



National Agromet Advisory Service Bulletin
based on
Extended Range Weather Forecast (ERFS)

Valid for 19th August to 1st September, 2016

Date of Issue: 19th August, 2016

Issued by

**Earth System Science Organisation
India Meteorological Department**

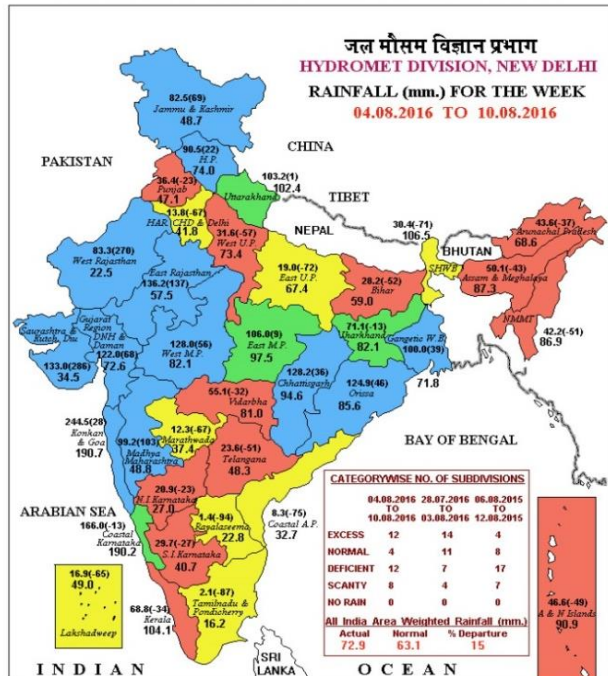
&

**Indian Council of Agricultural Research (ICAR)
All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad**

*** National AAS Bulletin based on ERFS is available at <http://www.imdagrimet.gov.in/erfsview15>**

Realized Rainfall (4th to 17th August 2016)

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT

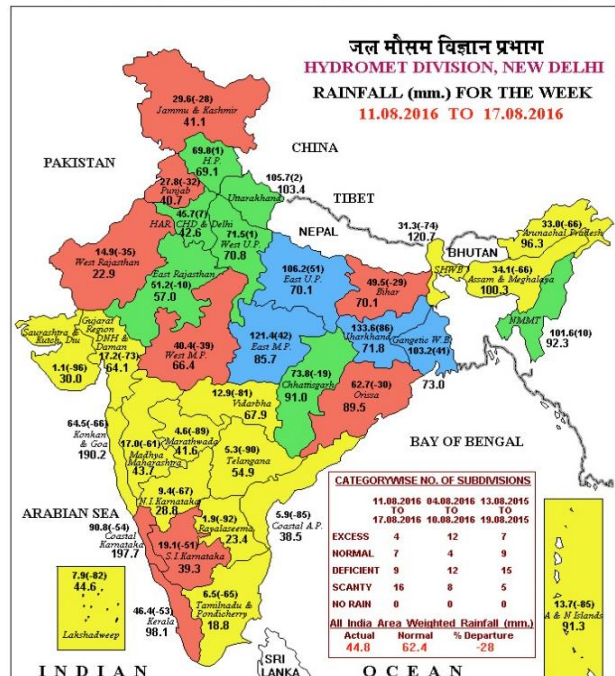


LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)
■ SCANTY [-60% TO -99%] ■ NO RAIN [-100%] ■ NO DATA

NOTES:

- (a) Rainfall figures are based on operational data.
 (b) Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)
 Percentage Departures of Rainfall are shown in Brackets.

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)
■ SCANTY [-60% TO -99%] ■ NO RAIN [-100%] ■ NO DATA

NOTES:

- (a) Rainfall figures are based on operational data.
 (b) Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)
 Percentage Departures of Rainfall are shown in Brackets.

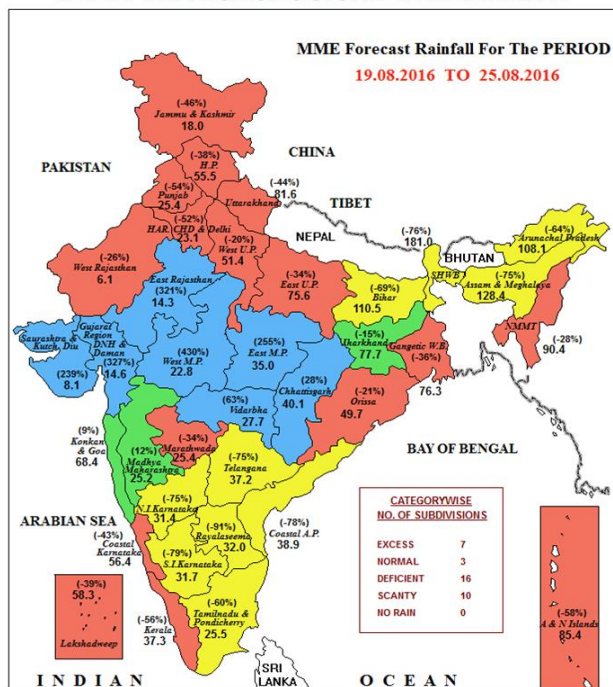
- Normal or above normal rainfall occurred during last two weeks in Uttarakhand, Himachal Pradesh, Jharkhand, Gangetic West Bengal, East Madhya Pradesh, Chhattisgarh and East Rajasthan.
- Normal or above normal rainfall occurred in either of the last two weeks in Jammu & Kashmir, Uttar Pradesh, Haryana & Delhi, West Rajasthan, Odisha, Nagaland, Manipur, Mizoram, Tripura, West Madhya Pradesh, Gujarat State, Konkan & Goa, Madhya Maharashtra and Coastal Karnataka.
- Below normal rainfall occurred in the last two weeks in Punjab, Arunachal Pradesh, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Bihar, Marathwada, Vidarbha, Interior Karnataka, Telangana, Rayalaseema, Coastal Andhra Pradesh, Kerala and Tamil Nadu.

