataka and at isolated places over remaining places. Isolated heavy rainfall is likely to occur over Coastal Karnataka during next 24 hours.
- **Major Crops:**
 - Rice is at flowering / grain filling stage. Pepper is at berry development stage and arecanut is at nut development stage. New planting is continued for coconut, black pepper, ginger, turmeric, tapioca, cocoa, cashew, nutmeg, mangosteen, rambutan etc. in Kerala.
 - *Kuruvai* rice (flowering), groundnut (pegging / pod formation), sugarcane (grand growth), banana (fruit bearing stage) in Tamil Nadu.

- *Kharif* crops viz., maize is at cob formation / development stage, paddy crop is at tillering stage and groundnut is at flowering / pegging in Andhra Pradesh.
- *Kharif* crops viz., green gram and black gram (pod development / maturity), pigeon pea (vegetative) and sugarcane (cane development) in Karnataka. This is proper time for sowing of sunflower.
- **Advisories:**
 - Due to favourable weather conditions and receipt of good amount of rainfall in Andhra Pradesh, farmers are advised to undertake intercultural operations and application of fertilizers and pesticides depending upon forecast of rainfall.
 - Due to continuous rains in North East Dry Zone (Gulbarga, Yadgir) in Karnataka, green gram crop was affected at harvesting stage. Coupled with alternate bright sunshine for the last 15 days, pod shattering is also observed leading to severe loss of crop. As there are chances of rainfall again, arrange for proper storage facilities for the harvested produce to avoid germination of green gram seeds.
 - Due to excess rainfall, waterlogging condition is reported in Southern Telangana Zone (Hyderabad, Medak, Rangareddy, Nalgonda). Farmers are advised to drain out excess water from the fields. Top dress with urea @ 25-30 kg per acre in rainfed crops like maize and cotton after draining out excess water.
 - Rain is likely to occur at many places in Coastal Karnataka and Kerala during next three days; farmers are advised to postpone intercultural operations, application of fertilizers and pesticides and irrigation to plantation crops and vegetable crops. Arrange for drainage facilities over Coastal Karnataka as there are chances of isolated heavy rainfall during next 48 hours
 - Farmers in Cauvery Delta Zone in Tamil Nadu are advised to undertake sowing of rice nursery for *latte samba/thaladi* utilizing Mettur dam water (varieties in Annexure I).
 - Present cloudy conditions coupled with high humid conditions over Scarce Rainfall Zone of Rayalaseema (Ananthpur, Kurnool) in Andhra Pradesh were favourable for the incidence of leaf folder in rice. Spray Chlorpyrifos @ 2.5 ml or Cartap hydrochloride @ 2 g per litre of water to control the disease.
 - Due to favourable weather conditions Southern Telangana Zone (Hyderabad, Medak, Rangareddy, Nalgonda) in Andhra Pradesh, there are chances of incidences of stem borer and *Hispa* in rice, sucking pests, bacterial leaf spot and tobacco streak virus in cotton, *Spodoptera*, Tikka leaf spot and rust in groundnut, semilopper in castor, white fly in sugarcane, fruit and shoot borer in brinjal and bhindi, early blight in tomato and bacterial leaf spot in chilli. Undertake plant protection measures to control the pests and diseases.
 - Due to high humidity and cloudy weather prevailing in Northern Zone (Kannur, Kasargod, Kozikod, Malappuram) in Kerala, banana plants may be affected by Sigatoka leaf spot disease; spray Hexaconazole @ 1 ml/liter of water to control the disease.
 - Under the prevailing weather conditions in Northern Zone (Kannur, Kasargod, Kozikod, Malappuram), there is a chance of attack of leaf sheath and leaf rot. Carbendazim @ 1g or Propiconazol @ 1ml/ litre of water can be sprayed to bring down incidence of fungal diseases on stem and sheath. There are also chances for the incidences of leaf roller in shaded condition. Unfold the folded leafs with a thorny twig and spray Quinalphos @ 2 ml/ litre of water. Trichogramma cards also can be used to control leaf folder @ 1card/ 5 cents
 - Plant protection measures may be undertaken after spells of rain in Coastal Karnataka and Kerala and on a non rainy day in Coastal Andhra Pradesh, Telangana and Interior Karnataka.
- **Animal Husbandry**
 - Care should be taken against the decrease in day temperature for silk worm and poultry and dairy rearing houses in Eastern Dry Zone (Bengaluru Urban, Bengaluru Rural, Kolar) in Karnataka. Maintain

