



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

Valid for 22nd July to 4th August, 2016

Date of Issue: 22nd July, 2016

Issued by

**Earth System Science Organisation
India Meteorological Department**

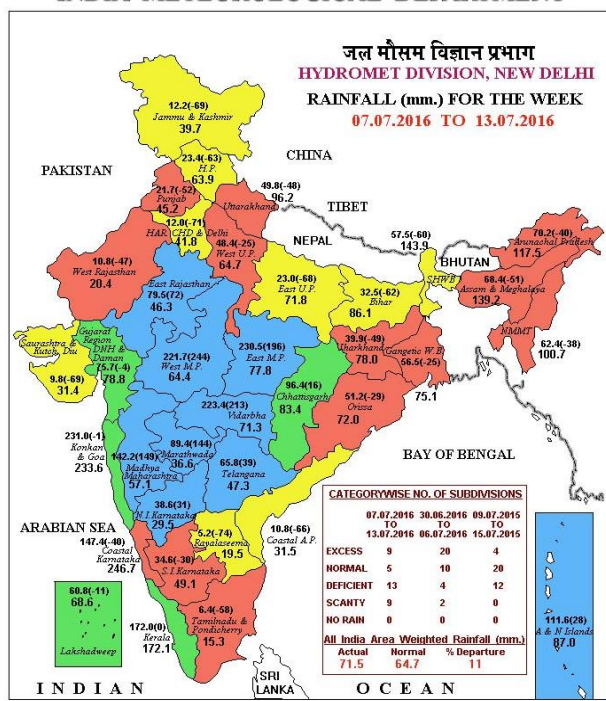
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**Indian Council of Agricultural Research (ICAR)
All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad**

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

Realized Rainfall (7th to 20th July 2016)

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT

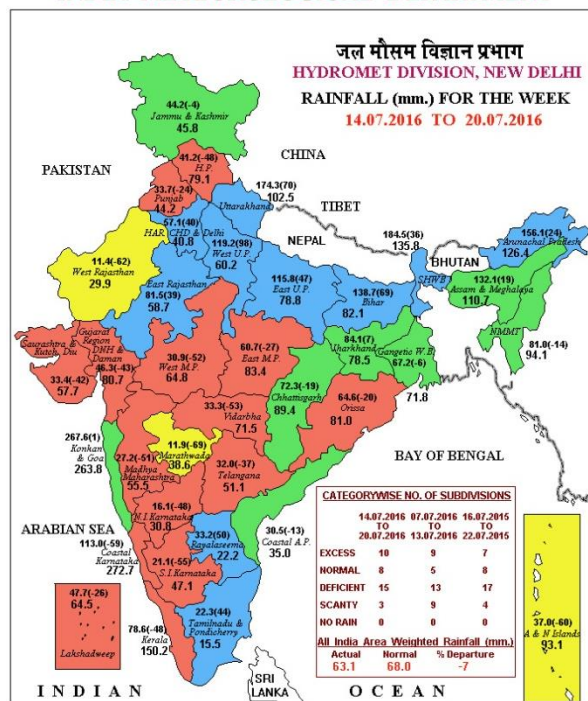


LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)
■ SCANTY (-60% TO -99%) ■ NO RAIN (-100%) ■ NO DATA

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.

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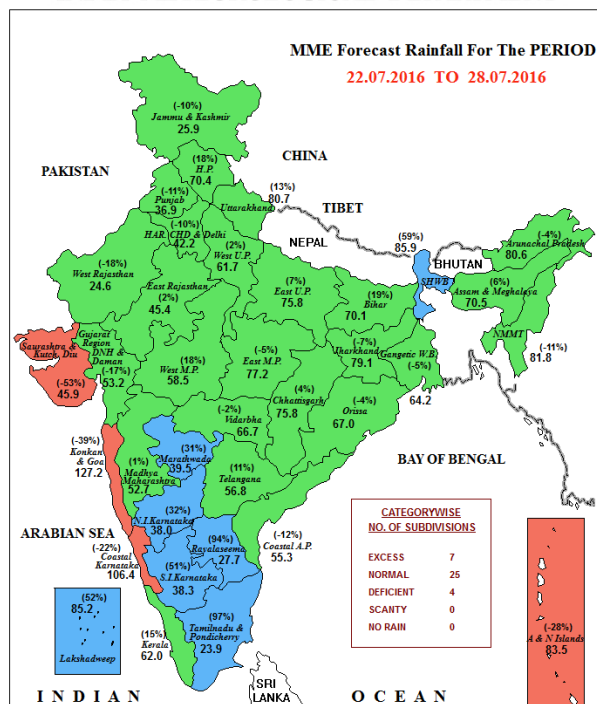
- Normal or above normal rainfall occurred during last two weeks in East Rajasthan, Konkan & Goa and Chhattisgarh.
- Normal or above normal rainfall occurred in either of the last two weeks in Jammu & Kashmir, Haryana & Delhi, Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, West Bengal & Sikkim, Arunachal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

Extended Range Forecast System

Subdivision wise rainfall forecast map for the next 2 weeks (IC =20 July)

Rainfall forecast (mm/day) (22 July – 4 August, 2016)

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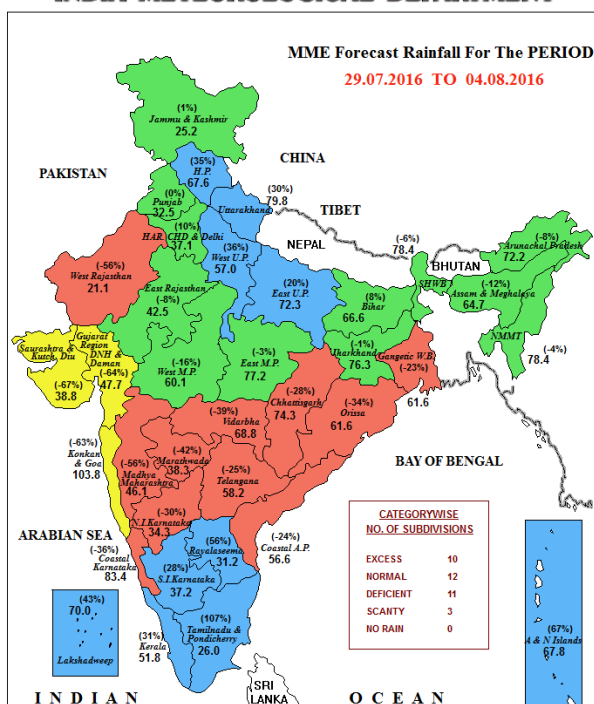


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- Normal or above normal rainfall is likely to occur during next fortnight over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, East Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya,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

Strategic Agricultural Planning based on rainfall during next two weeks till 4th August

- During the next two weeks (22 July to 04 August) monsoon will remain active over southern peninsula and also over the sub-Himalayan belt and northeast India. However, during this period monsoon is expected to be in weaker phase particularly over the central India.

In view of the above, following advisories are issued. Statewise crop varieties are given in Annexure I.

Major advisories for *kharif* crops

Kerala

Kerala received normal rainfall during first week and deficient during second week of previous fortnight. Normal/excess rainfall activity is expected during next fortnight.