Extended Range Forecast System

Subdivisionwise rainfall forecast for the next 2 weeks (IC =17 August)

Rainfall forecast (19 August - 01 September, 2016)

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT

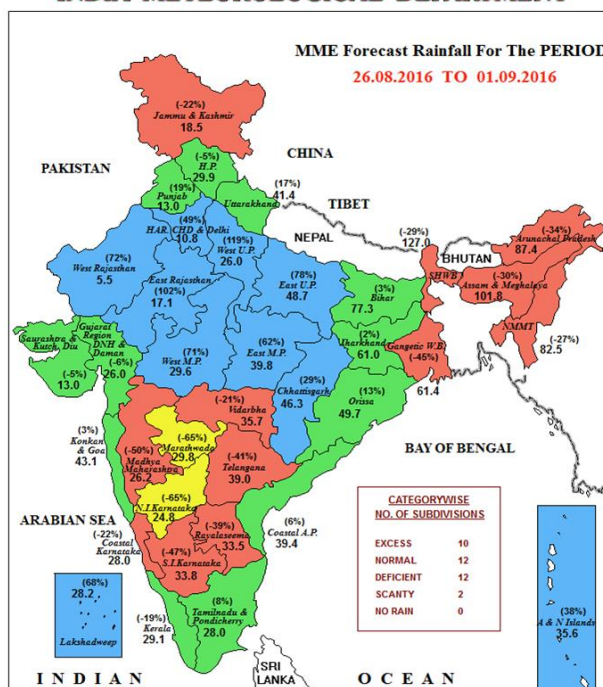


LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)
■ SCANTY [-60% TO -99%] ■ NO RAIN [-100%] ■ NO DATA

NOTES:

- (a) Rainfall figures are based on MME Forecast.
 (b) Bold figures indicate Forecast Normal rainfall [mm.]
 (c) Percentage Departures of Rainfall are shown in Brackets.

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)
■ SCANTY [-60% TO -99%] ■ NO RAIN [-100%] ■ NO DATA

NOTES:

- (a) Rainfall figures are based on MME Forecast.
 (b) Bold figures indicate Forecast Normal rainfall [mm.]
 (c) Percentage Departures of Rainfall are shown in Brackets.

- Normal or above normal rainfall is likely to occur during next fortnight over East Rajasthan, Jharkhand, Chhattisgarh, Madhya Pradesh, Gujarat State and Konkan & Goa.
- Normal or above normal rainfall is likely to occur in either of the next two weeks over Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, Uttar Pradesh, West Rajasthan, Bihar, Odisha, Madhya Maharashtra, Vidarbha, Coastal Andhra Pradesh, Kerala and Tamil Nadu.
- Below normal rainfall is likely to occur during the next two weeks over Jammu & Kashmir, West Bengal, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Marathwada, Telangana, Rayalaseema and Karnataka.

Strategic Agricultural Planning based on rainfall during next two weeks till 1st September

- During week 1 (19-25 August), rainfall activity is likely to be active over central parts of India and adjoining northwest India associated with the system, whereas, Northeast India and south peninsula is expected to be below normal.
- During week 2 (26 Aug-01 Sep), rainfall is expected to be active over northern parts of central India and adjoining North/Northwest parts of India. Rest of the region it will be normal to below normal
- State-wise crop varieties are given in Annexure I.

In view of subdued rainfall activity over southern parts of India and over Marathwada and Vidarbha subdivisions of Maharashtra during last fortnight and over Madhya Maharashtra during second week of last fortnight, which is likely to continue over Karnataka, Telangana, Rayalaseema and Marathwada during next fortnight and over Kerala, Tamil Nadu and Coastal Andhra Pradesh during first week of next fortnight and over Madhya Maharashtra and Vidarbha subdivisions of Maharashtra during second week of next fortnight, following advisories are suggested:

Kerala

- Maintenance of 3-5 cm water level in transplanted rice.
- Continuation of planting of new rubber saplings in Pathanamthitta district and tapping of rubber in Thiruvananthapuram district.
- Mulch the tender cashew nut plant base with dry leaves in Kannur, Kasaragod, Malappuram and Kozhikode districts.
- There is a chance for sheath blight disease in rice (panicle initiation stage) in Thrissur, Palakkad and Ernakulam districts; to control, apply Propiconazole 25 EC @ 500 ml / hectare on non-rainy day.
- Rice: Since light rainfall with high day temperature is forecasted, there is a chance for attack of rice thrips. To control, apply 250 ml of DDVP 100 EC/AF formulation / Dimethoate @ 2 ml / litre.
- Take necessary phyto-sanitary measures. Spray 1% Bordeaux mixture as a prophylactic measure to control mahali and bud rot diseases in arecanut and azhukal disease in cardamom in Idukki district.
- Coconut: As a prophylactic measure against the attack of rhinoceros beetle and red palm weevil, it is recommended to clean the top most leaf axils and after cleaning, apply 250 gneemcake mixed with equal volume of sand or mixed with one naphthalene boll in the top most three leaf axils.
- Banana: There is a chance for yellowing in banana. Examine the sucker and make sure that it is Erwinia rot, it can be controlled by mixing 25 gms of Kocide and 6gms of Streptocycline in 25 ml of water and apply 5 litre of solution to each banana basin.
- Ginger, Turmeric: During rainy season, there is a chance of rhizome rot. To control this dig out the affected plants and apply Kocide @2gm/litre of water.

Karnataka

Coastal Karnataka

- Maintenance of 3-5 cm water level in transplanted rice in Uttar Kannada district.
- Completion of transplanting of rice in Uttar Kannada district of Hill Zone with realised rainfall.

