

**Central Research Institute for Dryland Agriculture**  
**Hyderabad**

**Status of monsoon and contingency plans for some rainfall deficit/excess areas**

During 1<sup>st</sup> June to 15<sup>th</sup> September, the country as a whole experienced 11% deficit rainfall, which is considered as normal. For the first time since the onset of monsoon in this season, all regions showed normal rainfall condition. However, deficit rainfall conditions prevail over parts of Northwest India, Marathwada, Coastal Andhra Pradesh and Telangana. Rainfall was deficit by 19% over North-West India, 6% over Central India, 5% over Southern peninsula and by 15% over East and North-East India. Heavy rainfall and flash flood caused great damage in Jammu & Kashmir. Current rainfall status and contingency plans for major rainfall deficit regions in the country are given below.

**Haryana**

As the rainfall situation is deficit (54% deficit) so far, crop diversification is advocated and short duration mung bean (MH 421, SML 668) or maize or fodder crops as per local demand/ market are suggested in place of paddy.

- In Western Zone of Haryana, complete sowing of fodder crops such as jowar mixed with cowpea to increase the nutritive value for continuous supply of green fodder.
- Sowing of mustard (RH-30, RH -819, RB-24, RB 50, RH- 781 and Varuna) and chickpea (C-235, H-208 and HC-1) may be undertaken.
- Apply irrigation to pearl millet and recently transplanted fruit crops through micro irrigation system.
- Undertake hoeing in guar and pulses for conserving soil moisture. Alternate wetting and drying in rice fields and irrigation is advised in alternate rows in sugarcane in case of shortage of water for irrigation.

Following measures are also suggested

- Straw mulching in between rows for soil moisture conservation and preparation of ridge and furrow for rain water harvesting.
- Foliar spray of urea (2.5%) at 30-35 days.
- Conjunctive use of canal and ground water.
- Life saving irrigation, if possible.

**Uttar Pradesh**

Rainfall is deficit by 40 and 53% in Eastern and Western UP, respectively.

**East Uttar Pradesh**

- 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, and Ambedkarnagar districts of Eastern Plain Zone.
- Sowing of toria (T-9, T-36, Bhavani, Pant -30,303, 507) at a row spacing of 30 cm in Deoria and Ballia districts of Eastern Plain Zone and Kannauj, Mathura, Agra and Kanpur districts of Central Plain Zone. Sowing early varieties of potato like Kufri-Chandramukhi, Ashoka in Central Plain Zone is also recommended.
- Sowing of ladies finger and lobia in Gorakhpur, Raibareilly and Sultanpur districts may be continued.

- Top dressing of urea in paddy crop at panicle initiation stage in Faizabad, Kannauj, Mathura, Agra, Kanpur districts is advised.

### **West Uttar Pradesh**

- Sowing of pigeon pea (Bahar, Narendra 1 and 2) + pearl millet (NDFB 3) + blackgram (Ajad) is recommended.
- Transplanting of cauliflower, cabbage, tomato, chilli and brinjal, sowing of palak, cucumber, methi, ageti carrot, planting of fruit crops like mango, papaya, lemon, amla, etc. in Jhansi district of Bundelkhand Zone of Uttar Pradesh is suggested. Second top dressing of urea @ 20 kg + Zinc Sulphate @ 5 kg per hectare in rice is also suggested.
- Sowing of jowar varieties such as Pusa Chari-23, SSG-98-8 MFSH-3, H Pant-5 and MP Chari @ 30-40 kg seeds / ha with lobia varieties like Rashianzoint UPC-5286, UPC-5287, NP-3, Bundhel Lobia-2, UPC-9202 and UPC-4200 @ 15-20 kg seed for mixed cropping is advised.
- Select maize hybrid as Ganga-2, 5, 7 or composite as Kishan , African tall and Vijay or indigenous variety Type-41 for fodder.
- Undertake weeding in standing crops like rice, maize, sorghum, pigeon pea, black gram and green gram.
- Top dressing of 1/4 urea in rice at tillering stage is suggested.
- Opening of conservation furrow is recommended.

### **Punjab**

Rainfall situation is deficit in the state so far (47%). Following recommendations are given.

- Sowing of early varieties for potato is recommended.
- Sowing of toria is advised.
- Transplant tomato seedlings for autumn-winter crop.
- Complete new plantation of fruit crops.
- Sowing of leguminous and non-leguminous crops in mixture to improve the nutritive value of the fodder i.e. maize + cowpea, sorghum + guar is advised.
- Sowing of short duration early maturing and drought tolerant varieties of crops including maize (PMH1, PMH2) and moong (PAU 911, ML 818).
- In Undulating Plain Zone of Punjab, continue nursery sowing of mid-season cauliflower, desi varieties of radish, carrot and turnip.
- 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.

