



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

***Valid for 24<sup>th</sup> June to 7<sup>th</sup> July, 2016***

**Date of Issue: 24<sup>th</sup> June, 2016**

**Issued by**

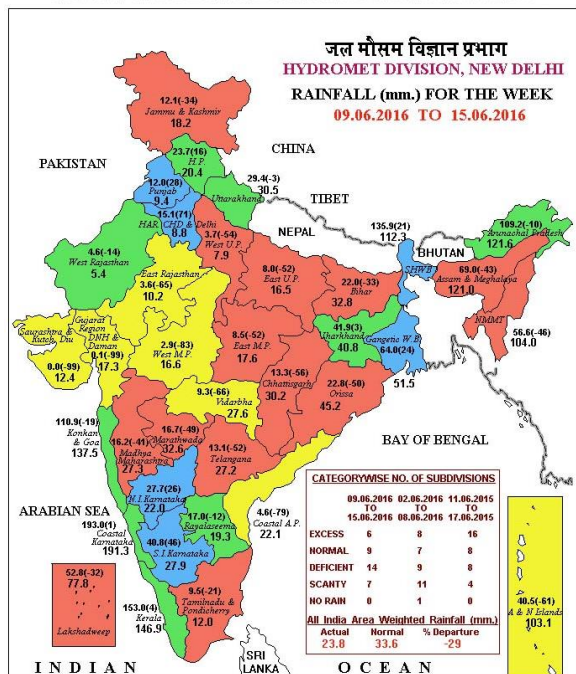
**Earth System Science Organisation  
India Meteorological Department**

**&**

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

## Realized Rainfall (9<sup>th</sup> to 22<sup>nd</sup> June 2016)

### भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT

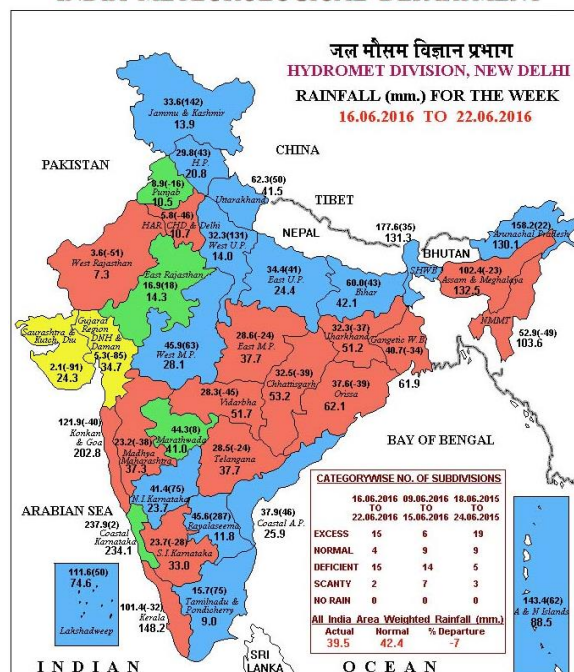


LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)  
■ SCANTY (+60% TO -99%) ■ NO RAIN (-100%) ■ NO DATA

**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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 Percentage Departures of Rainfall are shown in Brackets.

- Normal or above normal rainfall occurred during last two weeks in Himachal Pradesh, Uttarakhand, Punjab, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Rayalaseema, North Interior Karnataka and Coastal Karnataka,
- Normal or above normal rainfall occurred in either of the last two weeks in Jammu & Kashmir, Haryana & Delhi, West Rajasthan, East Rajasthan, East Uttar Pradesh, West Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, West Madhya Pradesh, Konkan & Goa, Marathwada, Coastal Andhra Pradesh, South Interior Karnataka, Kerala and Tamil Nadu.
- Below normal rainfall or no rain occurred in the last two weeks over East Madhya Pradesh, Chhattisgarh, Odisha, Telangana, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Madhya Maharashtra, Vidarbha and Gujarat State.

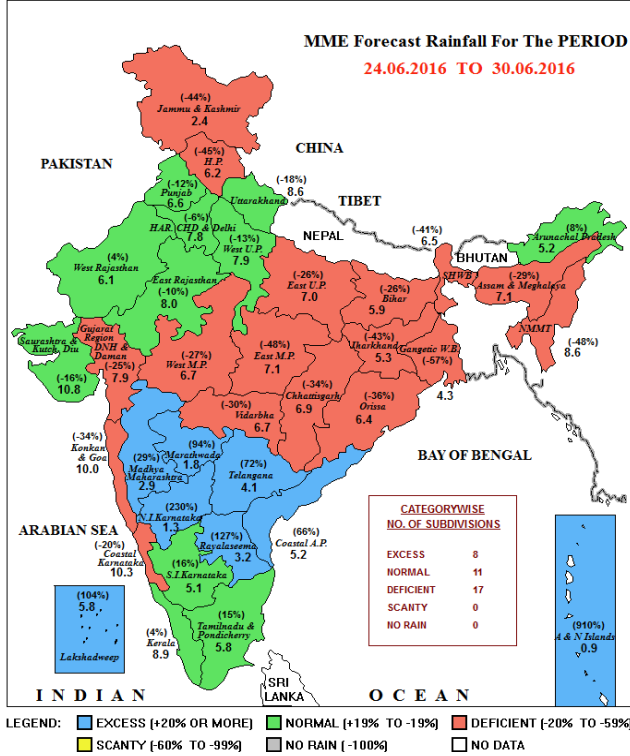
## Extended Range Forecast System

### Subdivision wise rainfall forecast map for the next 2 weeks (IC = 22 June)

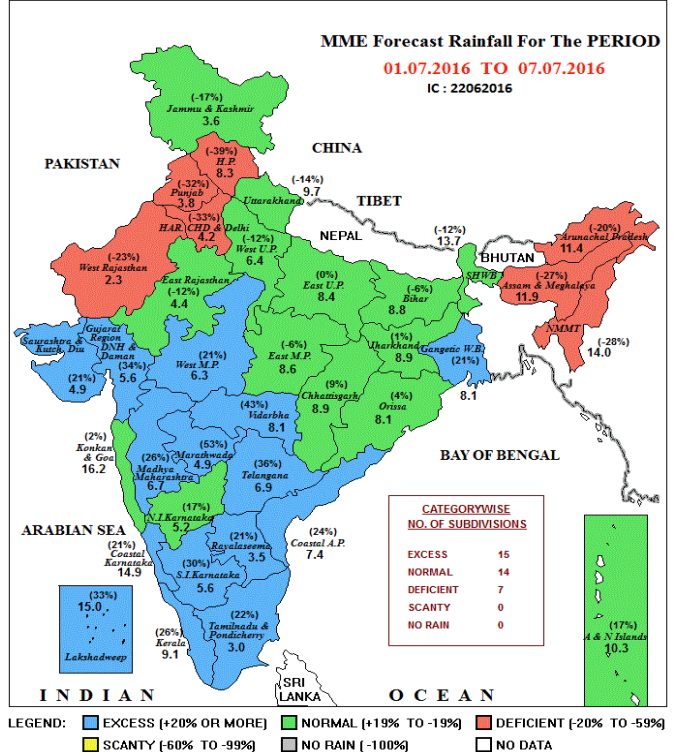
**Rainfall forecast (mm/day) (24 June – 7 July, 2016)**

**भारत मौसम विज्ञान विभाग  
INDIA METEOROLOGICAL DEPARTMENT**

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**Notes:**  
 (a) Rainfall figures are based on MME forecast  
 (b) Bold figures indicate forecast Normal rainfall (mm/day)  
 (c) Percentage Departures of Rainfall are shown in Brackets