South Interior Karnataka

- Make use of stored rain water for protective irrigation to *kharif* crops during the dry spell.
- Maintenance of 3-5 cm water level in transplanted rice.
- Intercultural operations in red gram in Hassan and Chikkamagaluru district of Southern Transition Zone.
- As there is scarcity of rainfall and also shortage of water in reservoirs, take up sowing of contingent crops like minor millet viz. foxtail millet, kodo millet, proso millet, ragi, jowar, maize and pulses like avare, cowpea except green gram, black gram, niger and sesamum in Chamrajnagar, Mandya and Mysuru districts of Southern Dry Zone. Avoid sowing / planting of rice and sugarcane.
- Completion of direct sowing of ragi in Ramnagara districts, continuation of sowing of maize and ragi in Bengaluru Rural and Bengaluru Urban districts, sowing of maize in Chikaballapura and Kolar districts of Eastern Dry Zone under sufficient moisture condition.
- Intercultural operations in earlier sown maize and groundnut crops to control the weeds and to increase the moisture availability to crops. Mulching in red gram and maize by using the residues of weeds, gliricidia and other green manure crops grown on the bunds, borders and along the drainage lines in Eastern Dry Zone.
- Infestation of wilt disease is noticed in vegetable crops like tomato, chilli and capsicum crops in Chamrajnagar, Mandya and Mysuru districts; to manage this, uproot the affected plants and spray Copper Oxychloride @ 3 g + 500 mg Streptomycin Sulphate /litre of water.

North Interior Karnataka

- Make use of stored rain water for protective irrigation to *kharif* crops during the dry spell.
- Maintenance of 3-5 cm water level in transplanted rice.
- Completion of sowing of minor millet in Vijayapura, Gadag and Bagalkote districts of North Dry Zone with sufficient moisture condition. Carry out weeding/intercultural operations in groundnut etc. Prepare ridges and furrows and compartment bunds in the lands reserved for *rabi* sowing.
- Weeding and other intercultural operations and earthing-up in soybean and pigeon pea to conserve moisture in Bidar district of North East Transition Zone.
- Completion of transplanting of rice in Kalaburgi, Koppal, Raichur, Yadgir and Ballari districts of North East Dry Zone with optimum moisture condition by 20th August.
- Intercultural operations in already sown maize, cotton groundnut crops and sugarcane crops in Dharwad, Belagavi and Haveri districts of North Transition Zone.

Andhra Pradesh

Coastal Andhra Pradesh

- Protect rice nurseries against prevailing dry weather condition by irrigation in the evening time in Guntur district.
- Adopt intercultivation in 30-40 days old red gram, black gram, green gram crops in Krishna and Guntur districts, for reduction of weeds as well as moisture stress.
- Completion of nursery sowing of rice, sowing of red gram, black gram and green gram in Krishna, Guntur and West Godavari districts of Krishna Godavari Zone with sufficient soil moisture.
- Continuation of transplanting of rice in Srikakulam, Vizianagaram and Vishakapatnam districts with receipt of rainfall.
- Maintenance of 2-3 cm water level in transplanted rice fields.
- Prevailing dry weather conditions in Krishna, Prakasam, Guntur and Krishna districts are congenial for Boron deficiency in cotton crop which results in early fruit drop; to manage, spray Borax @ 1 – 1.5 gm/ litre of water twice a week.
- Sucking pests are the serious problem in pulses under prevailing dry weather conditions in Krishna and Guntur districts; to manage, application of Acephate @ 1.2 gm / liter of water is advised.

Rayalaseema

- Monitoring of soil moisture condition and application of protective irrigation (by sprinkler method) to groundnut crop at vegetative stage to avoid moisture stress.
- Continue sowing of following contingency crops:
Sorghum (CSH-9, CSH-13, CSH-14, PSV-15, PSV-19), bajra (ICTP 8203, PBH 3), korra (Prasad, Krishnadevaraya, Narashimharaya, Srilakshmi, Surya Nandi), cowpea (C 152 GC3 C0-4 CO-5), sunflower (NDSH1, KBSH1, KBSH 44, DRSH 1), green gram (LGG 407, LGG 450, LGG 460, MGG 295, ML 267) and field bean (TFB-1 TFB-5) in Ananthapur and Kurnool districts with sufficient moisture.
- Sucking pest incidence (thrips, jassids) observed in groundnut. Spraying of Dimethoate @ 2ml/litre or Imidacloprid @ 0.3 ml/litre or Thiomethaxam @ 0.2 gm/litre of water can be taken up for control.

Telangana

- In view of prevailing dry weather condition which is likely to continue during next fortnight, monitoring of soil moisture condition and application of protective irrigation is advised in maize, cotton, soybean by adopting alternate furrow method, wherever irrigation facilities are available in Mahabubnagar, Nalgonda, Medak, Rangareddy, Khammam and Warangal districts of Southern Telangana Zone.
- Intercultivation in red gram, tomato, bhindi and brinjal with gorru/guntaka to keep the crop free from weeds upto 60 DAS in Karimnagar, Nizamabad and Khammam districts of Northern Telangana Zone.
- Magnesium deficiency was noticed in cotton in some parts of Northern Telangana Zone; spraying of Magnesium Sulphate @ 10 gm/litre for correction of Magnesium deficiency is advised.

Tamil Nadu

- Continuation of nursery sowing of *Samba* rice (CR 1009 and ADT 50) in Ariyalur, Nagapattinam, Perambalur, Thanjavur, Thiruvavur and Trichy districts.
- Application of 2nd top dressing Urea @ 25kg and Potash @ 10kg/ acre in transplanted *kar* season rice in Coimbatore, Tiruppur and Erode districts,
- Maintenance of 5 cm water level in rice in Kanyakumari district.
- Provide irrigation and mulching to newly planted banana, pepper and other young fruit plants in Kanyakumari district.
- Provide dust mulching to conserve subsurface soil moisture to tackle soil moisture stress in groundnut sown in dry lands in Pollachi taluka of Coimbatore district.
- If sowing is delayed up to second week of August, sowing of short duration varieties (Indaf 9 and CO 7) of finger millet is suggested in the place of long duration finger millet in Krishnagiri district.
- Crops such as varagu (Kodo millet) and cowpea are advocated instead of fallow in Pudukottai district.
- Intercultural operation and mulching for conservation of soil moisture.