optimum room temperature vaccinate the animals (buffalo, cow, bullock) against Foot and mouth disease.

- The vector activity will increase in rainy months in North Eastern Zone (Chennai, Cuddalore, Thiruvallur, Kancheepuram, Vellore, Villupuram) in Tamil Nadu which may cause arthropod borne diseases like Anaplasmosis, Theilariosis and Trypanosomiasis in cattle. Hence it is advised to avoid stagnation of water near animal sheds. The diseases can also be prevented by using fly repellents.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Most of the districts of the States of this region received good rain during last week.
- **Rainfall Forecast:** Rain is likely at many places in Konkan and Goa, Saurashtra and Kutch and Gujarat region during the period. Rain is likely to occur at many places in Madhya Maharashtra, Marathwada and Vidarbha during next 24 hours and decrease thereafter. Isolated heavy to very heavy rainfall would occur over Vidarbha and Madhya Maharashtra during next 24 hours and over Gujarat and Konkan & Goa during next 48 hours.
- **Major Crops:**
 - *Kharif* rice (early tillering in East Vidarbha and tillering / panicle initiation in Konkan, Kolhapur, Nashik & Pune (western parts) divisions), *kharif* jowar (vegetative), soyabean (flowering / pod formation), bajra (flowering / grain formation), cotton (floral bud initiation / flowering), sunflower (vegetative / floral bud formation), groundnut (flowering / pegging), red gram (primary branching / secondary branching), moong (pod maturity / picking) and irrigated cotton (flowering / boll formation) in Maharashtra.
 - Rice (tillering / panicle initiation / flowering), groundnut (flowering / pegging / pod formation), cotton (vegetative / flowering), maize and bajra (vegetative / flowering / grain formation), pigeon pea, soybean, sesamum, green gram and black gram (flowering / pod formation) and castor (early vegetative / vegetative) in Gujarat.
- **Advisory:**
 - As rain is likely at many places in both the States of Gujarat and Maharashtra of this region, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures to the standing crops.
 - As there is possibility of Isolated heavy to very heavy rainfall would occur over Vidarbha and Madhya Maharashtra during next 24 hours and over Gujarat and Konkan & Goa during next 48 hours, farmers are advised to make arrangement for draining out excess water from the crop fields.
 - Farmers in North Saurashtra Zone of Gujarat State are advised to sow Purva Til during first fortnight of September keeping seed rate of 3 kg / ha.
 - Complete transplanting of tobacco and sowing of castor in Middle Gujarat Zone and Bhal and Coastal zone of Gujarat.
 - Transplant winter chilly, brinjal and tomato in North Gujarat Zone. Also raise cauliflower nursery and sow pumpkin.
 - Due to heavy rainfall, decrease in temperature and increase in humidity during last week, there is attack of leaf burn disease on potato and tomato in Maharashtra; for control spray Copper oxychloride 50% @ 2.5 g per liter of water.
 - The incidence of rice leaf folder is noticed on rice in some part of the Nagpur division of Maharashtra; spray the crop with Carbaryl 50 WP @ 20 g / 10 litres of water and Monocrotophos 36 WSC @ 11 ml / 10 litres of water.
 - There is infestation of green semi looper & tobacco leaf eating caterpillar in soyabean in Maharashtra due to congenial weather; spray 5 % Neem extract or Endosulfan 35 % @ 15 ml or Fenvalerate 20% @ 5 ml in 10 liters water.
 - Due to cloudy & humid weather, soybean gets affected by leaf eating caterpillar (Spodoptera) in western Maharashtra plain zone; spray 500 ml S.L.N.P.V. (Magic) in 500 litres of water or 25% Cypermethrin 200 ml / ha in 500 litres of water.