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 (a) Rainfall figures are based on MME forecast  
 (b) Bold figures indicate forecast Normal rainfall (mm/day)  
 (c) Percentage Departures of Rainfall are shown in Brackets

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

## Strategic Agricultural Planning based on rainfall during next two weeks till 7<sup>th</sup> July

- The rainfall is expected to be normal to slightly above normal over southern peninsula and southern part of central India, close to normal over NW India and below normal over the eastern parts during week1 (24-30 June), whereas, almost close to normal rainfall on all India scale with increase of rainfall over central India is expected during week 2 (01-07 July).
- Southwest monsoon advanced over Kerala, Tamil Nadu, North-eastern States, Karnataka, Andhra Pradesh, Rayalaseema, Maharashtra, Telangana, Chhattisgarh, East Madhya Pradesh, Odisha, West Bengal and Sikkim, Jharkhand, Bihar, East Uttar Pradesh, Jammu & Kashmir, most parts of Uttarakhand, Himachal Pradesh, West Madhya Pradesh, some parts of West Uttar Pradesh.
- The conditions are favourable for further advance of Southwest Monsoon into remaining parts of West Madhya Pradesh, West Uttar Pradesh, most parts of Haryana, Chandigarh, Delhi and Punjab and some parts of East Rajasthan during next 3-4 days.

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

### Major advisories for *kharif* crops

#### Kerala

Kerala State received normal rainfall during last fortnight whereas normal/excess rainfall activity is likely during next fortnight.

- Continuation of transplanting of *Virippu* rice in Thiruvananthapuram, Kasargod, Kannur, Kozhikode, Malappuram, Palakkad, Thrissur and Ernakulam districts of Southern and Northern Zone. Complete transplanting in Thiruvananthapuram district in June.
- Continuation of direct sowing of rice in Alappuzha, Kottayam districts.
- Monitoring of pest and disease
  - Cashew: Closely watch the trees for early detection of stem borer attack. If attacked, chisel out the grubs and swab the tree trunk with Carbaryl WDP @ 4g/litre of water.
  - Rubber: Subsequent tappings must be done after proper drying of tapping panel. Apply Indofil M 45 @ 4 g/litre at one week interval to avoid fungal diseases.

#### Karnataka

South Interior Karnataka received excess in first week and deficient rainfall in second week of last fortnight, North Interior Karnataka received excess rainfall and Coastal Karnataka received normal rainfall during last fortnight, whereas normal/excess rainfall is likely to occur over Interior Karnataka, deficient rainfall is likely over Coastal Karnataka in first week and excess rainfall in second week of next fortnight.

##### Coastal Karnataka

- Continuation of transplanting of rice in Dakshina Kannada and Udupi district of Coastal Zone of Karnataka utilising realised rainfall.
- Continuation of drill sowing of rice and transplanting in Uttar Kannada district of Hill Zone.

##### South Interior Karnataka

- Continuation of nursery sowing of rice, sowing of ragi, red gram and groundnut and

completion of sowing of maize in Chickamagaluru, Hassan and Shivamogga districts of Southern Transition Zone utilizing realised and expected rainfall.

- Nursery preparation/sowing of rice, continuation of sowing of pulses like cowpea, green gram, black gram, sesame and sorghum etc., sowing of jowar, jowar + red gram (2:1), groundnut + red gram (4:1 or 8:2) by using seed drill in Chamrajnagar, Kodagu, Mandya and Mysuru districts of Southern Dry Zone utilising realised and expected rainfall.
- Continuation of sowing of red gram, maize, groundnut, ragi sesame, green gram, black gram, cowpea and castor in Bengaluru Rural, Chikaballapura and Kolar districts of Eastern Dry Zone with sufficient realised rainfall and expected rainfall.
- Continuation of nursery sowing of rice and sowing of cotton in Davengere district, sowing of minor millet in Chitradurga district, sowing of red gram, groundnut, sorghum, sunflower, finger millet and maize in Chitradurga, Davengere and Tumakuru districts in Central Dry Zone with realised and expected rainfall.
- Sowing of red gram with a seed rate of 15 kg/ha and seeds treatment with rhizobium culture @ 500 g/ha before sowing. Sow the seeds with spacing of 60 cm x 23 cm.
- For sowing of groundnut use 125 kg seeds/ha. Recommended spacing is 30 cm x 10 cm.

#### **North Interior Karnataka**

- Continuation of nursery sowing of rice and sowing of soybean, green gram, black gram, sorghum, pigeon pea and cotton in Bidar district of North East Transition Zone with realised and expected rainfall.
- Continuation of sowing of red gram, black gram, green gram, cotton and maize in Ballari, Kalaburgi, Koppal, Raichur and Yadgir districts of North East Dry Zone with realised rainfall.
- Continuation of sowing of *kharif* crops like green gram, black gram, soybean, sorghum, maize and cotton, wherever the soil moisture condition is favorable for sowing, in Dharwad, Belagavi and Haveri districts; sowing of groundnut in Dharwad and Belagavi districts and planting of sugarcane in Belagavi district of North Transition Zone utilising realised rainfall and expected rainfall.
- Continuation of sowing of green gram, sunflower, maize, Bt. cotton, red gram, bajra, sorghum, groundnut, sesame in Vijayapura, Bagalkote and Gadag districts of North Dry Zone with realised and expected rainfall; use medium duration varieties of red gram for sowing; use wilt resistant variety TS-3R, wherever the region is susceptible for wilt disease.
- Intercropping of bajra + groundnut (bunch) in 2:4 row proportion; bajra + red gram in 2:1 row proportion; groundnut (bunch) + red gram in 3:1 or 4:2 row row proportion, red gram + sesamum in 1:2 or 2:4 row proportion in light and medium black soils is suggested in North Dry Zone to make efficient use of available soil and water resources and to get higher returns.

#### **Andhra Pradesh**

Coastal Andhra Pradesh received scanty rainfall in first week and excess rainfall in second week of last fortnight and Rayalaseema received normal/excess rainfall during last fortnight and excess rain is likely to occur during next fortnight.

#### **Coastal Andhra Pradesh**

- Nursery sowing of rice, 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 and expected rainfall.

- Continuation of nursery sowing of rice and ragi, sowing of groundnut, medium duration varieties of maize in East Godavari district of High Altitude Tribal Zone with realised and expected rainfall.
- Farmers can take up sowing of Sesame in North Coastal AP (Srikakulam, Vizianagaram and Vishakhapatnam), Krishna and Godavari districts with the available soil moisture. The recommended varieties are : Hima and Sarada (YLM 66).
- Continuation sowing of *kharif* crops like bajra, red gram, green gram, black gram, groundnut and ragi, in Srikakulam, Vizianagaram and Vishakhapatnam districts of North Coastal Zone.

### **Rayalaseema**

- Sowing of irrigated groundnut in June and rainfed groundnut in July in Anantpur and Kurnool districts of Scarce Rainfall Zone with realised and expected rainfall.
- Continuation of transplanting of rice, sowing of *kharif* groundnut and red gram in Chittoor and Cuddephah districts of Southern Zone with realised and expected rainfall.
- Continuation of sowing of *kharif* crops like red gram, bajra, korra and castor in Anantpur and Kurnool districts of Scarce Rainfall Zone with realised and expected rainfall.

### **Telangana**

Telangana received deficient rainfall during last fortnight which is likely to improve (excess) during next fortnight.