Maharashtra

Madhya Maharashtra

- Maintenance of 3-5 cm water level in transplanted rice (at tillering stage) field in Western Ghat Regions.
- Intercultural operations in soybean in Kolhapur, Sangli, Satara, Ahmednagar and Jalgaon districts. Avoid intercultural operations in groundnut and soybean crop at flowering stage.
- Hoeing and weeding in *kharif* crops to conserve soil moisture.
- Organic mulching with crop residues in case of newly plant orchards to avoid excess water loss.
- Maintain optimum plant population in order to maintain water balance

Marathwada

- Intercultural operations like hoeing and weeding in soybean and cotton to conserve soil moisture.
- In cotton crop, to increase production, spray 2% Diamonium Phosphate (200 gm per 10 litres of water) at square formation stage (45 DAS) and for integrated pest management spray 5% Neem extract.
- Completion of planting of banana. Delay in plantation may result in reduction of yield.
- Continue plantation of fodder crops like maize, bajra and napier grass upto end of August.
- To control leaf eating caterpillar in pigeon pea, spray Methyl Parathion 50 EC @ 1 ml per litre of water.
- To control powdery mildew in green gram and black gram, dusting of sulphur 300 mesh powder @ 20 kg per ha is recommended.

Vidarbha

- Maintenance 3-5 cm water level in rice (at tillering stage) fields in East Vidarbha.
- Intercultural operations like hoeing and weeding in soybean and cotton to conserve soil moisture.

- In cotton crop, to increase production, spray 2% Di-Amonium Phosphate (200 gm per 10 litre of water) at square formation stage (45 DAS).
- Completion of planting of banana. Delay in plantation may result in reduction of yield.
- Continuation of plantation of fodder crops like maize, bajra and napier grass upto end of August.

Excess rainfall occurred during first week over Gujarat State, Konkan & Goa, whereas, rainfall was scanty over Gujarat State and Konkan & Goa during second week of last fortnight. Excess/normal rainfall is likely over Gujarat State and Konkan & Goa subdivision of Maharashtra during next fortnight. In view of this following advisories are suggested:

Maharashtra

Konkan

- Maintenance of 3-5 cm water level in rice (at tillering stage) fields.
- For control of fruit drop disease in sapota, spray the trees with fungicide Ridomil (Metalaxyl 8% + Mancozeb 64%) at 0.2 per cent (20 ml/10 litres of water) concentration. Add sticker @ 1 ml/ litre of spray solution at the time of spraying of insecticides/fungicides.
- Planting of biennial forage crops like paragrass, napier, gajraj etc.

Gujarat

Gujarat Region

- Maintenance of water level of 3-5 cm in rice fields. Weeding and intercultural operations in transplanted rice and okra in Navasari, Dangs and Valsad districts of South Gujarat Heavy Rainfall Zone.
- Maintenance of 5 cm water level in transplanted rice field, sowing of fodder sorghum, weeding and other intercultural operations in pearl millet and rice in Anand, Dahod, Panchmahals, Kheda and Vadodara districts in clear weather.
- Completion of sowing of fodder sorghum, transplanting of fennel and planting of saplings of fruit crops in Banaskantha, Mehsana, Gandhinagar, Patan and Sabarkantha districts. Weeding and other intercultural operations in cotton, pearl millet and vegetable crops in clear weather.
- Rain water harvesting for future use.

Saurashtra& Kutch

- Intercultural operations in groundnut and cotton in Junagadh and Porbandar districts in clear weather.
- Completion of sowing of castor (GCH-7) and intercultural operations in sesame and cotton crop in Kachchh district in clear weather.
- Gap filling, thinning in late sown pulses, completion of sowing of fodder sorghum, weeding and other intercultural operations in sesame, pearl millet and early sown pulses in clear weather in Bhavnagar and Ahmedabad districts.
- Transplanting of brinjal, chilli and early cauliflower with available soil moisture, carry out intercultural operations in pulses and pearl millet for creating soil mulch and removal of weeds in Amreli, Rajkot, Surendranagar and Jamnagar districts of North Saurashtra Zone.
- Rain water harvesting for future use.

- Continue sowing of following crops as mid-season corrections:
 - Sorghum fodder purpose :- CSH-6, GFS-4, GFS-5, GAFS-11
 - Sunflower :- EC-68414, Modern GS-1, 2 & 3
 - Sesame :- Gujarat sesame –1, 2, 3 & 4
 - Castor :- GAUCH-1, GCH-2, GCH-4, 5, 6 & GCH-7

In view of subdued rainfall activity during last fortnight over north-eastern India, Bihar and Sub-Himalayan West Bengal which is likely to continue during next fortnight, whereas normal / excess rainfall is likely to continue during next fortnight over Jharkhand, following advisories are suggested:

Arunachal Pradesh

- Avoid intercultural operations in groundnut field at pegging stage. Carry out hand weeding with care.
- Apply basal dose of fertilizers in ginger and turmeric fields followed by earthing up.
- Carry out manual picking of Blister beetle in pulses without delay because the incidence of the pest during flowering stage causes huge loss. Spray Fipronil @ 2ml/10lit against pod borer. Dust ash powder against aphids.