- Continuation of direct sowing of rice (Uma, Jyothy, Vyttila-6 varieties) in Alappuzha and Kottayam districts with realised rainfall.
- Provide adequate drainage in transplanted rice.
- Maintenance of water level of 3-5 cm in transplanted rice.
- Paddy: leaf folder attack is reported in some parts of the state. Use *Trichogramma* cards @ 2cc per acre. Cut the card in to small pieces and fix in different locations of the paddy field.
- In rubber plantation, take care of tapping panels in rain guarded plants. Spray Copper oxy chloride 4g/litre on new sprouts in newly planted gardens. Apply Indofil M 45 4g/litre of water on tapping panels.
- Clean the drainage channels. As there is chance of Pseudo stem weevil infestation farmers are advised to adopt strict phyto-sanitary measures. In varieties other than nendran farmers are advised to adopt proper control measures against the pseudo stem borer. Remove the dry outer sheaths of the pseudo stem of all the infested and un infested plants. To control pseudostem weevil drench the leaf axils, with Chlorpyrifos 4g/litre.

Karnataka

Coastal Karnataka and South Interior Karnataka received deficient rainfall during previous fortnight; North Interior Karnataka received normal rain during first week and deficient during second week of previous fortnight. Deficient rainfall is expected over Coastal Karnataka during next fortnight, excess over South Interior Karnataka during next fortnight, over North Interior Karnataka excess rainfall is expected during first week and deficient rainfall during second week of next fortnight.

Coastal Karnataka

- Completion of transplanting of rice in Dakshina Kannada and Udupi district of Coastal Zone of Karnataka with realised rainfall.
- Continuation of transplanting of rice in Uttar Kannada district of Hill Zone with realised rainfall.
- Maintenance of 3-5 cm water level in transplanted rice.
- Intercultural operations / weeding in maize and cotton crop in Uttar Kannada district.
- Rain water harvesting.

South Interior Karnataka

- Completion of sowing of sunflower, red gram and sowing of short duration varieties of finger millet (Indaf-5, Indaf-9, and GPU-28.MR-01,MR-06 & ML-365), with realised and expected rainfall in Chitradurga, Davengere and Tumakuru districts of Central Dry Zone. Intercultural operations and mulching in already sown crops to conserve soil moisture.
- Continuation of transplanting of rice in Chickamagaluru, Hassan and Shivamogga districts of Southern Transition Zone. Continuation of nursery preparation for ragi and also direct sowing of ragi. Intercultural operations in already sown maize, groundnut and red gram fields.
- Continuation of transplanting. Continuation of planting of black pepper in Kodagu, Mandya, Mysuru and Chamrajnagar districts of Southern Dry Zone. Intercultural operations in already sown crops to control the weeds and to conserve soil moisture in Mandya, Mysuru and Chamrajnagar districts.
- Completion of sowing of groundnut, maize, ragi, cowpea and castor in Bengaluru Rural, Bengaluru Urban, Ramnagara, Chickaballapura and Kolar districts of Eastern Dry Zone, as and when sufficient rainfall occurs.
- Transplanting of paddy in irrigated parts after release of water from major reservoirs.
- Apply the recommended dose of Urea through top dress fertilizer to red gram and maize.
- Wherever, the long duration crops like red gram, and castor has been sown, undertake earthing up operation in addition to the above agronomic measures.

North Interior Karnataka

- Transplanting of rice, completion of sowing of pigeon pea in Bidar district of North East Transition Zone with receipt of sufficient rainfall.
- Complete sowing of maize, groundnut and cotton by end of July in Belagavi and Dharwad districts with receipt of sufficient rainfall. Intercultural operations in already sown soybean, green gram, black gram, sorghum, maize and groundnut crops in Dharwad, Belagavi and Haveri districts of North Transition Zone.
- Transplanting of rice, completion of sowing of red gram, black gram, green gram, soybean, cotton and maize in Kalaburgi, Koppal, Raichur, Yadgir and Ballari districts of North East Dry Zone with receipt of sufficient rainfall.
- In Vijayapura, Baglkote and Gadag districts of North Dry Zone.
 - Completion of sowing of red gram, onion, castor, bajra, navane, cowpea and horse gram as solo crop (shallow black and red soils) to make efficient use of available soil and water resources and to get higher returns, intercropping of bajra + red gram in 2:1 row proportion or bajra + castor in 2:1 row proportion with realised and expected rainfall and
 - Sowing of red gram, chilli, onion, castor, bajra, navane, cowpea and horse gram as solo crop (medium black and deep black soils); to make efficient use of available soil and water resources and to get higher returns, intercropping of bajra + red gram in 2:1 row proportion or bajra + castor in 2:1 row proportion with realised and expected rainfall.

Andhra Pradesh

Rainfall was scanty over Coastal Andhra Pradesh and Rayalaseema during first week and normal/excess during second week of previous fortnight. Normal rainfall is expected during first week and deficient during second week over Coastal Andhra Pradesh and excess over Rayalaseema during next fortnight.

Coastal Andhra Pradesh

- Completion of nursery sowing of rice, land preparation for transplanting of main field, sowing of maize, millets, red gram, black gram, green gram and cotton in Krishna, Prakasam, Guntur and West Godavari districts of Krishna Godavari Zone with realised rainfall.
- Completion of transplanting of rice and ragi in East Godavari district of High Altitude Tribal Zone with realized rainfall.
- Completion of nursery sowing and direct sowing of rice, undertake main field preparation and transplanting of seedling with proper age. Continuation of planting of rainfed sugarcane, sowing of groundnut, red gram, green gram and black gram in Srikakulam, Vizianagaram and Vishakhapatnam districts of North Coastal Zone with realised rainfall. Pre-emergence spraying of Pretilachlor with safener @ 400 ml/acre within three days of sowing to control weed problem in direct sown rice.
- The present weather conditions are favourable for leaf folder and stem borer attack in rice in Nellore district. To control spray Chloripyrifos @ 2.5 ml or Cartaphydrochloride @ 2g or Rhynoxypyr @ 0.3 ml/litre of water.

Rayalaseema

- Completion of sowing of red gram, black gram, castor, bajra, and korra, continuation of sowing of rainfed groundnut in Anantpur and Kurnool districts of Scarce Rainfall Zone with available soil moisture.
- Intercultural operations for weed control and conserving soil moisture in June groundnut, red gram, bajra and castor crop in Anantpur district.
- Thinning in June sown red gram and castor crop in Ananthapuram district.
- Completion of sowings red gram in Chittoor, Nellore and Kadappa districts.
- Rainwater harvesting whenever rain is received and storing it in reservoirs for future use.

Telangana

Telangana received excess rainfall during first week and deficient rainfall during second week of previous fortnight. Normal rainfall is expected during first week and deficient during second week of next fortnight.

- Completion of nursery sowing of short to medium duration rice varieties (Telangana Sona (RNR 15048) in Nizamabad, Khammam, Adilabad and Karimnagar districts of North Telangana Zone and in Mahbubnagar, Nalgonda, Medak, Rangareddy and Warangal districts of Southern Telangana Zone with realised rainfall.
- Intercultural operations in green gram, soybean, red gram and cotton in Adilabad, Nizamabad, Karimnagar and Khammam districts of Northern Telangana Zone.
- Sowing of short duration varieties of maize under rainfed conditions, continuation of sowing of red gram, groundnut and Bt. Cotton in Mahbubnagar, Nalgonda, Medak,

Khammam, Rangareddy and Warangal districts of Southern Telangana Zone with realised rainfall.

