

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

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

During 1 June to 29 September, the country as a whole experienced 12% deficit rainfall. Except Northwest India, all other regions have received normal rainfall. Rainfall was deficit by 21% over North-West India, 9% over Central India, 7% over Southern peninsula and by 11% over East and North-East India. Northeast India received heavy rainfall during last week. Southwest monsoon has started the withdrawal and as on date, the withdrawal line continues to pass through Jammu, Una, Bareilly, Kanpur, Ujjain, Vadodara and Porbandar. Current rainfall status and contingency plans for major rainfall deficit regions in the country are given below.

**Haryana**

As the deficit rainfall situation continues (56% 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.

- Continue sowing of mustard (RH-30, RH -819, RB-24, RB 50, RH- 781 and Varuna) and chickpea (C-235, H-208 and HC-1).
- Undertake plantation of new orchard.
- Apply irrigation to pearl millet, rice and guar and recently planted 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.
- In Western Zone, sowing of fodder crop sorghum mixed with cowpea to increase the nutritive value and for continuous supply of green fodder may be completed.

**Uttar Pradesh**

Rainfall is deficit by 42 and 56% in Eastern and Western UP, respectively.

**East Uttar Pradesh**

- Undertake transplanting of cauliflower (60x60 cm row spacing), brinjal (75x60 cm row spacing), tomato and chilli and planting of fruit crops in Raibareilly, Amethi and Sultanpur districts of Eastern Plain Zone.
- Nursery sowing of cabbage (Imprabad Japoni, Pusa chipali and Pusa kartiki), sowing of Asiatic varieties of radish (Japoni white, Pusa chetaki, Hisar Muli No.1 and kalyanpur-1) and methi in Central Plain Zone of Uttar Pradesh is advised.
- Undertake sowing of toria @ 4kg seed per hectare in 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) in Eastern Plain Zone and Central Plain Zone.
- Supplementary irrigation may be provided in soybean at flowering and pod formation stages and in moong and urad in Central Plain Zone of Uttar Pradesh. Sowing of potato (Kufri - Chandramukhi, Sadabahar, Ashoka) may be undertaken. Harvesting of maize is also recommended.

- Undertake land preparation for sowing of potato in Sant Kabir Nagar and Gorakhpur districts of Eastern Plain Zone of Uttar Pradesh. It is also suggested to keep the inputs ready for sowing of mustard during last week of September and Ageti Matar (Kashi - Nandini, Uday, Mukti, Arkel, Azad-3) during first week of October.
- Apply irrigation in rice and then undertake top dressing of nitrogen in long duration rice crop
- Monitor medium duration varieties of rice for attack of Gundhi bug.
- Provide bamboo support to papaya, banana etc.

### **West Uttar Pradesh**

- Sowing of pigeon pea (Bahar, Narendra 1 and 2) + pearl millet (NDFB 3) + blackgram (Ajad) or Pigeon pea (Bahar, Narendra 1 and 2) + Sorghum (Varsha, CSH 13 and 23, Bundela) is recommended.
- Second top dressing of nitrogen in maize at knee high stage and third during tasselling stage in Western Plain Zone of Uttar Pradesh is recommended.
- Sowing of toria @ 4kg seed per ha in Agra, Mathura, Lucknow and Kanpur districts of Western Plain Zone is suggested.
- Continue transplanting of cauliflower, cabbage, tomato, chilli and brinjal, sowing of palak, cucumber, methi, ageti carrot in Jhansi district of Bundelkhand Zone. Sowing of Ageti matar (Azad P-3, Arkel) is advised. Undertake field preparation for sowing of mustard (Basati, Maya, Kanti, Urvashi, Narendra, Swarna-8, Narendra Ageti-4), arhar, matar and masoor. Harvesting of matured moong may be undertaken. Maintain 5cm water level in rice at panicle initiation and flowering stage. Select maize hybrid as Ganga-2, 5, 7 or composite as Kishan, African tall and Vijay or indigenous variety Type-41 for fodder purpose.
- Undertake weeding in standing crops like rice, maize, sorghum, pigeon pea, black gram and green gram.