- Continuation of nursery raising of rice (medium and short duration varieties) in Nizamabad, Adilabad districts of North Telangana Zone and in Mahbubnagar, Nalgonda, Rangareddy districts of Southern Telangana Zone with realised and expected rainfall. Avoid sowing of the rice nurseries using variety Telangana Sona (RNR 15048) in June.
- Sowing of jowar, maize, green gram, black gram, red gram, cotton and soybean in Nizamabad and Adilabad districts of Northern Telangana Zone with realised and expected rainfall, in Karimnagar district after receipt of sufficient rainfall, expected during next fortnight. Sowing of cotton and soybean in heavy soils.
- Sowing of rainfed crops like soybean, jowar, maize, red gram, green gram and Bt. cotton in Mahbubnagar, Nalgonda, Khammam, Rangareddy districts of Southern Telangana Zone with realised and expected rainfall; sowing on receipt of cumulative rainfall of 50-60 mm in light soils and 60-75 mm in heavy soils or when soil is wet upto top 15-20 cm.

### **Tamil Nadu**

Tamil Nadu received deficient rainfall in first week and excess rainfall in second week of last fortnight and normal/excess rainfall is expected during next fortnight.

- Continuation of nursery sowing of *kuruvai* rice and SRI cultivation in Thanjavur, Nagapattinam, Karur, Thiruvarur, Perambur, Trichy districts of Cauvery Delta Zone.
- Continuation of nursery sowing with pre-germinated seeds of rice in Coimbatore, Thiruppur and Erode districts of Western Zone.
- Continuation of sowing of small millets in the foothills of western ghat areas in

Coimbatore, Thiruppur and Erode districts of Western Zone.

- Continuation of cultivation of groundnut in Salem, Namakkal, Dharmapuri and Krishnagiri districts.

## **Maharashtra**

Konkan received normal rainfall in first week and deficient rainfall in second week of last fortnight, Madhya Maharashtra received deficient, Marathwada received deficient in first week and normal in second week. Vidarbha received scanty rainfall in first week and deficient rainfall during second week in last fortnight, whereas, deficient rainfall is likely in first week and normal rainfall in second week over Konkan & Goa, excess over Madhya Maharashtra and Marathwada, deficient rainfall is likely over Vidarbha in first week and excess rainfall in second week of next fortnight.

### **Konkan**

- Completion of nursery sowing of rice and finger millet in Raigad, Ratnagiri, Thane and Sindhudurg districts and transplanting of 21-25 days old rice seedlings.
- Continuation of sowing of *kharif* groundnut.

### **Madhya Maharashtra**

- Completion of nursery sowing of *kharif* rice on raised bed in Sangli, Satara and Kolhapur districts and transplanting of 21-25 days old rice seedlings.
- Continuation of sowing of soybean in Sangli, Satara, Kolhapur and Solapur districts.
- Sowing of red gram, green gram, black gram, groundnut and jowar in Kolhapur, Sangli, Satara, Solapur districts with realised rainfall.
- Completion of sowing of soybean, red gram, green gram in Nasik, Dhule and Nandurbar districts of North Madhya Maharashtra and undertake sowing only after sufficient receipt of rainfall.
- Continue and completion of sowing of maize and soybean after receipt of sufficient rainfall in Ahmednagar, Pune and Jalgaon districts.

### **Marathwada**

- Continuation of sowing of jowar, soybean, cotton, red gram, green gram, black gram, groundnut, and maize in Latur, Nanded, Osmanabad, Parbhani, Beed and Hingoli districts of Scarcity Zone.
- Intercropping of Cotton + Pigeon pea (6:1 or 8:2), Cotton + Soybean (1:1), Cotton + Green gram (1:2), Cotton + Black gram (1:1) serve as an insurance against crop failures and as a preventive against soil erosion.

### **Vidarbha**

- Continuation of nursery sowing of *kharif* rice in Gondia, Chandrapur, Nagpur and Gadchiroli districts of Eastern Vidarbha Zone utilising realised monsoon rainfall; nursery sowing of *kharif* rice in Bhandara district only after sufficient rainfall.
- Sowing of *kharif* crops like soybean, cotton, red gram and green gram in Akola, Washim, Amravati, Yavatmal, Buldhana and wardha districts of Central Vidarbha Zone with receipt of realised rainfall.
- Intercropping of cotton + green gram/black gram (1:1), pigeon pea + green gram / black gram/soybean (1:2 / 2:4), sorghum + green gram/pigeon pea (3:3) and Soybean + sorghum + pigeon pea (6:2:1). Also in soybean after every 6 or 9 rows one row of pigeon pea may be

sown in Central Vidarbha Zone.

## **Gujarat**

Rainfall over Gujarat State was scanty during last fortnight, whereas, normal rainfall over Saurashtra & Kutch is likely in first week and excess rainfall in second week during next fortnight and excess rain is expected over Gujarat Region during later part of next fortnight (1-7 July).

### **Gujarat Region**

- Nursery sowing of *kharif* rice and ragi with receipt of sufficient monsoon rainfall in Navasari, Valsad and Dangs districts of South Gujarat Heavy Rainfall Zone.
- Completion of land preparation; sowing of cotton, groundnut and pulses in Navasari, Dangs and Valsad districts of South Gujarat Heavy Rainfall Zone with receipt of monsoon rainfall during 24-30 June and expected excess rainfall during 1-7 July.
- Completion of land preparation and sowing of *kharif* crops like cotton, pigeon pea, sorghum etc. in Bharuch, Surat, Narmada and Tapi districts of South Gujarat Zone with monsoon rainfall during 24-30 June and expected excess rainfall during 1-7 July.
- Completion of land preparation and undertaking of nursery sowing of rice, completion of land preparation for sowing of ground nut, cotton, green gram, black gram, cowpea and pigeon pea in Anand, Dahod, Kheda, Panchmahals and Vadodara districts of Middle Gujarat Zone and sowing with expected excess rainfall during 1-7 July.
- Completion of land preparation for sowing of *kharif* crops like pearl millet, groundnut, green gram, black gram, sesame, maize, castor etc. in Banskantha, Sabarkantha, Mehsana, Patan and Gandhinagar districts of North Gujarat Zone and sowing with expected excess rainfall during 1-7 July.

### **Saurashtra & Kutch**

- Completion of land preparation for sowing of *kharif* cotton, groundnut, sesame, soybean, castor in Junagadh and Porbandar districts of South Saurashtra Zone; sowing with receipt of sufficient monsoon rainfall.
- Completion of land preparation for *kharif* crops like cotton, pearl millet, groundnut, green gram in Ahmedabad and Bhavnagar districts of Bhal and Coastal Zone; sowing with receipt of expected sufficient monsoon rainfall.
- Completion of land preparation for sowing of pearl millet, groundnut, green gram, black gram, cow pea, pigeon pea, sesame and cotton in Amreli, Jamnagar, Surendranagar and Rajkot districts of North Saurashtra Zone and sowing with expected monsoon rainfall during the period.
- Completion of land preparation for sowing of *kharif* crops like pearl millet, groundnut, green gram, black gram, sesame, maize, castor etc. in Kutch district of North West Zone and sowing with receipt of sufficient expected monsoon rains.

## **Arunachal Pradesh**

Normal to excess rainfall activity observed during last fortnight and normal rainfall is likely to occur during first half and subdued in later part of next fortnight.



- Nursery sowing /transplanting of rice in Papum Pare district.
- Maintain optimum water level in Rice (2-3 cm) during tillering stage in Anjaw, Changlang, East Siang, Kurung Kumey, Lohit, Lower Dibang Valley, Lower Subansiri, Tawang, Tirap, upper Siang, upper Subansiri, Upper Kameng, West Siang districts.

### **Assam**

Subdued rainfall activity observed during last fortnight in Assam & Meghalaya and is likely to continue during next fortnight.