- Adequate drainage in rice nurseries in Mahbubnagar, Nalgonda, Medak, Rangareddy and Warangal districts.

Tamil Nadu

Tamil Nadu received deficient rainfall during first week and excess during second week of previous fortnight. Excess rainfall is likely during next fortnight.

- Cono weeding on 10-12 days after transplanting in SRI paddy in Ariyalur, Nagai, Perambalur, Thanjavur and Trichy districts of Cauvery Delta Zone.
- Top dressing with 35 kg urea and 10 kg MOP/acre by keeping thin film of water in the field at active tillering stage of *Kuruvai* rice in a clear weather.
- Planting of tea seedlings in Nilgiris district.
- Maintenance of 3-5 cm water level in rice field.
- Intercultural operation and mulching in already sown crops for conservation of soil moisture.

Maharashtra

Konkan and Goa received normal rainfall during previous fortnight, Madhya Maharashtra, Marathwada and Vidarbha received excess rainfall during first week and deficient during second week of previous fortnight. Normal rainfall is expected over Madhya Maharashtra and Vidarbha, excess over Marathwada and deficient over Konkan & Goa during first week of next fortnight and deficient/scant rainfall is expected over Maharashtra & Goa during second week of next fortnight.

Konkan,

- Completion of transplanting of 28-30 days old finger millet seedlings.
- Maintenance of 3-5 cm water level in transplanted rice.
- Drain out excess water from transplanted rice fields.

Madhya Maharashtra

- Continuation of planting of *adsali* sugarcane in Dhule, Nandurbar, Ahmednagar districts. Recommended varieties: CO - 86032 (Nira) and Phule - 0265.
- Continuation of Transplanting of rice in Kolhapur, Pune and Ahmednagar.
- Maintain 2-3 cm water level in transplanted rice field.
- Hoeing and weeding to conserve soil moisture in early sown crops in Solapur district.

Marathwada

- Hoeing and two hand weeding (one at 25 – 30 days and another at 45 – 60 days after sowing) in early sown crops like cotton, pigeon pea, green gram, black gram and cotton for effective weed control and moisture conservation in Parbhani, Osamnabad, Beed, Latur district.
- Continuation of planting of *Adsali* sugarcane Aurangabad, Nanded districts. Recommended varieties: CO - 86032 (Nira) and Phule - 0265.

Vidarbha

- Continuation of transplanting of *kharif* rice in Gondia, Chandrapur and Gadchiroli districts of Eastern Vidarbha Zone utilising realised rainfall.
- Intercultural operations in cotton, soybean, black gram and green gram in Akoladistricts.

Areas which are not sown so far can be accommodated with suitable crops/crop varieties (as mentioned below).

- Early soybean varieties JS 9560 and JS 9305 may be sown up to 25 July.
- Pigeonpea AKT 8811 and Vipula with 60x30 cm spacing; PKV- Tara and BSMR-736 with 90x20 spacing).
- Intercropping systems include pigeon pea + soybean (1:2 / 2:4), sunflower + pigeonpea (2:1) or in soybean after every 6 or 9 rows one row of pigeonpea may be sown.
- Alternative crops include pearl millet (PKV Raj Shradha, Saburi), sesame (AKT64), sunflower (PKV SF-9, PKVSH-27, KBSH-1) and castor (AKC-1, GCH-4,5,6 & DCH-117).

Gujarat

Gujarat Region received normal rainfall during first week and deficient during second week of previous fortnight, whereas, Saurashtra and Kutch received scanty/deficient rain during previous fortnight. Normal rainfall in first week and scanty in second week is expected over Gujarat region during next fortnight, deficient /scanty rainfall is expected over Saurashtra & Kutch during next fortnight.

Gujarat Region

- Completion of transplanting of rice, completion of sowing of red gram, pearl millet, green gram, black gram in Navasari, Dangs and Valsad districts of South Gujarat Heavy Rainfall Zone utilising realised rainfall. Drain out excess water from transplanted rice.
- Completion of sowing of pigeon pea and castor, continuation of sowing of maize and bajra in Bharuch, Surat Narmada and Tapi district of South Gujarat Zone with realised rainfall.
- Completion of transplanting of rice, completion of sowing of groundnut, pearl millet(GHB-744 moderate duration and GHB- 538, GHB-719 for early maturity), maize, pulses with realised and expected rainfall in Anand, Dahod, Kheda,Vadodara and Panchmahals districts of Middle Gujarat Zone. Take green gram, pigeon pea, guar as intercrop in pearl millet. Carry out intercultural operation in cotton to conserve soil moisture.
- Completion of sowing of cotton, groundnut, pearl millet, sesame, maize, cluster bean, green gram and cowpea in Banaskantha, Mehsana, Gandhinagar, Patan and Sabarkantha districts with realised and expected rainfall. Select short duration crops and varieties for sowing. Take short duration pulse crops as intercrops in new orchards. Carry out gap filling and hand weeding in sesame, maize, pearl millet to conserve soil moisture at vasma condition. Carry out hand weeding and inter cultural operations in already sown groundnut and cotton to conserve soil moisture. For late sowing, select GG-2 variety of groundnut. Intercropping of green gram, pigeon pea, guar in pearl millet is advised for getting more income.

Saurashtra & Kutch

- Subdued rainfall activity is likely to continue during next fortnight, undertake the following measures specifically for Kutch region.
 - Undertake sowing of alternate crops like castor and other suitable crops as normal crops could not be sown till now.
 - Intercultural operations, weeding and mulching to conserve soil moisture.
 - Protective irrigation is advised in the areas where sowing is completed.
- Continuation and completion sowing of soybean, sesame, pigeon pea and castor in Junagadh and Porbandar districts of South Saurashtra Zone with realised and expected rainfall. Intercultural operations, weeding and mulching to conserve soil moisture in the areas where sowing is completed.
- Completion of transplanting of rice, completion of sowing of cotton, pearl millet, groundnut, sesame, cluster bean, green gram and cowpea in Bhavnagar and Ahmedabad district. Carry out intercultural operation in already sown cotton to conserve soil moisture.
- Selection of short duration crops and varieties for sowing. Select bunch type groundnut varieties instead of spreading and semi spreading varieties. Continuation and completion of sowing of castor, pigeon pea, groundnut, cotton, pearl millet, sesame, green gram, black gram and cowpea in Amreli, Rajkot, Jamnagar and Surendranagar districts of North Saurashtra Zone with realised and expected rainfall. Sowing of groundnut only for seed purpose.

Arunachal Pradesh

Deficient rainfall occurred during first week whereas excess rainfall occurred during second week of last fortnight. Normal rainfall is likely to occur during next fortnight.

- Complete transplanting wetland rice.
- Undertake nipping in soybean with excessive vegetative growth.
- Undertake gap filling in early sown groundnut crops.
- Undertake manual weeding in green gram / black gram.

Assam & Meghalaya

Deficient rainfall activity was observed during first week whereas normal rainfall occurred during second week of last fortnight in Assam & Meghalaya. Normal rainfall is likely to occur during next fortnight.

Assam

- Complete transplanting of *sali* rice in Karbi Anglong, Sonitpur, Barpeta, Kamrup, Hailakandi and Karimganj districts.
- Apply second and third doses of fertilizers in direct seeded Ahu rice at tillering stage in Hailakandi district.
- Continue sowing of arhar.
- Undertake weeding in 20-25 days old arhar crop in Karbi Anglong district.
- Undertake land preparation for sowing of sesame.

