

National Agromet Advisory Service Bulletin

Monday 28th July 2014

(For the period 28th July to 1st August 2014)



Issued by

**National Agrometeorological Advisory Service Centre,
Agricultural Meteorology Division,
India Meteorological Department, Shivajinagar, Pune.**



Monsoon Watch

- Yesterday, the southwest monsoon was active over Telangana.

Realised Weather as on 28th August 2014

- **Rainfall:** (From 0830 hours IST to 1730 hours IST of yesterday): Rain/thundershowers occurred at most places over Odisha; at many places over Madhya Maharashtra, Konkan & Goa, coastal Karnataka, Kerala; at a few places over Himachal Pradesh, West Bengal & Sikkim, Assam & Meghalaya, Chhattisgarh, interior Karnataka and West Madhya Pradesh and at isolated places over Haryana & Delhi, Uttar Pradesh, Punjab, Bihar, Vidarbha, Marathwada and East Madhya Pradesh. Weather remained mainly dry/dry over rest parts of the country. The amounts of rainfall cm or more) recorded at 1730 IST of yesterday were: Dahanu 10; Mumbai(SCZ) 9; Harnai & Mumbai(CLB) 6 each; Mahabaleshwar 5; Amraoti & Agumbe 4 each and Betul 3.
- **Temperature:** Yesterday maximum temperatures were above normal by 2-4°C at many places over Jammu & Kashmir, Tamilnadu and Assam & Meghalaya; at a few places over Rajasthan, Haryana & Delhi, north Madhya Pradesh, Sub-Himalayan West Bengal; at isolated places over Odisha, Chhattisgarh, Karnataka and Kerala. They were below normal by 2-4°C at many places over Maharashtra; at a few places over coastal Andhra Pradesh and at isolated places over Konkan & Goa and Telangana and near normal rest of the country.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 31st July, 2014)

- Rain/thundershowers would occur at many places over Andaman & Nicobar Islands during next 48 hours and at a few places thereafter.
- Rain/thundershowers would occur at a few places over Arunachal Pradesh and Jharkhand during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at many places over Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura and Sub-Himalayan West Bengal & Sikkim and at a few places over Bihar during the period.
- Rain/thundershowers would occur at many places over Jammu & Kashmir and Gangetic West Bengal during next 48 hours and at a few places thereafter.
- Rain/thundershowers would occur at most places over Coastal Andhra Pradesh during next 24 hours; over Odisha and West Madhya Pradesh during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at many places over Uttarakhand during next 24 hours; over Himachal Pradesh during next 48 hours and at most places thereafter.
- Rain/thundershowers would occur at a few places over West Uttar Pradesh during next 24 hours and over Punjab and East Uttar Pradesh during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at most places over Konkan & Goa during the period.
- Rain/thundershowers would occur at many places over Haryana & Delhi, East Rajasthan, East Madhya Pradesh, Chhattisgarh, Gujarat Region, Madhya Maharashtra, Marathwada, Vidarbha, Coastal Karnataka and Kerala during the period.
- Rain/thundershowers would occur at a few places over West Rajasthan and North Interior Karnataka during the period.
- Rain/thundershowers would occur at a few places over Saurashtra & Kutch during next 48 hours and at many places thereafter.

Weather Warning during next 3 days

- 28 July (Day 1): Heavy to very heavy rainfall would occur at isolated places over Odisha, Telangana and coastal Andhra Pradesh. Heavy rainfall would occur at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Gangetic West Bengal, Chhattisgarh, Gujarat region, Madhya Pradesh, Vidarbha, Assam & Meghalaya, Konkan & Goa, coastal Karnataka and Kerala.
- 29 July (Day 2): Heavy to very heavy rainfall would occur at isolated places over west Madhya Pradesh and Chhattisgarh. Heavy rainfall would occur at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, east Madhya Pradesh, Vidarbha, Odisha, Assam & Meghalaya, Gujarat region, Madhya Maharashtra, Telangana, Konkan & Goa, coastal Karnataka and Kerala.
- 30 July (Day 3): Heavy to very heavy rainfall would occur at isolated places over west Madhya Pradesh and Chhattisgarh. Heavy rainfall would occur at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, east Madhya Pradesh, Vidarbha, Odisha, Assam & Meghalaya, Gujarat region, Madhya Maharashtra, Telangana, Konkan & Goa, coastal Karnataka and Kerala.