- Sowing of *baou* rice in Nagaon and Morigaon districts.
- Nursery raising and Main field preparation for *sali* rice in Karbi Anglong, N.C.hills, Baksa, Barpeta, Bongaigaon, Chirang, Dhubri, Goalpara, Kamrup, Kokraghar, Nalbari, Hailakandi, Cachar, Karimganj, Darrang, Dhemaji, Lakhimpur, Sonitpur, Udalguri Nagaon and Marigaon districts.
- Sowing of groundnut in Lower Brahmaputra Valley Zone.

### **Meghalaya**

- Nursery raising and main field preparation of *sali* rice in all the districts of Meghalaya.
- Sowing of groundnut in all the districts of Meghalaya.
- Sowing of soybean in all the districts of Meghalaya.
- Sowing of *kharif* pulses green gram, black gram and rajma.

Deficient rainfall occurred in last fortnight and likely to continue during next fortnight over Nagaland, Manipur, Mizoram and Tripura.

### **Manipur**

- nursery sowing and main field preparation for transplanting of *kharif* rice in all the districts of Manipur.
- Sowing of black gram and soybean in all the districts of Manipur.

### **Mizoram**

- Transplanting of *kharif* rice.
- Sowing of *kharif* green gram, black gram and rajma.

### **Tripura**

- Continuation of sowing of *aman* rice in all the districts of Tripura.
- Maintain optimum water level in Jhum rice is in late tillering stage.
- Complete sowing of maize in all the districts of Tripura.

### **Nagaland**

- Continuation of nursery sowing of rice in low land.

### **West Bengal**

Excess rainfall occurred in Sub Himalayan West Bengal and deficient in Gangetic West Bengal in later part of last fortnight. Deficient rainfall is likely to occur in first half and normal in later part of next fortnight.

- Continue nursery sowing of *aman* rice in Gangetic West Bengal and direct sowing of rice in Purba Medinipur and South 24 Parganas districts.
- Also continue seedbed preparation for onion in Dakshin Dinajpur district.
- Due to humid and warm weather, infestation of blight in vegetable crops is likely to increase; spray Mancozeb @ 2 g per liters of water.

### **Andaman & Nicobar**

- Continue preparation of rice nursery in low lying area.

### **Odisha**

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

- Undertake nursery sowing of rice in Kalahandi and Cuttack districts.
- Undertake sowing of maize in Deogarh and Sundergarh districts.
- Undertake direct sowing of rice in Malkangiri district.
- Also undertake sowing of maize in Malkangiri district.

### **Bihar**

Deficient rainfall occurred in first half and excess in second half of last fortnight. Deficient rainfall is likely to occur in first half and normal in later part of next fortnight.

- Undertake preparation of nursery bed for upland rice varieties in Katihar district.
- Start transplanting of *kharif* rice in Begusarai district.
- Undertake sowing of *kharif* maize in Darbhanga district utilising realised rainfall.
- Undertake nursery sowing of *kharif* onion in East Champaran district.

### **Jharkhand**

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

- Complete sowing of maize in East Singhbhum district.
- Complete transplanting of finger millet in West Singhbhum district.
- Complete preparation of rice nursery bed for transplanting in Saraikela district.
- The recommended inter cropping of this region is as follows: Red gram + groundnut/rice/black gram: Between the 2 rows of red gram (75 cm between row & 20 - 25 cm between plant) 2 rows of groundnut/rice/black gram. Red gram + Maize: 1 row Red gram and 1 row Maize (75 cm between rows).

### **Madhya Pradesh**

#### **East Madhya Pradesh**

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

- Continue nursery sowing of rice in East Madhya Pradesh. Undertake sowing of soybean and red gram utilising the realised and expected rainfall.
- Continuation of sowing of maize, soybean, red gram and cotton in Chhindwara district, with expected rainfall in second week.
- Continuation of nursery sowing of rice and undertake sowing of *kharif* crops like, red

gram, maize, soybean, sesame, groundnut in Narsingpur district, utilising the realised and expected rainfall.

- Continue nursery sowing of rice and undertake sowing of red gram and soybean in Sagar and Damoh districts, utilising the realised and expected rainfall.
- Continuation of nursery sowing of rice in Jabalpur, Satna, Rewa Mandla district of Kymore Plateau Zone.

### **West Madhya Pradesh**

Scanty rainfall occurred in first half of previous fortnight and likely to occur in first half of next fortnight. Excess rainfall occurred in later part of previous fortnight and is likely to occur in later part of next fortnight.

- Undertake sowing of soybean and maize in Indore, Ujjain districts utilising the realised and expected rainfall.
- Continue land preparation and sowing of maize, soybean, red gram and cotton in Betul district with expected rainfall.
- Continue nursery preparation of rice in Gwalior, Bhind, Morena, Shivpuri, Guna, Ashoknagar and Sheopur districts. Undertake sowing of pearl millet, red gram, green gram and black gram utilising the realised and expected rainfall.
- Undertake sowing of soybean in Khargaoan, Khandwa and Barwani districts utilising the realised and expected rainfall.
- Continue preparation of rice nursery in Hoshangabad districts, and undertake sowing of *kharif* crops like, red gram, maize, soybean, sesame, groundnut utilising the realised and expected rainfall.
- Continue nursery sowing of rice. Undertake sowing of red gram and soybean in Bhopal, Vidisha, Raisen, and Sehore, districts, utilising the realised and expected rainfall.
- Undertake nursery sowing of rice in Jhabua, Alirajpur and Dhar districts. Undertake sowing of soybean, black gram and maize utilising the realised and expected rainfall.

### **Chhattisgarh:**

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

- In North Chhattisgarh, continue nursery preparation for sowing of long duration varieties of rice.
- In Central Chhattisgarh, continue line sowing of rice and nursery sowing of rice. Continue sowing of red gram, soybean and maize.
- In South Chhattisgarh, continue nursery sowing of rice, line sowing of rice and sowing of tuber crops. Continue land preparation for *kharif* crops like soybean, groundnut and undertake sowing after receipt of sufficient rainfall.

### **Jammu & Kashmir**

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

- Continue nursery raising of rice (Basmati 370 and Ranbir Basmati) in Jammu, Kathua and Reasi districts of Sub Tropical Zone.
- Undertake sowing of maize in Sub Tropical Zone. Undertake land preparation of the fields where rice seedlings are to be transplanted in Sub Tropical Zone.
- Continue preparing land for transplanting of rice seedlings in Rajouri, Ramban Poonch and Udhampur districts of Intermediate Zone. Transplant seedlings at 4-6 leaf stage. Undertake sowing of maize.

- Undertake transplanting of rice seedlings, transplant 2-3 plants/hill after proper puddling in Srinagar, Badgam, Kupwara and Baramulla districts of Valley Temperate Zone.

### **Uttarakhand**

Normal/excess rainfall occurred in last fortnight and normal rainfall is likely to continue in next fortnight.

- In Nainital district of Bhabar and Tarai Zone, continue transplanting of rice and sowing of black gram and green gram.
- In Udham Singh Nagar district of Bhabar and Tarai Zone, undertake land preparation for transplanting of rice. Undertake sowing of pigeon pea, groundnut and maize.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, continue transplanting of long duration varieties of rice.
- In Tehri Garhwal district of Hill Zone, undertake transplanting of rice at 4-5 leaf stage.

### **Himachal Pradesh**

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

- In Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone, continue nursery sowing and land preparation of main field for transplanting of rice and continue sowing of maize.

### **Haryana & Delhi**

Excess rainfall occurred in first half of last fortnight and normal rainfall is likely to occur in first part of next fortnight.

- Undertake transplanting of rice seedlings in Western and Eastern Zone.