### **Punjab**

Seasonal rainfall is 50% deficit in the state so far. Following recommendations are given.

- Sowing of toria and early varieties for potato is recommended.
- Transplant tomato seedlings for autumn-winter crop.
- 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
- In Western Plain Zone of Punjab, field preparation and sowing of short duration hybrid maize (PMH 2) is suggested.
- 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.

### **Maharashtra**

The rainfall status of Marathwada remains deficit (41% deficit). Madhya Maharashtra and Konkan regions received near normal rainfall with 6% and 5% deficit, respectively. Vidarbha region has received normal rainfall (14% deficit) so far. Contingency plan for Marathwada region is as follows:

#### **Marathwada**

- Intercultural operations in cotton, red gram and vegetables may be carried out.
- Complete plucking of already matured green gram and black gram pods.
- Land preparation for sowing of rabi crops like sorghum and safflower may be undertaken.

- Taking benefit of available soil moisture, sowing of rainfed sorghum (Parbhani Moti or Parbhani Jyoti) may be undertaken.

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

- In Central Brahmaputra Valley Zone of Assam, sowing of cole crops and early radish may be continued. Weeding and thinning in sesame may be carried out. Nursery sowing of winter brinjal (Pusa Kranti, Pusa Purple Long, Pusa Purple Cluster, Pusa Bhairav, JC-2, BWR-12) may be continued. Sowing of green gram (SG-1, T-44, Kopergaon, ML-56) may be undertaken.
- In Hill zone of Assam, land preparation for sowing of sesame (AST-1, Gauri, Vinayak) may be continued. Sowing of black gram and green gram may be completed. Transplanting of early cauliflower may be undertaken.
- In Lower Brahmaputra Valley Zone of Assam, transplanting of 25-30 days old seedlings of mid cauliflower, early cabbage, knol khol in the main field may be continued. 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) may be completed. Sowing of garlic may be continued. Weeding and thinning in already sown black gram, green gram and sesame crops may be continued. Sowing of pumpkin (Arke Suryamukhi, Arka Chandan and Selected Local cultivar) may be undertaken.
- In Upper Brahmaputra Valley Zone of Assam, transplanting of 25-30 days old seedlings of mid cauliflower, early cabbage, knol khol in the main field may be continued. Weeding in sali rice and pulses may be continued.
- In Barak Valley Zone of Assam nursery sowing of mid cauliflower, early cabbage and knol khol may be continued. Sowing of bottle goblackgram may be continued.
- In North Bank Plain Zone of Assam nursery sowing of mid cauliflower, early cabbage, brinjal, tomato, carrot, spinach, beet, raddish and knol khol may be continued. Weeding and thinning in pulse crops may be continued.
- 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 completed. In ginger and turmeric undertake hand weeding followed by fertilizer application, earthing up and mulching. Mulching can be done with locally available weed biomass, maize stalk, etc. Land preparation for sowing of potato and peas may be continued.
- In Manipur, in kharif rice, maintain water level of 5-8 cm. Continue raising off-season tomato nursery under poly houses. Preparation of nursery for onion may be continued. Transplanting of raised cole crops (cabbage/ cauliflower/ broccoli) may be undertaken. Sowing of French bean, broad bean and pea may be continued. Recommended varieties for French bean are – Pant Anupam, Anupam and Tangkhul Hawaii (local), for broad bean, plant local variety and for pea, Arkel or Azad may be planted. Weeding in groundnut and black gram may be carried out.
- In Mizoram, nursery preparation for cabbage, cauliflower, broccoli and knol khol may be continued. Carry out weeding in rice, maize, cowpea, turmeric and ginger field.
- In Mild Tropical Plain Zone of Tripura, weeding in aman rice may be carried out. In raised nursery beds sowing of winter vegetable like tomato, cauliflower, cabbage, broccoli is in progress.
- In Nagaland, nursery preparation for cabbage may be undertaken.

***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.***