- Apply plant protection measures after current spells of rain.
- As rain is likely at many places, keep animals in safe places during rainfall.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rain occurred over many districts of Madhya Pradesh and Chattisgarh (except Chhatarpur, Chindwara, Dindori, Katni, Panna, Sagar, Shahdol, Tikamgarh, Badwani, Bhopal, Dewas, Guna, Harda, Khandwa, Khargone, Mandasaur, Raisen, Ratlam, Shajapur, Sheopur Kalani, Shivpuri, Vidisha districts of Madhya Pradesh and Jashpurnagar and Surguja districts of Chhattisgarh) during the period.
- **Rainfall Forecast:** Rain is likely at many places over Madhya Pradesh and Chhattisgarh for the next 24 hours and at a few places thereafter. Isolated heavy to very heavy rainfall is likely over South Madhya Pradesh during next 24 hours.
- **Major Crops:**
 - *Kharif* crop like soyabean, maize, sorghum, sesame (late vegetative), green gram (flowering) and black gram (late vegetative / flowering) in Madhya Pradesh.
 - *Kharif* crops like soyabean, maize, etc (late vegetative), green gram (flowering), black gram (late vegetative / flowering) and sugarcane (cane development) in Chhattisgarh. This is proper time for nursery sowing and transplanting of rainy season vegetables.
- **Advisory:**
 - Postpone intercultural operations and application of fertilizers and pesticides in Madhya Pradesh and Chhattisgarh as there are chances of rain during next few days. Arrange for drainage facilities in South Madhya Pradesh as there are chances for isolated heavy to very heavy rainfall during next 48 hours
 - Due to excess rainfall in Jhabua Hills Zone (Jhabua, Dhar, Alirajpur) in Madhya Pradesh, farmers are advised to arrange for proper drainage for release of excess water from the crop fields.
 - Farmers in Gird Zone (Ashoknagar, Gwalior, Morena, Bhind, Guna, Shoopur, Shivpuri) in Madhya Pradesh are advised to complete transplanting tomato, brinjal and chilli and other vegetable crops. Also undertake planting of fruit crops in pits prepared at recommended distance.
 - Farmers in Bastar Plateau Zone are advised to undertake sowing of black gram and horse bean can be sown in sufficient moisture condition (varieties given in Annexure I).
 - Farmers in North Hill Zone (Jashpur, Korla, Surguja) of Chhattisgarh are advised to undertake planting of horticultural crops like mango, papaya, jack fruit, guava. Transplanting of chilli, tomato & brinjal may be done immediately. Sowing of sesamum & horse bean may be done immediately in upland areas of deficient rainfall.
 - Farmers in Chattisgarh Plain zone are advised to undertake sowing of nursery of early varieties of cabbage, tomato, brinjal, chilli
 - Due to favourable weather conditions in Jhabua Hills Zone (Jhabua, Dhar, Alirajpur) in Madhya Pradesh, there are chances of incidences of tobacco caterpillar and pod borer in kharif pulses; spray Trizophos 40 EC or Profenophos @ 2.0 ml/l for control.
 - Present weather condition in Chattisgarh Plain Zone (Bilaspur, Dhamtari, Durg, Janjgir, Kabirdham, Kanker, Kawardha, Korba, Mahasamund, Raigarh, Rajnandangaon, Raipur) is favourable for the incidence of tobacco caterpillar in soybean, groundnut and urd. Farmers are advised to keep watch over the crops and in the initial stage collect the caterpillars and destroy. In case of severe incidence farmers are advised for the spraying of Thiodon / Endosulphan @ 400-500 ml/acre mixed in 200 liter water.
 - Plant protection measures may be undertaken after spells of rain in Madhya Pradesh and Chhattisgarh.
- **Animal Husbandry:**
 - Looking to cloudy weather increase light duration in poultry farms to maintain egg production.
 - Provide proper aeration for cattle as humidity is rising.