### **Delhi**

- Continue nursery sowing of rice in Western Semi Arid Zone.
- Continue sowing of pigeon pea.
- Prepare field for sowing of maize crop.

### **Punjab**

Excess/normal rainfall occurred in last fortnight and normal rainfall likely to occur in first half of next fortnight.

- Continue nursery sowing of short duration rice varieties and transplanting of paddy in Moga, Bhatinda and Mansa districts of Western Zone and Faridkot district of Western Plain Zone.
- In Gurdaspur district, undertake transplanting of rice and continue sowing of maize in Undulating Plain Zone.

### **Uttar Pradesh**

#### **East Uttar Pradesh**

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

- Continuation of nursery sowing of rice and sowing of maize in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone. Continuation of sowing of arhar.
- Continuation of nursery sowing of late maturing varieties of rice and sowing of arhar in Faizabad, Gorakhpur, Sultanpur districts of Eastern Plain Zone. Undertake sowing of

black gram and green gram.

- Continuation of nursery sowing of rice and sowing of early maturing variety of maize in Kanpur, Sitapur, Uno, Lucknow districts of Central Plain Zone.
- Continuation of nursery sowing of rice in Varanasi, Azamgarh, Mirzapur, Mau districts of Central Plain Zone. Undertake land preparation and sowing of black gram, sorghum and maize.

### **West Uttar Pradesh**

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

- Continuation of nursery sowing of rice in Jhansi, Jalaun, Lalitpur, Mahoba and Hamirpur district of Bundelkhand Zone.
- Continuation of nursery sowing of paddy in Meerut, Saharanpur, Gazipur, Muzaffarnagar, Aligarh districts of Western Plain Zone of Uttar Pradesh. Land preparation for sowing of maize.

### **Rajasthan**

- In Dungarpur and Banswara districts of Southern Humid Plain Zone, undertake sowing of cotton.
- Continuation of sowing of pearl millet. Continuation of Land preparation and sowing sorghum in Bharatpur, Alwar, Karauli districts of Flood Prone Eastern Plain Zone.
- Continuation of land preparation and sowing of groundnut in Bikaner, Jaisalmer districts of Arid Western Plain Zone as rainfall is expected in second week of next fortnight.
- Continue sowing of cluster bean in Sriganganagar and Hanumangarh districts of Irrigated North Western Plain Zone as rainfall is expected in second week next fortnight.
- Continuation of sowing of groundnut and maize in Bilwara, Chittorgarh, Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone as the rainfall is expected in second week of next fortnight.

### **Advisories for other crops**

### **Kerala**

- Continuation of transplanting of *kharif* vegetables like bhindi and brinjal, planting of cucurbits like pumpkin, cucumber and bottle gourd; plant seedlings at 3-4 leaf stage in Thiruvananthapuram district of Southern Zone.
- Continuation of transplanting of vegetables like bhindi, brinjal and chilli in Alappuzha, Kottayam districts of Problem Area Zone.
- Continuation of planting of new pepper cuttings in Pathanamthitta district.
- Continuation of planting of ginger and turmeric with adequate drainage facility in Central Zone.
- Continuation of tapping of rubber and completion of new planting of rubber seedlings in Thiruvananthapuram district. Avoid water logging at the base of the new plants.
- Continuation of cultivation of ginger, turmeric, banana, mulberry and tuber crops as intercrops along with coconut.
- Continuation of planting of coconut, arecanut, pepper and cardamom in Wayanad and Idukki districts of High Altitude Zone.
- Provide adequate drainage facility for vegetables and orchards to avoid water stagnation.

### **Karnataka**



### **South Interior Karnataka**

- Continuation of planting of ginger and turmeric.
- Preparation of the soil conservation structures like bunds to drain out the excess water and to avoid soil erosion incorporate the farm yard manure in soil.

### **North Interior Karnataka**

- Continue fresh plantation of fruit trees, teak, neem, tamarind, acacia or other trees on the bunds, uncultivated and marginal land in North East Transition Zone and North East Dry Zone.
- Repairing of bunds and check dam so as to reduce the runoff and to check the soil erosion.
- Sowing of crops in rows across the slope to facilitate better conservation of moisture in the soil.

### **Andhra Pradesh**

- Undertake Earthing up in 120 days old sugarcane crop.
- Undertake land preparation and sowing of green manure crops.
- Procurement of good quality seeds from reputed firms.

### **Rayalaseema**

- Spacing: red gram 90 x 20 cm for light red soils and 180 x 20 cm for black soils, bajra 45 x 12-15 cm, korra 22.5 X 7.5 cm.

### **Telangana**

- Continuation of harvesting of matured vegetables in Northern Telangana Zone.

### **Tamil Nadu**

- Undertake pit preparation for fresh planting of orchard crops and picking up of fully opened cotton bolls in early morning hours in clear weather.
- In Salem, Namakkal, Dharmapuri and Krishnagiri districts, severe incidence of woolly aphid was found in sugarcane. To control, spray Acephate @ 2g/litre of water along with adjuvant on a non rainy day.
- Provide drainage facilities in the fields in Nilgiris district.
- Covering the root zone of horticulture crops with coir pith to conserve moisture in the North Eastern Zone.
- Hand weeding and hoeing may be done in irrigated 30 days old turmeric.

### **Maharashtra**

#### **Konkan**

- Continuation of new planting of mango, cashew, sapota, coconut and arecanut.
- Providing mechanical support to newly planted grafts/plants.
- Application of manures and fertilizers to cashew, coconut, arecanut and sapota.
- Planting of biennial forage crops like Paragrass, Napier, Gajraj etc.
- Protect the animals and poultry birds during rains.

#### **Madhya Maharashtra**

- Completion of nursery sowing of kharif vegetable crops like tomato and chilli. Nursery

sowing of *kharif* onion & tomato crops in Nashik district.

- Continuation of fresh planting of orchards mango, banana, papaya and pomegranate.
- Cultivation of ginger and turmeric.
- Cultivation of sorghum, bajra, maize, cowpea and hybrid napier as green fodder for livestock.

#### **Marathwada**

- Continuation of nursery cultivation of *kharif* vegetable crops like brinjal, chilli and tomato seed on raised bed.
- Planting of mango and custard apple crops.
- Continuation of sowing for floriculture crops.
- Continuation of sowing of fodder crops like African Tall, Ganga-5, Vijay and Manjari.

#### **Vidarbha**

- Completion of sowing of vegetables like bitter gourd, tinda, ridge gourd, smooth gourd, bottle gourd, cowpea, cluster bean, coriander etc. in Central Vidarbha Zone.
- Land preparation for turmeric in Eastern Vidarbha Zone with realised rainfall.

### **Gujarat**

#### **Gujarat Region**

- Continuation of sowing of irrigated cotton with irrigation in Anand, Dahod, Kheda, Panchmahals and Vadodara districts of Middle Gujarat Zone.
- Continue pre-sowing of irrigated *kharif* groundnut under assured irrigation facilities; continue gap filling in pre-sown groundnut and cotton; avoid irrigation in pre-sown *kharif* cotton and groundnut crops as rain is expected and complete threshing of harvested summer crops at the earliest and store the harvested produce in safe place; continue picking of matured fruits of vegetable and fruit crops in Banaskantha, Sabarkantha, Mehsana, Patan and Gandhinagar districts of North Gujarat Zone.
- Continuation of preparation for new plantation of horticultural crops (mango, sapota, lemon, pomegranate, ber, guava).
- Make necessary arrangements for water harvesting in the fields.