Contingency measures to be taken under flood

- Suitable paddy cultivar for flood prone area: Luit
- Suitable paddy cultivar for 15 days submergence tolerance: Swarna Sub-1, jalashree, Jalkunwari, Plaban
- Suitable paddy cultivar for delayed transplanting with aged seedling: Padumoni, Prafulla, Gitesh
- Suitable paddy cultivar for normal planting: Ranjit, Bahadur, Maniram, Kushal, Piolee,

Pankaj, Lakhimi

- Suitable paddy cultivar with medium duration: Satyaranjan, Basundhara

Post flood condition

- After receding of flood water go for wet seeding of sprouted rice where ever possible with short duration cultivars.
- In other case, plan for sowing of green gram, lentil, early rabi vegetables etc.

Meghalaya

- High relative humidity with intermittent rain is favourable for development of blast in *jhum* rice in East Khasi hills. If blast spot are seen, apply Mancozeb @ 2g/l or Carbendazime @ 1g/l on a bright sunny day.
- Continue transplanting of *sali* rice in all the districts of Meghalaya.
- Harvest mature maize cobs and sundry before storing.
- Provide proper drainage system in potato field.

Deficient to normal rainfall occurred in last fortnight over Nagaland, Manipur, Mizoram and Tripura. Normal rainfall is likely to occur during next fortnight.

Manipur

- Replant *kharif* rice, where plant population is less.
- Undertake weeding in *kharif* maize on a bright sunny day.
- Maintain proper drainage system in soybean to avoid water logging.
- Undertake weeding and thinning of groundnut plants by keeping space of 30cm x 15cm.

Mizoram

- Undertake transplanting of *kharif* rice with two to three seedlings per hill.
- Remove unwanted plants by hand weeding in pre *kharif* rice.
- Maize is in tassling and silking stage. Remove unwanted plant near base of the plant and cut dead branches.
- In green gram, black gram and rajma, remove unwanted plant from the base of the plant.

Tripura

- Continue transplanting of *aman* rice in all the districts of Tripura.
- Maintain optimum water level in *jhum* rice in panicle initiation stage.
- Undertake weeding in maize field.

Nagaland

- Undertake land preparation for sowing of soybean.
- Undertake weeding, 15-20 days after transplanting TRC/WRC rice.
- Cultivate oilseed crops like soybean where paddy cultivation is not at all possible. Sowing should be done with a spacing of 45cm row to row and 10cm plant to plant.

West Bengal

Normal rainfall occurred in Sub Himalayan West Bengal and excess in Gangetic West Bengal in later part of last fortnight. Excess to normal rainfall is likely to occur during next fortnight.

- Continue transplanting of rice in Bankura district.

- Continue transplanting of *aman* rice in South 24 Parganas district.
- Carry out earthing up, weeding and drain out excess water from ginger, turmeric fields in North Dinajpur district.
- Undertake weeding and intercultural operations to minimize the loss of moisture due to competition and capillary action.
- In-situ moisture conservation measures covering both soil and land management practices to be practiced. They include field bunding, ridges and furrows, conservation furrows, broad bed and furrow systems, mulches etc.
- SRI method of rice cultivation is suitable for uplands in the region.
- Harvest jute at 100 days after sowing if *aman*-rice-growers want to cultivate rice in the same field. Otherwise, jute may be harvested at 120 to 125 DAS.
- In case of late sown jute crop, this time attack of Bihar hairy caterpillar and semilooper may be prevalent. For both insects, apply 1.5 ml Chlorpyrifos per litre of water in clear weather.
- Due to humid and warm weather, infestation of blight in vegetable crops is likely to increase; spray Mancozeb @ 2 g per litres of water in clear weather.

Andaman & Nicobar

- Complete transplanting 25 days old rice seedlings with the spacing of 20x20 cm.

Odisha

Deficient rainfall occurred during last fortnight. Normal rainfall is likely to occur in first half and deficient in later part of next fortnight.

- Undertake transplanting of medium duration rice varieties in medium land and medium late duration varieties in low land in Naupara and Kalahandi districts.
- Undertake transplanting *kharif* rice in Balasore, Bhadrak and Jajpur districts.
- Carry out hoeing and weeding in maize in Puri district.
- Undertake hand weeding and 1st top dressing in cotton at third week.
- Complete hoeing and weeding in sugarcane in Kalahandi district.
- Make drainage arrangement in Arhar field where the crop is at germination to two-week stage.

Bihar

Scanty rainfall occurred in first half and excess in second half of last fortnight. Normal rainfall is likely to occur during next fortnight.

- In Begusarai, Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran of North West Alluvial Plain Zone, undertake transplanting of *kharif* rice.
- In Bhagalpur, Banka, Lakhisarai, Patna, Nalanda, Gaya and Bhojpur districts of South Bihar Alluvial Zone, undertake transplanting of 20-25 days old rice seedlings. Also complete sowing of arhar in upland areas.
- In Saharsa, Purnia, Supaul and Araria districts in North East Alluvial Zone, continue transplanting of 20-25 days old low land rice seedlings.
- Drain out excess water from *kharif* maize and jute field in Madhepura district.

Jharkhand

Deficient rainfall occurred in first half and excess in second half of last fortnight. Normal rainfall is likely to occur during next fortnight.

- In Deogarh, Dhanabad and Dumka districts, continue transplanting of 15 days old seedlings of rice.
- Undertake weeding and earthing up in pigeon pea and maize.
- Undertake sowing of til.
- In Bokaro, Khunti, Ramgarh and Ranchi districts undertake weeding in groundnut, arhar, black gram, maize and green gram.
- Complete transplanting of finger millet after bunding of the field. 2 - 3 seedlings should be transplanted at a distance of 15 cm (plant to plant and row to row).
- In Saraikela, East & West Singhbhum districts in South Eastern Plateau, timely sown direct seeded upland rice is at tillering stage. Undertake weeding. In case of gap filling first remove seedlings from overcrowded area and maintain optimum plant population by rouging. Be careful about the moisture at the time of removing seedlings.
- Complete transplanting of 15-20 days old seedlings of medium and lowland rice.
- As sufficient moisture is available in the field, complete sowing of pigeon pea, green gram and black gram.

Madhya Pradesh

East Madhya Pradesh

Excess rainfall occurred in first week of last fortnight and normal rainfall is likely to continue in next fortnight.

- Continuation of gap filling in soybean and maize in water logged areas due to heavy rainfall during first fortnight of July.
- In late condition mono cropping area, undertake sowing of pigeon pea, castor and niger and in double crop area, undertake sowing of sesame, cluster bean, black gram, green gram and lobia in Chhindwara district.
- Complete transplanting of rice and sowing of arhar in Narsingpur district. Undertake weeding in soybean crop.
- Continue transplanting of rice and complete sowing of til, maize, moong, urd, sesame, and groundnut in Chhatarpur and Tikamgarh districts.
- Continue sowing of black gram in Sagar and Damoh districts
- Complete transplanting of rice in Rewa, Satna, Panna, Jabalpur, Seoni, Siddhi, Katni, Shahdol, Umaria, Mandla, Dindori, Balaghat, Anuppur, Singrauli district of Kymore Plateau Zone. Complete sowing of arhar. Continue sowing of green gram and black gram.
- Arrange for drainage facility in Siddhi district.