Assam & Meghalaya

Assam

- Farmers of flood affected areas of Marigaon district are advised for direct seeding of Sali rice with the photo insensitive short duration cultivars like Luit, Kapilee, Kolong and Dishang up to August.
- Late and staggered planting after receding flood with 60 to 80 days old seedlings of the varieties like Prafulla (80 days) and Gitesh (60 days) is also suggested up to mid of September. The old seedlings of other improved long duration variety like Monohar Sali can be transplanted up to August.
- In partially flood affected fields, farmers are advised to apply 1/3rd N2 + 50% K2O of total dose as top dressing during the tillering stage.
- Complete sowing of sesame in Sonitpur district.
- Undertake land preparation and sowing of radish in Sonitpur district.

Meghalaya

- Apply small quantity of urea @ 35 kg/ha as top dressing in upland Jhum rice in East Jaintia Hills district after hand weeding at 40-45 DAT.
- High relative humidity with intermittent rain is favourable for development of blast in rice. If blast spots are seen, apply Mancozeb @ 2g/l or Carbendazime @ 1g/l. Spraying should be done in sunny days.
- Undertake one weeding and hoeing in tomato. Stake the plants with 1-1.5 m tall bamboo sticks.
- Spray of Malathion (3ml/l) or Rogor (1.0ml/l) at 10-15days interval for control of fruit borer. Avoid tomato fruits for consumption up to 7-10 days after spraying the chemicals.
- Undertake weeding operation, top dressing of urea @ 81.4 kg urea & MOP @ 41.75 kg/ha in ginger & urea @ 65.1 kg/ha, MOP @ 100.2 kg/ha in turmeric followed by earthing up at 45DAP.

Nagaland, Manipur, Mizoram and Tripura (NMMT):

Manipur

- Drain out the water and apply 33kg of urea/ ha as top dress after 30days of transplanting main *kharif* rice in Bishnupur district. Drain out water after 48hrs of top-dressing. Construct ridges to maintain water level of 5-8cm.
- Arrange proper drainage to avoid water logging in *kharif* maize.
- Prepare raised beds for cauliflower nursery. Also prepare temporary rain shelter to protect it. Arrange for drainage facility.
- To prevent rhizome rot in turmeric and ginger, spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times in clear weather.

Mizoram

- Apply split dose of fertilizer 600: 200:100 (g/pt) in banana in Kolasib district. Apply micro-nutrients viz. zinc, copper, manganese, iron, boron and molybdenum. They also reduce serious disorders which may lead to decline of the whole orchard.
- Apply insecticide like Imidacloprid 0.5 ml or Phosolone 1.5 ml or Acephate 1.0 g or Dimethoate 2 ml/litre of water to control turmeric shoot borer.
- Remove unwanted plant near base of the *kharif* maize plant in vegetative stage and cut dead branches. Carry out earthing up of soil along with fertilizer mixture. Apply split dose of fertilizer.

Tripura

- *Aman* rice transplanted at first fortnight of July now at tillering stage. Carry out weeding in the field. Give one spray of Zinc Sulphate and apply urea @ 10kg per kani for better tiller. In SRI field maintain aerobic condition through proper drainage.
- Maintain the drainage in groundnut at grain filling stage in Dhalai district, particularly in medium upland and lowland where there is a chance of stagnant water due to rain.
- Apply urea @ 10 kg per kani in the *kharif* maize sown in second fortnight of June. Before application of top dressing carry out thinning, weeding and earthing operations.
- Cloudy and humid weather is conducive for the attack of leaf roller in summer brinjal, chilly etc. To manage the attacks, apply Imidacloprid @ 2ml per litre of water.

Nagaland

- Harvest maize as soon as it is dry and do not let in the field or else it will be attacked by weevils. In addition to reducing post-harvest losses, this will also release the field for early land preparation.
- Maintain proper drainage in soybean field in Dimapur district and carry out timely earthing up.
- Maintain good drainage in the ginger field to avoid rhizome rot.
- Maintain proper staking in cowpea and harvest the crop in time.

West Bengal

- Apply top dressing in rice in Jalpaiguri district at about 21 DAT. If top dressing already

completed, apply Fipronil @ 1.5 Kg/ Bigha for stem borer infestation.

- To avoid vine rotting in betel vine, apply (Carbendazim 2g + Chlorothalonil 1g) or Bordeaux mixture 1% at the base of plant. Avoid water stagnation at the base.
- Apply first top dressing in *Aman* rice in South 24 Parganas. Maintain proper water level.
- Present weather condition is congenial for outbreak of Downy mildew on cucurbits in Malda district; if disease appears, spray Metalaxyl +Mencozeb @ 2.5gm/litre of water at 10-15 days intervals depending on the severity of the disease.

Odisha

- In Jajpur district, monitor the adult population of stem borer in the transplanted rice field at tillering stage. Use Pheromone traps to reduce initial population.
- Undertake propping in 4-5 months old medium and late duration varieties sugarcane crop. Spray Chloropyriphos or Quinalphos @ 400 ml/ac in 200 litres of water to control early shoot borer.
- This is the ideal time for planting mango. Select suitable varieties from Amrapalli, Dusseheri, Chousa, Baganpalli, Totapuri, Bombay green, Suvarnarekha, Himsagar, etc. Plant the seedlings in pits at a distance of 10m x 10m. The pit size should be 1m X 1m X 1m. Prefer one year old healthy grafted plant. Apply two baskets of compost, 80 g N, 100 g P₂O₅ and 60 g K₂O fertilizer at the time of planting.
- The arhar crop is at seven to eight week stage in Mayurbhanj district. Carry out one hoeing, weeding and earthing up operation. Drain out excess rain water from the field as the crop is susceptible to water stagnation.