#### **Saurashtra & Kutch**

- Complete land preparation and undertake sowing of *kharif* vegetable crops like tomato, brinjal and chilli after receipt of monsoon rainfall in Ahmedabad and Bhavnagar districts of Bhal and Coastal Zone.
- Continuation of pre-sowing of groundnut with irrigation in Junagadh, Porbandar, Amreli, Jamnagar Surendranagar and Rajkot districts in Saurashtra. Carry out thinning, intercultural operation and hand weeding in already sown irrigated groundnut.
- Keep the seeds and other inputs ready for sowing of *kharif* crops.

#### **Arunachal Pradesh**

- Prepare half moon terraces in fruit crops (orange/banana/apple/peach) grown in steep slopes to prevent nutrient loss during heavy downpour.

#### **Assam**

- Land preparation and sowing of turmeric and ginger in Central Bramhaputra Valley Zone.

- Sowing of bottle gourd and planting of lemon in Lower Bramhaputra Valley Zone.
- Planting of okra in Barak valley Zone.
- Planting of papaya in Central Bramhaputra Valley Zone
- Planting of tapioca in Hill Zone.
- Planting of pineapple in North Bank Plain Zone and Hill Zone.
- Sowing of *Colocasia* in Lower Bramhaputra Valley Zone.
- Sowing of fodder crops like Hybrid Napier, Setaria and Guinea etc. may be planted at a spacing of 45 cm in Upper Bramhaputra Valley Zone.
- Land preparation for sowing of arhar in Karbi Anglong, N.C.hills, Nagaon and Marigaon districts.
- Sowing of jute in Baksa, Barpeta, Bongaigaon, Chirang, Dhubri, Goalpara, Kamrup, Kokraghar, Nalbari district.
- Planting of black pepper in Darrang, Dhemaji, Lakhimpur, Sonitpur and Udalguri districts.

#### **Meghalaya**

- Planting of High Yielding Varieties of ginger/turmeric (varieties: turmeric- Lakadong, RCT-1, ginger- Nadia, Poona, Riodegenerio etc.).

#### **Manipur**

- Transplanting of papaya, tree bean, mango.

#### **Mizoram**

- Transplanting of brinjal and chilli in the main fields.
- Sowing of maize, okra, French bean, cowpea, Colocasia, planting of ginger and turmeric and also new planting of orchard crops like passion fruit, Khasi mandarin and acid lime.
- Sowing of Khasi Mandarin and acid lime in all the districts of Mizoram.
- Transplanting of passion fruit in all the districts of Mizoram.

#### **Tripura**

- Planting of banana.

#### **West Bengal**

- In Darjeeling district undertake land preparation for new plantation of large cardamom and keep the field weed free.
- Also undertake weeding in ginger and turmeric fields in Darjeeling district.

#### **Andaman & Nicobar**

- In Nicobar district raise the seedling of vegetable crops like cucurbit and solanaceous crops in the poly bag to avoid damage due to heavy rain and ensure healthy seedlings for backyard kitchen garden.
- Raise nursery of vegetables like chilli and brinjal in the upland area of Portblair.
- Undertake sowing of seeds of bhendi and lobia in raised beds.

#### **Odisha**

- In Cuttack district undertake sowing of maize.
- Also undertake planting of okra in Cuttack district.
- Undertake sowing of groundnut and ragi in Kendujhar & Mayurbhanj districts.

#### **Bihar**

- Undertake sowing of turmeric and ginger in Samastipur district utilising realised rainfall.

## **Jharkhand**

- Undertake sowing of groundnut in East Singhbhum district.
- Continue sowing of Marua seed in nursery bed to raise the seedlings in Ranchi district.

## **Madhya Pradesh:**

### **East MP**

- Sowing of bottle gourd and bitter gourd in polythene bags in Narsingpur district.
- Continuation of seed bed preparation for sowing of *kharif* onion in Chhatarpur and Tikamgarh districts. Continue planting of ginger.

### **West MP**

- Undertake nursery sowing of onion and chilli in Khargwan, Khandwa and Barwani districts utilising the realised and expected rainfall.
- Sowing of bottle gourd and bitter gourd in polythene bags in Hoshangabad district.
- Continue seed bed preparation for sowing of *kharif* onion in Datia districts. Continue planting of ginger.
- Continue planting of turmeric and ginger in Jhabua, Alirajpur and Dhar districts. Continue nursery preparation for *kharif* vegetables, onion and cauliflower.

## **Chhattisgarh**

- Continue land preparation for sowing/transplanting of *kharif* vegetables in North Chhattisgarh.
- Prepare nursery for papaya and custard apple in South 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.
- Sowing of pole type beans in Srinagar, Badgam, Kupwara and Baramulla districts of Valley Temperate Zone.

## **Uttarakhand**

- Continue nursery sowing of short duration varieties of cabbage, cauliflower, Knol-Khol and broccoli in Nainital district of Bhabar and Tarai Zone.
- Sowing of rainy season okra and prepare the nursery for rainy season crop of chilli In Udhampur district of Bhabar and Tarai Zone.

## **Himachal Pradesh**

- Continue sowing of bhindi and French bean In Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone. Continue planting of ginger and turmeric in Low hills.
- Undertake direct sowing & transplanting of tomato brinjal, chilli and capsicum. Continue sowing of fodder maize alongwith cowpeas and soybean in irrigated and rainfed areas. Preferably chari +Bajra crop should be taken.

## **Haryana & Delhi**

### **Haryana**

- Undertake field preparation for sowing of pearl millet (bajra) in Western Zone.
- Undertake planting of mango, guava, jamun, orange, papaya, pomegranate and ber in Eastern Zone.

### **Delhi**

- Continue nursery sowing of chilli and brinjal in **Western Semi Arid Zone**.

## **Punjab**

- Undertake nursery sowing of cauliflower, Brinjal and *kharif* onion in Western Zone. Undertake sowing of okra in Moga, Bhatinda and Mansa districts.

## **Uttar Pradesh**

- Continuation of nursery sowing of vegetables like cauliflower, cabbage, brinjal, tomato and chilli

in Jhansi, Jalaun, Lalitpur, Mahoba and Hamirpur district of Bundelkhand Zone.

#### Rajasthan

- Digging of pits for new plantation of ber, aonla and for pomegranate in Bharatpur, Alwar, Karauli districts of Flood Prone Eastern Plain Zone.
- Planting of papaya in Bilwara, Chittorgarh, Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone.

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

#### Annexure –I

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

| State     | Subdivision                 | Crop       | Varieties  |
|-----------|-----------------------------|------------|--|
| Kerala    |                             | Rice       | low land: Intan, Abhilash and Hemavati<br>Upland: Amrut or Prasanna.       |
| Karnataka | Coastal<br>Karnataka        | Rice       | for low land Intan, Abhilash and Hemavati, for upland<br>Amrut or Prasanna |
|           | South Interior<br>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<br>Karnataka | Rice       | Jaya, Rasi, BPT-5204   |
|           |                             | Soybean    | JS-335, DSB-21   |
|           |                             | Green gram | BGS-9, Sel-4, S-4, Chainamung & Pusa baisaki                               |
|           |                             | Black gram | DU-1, TAU-1, TU-1  |
|           |                             | Sorghum    | DSV-2,CSV-15, DSV-3, DSV-62, Hybrids – CSH-14,<br>CSH-16, CSH-18           |
|           |                             | Pigeon pea | BSMR 736, TS-3R  |
|           |                             | Soybean    | JS-335, DSB-1,   |