West Madhya Pradesh

Excess rainfall occurred in first week of last fortnight and normal rainfall is likely to continue in next fortnight.

- Continuation of gap filling in soybean and maize in water logged areas due to heavy rainfall during first fortnight of July.
- In late condition mono cropping area, undertake sowing of pigeon pea, castor and niger

and in double crop area, undertake sowing of sesame, cluster bean, black gram, green gram and lobia in Betul district.

- Complete transplanting of rice in Gwalior district. Continue sowing of green gram and black gram in Gwalior, Bhind, Morena, Shivpuri, Guna, Ashoknagar and Sheopur districts.
- Continue transplanting of rice and complete sowing of til, maize, moong, urd, sesame, and groundnut in Datia districts.
- Complete transplanting of rice and sowing of arhar in Hoshangabad district. Undertake weeding in soybean crop.
- Continue sowing of black gram in Bhopal, Vidisha, Raisen, and Sehore, districts.
- Arrange for drainage facility in Bhind district.

Chhattisgarh:

Normal rainfall occurred in last fortnight and likely to continue in first week of next fortnight.

- Continue transplanting of rice in Chhattisgarh.
- Continuation of transplanting of rice and sowing of tuber crops. Continue sowing of soybean, groundnut and til in South Chhattisgarh.
- Continue transplanting of rice in Central Chhattisgarh. Continue sowing of red gram, sesame, soybean and maize.
- To control weeds in line sown rice crop, apply pre-emergence herbicides like Pendimethalin @ 1.25 liter per ha. dissolved in 500 liters of water within 3 days after sowing.

Jammu & Kashmir

Normal rainfall occurred in second week of last fortnight and likely to occur in next fortnight.

- Complete transplanting of rice seedlings in Jammu, Kathua and Reasi districts of Sub Tropical Zone.
- Complete transplanting of rice seedlings in Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone. For effective management of weeds apply Butachlor granules 5G @ 30 Kg/ha 2-5 days after transplanting in standing water. Don't drain the field for 4-5 days. Keep the field free of weeds by giving two hoeing or weeding i.e. first weeding and hoeing at 15 days after transplanting (DAT) and second operation after a fortnight.

Uttarakhand

Excess rainfall occurred in second week of last fortnight. Normal/excess rainfall is likely to occur in next fortnight.

- Undertake sowing of short duration Sankul variety of Maize like Kanchan, Gaurav, Surya, Vivek Sankul-11, 31, 35 and Prakash in Udham Singh Nagar district of Bhabar and Tarai Zone. To control the broad and narrow leaf weed which appears after 15 days of transplanting of paddy, apply 10EC Vispyaribek sodium @ 200ml/Ha.
- Drain out excess water from crop fields.

Himachal Pradesh

Scanty/deficient rainfall occurred in last fortnight. Normal/excess rainfall is likely to occur in next fortnight.

- Complete transplanting of rice in Una, Hamirpur, Kangra and Chamba districts of Sub-

Montane and Low Hills Sub-Tropical Zone. Continue sowing of moong, mash and kulthi.

Haryana & Delhi

Excess rainfall occurred in second week of last fortnight. Normal rainfall is likely to occur in next fortnight.

Haryana

- Complete transplanting of rice seedlings in Western and Eastern Zone.
- Complete sowing of guar in Western Zone.
- Drain out excess water from crop fields in Faridabad, Rewari and Yamuna Nagar districts.

Delhi

- Complete transplanting of rice in Western Semi Arid Zone. Maintain 2.5 cm water level in rice field. One packet of Blue Green Algae (BGA) per acre should be used for increasing nitrogen in the paddy field. Use Tricho-Card for pest management. Drain out excess water from the field to avoid water logging.

Punjab

Deficient rainfall occurred in last fortnight. Normal rainfall is likely to occur in next fortnight.

- Complete transplanting of rice in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone. In transplanted rice, apply second and third dose of 37 kg urea per acre each after 3 and 6 weeks of transplanting. In 'Direct Seeded Rice' apply 43 kg urea per acre each at 2, 5 and 9 weeks of sowing.

Uttar Pradesh

East Uttar Pradesh

Excess rainfall occurred in second week of last fortnight. Normal / Excess rainfall is likely to occur in next fortnight.

- Complete transplanting of rice in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone. Continue sowing of green gram, black gram and sunflower. Apply 100 Kg Gypsum 3 week after sowing of groundnut.
- Complete transplanting of rice in Faizabad, Gorakhpur, Sultanpur districts of Eastern Plain Zone. Complete sowing of black gram, green gram and til.
- Complete transplanting of rice in Kanpur, Sitapur, Unnao, Lucknow districts of Central Plain Zone. Undertake sowing of green gram and black gram
- Complete sowing of pigeon pea, sesame, groundnut in Bahraich, Shravastinagar, Balarampur, Gonda, Kushinagar, Sidharthnagar and Maharajganj districts of North Eastern Plain Zone.
- Drain out excess water from crop fields.

West Uttar Pradesh

Excess rainfall occurred in second week of last fortnight. Normal / Excess rainfall is likely to occur in next fortnight.

- Complete sowing of jowar, black gram, green gram, bajra, and til in Jhansi, Jalaun, Lalitpur, Mahoba and Hamirpur district of Bundelkhand Zone. Complete transplanting of

rice.

- Complete transplanting of rice in Meerut, Saharanpur, Gazipur, Muzaffarnagar, Aligarh districts of Western Plain Zone of Uttar Pradesh. Add one packet/acre of Blue Green Algae (BGA) in those fields of paddy where standing water is available, as it is rich source of nitrogen. Avoid water logging in maize, pulses and vegetables by doing proper drainage in the fields.
- Drain out excess water from crop fields.

Rajasthan

East Rajasthan

Excess rainfall occurred in last fortnight and normal rainfall is likely to occur in next fortnight.

- Complete sowing of *kharif* crops like bajra, jowar, guar, sesame and moong etc. in Bharatpur, Alwar, Karauli districts of Flood Prone Eastern Plain Zone.
- Complete sowing of groundnut in Bilwara, Chittorgarh, Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone.

West Rajasthan

Deficient/scanty rainfall occurred in last fortnight. Normal rainfall is likely to occur in first week of next fortnight.

- Complete sowing of guar and castor in Sriganganagar and Hanumangarh districts of Irrigated North Western Plain Zone with likely rainfall.
- Complete sowing of moth bean and undertake sowing of castor in Churu, Barmer, Jalore, Jodhpur and Pali districts of Arid Western Plain Zone with likely rainfall.

Advisories for other crops

Kerala

- Banana: there is a chance of aphid infestation. Spray verticillium solution 5 ml/L as a control measure against aphid.
- Arecanut: apply 1% Bordeaux mixture as a prophylactic measure to control mahali and bud rot diseases.
- Tapping of rubber in Thiruvananthapuram district and take care to avoid water logging at the base of banana plant especially in low lying areas in Kollam district.
- Planting of banana cultivars like Poovan, Palayankodan, Robustain Kannur, Malappuram and Kozhikode districts.
- Completion of transplanting of brinjal, bhindi and chilli with adequate drainage in Alappuzha, Kottayam districts of Problem Area Zone.
- Prevailing weather conditions (humid conditions) in Alappuzha and Kottayam districts are congenial for incidences of leaf rot, rhinoceros beetle & red palm weevil in coconut; to control leaf rot, apply Contaf @ 2 ml / 300 ml of water and Ferterra @ 20gm + 200gm sand in leaf axil to control rhinoceros beetle & red palm weevil after current spells of rain.