### **Maharashtra**

The rainfall status of Marathwada remains deficit (36% deficit). Madhya Maharashtra and Konkan regions received near normal rainfall with 2% excess and 3% deficit, respectively. Vidarbha region has received normal rainfall (10% deficit) so far. Contingency plan for Marathwada region is as follows:

#### **Marathwada**

- Make furrows in cotton, soybean and sorghum fields for rain water harvesting.
- Farmers may undertake intercultural operations like weeding / hoeing in late sown cotton, soybean, pearl millet, sunflower and pigeon pea crops during third week of September to conserve soil moisture.

#### **Madhya Maharashtra**

- Planting of adsali sugarcane may be completed and conserve rain water for future use.

- Maintain the 5 cm water level in transplanted rice fields.
- Carry out intercultural operations like weeding and fertilizer application in sugarcane, vegetables and in late sown cotton, redgram, soybean and sunflower.
- Plan for early rabi sorghum and safflower crops.
- Sowing of fodder crops like sorghum (Ruchira, Phule Amruta, Phule Godhan) and maize (African tall, Karveer, Rajshree) may be completed utilizing realised and expected rain.

## **Telangana**

The rainfall deficit of the state is 32% so far.

- In Adilabad, Karimnagar and Khammam districts, undertake gap filling with survived hills (split into individual tillers), wherever the rice fields are inundated and the crop is damaged.
- In cotton, apply a booster dose of 30 kg urea + 15 kg MOP per acre and undertake intercultural activities to create better aeration in areas which received heavy rains.
- Maintain optimum water level in rice fields.

## **Arunachal Pradesh, Assam & Meghalaya, NNMT**

- In Central Brahmaputra Valley Zone of Assam, sowing of black gram, green gram is expected to be completed. Continue nursery sowing of cole crops and early radish. Undertake weeding in sesame.
- In Hill zone of Assam, replanting or gap filling with seedlings of sali rice of similar age should be done within 7-10 days of transplanting. Undertake land preparation for sowing of sesame (AST-1, Gauri, Vinayak).
- In Lower and Upper Brahmaputra Valley Zone of Assam, undertake transplanting of 25-30 days old seedlings of mid cauliflower, early cabbage, knol khol in the main field. Undertake land preparation for sowing of black gram (T-9, T-27, Pant U-19, T-122) and green gram (T-44, Kopergaon, K-851, ML-56, ML-131).
- In Upper Brahmaputra Valley Zone of Assam, gap filling in the main field of rice with same age of seedlings at 20 and 40 days after transplanting may be taken up.
- In Barak Valley Zone of Assam undertake sowing of jute for seed purpose.
- In Meghalaya, maintain water level of 3-5 cm in transplanted Sali rice. Conserve water by repairing bunds. Transplanting of cabbage, cauliflower and broccoli and sowing of carrot, radish and French bean may be continued. In ginger and turmeric undertake hand weeding followed by fertilizer application, earthing up and mulching. Apply 80 kg/ha urea and 40 kg/ha MOP for ginger and apply 65 kg/ha urea and 100 kg/ha for turmeric MOP at 90 DAS. Mulching can be done with locally available weed biomass, maize stalk, etc.
- In Manipur, in kharif rice, maintain water level of 5-8cm. Weeding may be done before top dressing. Continue raising off-season tomato nursery under polyhouses. Preparation of nursery for onion may be continued. Continue preparation of main field for transplanting from raised cole crops nurseries (Cabbage/Cauliflower/Broccoli). Land preparation for sowing of French bean, broad bean and pea may be continued. Recommended varieties for French bean are – Pant Anupam, Anupam and Tangkhul Hawai (local), for broad bean, plant local variety and for pea, Arkel or Azad may be planted.
- In Mizoram, nursery preparation for cabbage, cauliflower, broccoli and knol khol may be undertaken. Carry out weeding in rice, maize, cowpea, turmeric and ginger field.

- In Mild Tropical Plain Zone of Tripura, provide adequate drainage in groundnut at pod filling stage particularly in low and medium lands and where there is a chance of water stagnation.

*Note: The above is a general overview for the states. However, ICAR (CRIDA) has prepared district level contingency plans (covering all farming situations within the district) and placed in the websites of the Ministry of Agriculture & Cooperation, Government of India ([www.agricoop.nic.in](http://www.agricoop.nic.in)) and CRIDA ([www.crida.in](http://www.crida.in)) for further details.*