|                       |                               |                   |   |
|-----------------------|-------------------------------|-------------------|---|
|                       |                               | <b>Maize</b>      | Hybrids –DMH-2, Arjun and Private hybrids,  |
|                       |                               | <b>Cotton</b>     | DHH-11, NCH-145, NHH-44, DHB-105 and Sahana,  |
|                       |                               | <b>Groundnut</b>  | Bunch type varieties GPBD-4, JL-24 and TMV-2, spreading type varieties: DSG-1 and JSP-39  |
| <b>Andhra Pradesh</b> | <b>Coastal Andhra Pradesh</b> | <b>Rice</b>       | BPT-5204, vijetha, IR-64 and Bavapuri sannaalu, MTU 1010, MTU 1075, NLR 34449.  |
|                       |                               | <b>Maize</b>      | 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. |
|                       |                               | <b>Red gram</b>   | LRG- 38, LRG- 41, laksmi, Abhaya, Asha, Maruthi and PRG-158, LRG 52.  |
|                       |                               | <b>Black gram</b> | LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787 , TBG 1,GBG 104.  |
|                       |                               | <b>Green gram</b> | LGG-407, LGG-460, LGG-450, LGG-410, TM-96- 2.   |
|                       |                               | <b>Cotton</b>     | Cotton Dorasannaalu   |
|                       |                               | <b>Ragi</b>       | Bharati, Srichaitanya, Vaula.   |
|                       |                               | <b>Groundnut</b>  | Kadiri-7 Bold, Kadiri-8, Bold, kadiri-6 Kadiri-9, Kadiri Harithandra, Kadiri Anantha.   |
|                       | <b>Rayalaseema</b>            | <b>Rice</b>       | MTU 1010, Nellore Masuri in Nellore district.   |
|                       |                               | <b>Groundnut</b>  | Narayani, Abhaya, Dharani, Grishma, TPT-4, Kadiri-6, Kadiri-9 and dharani.  |
|                       |                               | <b>Redgram</b>    | L.R.G-30, L.R.G-41, T.R.G-22,LRG-41, PRG-158, PRG-176, Lakshmi, and Asha.   |
|                       |                               | <b>Bajra</b>      | P.H.B-3, I.C.M.H-356, Dhanashakthi.   |
|                       |                               | <b>Korra</b>      | Prasad,SIA-3085, Krishnadevaraya,Surya nandi, Narasimharaya, Srilakshmi and SIA 3156.   |
|                       |                               | <b>Castor</b>     | PCH-111, PCH-222, Haritha, Kiran.   |
|                       | <b>Telangana</b>              | <b>Rice</b>       | RNR15048, kuruvai, ADT 36, ADT 43, ADT 45 and ADT 47.   |
|                       |                               | <b>Jowar</b>      | CSH 6,9,10,11,CSV -15, PNV-1.   |
|                       |                               | <b>Maize</b>      | DHM-101, 103,107 and other private hybrids  |
|                       |                               | <b>Greengram</b>  | ML-267, LGG 407,410,450,460.  |
|                       |                               | <b>Blackgram</b>  | T-9, LGG-20, 623, PBG-1.  |

|                    |                           |                      |   |
|--------------------|---------------------------|----------------------|---|
|                    |                           | <b>Red gram</b>      | LRG 30, ICPL 8863, 332,87119, 85063.  |
|                    |                           | <b>Soybean</b>       | JS 335, MACS-13, 58.  |
| <b>Maharashtra</b> | <b>Konkan</b>             | <b>Groundnut</b>     | Konkan Gaurav and Trombay Konkan (Tapora), high yielding varieties: TG-26, TAG-24 and TPG-41.   |
|                    | <b>Madhya Maharashtra</b> | <b>Soybean</b>       | Phule Kalyani, Phule Agrani (KDS 344), JS 335, MACS 11188, JS 335, Phule Kalyani (DS-228).  |
|                    |                           | <b>Sorghum</b>       | 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.   |
|                    |                           | <b>Sweet sorghum</b> | SSV 84, CSV 24 SS, CSV 19 SS.   |
|                    |                           | <b>Groundnut</b>     | Phule Morana, Phule Pragati, Phule Vyas, Phule Unnati, Phule RHRG 6021, SB11, TPG41, TG26.  |
|                    |                           | <b>Rice</b>          | Halava: Karjat 184, Ratnagiri 1, Karjat 4, Ratnagiri 711, Phule Radha; Nimgarva: Jaya, Phule Maval, Phule samruddhi, Phule R G –N-6; Garva: Ratnagiri 2, Karjat 2, Daranna, Suvarna; Scented rice: Basmati370, Indrayani, Prabhavati, Sughandha; Hybrid: Sahyadri 1, Sahyadri 2, Sahyadri 3, Sahyadri 4, Sahyadri 5, K R H 2. |
|                    |                           | <b>Pearl Millet</b>  | Shraddha, Saburi, Phule Shanti or ICTP 8203, ICMV 155.  |
|                    |                           | <b>Pigeon pea</b>    | ICPL 87, Vipula, BSMR-853, BSMR-736.  |
|                    |                           | <b>Sunflower</b>     | EC 68414, SS 56, Bhanu.   |
|                    | <b>Marathwada</b>         | <b>Pigeon pea</b>    | rainfed: BDN-2, BDN-708 (Amol), BDN-711 , BDN-716; irrigated: BSMR-853, BSMR-736)   |
|                    |                           | <b>Green gram</b>    | BM-4, Kopargaon, BPMR-145, BM-2002- 01, BM-2003- 2.   |
|                    |                           | <b>Black gram</b>    | BDU-1, TU-1   |
|                    |                           | <b>Groundnut</b>     | JL-24, LGN-2 (Manjra), TLG-45, LGN-1, LGN-123   |
|                    |                           | <b>Maize</b>         | 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<br><br>Fodder crops: African Tall, Ganga-5, Vijay and Manjari.   |
|                    | <b>Vidarbha</b>           | <b>Red gram</b>      | ICPL- 87119 (Asha), C-11  |

|                |                               |                     |   |
|----------------|-------------------------------|---------------------|---|
|                |                               | <b>Black gram</b>   | PKV-15, TAU-1, TAU-2 and TPU-4.   |
|                |                               | <b>Green gram</b>   | PKV- green gold, PKV mug -8802, TARM-18   |
|                |                               | <b>Sorghum</b>      | early duration- CSH-14 and CSH-17, medium duration- CSH-9 SPH-388 and improved- SPV-669.  |
|                |                               | <b>Cotton</b>       | desi cotton: AKA-5, 7, 8, American improved varieties: AKH – 081, PKV-Rajat, AKH-8828,<br>hybrid varieties: PKV-DH- 1   |
| <b>Gujarat</b> | <b>Gujarat Region</b>         | <b>Rice</b>         | (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).  |
|                |                               | <b>Groundnut</b>    | semi-spread GG.20 or erect GG.2, GG.5, GG.7 and TG-26.  |
|                | <b>Saurashtra &amp; Kutch</b> | <b>Groundnut</b>    | GG-20 & 22, GUG-10, GG-2,11,13, TAG- 24 & 37, TPG-41, TLG-45.   |
|                |                               | <b>Cotton</b>       | 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.  |
|                |                               | <b>Cow pea</b>      | Gujarat Cowpea-1,2,4, Pusa Falguni.   |
|                |                               | <b>Black gram</b>   | T-9, GU-1.  |
|                |                               | <b>Green gram</b>   | GM-4, K-85.   |
|                |                               | <b>Pearl millet</b> | GHB-558, 77, 538, 719, 732,744.   |
|                |                               | <b>Castor</b>       | GAUCH-1, GCH-4,5,6,7, GC-2, 3.  |
|                |                               | <b>Soybean</b>      | Guj. Soya. 1, 2, 3.   |
|                |                               | <b>Pigeonpea</b>    | BDN-2, Vaishali, GTH-1, GT-100.   |
|                |                               | <b>Sesame</b>       | Guj.Til-1,2,3,10, GT-2 or GT-3.   |
| <b>Assam</b>   |                               | <b>Bao rice</b>     | Maguri, Kekua Bao, Negheri Bao, Tara Bao  |
|                |                               | <b>Sali Rice</b>    | Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal, for typical lowland rice area,<br>medium duration varieties: Satya and Basundhara T.T.B.-404, Mulagabharu, Kanaklata, Joymoti, IR-36, IR-64. for<br>flood prone area: Luit, Jalashree, Plaban. |
|                |                               | <b>Groundnut</b>    | TG-1A, JL-24  |
|                |                               | <b>Pigeon pea</b>   | T-21  |