Karnataka

Coastal Karnataka

- Hand weeding in 25-35 days old maize and cotton crops in Uttara Kannada district.
- Continuation of planting of pineapple, black pepper, arecanut; provide drainage in turmeric and ginger in Uttara Kannada district.

North Interior Karnataka

- Completion of sowing of sorghum, maize (African tall), cowpea and short duration bajra for fodder purpose in Ballari, Kalaburgi, Koppal, Raichur and Yadgir district of North East Dry Zone.
- Completion of fresh plantation of fruit trees, teak, neem, tamarind, acacia or other trees on the bunds, uncultivated and marginal land in North East Dry Zone.

Andhra Pradesh

- Continuation of planting of rainfed sugarcane in Srikakulam, Vizianagaram and Vishakapatnam districts. Trash mulching in sugarcane.
- Monitor for sucking pest incidence like leaf miner, thrips in groundnut, thrips in green gram, black gram and sucking pests in cotton.

Telangana

- Completion of sowing of tomato, bhindi, brinjal in Adilabad, Karimnagar, Khammam and Nizamabad districts of Northern Talangana Zone

Tamil Nadu

- Grafting and cutting of horticultural crops, planting of rubber in Kanyakumari district.
- Completion of sowing of gourds in Coimbatore, Tiruppur and Erode districts.
- Mulching in tree crops in Kanyakumari district.

Maharashtra

Konkan

- Maintenance of adequate drainage in transplanted rice and vegetable crops (Bhindi and cluster bean).
- Completion of new planting of mango, cashew, sapota.
- Continuation of sowing of okra in ridges and furrow having spacing of 60 x 45 cm in Ratnagiri district.
- Rain water harvesting for future use.

Madhya Maharashtra

- Drain out excess water from mango, cashew, sapota, coconut and arecanut orchards.
- Completion of cultivation of sorghum, bajra, maize, cowpea and hybrid napier as green fodder for livestock.
- Rain water harvesting for future use.

Marathwada

- Gap filling in vegetable crops like brinjal, chilli, lady's finger and cluster bean in Nanded, Parbhani and Aurangabad districts.
- Rain water harvesting for future use.
- Completion of sowing of fodder crops like maize, jowar and bajra.

Vidarbha

- Completion of cultivation of vegetables like bitter gourd, tinda, cluster bean, cowpea and gourds in Buldana, Nagpur, Akola, Washim, Amravati, Wardha and Yeotmal districts.
- Rain water harvesting for future use.

Gujarat

Gujarat Region

- Completion of transplanting of chilli and brinjal, sowing of cucurbits like bottle gourd, ridge gourd, sponge gourd and bitter gourd, earthing up in sugarcane in Navasari, Valsad and Dangs districts of South Gujarat Heavy Rainfall Zone.
- Completion of sowing of vegetable crops like bhindi, beans and cucurbits in Surat, Narmada, Tapi and Bharuch districts. Provide adequate drainage in vegetable crops.
- Rain water harvesting for future use.

Saurashtra & Kutch

- Transplanting of vegetable crops like tomato, brinjal and chilli in Ahmedabad and Bhavnagar districts of Bhal and Coastal Zone.
- Completion of sowing of vegetable crops like bhindi, beans and cucurbits in Bharuch, Surat, Narmada and Tapi districts of South Gujarat Zone with realised rainfall.
- Intercropping of guar in pearl millet in Kachchh district of North West Zone.
- Completion of transplanting of brinjal, chilli and early cauliflower in Amreli, Rajkot, Jamnagar and Surendranagar districts of North Saurashtra Zone. Complete sowing of cucurbits (bottle gourd, bitter gourd, ridge gourd and pumpkin), lady's finger, cluster bean, kidney bean, cowpea, tur and amaranthus.
- Rain water harvesting for future use.

Arunachal Pradesh

- Remove side shoots in tomato at fruiting stage to prevent the fruits being shaded by leaves.
- Undertake weeding and earthing up in ginger and turmeric in vegetative stage.
- Remove excess suckers in pineapple at active vegetative stage.

Assam

- Due to cloudy and humid weather, there may be attack of Yellow Vein Mosaic Virus particularly in Ladies Finger. White Flies are the vector of the disease. To manage the attack, spray Cypermethrin @ 1.5ml per liter of water at an interval of 7 days for 3times.

Meghalaya

- Undertake weeding and hoeing in tomato.
- Undertake first hand weeding in groundnut at flower initiation stage.
- Undertake weeding operations in ginger and turmeric field.

Manipur

- Coriander may be sown as intercrop plants in Turmeric field.
- Raise nursery of cauliflower in raised nursery beds (18-20 cm height) under temporary rain shelter.

Nagaland

- Avoid water stagnation in the fields of ginger and carry out timely earthing up.
- Undertake harvesting of okra.

West Bengal

- Keep the large cardamom field weed free and avoid stagnation of water in Darjeeling district. Also avoid water stagnation to manage collar rot in round chilli.
- Undertake seedbed preparation for sowing early cabbage and broccoli.
- Harvest gerbera flowers regularly.

Odisha

- Undertake planting of okra in Puri district.
- Undertake planting of ginger, turmeric and mango in Mayurbhanj and Keonjhar districts.

- Undertake sowing of sesame and ragi in Cuttack and Puri districts.
- Complete propping of sugarcane and drain out excess water in Gajapati district.

Bihar

- Undertake planting of mango saplings and healthy banana suckers in Darbhanga district.
- Undertake planting of mango, litchi, guava and papaya plants in Madhepura district.
- Undertake earthing up in ginger and turmeric in Madhepura district. Also ensure a certain level of slope in the field so that water does not stagnate around the root zone. Undertake mulching with agro-waste like straw to arrest soil loss until the canopy cover of the crop increases.

Madhya Pradesh

East Madhya Pradesh

- Continue sowing of vegetables like- ladyfinger, bottle guard, cucurbits, sponge guard, bitter guard and beans in Chhatarpur and Tikamgarh districts.
- Prepare papaya seedlings in polybags in Rewa, Satna, Panna, Jabalpur, Seoni, Siddhi, Katni, Shahdol, Umaria, Mandla, Dindori, Balaghat, Anuppur, Singrauli district of Kymore Plateau Zone.

West Madhya Pradesh

- Continue sowing of vegetables like- ladyfinger, bottle guard, cucurbits, sponge guard, bitter guard and beans in Datia districts.
- Continue transplanting of vegetables in field in Mandsaur, Ratlam, Ujjain, Dewas, Indore, Shajapur, Rajgarh and Neemuch districts of Malwa Plateau Zone. Prepare seedling for kharif vegetables. Seeds of Pumpkin, Bitter guard & Bottle guard must be sown in the back yard.
- To control of broad leaves weed in maize, spray 2, 4-D @ 1.25 to 1.50 l/ha with 600-700 lit. of water at 15-20 DAS when, sufficient moisture in the field in Jhabua, Dhar and Alirajpur in Jhabua Hills Zone.

Chhattisgarh

- Planting of papaya, mango, guava etc. in North Chhattisgarh. Undertake nursery sowing of brinjal, early tomato, chilli and onion in the upland areas.
- Prepare nursery for papaya and custard apple in South Chhattisgarh.
- Continue nursery preparation for vegetables in Central Chhattisgarh.