Bihar

- In the upland areas where due to poor rainfall rice could not be transplanted, pigeon pea (Bahar, Narendra pigeon pea-1) black gram (T-9, Navin, Pant black gram-19) could be sown.
- Carry out weeding in turmeric, ginger, and kharif vegetables such as ladies finger (Bhindi), bottle guard, ridge guard, bitter guard, cucumber etc.
- Undertake transplanting of chilli seedlings at a distance of 50x45 cm.
- Undertake sowing of radish. Pusachetki, Pusadesi, Jounpuri, Pusahimani, Japanisafed, Pusarashmi, Punjab safed and Arkanishant varieties are recommended for sowing.
- If infestation of leaf hopper in ladies finger is found in Gopalganj district, then spray Imidacloprid @ 0.5ml/litre or Dimethoate30EC@1.5 ml/litre of water.
- Present weather is favorable for infestation of sucking insect pests such as white fly, leaf hopper and aphid in standing vegetables. These pests also cause viral infections. Spray Imidacloprid @ 0.3 ml/litre of water to protect the crop.
- Do not graze cattle in the areas (Falgu and Sone river basin in south Bihar) from where flood water has just receded.

Jharkhand

- Continue transplanting of rice seedlings in Godda district.
- Carry out weeding and earthing up in pigeon pea.
- Undertake sowing of improved varieties of black gram in upland.
- Provide proper drainage facility in turmeric and ginger in Dhanbad district.
- In case of intercropping viz. pigeon pea + sorghum row ratio 1:1, pigeon pea +gora rice row

ratio 1:3, pigeon pea + maize row ratio 1:1, pigeon pea + groundnut row ratio 1:3, Pigeon pea + soybean row ratio 1:2, pigeon pea + black gram/green gram row ratio 1:2 and Pigeon pea + okra row ratio 1:1 should be maintained and fertilizer should be applied accordingly.

- To maintain the proper soil profile moisture level near to Field capacity, farmers are advised to divert runoff rainwater coming from higher slope to their main fields.
- Maize: rain likely to occur in coming days hence, to protect the crop from water logging prepare channel for draining excess water.

In view of excess/normal rainfall activity during last fortnight over northern and central India which is likely to continue during next fortnight except Jammu & Kashmir, following advisories are suggested:

Jammu & Kashmir

- In rice crop, apply 2nd dose of N as top dressing just before panicle initiation stage (55 – 65 DAT). If not applied yet, apply urea as first top dress in 30-35 days crop at mid tillering in Jammu, Kathua and Reasi districts of Sub Tropical Zone.
- In maize crop, undertake intercultural operations (weeding, hoeing and earthing up) and top dress nitrogen (Urea) during clear day at optimum moisture conditions before tassel formation (30-40 days after sowing).
- Apply first top dressing of urea where the rice crop is at mid tillering stage in Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone. Apply second top dressing of urea in maize crop, before tassel formation i.e. about two months after sowing. Apply fertilizer during fair weather condition only. Farmers are advised to do weeding at regular intervals to keep the crop free of weeds to avoid yield loss.
- Due to the presence of sufficient moisture go for transplanting of root cuttings of Chrysanthemum.

Uttarakhand

- Undertake transplanting of brinjal and carry out weeding and hoeing in the early variety of Cabbage in Udham Singh Nagar district of Bhabar and Tarai Zone. Urea should be given as top dressing in the finger millet after one month of sowing. Continue transplanting of chilly. Proper drainage should be arranged in the vegetable fields.
- Continue sowing of French bean and early varieties of pea in mid hills in Nainital district of Bhabar and Tarai Zone. Undertake sowing of radish in mid hills.
- Apply nitrogen in maize crop when sky is clear in Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone. First top dressing of Nitrogen in paddy crop with Zinc Sulphate @ 25 kg/ha for the prevention of khaira disease.
- Undertake sowing of carrot in raised bed in Uttarkashi, Chamoli, Rudraprayag districts of Hill Zone. Carry out weeding in all crops and vegetables and after that split dose of nitrogen should be broadcast for optimum growth. Conserve rain water in the paddy fields by making broad and elevated bunds. Application of one packet of Blue Green Algae (BGA) per acre should be used for increasing nitrogen in the paddy field.
- Drain out excess water from crop fields.

Himachal Pradesh

- Continue transplanting of onion in Solan, Simla and Sirmaur districts of Mid Hills Sub-Humid Zone. Continue nursery sowing of cabbage in Solan, Simla and Sirmaur districts of Mid Hills Sub-Humid Zone. Continue plantation of evergreen plants like mango, litchi, guava, citrus, laquat and amla.
- In mid hill region continue nursery sowing of Chinese cabbage and direct sowing of raddish, carrot, broccoli and lettuce in Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone. Continue nursery sowing of cauliflower and transplanting of cabbage.
- Continue sowing of oats in Kinnaur, Lahaul & Spiti districts of High Hill Temperate Dry Zone.
- Drain out excess water from standing crop fields in Hamirpur and Kangra districts.

Haryana & Delhi

Haryana

- In Western Zone, undertake weeding in rice crops for removing the weeds in clear weather.
- Carry out weeding and hoeing for conserving the moisture and removing weeds in guar and bajra crop.
- Continue planting of mango, banana, jamun, pomegranate, papaya, amla, phalsain Western Zone.

Delhi

- Continue transplanting of onion seedling in the prepared fields. Continue sowing of carrot (Pusa Vrishti), sarsonsaag (Pusa saag-1), radish (Versa kee rani, summer long, long chetaki), spinach (All green) and coriander (pant Haritama) on raised bed.
- Continue planting of mango, citrus and guava.

Punjab

- Continue nursery sowing of mid-season cauliflower in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone districts.
- Farmers are advised to apply supplementary irrigation the rice crop at two days after the ponded water has infiltrated into the soil but, fields should not be allowed to develop cracks in Ferozpur and Faridkot districts of Western Plain Zone. Farmers are advised to keep the paddy field free from weeds.
- Undertake transplanting of papaya seedlings in the fields in Central Plain Zone. For control of weeds in maize crop, use atrazine 50 WP @ 500g per acre as pre-emergence application on light textured soils and @ 800 g per acre on heavy textured soils.
- Raise nursery of Cauliflower in Rupnagar, Patiala and Nawanshahar districts of Sub-Montane undulating Zone. Undertake hoeing and weeding in vegetable crops followed by supplementary irrigation in vegetable crops in the absence of rainfall.