|                    |  |                                      |   |
|--------------------|--|--------------------------------------|---|
|                    |  | <b>Black pepper</b>                  | Panniyur-1, and 2, Kalluvali, Karimunda, kottandam, Balankotta  |
| <b>Meghalaya</b>   |  | <b>Sali rice</b>                     | Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1- 411 & local varieties like Mendri, Manipuri  |
|                    |  | <b>Groundnut</b>                     | ICGS76 and JL 24  |
|                    |  | <b>Soybean</b>                       | JS 335, Bragg, Ankur, Pusa Soybean-1 and Local JS 2   |
| <b>Tripura</b>     |  | <b>Aman rice</b>                     | Gomati, Ranjeet, Swarna, Naveen   |
|                    |  | <b>Maize</b>                         | DMH- 849, 117, HQPM 1, BQPM 9   |
|                    |  | <b>Groundnut</b>                     | TAG 24, TG 37A, ICGS 76   |
| <b>Nagaland</b>    |  | <b>Rice</b>                          | CAU R1, CAU R3, RCM-9 and RCM-1.  |
| <b>West Bengal</b> |  | <b>Aman rice</b>                     | medium duration MTU-7029, MTU1001, Pratiksha and for long duration CR1017, CR1018,  |
|                    |  | <b>Guava</b>                         | Himsagar, Mallicka, Langra for Mango; Safeda, L-49  |
|                    |  | <b>Coconut</b>                       | Eastcoastal, Hazari., Cr1019, Sabita.   |
|                    |  | <b>dry seeded long duration rice</b> | Sabita Foundation, Swarna sub-1 certified, IR-64, Hira T.L.   |
| <b>Odisha</b>      |  | <b>Rice</b>                          | 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. |
|                    |  | <b>Cotton</b>                        | HYV cotton: Suraj, Supriya, B.S.-30, B.S.-279, Surabhi, Hybrids varieties: Bunny, Diana, Bhaskra, Namaskara, Tulasi, Sigma, Chiruta, Takat etc)   |
|                    |  | <b>Arhar</b>                         | Asha, Laxmi, UPAS-120, ICPL-88039   |
|                    |  | <b>Maize</b>                         | Shakti-1, Navjot, Decan-107, Decan-109 etc. and hybrids varieties: Megan-G, Megan, MM- 1107, Highshell, Prabal, Proagro 4643, Bio9681, Pinnacle, DMH-7705   |

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| <b>Bihar</b>          |  | <b>Rice</b>       | 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.   |
|                       |  | <b>Maize</b>      | Devki, Suwan, Shaktimaan-1, Shaktimaan-2, Rajendra Shanker Makka-3 and Ganga 11   |
|                       |  | <b>Onion</b>      | <i>Agrifound Dark Red (ADR), N-53, Bhima Super, Arka Kalyan),</i>   |
|                       |  | <b>Turmeric</b>   | Rajendra Sonia and Rajendra Sonali  |
|                       |  | <b>Ginger</b>     | Maran and Nadia.  |
| <b>Jharkhand</b>      |  | <b>Rice</b>       | 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. |
|                       |  | <b>Maize</b>      | Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid), HQPM (Hybrid))   |
|                       |  | <b>Pigeon pea</b> | Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days).  |
|                       |  | <b>Ginger</b>     | Vardhaman or Nadia  |
|                       |  | <b>Turmeric</b>   | Rajendera Sonia.  |
| <b>Madhya Pradesh</b> |  | <b>Rice</b>       | Very early maturing: Jawahar Dhan (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   |
|                       |  | <b>Soybean</b>    | Short-duration: JS 93-05, JS 95-60, JS 335, JS 90-4. Medium duration: JS 97-52, JS 20-29, NRC-37, NRC-7, NRC-12.  |
| <b>Chhattisgarh</b>   |  | <b>Rice</b>       | Upland: CR-40, Purnima, Danteswari, Shabagi, Midland: MTU1010, Samleswari, Rajeswari, Low land : MTU 1001, Suwarna ,Mahamaya, Jal Dube ,Hybrid : Arice 6444, US 312.  |
|                       |  | <b>Soybean</b>    | J.S. 335, Indira soya-9, J.S. 80-21, J.S. 93-05.  |
|                       |  | <b>Groundnut</b>  | SB -11 (J 11), ICGS-37, ICGS-44, T.A.G.-24, T.A.G.-28.  |
|                       |  | <b>Til</b>        | T.K.G. -21, T.K.G-22, T.K.G-55, and T.K.G - 8.  |



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|----------------------------|--|---------------------|---|
|                            |  | <b>Tomato</b>       | Pusa early dwarf, Sweet 72, Pusa rubi, Pusa Gurab, Mangala, Naveen, Laxmi 5005 & NS 815.  |
|                            |  | <b>Brinjal</b>      | Punjab Shadabahr, K S 331, P H 5, P H 6 ,KS 224 ,A R B H -543.  |
| <b>Jammu &amp; Kashmir</b> |  | <b>Rice</b>         | Basmati 370 and Ranbir Basmati  |
| <b>Uttarakhand</b>         |  | <b>Rice</b>         | Sharbati, Pusa1121, Pusa1, Pusa44, NDR359 etc.  |
|                            |  | <b>Pigeon pea</b>   | Pant Arhar-3, Pant Arhar-291, UPAS-120, Pusa-992  |
|                            |  | <b>Maize</b>        | Tarun, Navin, Kiran, Navjot, Pratap maize-1, Pusa sankul-3& 4.  |
| <b>Uttar Pradesh</b>       |  | <b>Arhar</b>        | Prabhat and UPAS-120 fast-ripening and late-ripening varieties- Narendra Tur- 1 and Malviya -15   |
| <b>Punjab</b>              |  | <b>Rice</b>         | Basmati 370 and Basmati 386; direct sowing: basmati variety Pusa Basmati 1121.  |
|                            |  | <b>Maize</b>        | PMH 1, PMH 2 and Parbhat.   |
|                            |  | <b>Brinjal</b>      | BH-2, PBH-3, Punjab Barsati, Punjab Sada Bahar, Punjab Nagina and Punjab Neelam   |
|                            |  | <b>Okra</b>         | Punjab-8 and Punjab-7   |
|                            |  | <b>Kharif onion</b> | Agrifound Dark Red  |
| <b>Delhi</b>               |  | <b>Rice</b>         | 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 sughanda-4 (Pusa 1121), Ranvir basmati and Taravadi basmati |
| <b>Rajasthan</b>           |  | <b>Pearl millet</b> | RHB-121, HHB-67, HHB-60, Raj-171, GHB-538, Pusa-605, RHB-177.   |
|                            |  | <b>Maize</b>        | HQPM-1, HQPM-5, PEHM-1, PEHM-2, Pratap Hybrid-1, Bio-9681, Bio-9637, Navjot, Mahi Kanchan, Pratap Makka-5.  |