Jammu & Kashmir

- Provide staking with plastic string in tomato, bottle gourd, bitter gourd, sponge gourd and cucumber to prevent the fruit from rotting in Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone. To avoid wilting in chillies, tomato and brinjal farmers are advised to avoid water logging conditions in the field.
- In rice crop, apply first top dose of nitrogen (3.25 kg urea per kanal after 15-18 days of transplanting). Undertake hand weeding after 18-20 days of transplanting in Srinagar, Badgam, Kupwara and Baramulla districts of Valley Temperate Zone.

Uttarakhand

- Complete sowing of okra in Udham Singh Nagar district of Bhabar and Tarai Zone.
- Make proper arrangement for drainage of excess water from the field of rice, sugarcane, fodder & vegetables, etc. in Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone. Apply insecticide and pesticide in sugarcane and vegetable crops only when sky remains clear.

Himachal Pradesh

- Complete sowing of bhindi and French bean in Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone and in Bilaspur, Simla, Sirmaur and Solan

districts of Mid Hills Sub Humid Zone. If tomato brinjal, chilli and capsicum crops are of 20-25 days planted age then apply dose of urea with intercultural operation when sky remains clear.

Delhi

- Undertake transplanting of Chilli, Brinjal and Early Cauliflower in raised bed.

Punjab

- Complete sowing of okra, radish, and planning of evergreen fruit plants such as citrus, mango, litchi, guava, loquat, ber, Amla and papaya in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone and in Amritsar, Kapurthala, Jalandhar, Ludhiana, Fatehgarh Sahib, Taran Taran and Patiala districts of Central Plain Zone.

Uttar Pradesh

- Complete nursery sowing of vegetables like cauliflower, cabbage, brinjal, tomato and chilli in Jhansi, Jalaun, Lalitpur, Mahoba and Hamirpur district of Bundelkhand Zone.
- Undertake planting of Guava, Mango, Leechi, Anola, Jackfruit, Lime, Ber, Banana and Papaya as new orchard in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone.
- Continue sowing of bhindi and lobia in Kanpur, Sitapur, Unnao, Lucknow districts of Central Plain Zone.

Rajasthan

- Continue planting of papaya in Bilwara, Chittorgarh, Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone.
- Continue sowing of khira, bottle gourd, ridge gourd, bitter gourd and cucumber in Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone. Continue planting of fruit crops like mango, plum and pomegranate.

Annexure –I

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

State	Subdivision	Crop	Varieties
Kerala		Ladies finger	Arka anamika, Susthira, Arka abhaya
Karnataka	Coastal Karnataka	Rice	for low land Intan, Abhilash and Hemavati, for upland Amrut or Prasanna
	South Interior Karnataka	Red gram	TTB-7, BRG-1, 2, 4, 5, Hyd-3c.
		Groundnut	TMV-2, JL-24, KCG-6
		Ragi	Indaf -9, ML-365
		Sesame	Navile-1, T-7
		Green gram	PS-16, PDM-84,178
		Black gram	Karagao-3, T-9, Rashmi
		Cowpea	TVX-944, KBC-1

		Castor	DCS-9 (Jyothi), DCH-177 & 32
	North Interior Karnataka	Rice	Jaya, Rasi, BPT-5204
		Soybean	JS-335, DSB-21
		Green gram	BGS-9, Sel-4, S-4, Chainamung & Pusa baisaki, DGGV-2
		Black gram	DU-1, TAU-1, TU-1, DBGV-5.
		Sorghum	DSV-2, CSV-15, DSV-3, DSV-62, Hybrids – CSH-14, CSH-16, CSH-18, CSH-30, SSV- 74.
		Pigeon pea	BSMR 736, TS-3R
		Soybean	JS-335, DSB-1, DSB-21, JS 93-05.
		Maize	Hybrids –DMH-2, Arjun and Private hybrids, GH-0727, Renuka (G-25).
		Cotton	DHH-11, NCH-145, NHH-44, DHB-105 and Sahana,
		Groundnut	Bunch type varieties GPBD-4, JL-24 and TMV-2, spreading type varieties: DSG-1 and JSP-39, Bunch type of varieties –GPBD-5 and G-2-52, R-2001-3 (Ajay), Spreading type of varieties – DSG-1 and JSP-39. cotton: DHB-915.
Andhra Pradesh	Coastal Andhra Pradesh	Rice	BPT-5204, vijetha, IR-64 and Bavapuri sannaalu, MTU 1010, MTU 1075, NLR 34449, Pushyami, Sridruthi, Sridruthi, Pushkala, Sri Satya.
		Maize	DCH-111, DCH-113, DCH-115, Maandhuri & Priya (sweet varieties), DHM 111, DHM 117, DHM-119, KH 510, Bio 9637, KH 9541, MCH 2, Kohinoor, Prabhal and Bisco 855.
		Red gram	LRG- 38, LRG- 41, laksmi, Abhaya, Asha, Maruthi and PRG-158, LRG 52.
		Black gram	LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787 , TBG 1,GBG 104.
		Green gram	LGG-407, LGG-460, LGG-450, LGG-410, TM-96- 2.
		Cotton	Cotton Dorasannaalu
		Ragi	Bharati, Srichaitanya, Vaula.
		Groundnut	Kadiri-7 Bold, Kadiri-8, Bold, kadiri-6 Kadiri-9,

			Kadiri Harithandra, Kadiri Anantha.
		Sesame	Hima and Sarada (YLM 66)
	Rayalaseema	Rice	MTU 1010, Nellore Masuri in Nellore district.
		Groundnut	Narayani, Abhaya, Dharani, Grishma, TPT-4, Kadiri-6, Kadiri-9 and dharani.
		Redgram	L.R.G-30, L.R.G-41, T.R.G-22,LRG-41, PRG-158, PRG-176, Lakshmi, and Asha.
		Bajra	P.H.B-3, I.C.M.H-356, Dhanashakthi.
		Korra	Prasad,SIA-3085, Krishnadevaraya,Surya nandi, Narasimharaya, Srilakshmi and SIA 3156.
		Castor	PCH-111, PCH-222, Haritha, Kiran.
	Telangana	Rice	RNR15048, kuruvai, ADT 36, ADT 43, ADT 45 and ADT 47.
		Jowar	CSH 6,9,10,11,CSV -15, PNV-1.
		Maize	DHM-101, 103,107 and other private hybrids
		Greengram	ML-267, LGG 407,410,450,460.
		Blackgram	T-9, LGG-20, 623, PBG-1.
		Red gram	LRG 30, ICPL 8863, 332,87119, 85063.
		Soybean	JS 335, MACS-13, 58.
Maharashtra	Konkan	Groundnut	Konkan Gaurav and Trombay Konkan (Tapora), high yielding varieties: TG-26, TAG-24 and TPG-41.
	Madhya Maharashtra	Soybean	Phule Kalyani, Phule Agrani (KDS 344), JS 335, MACS 11188, JS 335, Phule Kalyani (DS-228).
		Sorghum	Hybrid varieties: CSH 5, CSH 9, CSH 13, CSH 14, CSH 16, CSH 21, CSH 25. Improved varieties: SPV 462, CSV 13, CSV 15, CSV 17 and CSV 23.
		Sweet sorghum	SSV 84, CSV 24 SS, CSV 19 SS.
		Groundnut	Phule Morana, Phule Pragati, Phule Vyas, Phule Unnati, Phule RHRG 6021, SB11, TPG41, TG26.
		Pearl Millet	Shraddha, Saburi, Phule Shanti or ICTP 8203, ICMV 155.
		Pigeon pea	ICPL 87, Vipula, BSMR-853, BSMR-736.
		Sunflower	EC 68414, SS 56, Bhanu.