Uttar Pradesh

- Undertake nursery sowing of cauliflower, brinjal and tomato and continue planting of mango, guava and banana in Faizabad, Gorakhpur, Sultanpur districts of Eastern Plain Zone.

- Continue sowing of sweet corn and baby corn in raised bed in Meerut, Saharanpur, Gazipur, Muzaffarnagar, Aligarh districts of Western Plain Zone of Uttar Pradesh. Undertake transplanting of brinjal, tomato, chilli cauliflower and cabbage on raised bed if seedlings are ready.
- Undertake weeding in bajra and jowar in Kanpur, Sitapur, Unnao, Lucknow districts of Central Plain Zone.
- Undertake weeding in green gram and black gram.
- Drain out excess water from pulse/oil seed crops in Central Plain Zone, Bundelkhand Zone and Eastern Plain Zone.

Rajasthan

East Rajasthan

- Continue planting of fruit crops like mango, plum and pomegranate in Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone.

West Rajasthan

- Continue planting new seedlings of kinnow in already prepared pit in the field in Sriganganagar and Hanumangarh districts of Irrigated North Western Plain Zone.
- Continue preparation of nursery of vegetables like cauliflower, cabbage chilli and brinjal vegetables in Bikaner and Jaisalmer districts of Arid Western Plain Zone.
- Carry out hoeing and weeding in Pulse crops in Barmer, Churu, Jalore, Jodhpur and Pali districts of Arid Western Plain Zone. Apply 20 kg nitrogen per hectare in cucurbit vegetables at flowering stage. Spray @ 2kg Mancozeb per hectare at flowering stage in pearl millet crop to protect from ergot disease.

Madhya Pradesh

East Madhya Pradesh

- In Narsinghpur district, undertake nursery preparation for cauliflower, cabbage and radish. Apply one third dose of fertilizer in rice fields at the rate of 20 kg nitrogen and phosphorous per hectare in clear weather.
- Drain out excess water from standing crop fields in Anuppur, Chhatarpur, Katni, Panna, Rewa, Satna, Shahdol, Sidhi, Singrauli and Umaria districts.

West Madhya Pradesh

- Continue planting of orchard crops like mango, lemon and guava, continue nursery preparation for cauliflower and transplanting of onion in Mandsaur, Ratlam, Ujjain, Dewas, Indore, Shajapur, Rajgarh and Neemuch districts of Malwa Plateau Zone. Undertake intercultural operations in maize.
- Continue transplanting of brinjal, tomato and onion in Gwalior, Bhind, Morena, Shivpuri, Guna, Ashoknagar, Sheopur districts of Grid Zone.
- In Hoshangabad district, undertake nursery preparation for cauliflower, cabbage and radish. Apply one third dose of fertilizer in rice fields at the rate of 20 kg nitrogen and phosphorous per hectare.

Chhattisgarh

- In the transplanted rice field maintain water level up to 5 cm in North Hill Zone.

- Carry out intercultural operation to control weeds in different *kharif* crops like rice, maize, arhar, groundnut, soybean, urd, mung etc. After weeding, broadcast urea as per their requirement.
- Continue planting of papaya, mango, guava etc. in North Chhattisgarh. Continue nursery sowing of brinjal, early tomato, chilli and onion in the upland areas.
- Undertake field preparation for the sowing of crops like Niger, horse gram, black gram, green gram in South Chhattisgarh.
- Drain out excess water from standing crop fields in Balrampur, Janjgir, Koriya, Surajpur and Surguja districts.

Annexure –I

State-wise Varieties of different crops for *Kharif* Season

State	Subdivision	Crop	Varieties
Karnataka		Ragi	Indaf-5, Indaf-9, and GPU-28.MR-01,MR-06 & ML-365
		Maize	Hybrids –DMH-2, Arjun and Private hybrids, GH-0727, Renuka (G-25)
		Rice	Jaya, Rasi, BPT-5204
Andhra Pradesh	Coastal AP	Maize	DCH-111, DCH-113, DCH-115, Maandhuri&Priya (sweet varieties)
		Black gram	LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787,TBG 1,GBG 104
		Red gram	LRG- 38, LRG- 41, laksmi, Abhaya, Asha, Maruthi and PRG-158,LRG 52
	Rayalaseema	Sorghum	CSH-9, CSH-13,CSH-14, PSV-15,PSV-19
		Bajra	ICTP 8203,PBH 3
		Korra	Prasad, Krishnadevaraya, Narashimharaya, Srilakshmi, Surya Nandi
		Sunflower	NDSH1, KBSH1, KBSH 44, DRSB 1
		Green gram	LGG 407, LGG 450, LGG 460, MGG 295, ML 267
		Field bean	TFB-1, TFB-5
		Cowpea	C 152, GC 3, CO-4, CO-5
Telangana		Rice	Prathyumna, Varalu, Anjana
Tamil Nadu		Samba rice	CR 1009, ADT 50