Annexure I List of Varieties

Assam

Short duration HYV *Sali* rice varieties (flood affected areas): like Luit, Kapili, Kolong, Dishang etc.

Early varieties of cauliflower: Pusa Keteki, Pusa Dipalee, Early Kowari, Jowahar Moti etc.

Green gram: T-44, Kopergaon, K-851, ML-56, ML-131, Pratap, SG 21-5 etc.

Black gram: T-9, T-27, Pant U-19, T-122, SB 121, KU 301, USJD 113 etc.

Early cabbage: Golden Acar, Pride of India, Pusa Mukta etc.

Early raddish: Pusa Desi, Pusa Chetki and Pusa Himani.

Brinjal: Pusa Kranti, Cluster, JC-1, Kuchia, Pusa Purple Long, Pusa Purple Round etc.

Knolkhol: White Vienna

Meghalaya

SRI rice: Ranjeet, Naveen.

Bihar

Urd: T-9, Navin, Pant Urd 19 etc.

Cauliflower: Kuwari, Patna Early, Pusa Katki, Pusa Deepali and Hajipur Agat.

Brinjal: Rajendra Baigan-2, Rajendra Annapurna, Pant Rituraj, Pant Samrat, Swarn Pratibha and Arka Navnit.

Jharkhand

Sweet potato: Pusa Safed, Kalmegh.

Safflower: Birsa Sarguja-1, Birsa Sarguja-2 etc.

Vegetable pea: Arkel, Azad Pea-1.

Toria: P.T.-303, Panchali, Bhavani etc.

Maize: H.Q.P.M.-1, Suwan.

Potato: Kufri Chandramukhi, Kufri Ashoka, Kufri Kanchan.

Kulthi: Birsa Kulthi-1, Madhu.

Marigold: Pusa Basmati, Pusa Narangi.

Gladiolus: American Beauty, Jackson Willy Gold, Her Majesty etc.

West Bengal

Green gram: Sonali, Panna, Amrita, Sujata.

Black gram: Kalindi, sarala, Navin.

Arhar: Sarad and Pusa 9.

Radish: Contayl Lal, Red Bombai, Japanese White.

Spinach: Calcutta, Banerjee's Giant, Allgreen Verginia.

Gujarat

Castor: GAUCH-1, GCH-2, 4, 5, 6; GC- 2 etc.

Jammu & Kashmir

Cabbage: Golden Acre, Pride of India.

Cauliflower: Giant Snow Ball, Pusa Synthetic.

knol khol: White Vienna and Purple Vienna.

Punjab

Radish: Asiatic (Desi) varieties -Pusa Chetki,

Carrot: PC-34

Turnip: L-1, Desi varieties

Rajasthan

Ashwaghandha: Ashwaghandha-20 and Ashwaghandha-134.

Radish: Pusa Rasmi

Carrot: Pusa Keshar

Uttarakhand

Vegetable pea: VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel

Garlic: VL-Garlic or DARL-52

New Delhi

Carrot: Pusa Rudhira and Pusa Kesar.

Early pea: Pusa Pragati.

Tamil Nadu:**Rice:**

Late samba and thaladi: ADT 38, ADT 46, Improved White Ponni, IR 20, Ambai 19, Paiyur1, Trichy 1, Trichy 3 and Co 50. For late Thaladi ADT 39 and ADT 42.

Late thaladi: ADT 39 and ADT 42.

Chattisgarh

Horse bean: AK-21, AK-42, Bastar Kulthi, Birsa Kulthi, BLG-9 .

Annexure II Contour maps for the week ending 08.09.10