	Marathwada	Pigeon pea	rainfed: BDN-2, BDN-708 (Amol), BDN-711 , BDN-716; irrigated: BSMR-853, BSMR-736)
		Green gram	BM-4, Kopargaon, BPMR-145, BM-2002- 01, BM-2003- 2.
		Black gram	BDU-1, TU-1
		Groundnut	JL-24, LGN-2 (Manjra), TLG-45, LGN-1, LGN-123
		Maize	early varieties: Paras, Arun, Kiran, Surya; mid late varieties: Navjot, Manjra, DMH-107, KH-9451, MHH, late varieties: Prabhat, Deccan-103, K-2492, Bio-9381, Maharaja Fodder crops: African Tall, Ganga-5, Vijay and Manjari.
	Vidarbha	Red gram	ICPL- 87119 (Asha), C-11
		Black gram	PKV-15, TAU-1, TAU-2 and TPU-4.
		Green gram	PKV- green gold, PKV mug -8802, TARM-18
		Sorghum	early duration- CSH-14 and CSH-17, medium duration- CSH-9 SPH-388 and improved- SPV-669.
		Cotton	desi cotton: AKA-5, 7, 8, American improved varieties: AKH – 081, PKV-Rajat, AKH-8828, hybrid varieties: PKV-DH- 1
Gujarat	Gujarat Region	Rice	(NAUR-1, GNR-2 (Costal area), GNR-3 (N/V), GNR-4 (long duration), Jaya, Ghujari, GR-5, 7, 8, 9, IR-28 and GAR-13), GR-8,9 and Gurjari.
		Groundnut	semi-spread GG.20 or erect GG.2, GG.5, GG.7 and TG-26.
		Pearl millet	Late maturity GBH-558, GBH-732 and for moderate maturity GBH-744, GBH-905 and for early maturity GHB-757, GHB-719, GHB- 538.
		Sesame	G.til-1 and G.til-2.
		Maize	G.maize-1, 2, 4, 6, and Ganga safed-Ganga-11.
		Cluster bean	Gujarat Guar-2.
		Green gram	G.Mung-4 and K-851, Meha.
		Black gram	T-9, Guj. Udid-1.
		Cow Pea	G. Cowpea-4, G. Cowpea-5, Pusa Falguni
		Sunflower	Modern, EC 68414

		Cotton	Guj. Hy. Cotton-6, 8, 10, 12 and Desi cotton, early maturing Bt. Hybrid cotton .
	Saurashtra & Kutch	Groundnut	GG-20 & 22, GUG-10, GG-2,11,13, TAG- 24 & 37, TPG-41, TLG-45.
		Cotton	early: Bg-II GCH-8, Agritop-333, 777, 444, Jay, Beejdhan-2, Sarju, Atom, Bhakti, Medium Late: Bg-II GCH-6, Agritop-444, Solar-76, Swapna, Mallika.
		Cow pea	Gujarat Cowpea-1,2,4, Pusa Falguni.
		Black gram	T-9, GU-1.
		Green gram	GM-4, K-85.
		Pearl millet	GHB-558, 77, 538, 719, 732,744.
		Castor	GAUCH-1, GCH-4,5,6,7, GC-2, 3.
		Soybean	Guj. Soya. 1, 2, 3.
		Pigeonpea	BDN-2, Vaishali, GTH-1, GT-100.
		Sesame	Guj.Til-1,2,3,10, GT-2 or GT-3.
Assam		Bao rice	Maguri, Kekua Bao, Negheri Bao, Tara Bao
		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.
		Groundnut	TG-1A, JL-24
		Pigeon pea	T-21
		Black pepper	Panniyur-1, and 2, Kalluvali, Karimunda, kottandam, Balankotta
Meghalaya		Sali rice	Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1- 411 & local varieties like Mendri, Manipuri
		Groundnut	ICGS76 and JL 24
		Soybean	JS 335, Bragg, Ankur, Pusa Soybean-1 and Local JS 2

Tripura		Aman rice	Gomati, Ranjeet, Swarna, Naveen
		Maize	DMH- 849, 117, HQPM 1, BQPM 9
		Groundnut	TAG 24, TG 37A, ICGS 76
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,
		Guava	Himsagar, Mallicka, Langra for Mango; Safeda, L-49
		Coconut	Eastcoastal, Hazari., Cr1019, Sabita.
		dry seeded long duration rice	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.
		Cotton	HYV cotton: Suraj, Supriya, B.S.-30, B.S.-279, Surabhi, Hybrids varieties: Bunny, Diana, Bhaskra, Namaskara, Tulasi, Sigma, Chiruta, Takat etc)
		Arhar	Asha, Laxmi, UPAS-120, ICPL-88039
		Maize	Shakti-1, Navjot, Decan-107, Decan-109 etc. and hybrids varieties: Megan-G, Megan, MM- 1107, Highshell, Prabal, Proagro 4643, Bio9681, Pinnacle, DMH-7705
Bihar		Rice	Long duration rice- Rajshree, Rajendra sweta, Rajendra Mansuri, BPT-5204, Swarna, Satyam and Kishori), medium duration rice- Seeta, Santosh, Saroj, Rajshri, Prabhat, Rajendra suvasni, Rajendra kasturi.
		Maize	Devki, Suwan, Shaktimaan-1, Shaktimaan-2, Rajendra Shanker Makka-3 and Ganga 11
		Onion	<i>Agrifound Dark Red (ADR), N-53, Bhima Super, Arka Kalyan),</i>
		Turmeric	Rajendra Sonia and Rajendra Sonali
		Ginger	Maran and Nadia.

Jharkhand		Rice	Direct seeded upland rice; improved varieties: Vandana, Birsa Vikas Dhan -109 & Birsa Vikas Dhan -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, Sambha Mahsuri (BPT-5204), Birsa Dhan- 202, Birsamati, Pro-Agro 6444.
		Maize	Birsa Makka-1, Birsa Makka-2, Suwan-1 (Hybrid), HQPM (Hybrid)
		Pigeon pea	Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days).
		Ginger	Vardhaman or Nadia
		Turmeric	Rajendera Sonia.
Madhya Pradesh		Rice	Very early maturing: Jawahar Dhan (JD) 75, Vandana. Early maturing: JD 201, JRH-5, JRH-8, Danteswari, 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, Jal Dube ,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, Pusa rubi, Pusa Gurab, Mangala, Naveen, Laxmi 5005 & NS 815.
		Brinjal	Punjab Shadabahar, 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- Narendra Tur- 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 Sada Bahar, Punjab Nagina and Punjab Neelam
		Okra	Punjab-8 and Punjab-7
		Kharif onion	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	Pusa Navbahar, Durga Bahar
		Bajra	Pusa Composite-443, Pusa Composite-383, HSB -67
		Cluster bean	Pusa Komal
		Beans	Pusa Sem 2, Pusa Sem 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, Mahi Kanchan, Pratap Makka-5.