		Finger millet	Indaf 9, CO 7
Gujarat		Pigeonpea	BDN-2, Vaishali, GTH-1, GT-100
		Sunflower	EC-68414, Modern GS-1, 2 & 3
		Sesame	Gujarat sesame -1, 2, 3 & 4
		Castor	GAUCH-1, GCH-2, GCH-4, 5, 6 & GCH-7
		Sorghum (fodder)	CSH-6, GFS-4, GFS-5, GAFS-11
Assam		Sali Rice	Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal, for typical lowland rice area, Medium duration varieties: Satya and Basundhara T.T.B.-404, Mulagabharu, Kanaklata, Joymoti, IR-36, IR-64. for Flood prone area: Luit, Jalashree, Plaban.
Meghalaya		Sali rice	Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1- 411 & local varieties like Mendri, Manipuri
Tripura		Aman rice	Gomati, Ranjeet, Swarna, Naveen
Nagaland		Rice	CAU R1, CAU R3, RCM-9 and RCM-1.
West Bengal		Aman rice	medium duration MTU-7029, MTU1001, Pratiksha and for long duration CR1017, CR1018,
		Rice	dry seeded long duration:Sabita Foundation, Swarna sub-1 certified, IR-64, Hira T.L.
Odisha		Rice	Early varieties: Jogesh, Siddant, Hazaridhan, Mandakini, Jyotirmayee, Virendra, Sahabhagi, Medium varieties: Pratikshya, Manaswini, Tapaswini MAS, Konark, Surendra, Kharavela, Naveen, Abhisek, Late varieties: Varshadhan, Ranidhan, Pooja, Mrinalini, RGL-2837, Moti, Ketakijoha, Padmini, Kanchana, Mahanadi, Jagabandhu. Hybrid varieties: CR Dhan 701, NK 5251, JKRH 401, Ajay, Rajalaxmi, Arize 6444G. short duration varieties: Sahabhagi, Khandagiri, Udaigiri, Kalinga-3, Jyotirmayee, Mandakini etc.
Bihar		Rice	Long duration rice- Rajshree, Rajendrasweta, RajendraMansuri, BPT-5204, Swarna, Satyam and Kishori), medium duration rice- Seeta, Santosh, Saroj, Rajshri, Prabhat, Rajendrasuvasni, Rajendrakasturi.
Jharkhand		Rice	Direct seeded upland rice; improved varieties: Vandana, BirsaVikasDhan -109 & BirsaVikasDhan - 110, medium land rice improved varieties: Anjali, Sahbhagi, Naveen, Lalat, Birsamati, Sugandha, BR-

			10, Pro-Agro 6444, IR-36, IR-64, low land rice improved varieties Swarna (MTU-7029), Rajshree, SambhaMahsuri (BPT-5204), Birsadhan- 202, Birsamati, Pro-Agro 6444.
Madhya Pradesh		Rice	Very early maturing: JawaharDhan (JD) 75, Vandana. Early maturing: JD 201, JRH-5, JRH-8, Danteshwari, Sahbhagi. Medium duration: MR-219, WGL 32100, IR 36, IR 64, Kranti, Mahamaya, Pusa Sugandha-3, Pusa Sugandha-5, Pusa basmati-1, MTU 1010. Long duration: Mahsuri, Swarna
		Green Gram	JM-721, TARM-1, LAM-410, HUM-1, HUM-16
		Arhar	TJT-501, ICPL-87
Chhattisgarh		Rice	Upland: CR-40, Purnima, Danteswari, Shabagi, Midland: MTU1010, Samleswari, Rajeswari, Low land : MTU 1001, Suwarna ,Mahamaya, JalDube ,Hybrid : Arice 6444, US 312.
		Soybean	J.S. 335, Indira soya-9, J.S. 80-21, J.S. 93-05.
		Groundnut	SB -11 (J 11), ICGS-37, ICGS-44, T.A.G.-24, T.A.G.-28.
		Til	T.K.G. -21, T.K.G-22, T.K.G-55, and T.K.G - 8.
		Tomato	Pusa early dwarf, Sweet 72, Pusaarubi, PusaGurab, Mangala, Naveen, Laxmi 5005 & NS 815.
		Brinjal	Punjab Shadabahr, K S 331, P H 5, P H 6 ,KS 224 ,A R B H -543.
Jammu & Kashmir		Rice	Basmati 370 and Ranbir Basmati
Uttarakhand		Rice	Sharbati, Pusa1121, Pusa1, Pusa44, NDR359 etc.
		Pigeon pea	Pant Arhar-3, Pant Arhar-291, UPAS-120, Pusa-992
		Maize	Tarun, Navin, Kiran, Navjot, Pratap maize-1, Pusa sankul-3& 4.
Uttar Pradesh		Arhar	Prabhat and UPAS-120 fast-ripening and late-ripening varieties- NarendraTur- 1 and Malviya -15
Punjab		Rice	Basmati 370 and Basmati 386; direct sowing: basmati variety Pusa Basmati 1121.
		Maize	PMH 1, PMH 2 and Parbhat.
		Brinjal	BH-2, PBH-3, Punjab Barsati, Punjab SadaBahar, Punjab Nagina and Punjab Neelam
		Okra	Punjab-8 and Punjab-7
		Kharifonion	Agrifound Dark Red
Delhi		Rice	Hybrid varieties: - K. R. H 2, PHB 71, Pant hybrid Dhan1, Narendra hybrid dhan 1, P R H 10, High yielding varieties- Pusa 44, Pant Dhan-4, Pant Dhan-

			10, Pusa-834, Pusa basmati-1, Pusa basmati-1509, Pusa, Improved basmati, Pusa sugandha-5, Pusa sugandha-4 (Pusa 1121), Ranvir basmati and Taravadi basmati
		Guar	PusaNavbahar, DurgaBahar
		Bajra	Pusa Composite-443, Pusa Composite-383, HSB -67
		Cluster bean	PusaKomal
		Beans	PusaSem 2, PusaSem 3
Rajasthan		Pearl millet	RHB-121, HHB-67, HHB-60, Raj-171, GHB-538, Pusa-605, RHB-177.
		Maize	HQPM-1, HQPM-5, PEHM-1, PEHM-2, Pratap Hybrid-1, Bio-9681, Bio-9637, Navjot, MahiKanchan, Pratap Makka-5.