Weather Outlook for subsequent 4 days from 31st July 2014 to 04th August 2014

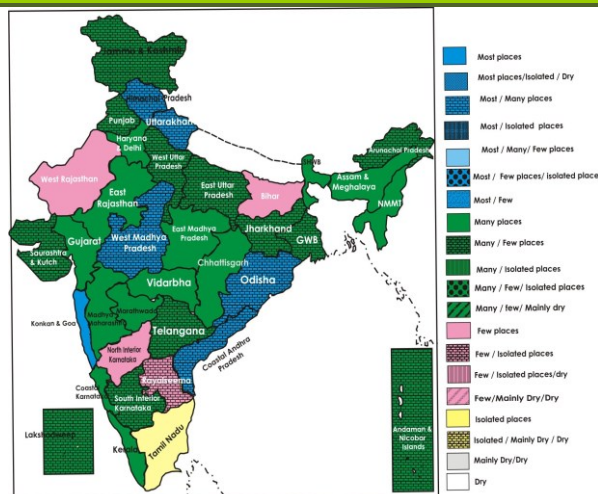
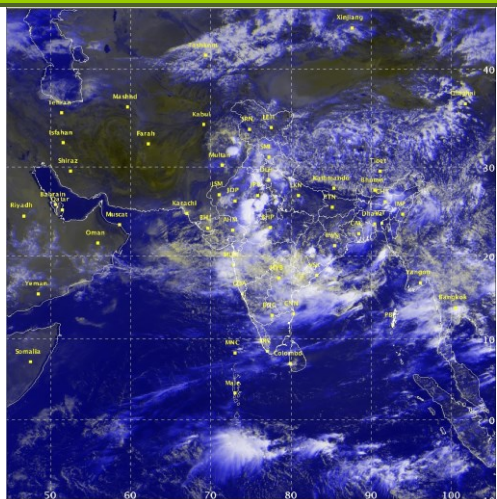
- Rain/thundershowers would occur at most places along west coast and at many places over central and adjoining northwest India and over Gujarat.
- Rain/thundershowers would also occur at many places over western Himalayan region and east India.
- Subdued rainfall activity would occur over interior peninsular India.
- Rain/thundershowers would occur at a few places

- Rain/thundershowers would occur at many places over South Interior Karnataka and Lakshadweep during next 24 hours; over Telangana during next 48 hours and at a few places thereafter.
- Rain/thundershowers would occur at a few places over Rayalaseema during next 48 hours and at isolated places thereafter.
- Rain/thundershowers would occur at isolated places over Tamilnadu & Pudduchery during the period.

over rest of the country.

Satellite image dated 28.07.2014, 0600 UTC

Weather Forecast Map (Valid upto 0830 hours of 31st July, 2014)



Salient Advisories

- Due to subdued rainfall in major parts of **South Interior Karnataka**, continue sowing of the following medium duration varieties of crops like groundnut - TMV-2, JL-24 and Chintamani-2; finger millet - Indaf- 8, MR-1, MR-2 and MR-6; Sunflower: KBSH-42 and KBSH-44; maize - Ganga, Deccan, Vijaya composite and Composite NAC utilising the realised and expected rainfall.
- In view of chances of subdued rainfall activity over **North Interior Karnataka**, complete sowing of onion, sesame, maize, sunflower, niger, castor, bajra, groundnut (spreading), red gram, desi cotton, horse gram, cowpea, also sowing of intercrops like, pearl millet + pigeonpea (2:1), pearl millet + castor (2:1), kharif sorghum + redgram (5:1), redgram + sesame (1:2 or 2:4); redgram + horsegram (2:1) is suggested to minimize risk from subdued rainfall situations.
- In **Krishna Godavari Zone of Andhra Pradesh**, undertake sowing of rainfed maize, cotton, red gram and green gram. In **Rayalaseema**, continue intercropping of red gram + groundnut, castor and cotton. In **Anantpur**, district continue sowing of groundnut and bajra utilizing the realized rainfall.
- Due to non-receipt of rainfall in earlier weeks in most of the districts of **Gujarat**, normal *kharif* crops like cotton, pigeon pea, castor, pearl millet and other crops could not be sown. As there is improvement in rainfall during last week over Gujarat and rain would occur at many places, continue sowing of following contingency crops of Gujarat as given below:
 - **For South and Middle Gujarat region:**
 - Prefer soybean cv. GS-1,GS-2, JS-335.
 - Prefer short duration varieties in Sunflower (cv. Modern and EC-68414 and Guj-1) and Sesame (cv. Guj. Tal 1,2, 10), blackgram (cv. T-9, Guj. Udid-1), Greengram (cv. GM-4, K-851, Meha), Cowpea (cv. Guj. Cowpea 1,2,4, Pusa Falguni).
 - Sowing of grain Sorghum (cv. GJ-35,36 and 37) and Fodder sorghum (cv. S-1049, C-10-2, Gundari, GFS 4,5) is recommended to overcome future fodder shortages.
 - In Baroda and Panchmahal districts, undertake drill sowing of rice cv.GR 5,8,9, Sathi 34-36, IR-28, ADR-1and Sukhvel-20.

- **North Gujarat Region:**
- In sesame varieties like Guj.Tal-1,2,10, in sunflower - Modern, EC 68414 and in bajra, GHB- 538,732
- **For Saurashtra region:**
- In blackgram, T-9, Guj. Udid-1 and Greengram - GM-4, K-851, Meha are suggested.
- For fodder purpose, sorghum cv. CSH-6 and CFS-4 are recommended.
- In sesame cv. Purva-1, in cotton - G. cot-13, 21, 23, V-797, in pigeonpea - cv. BDN-2, ICPL-87, GT-100, GT-101, Vaishali may be preferred.
- In **West Madhya Pradesh**, continue sowing of early maturing varieties of maize (JVM 421, JM 12), red gram (UPAS 120, Pusa 9, TJT 501), sunflower (Modern), sesame variety (TKG-8) and black gram (T 9, JU 86) after spells of heavy rain.
- Continue transplanting of rice and sowing of maize and soybean in **East Madhya Pradesh** utilizing the realized and expected rainfall.
- In **Madhya Maharashtra**, in north Madhya Maharashtra (Dhule, Nandurbar, Jalgaon and Ahmednagar) undertake short duration improved variety of pearl millet, red gram, sunflower. Intercropping of pearl millet+redgram in 2:1, sunflower+redgram in 2:1, and guar+redgram in 2:1 ratios. In South Madhya Maharashtra except in Solapur district undertake sowing of contingency crops like sunflower, sesame, pearl millet, red gram, horse gram and moth bean. Intercropping of pearl millet+redgram in 2:1, sunflower+redgram in 2:1, and guar+redgram in 2:1 ratios.
- In **Marathwada** continue sowing of red gram and bajara with short duration improved varieties in Aurangabad, Jalna and Hingoli districts. Adopt intercropping systems like cotton + pigeon pea (6:1), bajra + pigeon pea (3:3), etc. for minimizing risk.
- In **Bihar**, complete transplanting of rice varieties like Rajendra Bhagwati, Prabhat, Narandra 97, MTU-1010 and Rajendra Sweta in medium land and Swarna Sab-1, BPT-5204, MTU-7029, MTU-1001 and Rajshree in low land situation. Transplanting in upland areas should be avoided. Instead of that, undertake sowing of black gram (var. T-9, Navin), red gram (Bahar, Pusa-9, Malvia-13) and sweet potato (Rajendra mishrikhand-11).
- Continue direct sowing of *kharif* rice in Sub Montane and Low Hills Sub Humid Zone of **Himachal Pradesh**.

Detailed Zonewise Agromet Advisories

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP]



Trasplanting of Rice



Rice Nursery



Sugarcane



Okra

- **Realised Weather:** Rain/thundershowers occurred at many places over Coastal Karnataka, Kerala; at a few places over interior Karnataka. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were above normal by 2-4°C at many places over Tamilnadu; at isolated places over Karnataka and Kerala. They were below normal by 2-4°C at a few places over coastal Andhra Pradesh and at isolated places over Telangana and near normal rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Coastal Andhra Pradesh during next 24 hours and at many places thereafter. Rain/thundershowers would occur at many places over Coastal Karnataka and Kerala and at a few places over North Interior Karnataka during the period. Rain/thundershowers would occur at many places over South Interior Karnataka and Lakshadweep during next 24 hours; over Telangana during next 48 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Rayalaseema during next 48 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Tamilnadu & Pudduchery during the period.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Telangana and Coastal Andhra Pradesh on 28th July. Heavy rainfall would occur at isolated places over Coastal Karnataka, Kerala during the period and over Telangana on 29th and 30th July.

- **Weather Outlook:** Subdued rainfall activity would occur over interior peninsular India. Rain/thundershowers would occur at a few places over rest of the region.
- **Advisories:**
 - **Karnataka:**
 - As rain/thundershowers would occur at many places over Coastal Karnataka along with heavy rainfall at isolated places during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
 - Continue transplanting of lowland and upland rice of proper age of seedlings utilizing the realized and expected rainfall in the Hill Zone of Karnataka.
 - Continue transplanting of vegetables in the Southern Transition Zone of Karnataka.
 - Continue nursery sowing of rice, ragi and land preparation for planting of ginger, turmeric, arecanut and banana in the Southern Transition Zone of Karnataka utilizing the realized and expected rainfall.
 - Sowing of *kharif* crops is delayed due to inadequate rainfall in major parts of South Interior Karnataka. Continue sowing of the following medium duration varieties of crops like groundnut - TMV-2, JL-24 and Chintamani-2; finger millet - Indaf- 8, MR-1, MR-2 and MR-6; Sunflower: KBSH-42 and KBSH-44; maize - Ganga, Deccan, Vijaya composite and Composite NAC utilising the realised and expected rainfall.
 - In view of chances of subdued rainfall activity over North Interior Karnataka, complete sowing of onion, sesame, maize, sunflower, niger, castor, bajra, groundnut (spreading), red gram, desi cotton, horse gram, cowpea, also sowing of intercrops like, pearl millet + pigeonpea (2:1), pearl millet + castor (2:1), kharif sorghum + redgram (5:1), redgram + sesame (1:2 or 2:4); redgram + horsegram (2:1) is suggested to minimize risk from subdued rainfall situations.
 - **Kerala:**
 - As rain/thundershowers would occur at many places during the period, along with heavy rainfall at isolated places during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
 - Continue direct sowing of rice and planting of Poovan, Robusta and Kannan varieties of banana and rainfed Nendran banana in the Problem Area Zone of Kerala.
 - Continue planting of Nendran banana and cultivation of monsoon vegetables in the Northern Zone of Kerala.
 - Present cloudy weather with high humidity and low temperature condition is congenial for the incidences of black bug, stem borer and leaf roller attack on rice crop in the Problem Area Zone of Kerala. Monitor the crop and spray Asataf @ 2 g/litre at the basal part of the plant after draining the field, if noticed.
 - Due to high humidity and moist weather conditions, there is chance of increase of leaf folder and stem borer attack on rice crop in the Central Zone of Kerala. To manage, use Trichogramma cards @ 2CC per acre and apply Quinalphos (2ml per one litre of water) or Cartap hydrochloride (25g per one hectare) if the attack is severe after current spells of rain. Due to continuous rain, there is a chance of bud rot disease in coconut. Cut and remove all the affected tissues of the crown. Apply Bordeaux paste and protect it from rain till normal shoot emergence.
 - High humidity is congenial for the incidence of sheath blight and sheath rot in rice and sigatoka disease in bananas in the Southern Zone of Kerala. Spray Bavistin @ 200 g/Tilt (Propiconazol) @ 150 ml/ 200 litre of water to manage sheath blight and sheath rot in rice and apply propiconazol 1ml / litre of water and copper oxy chloride 4 g/ litre of water alternately at two weeks interval after current spells of rain.
 - **Andhra Pradesh:**
 - As rain/thundershowers would occur at most/many places over Coastal Andhra Pradesh during the period, along with heavy to very heavy rainfall at isolated places on 28th July, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
 - In Krishna Godavari Zone of Andhra Pradesh, undertake sowing of rainfed maize, cotton, red gram and green gram. Continue transplanting of rice in Nellore district in the Southern Zone of Andhra Pradesh.
 - Complete planting of rainfed sugarcane and sowing of irrigated maize, green gram, black gram and red gram, nursery sowing of rice utilizing the realized and expected rainfall in the North Coastal Zone of Andhra Pradesh.
 - In the Southern Telangana Zone of Andhra Pradesh, complete sowing of rainfed crops like cotton, maize, groundnut, pulses etc. at the earliest. Continue nursery sowing and transplanting of tomato, brinjal and chilli and direct sowing of cucurbits, beans and bhendi utilizing the realized and expected rainfall.
 - In Scarce Rainfall Zone of Rayalaseema, continue sowing of red gram and intercropping of korra + redgram @ 5:1 and red gram + groundnut, castor and cotton in the rainfed tracts in Kurnool district. In Anantpur district, continue sowing of rainfed castor and red gram, groundnut and bajra utilizing the realized rainfall.
 - **Tamil Nadu:**
 - Continue transplanting of *kuruvai* rice and continue land preparation for nursery sowing of *samba* rice in Nagapattinam, Thanjavur and Trichy districts in the Cauvery Delta Zone of Tamil Nadu with irrigation.
 - Since prevailing wind speed is high, five months old banana and sugarcane may be propped against lodging in the Western Zone and Southern Zone of Tamil Nadu.
 - Black bug incidence was noticed in *kuruvai* rice in tillering stage in the Cauvery Delta Zone of Tamil Nadu and likely to persist, spray Cholorpyriphos 20 E.C @ 500 ml /acre or Neem seed kernel extract 5% to manage the

incidence.

- Prevailing humid weather condition is congenial for *cercospora* leaf spot in groundnut in the Western Zone of Tamil Nadu. Monitor the crops and if already infected, spray Mangozeb @ 2.5 g per litre of water.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- Prevailing weather conditions are congenial for Anthrax in cattles in the Scarce Rainfall Zone of Andhra Pradesh. Vaccinate the animals to prevent the disease.

NORTHEAST INDIA [ARUNACHAL PRADESH, NMM&T, ASSAM, MEGHALAYA]



Rice Nursery



Transplanting of Rice



Okra



Jute

- **Realised Weather:** Rain/thundershowers occurred at a few places over Assam & Meghalaya. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were above normal by 2-4°C at many places over Assam & Meghalaya and near normal rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Arunachal Pradesh during next 48 hours and at many places thereafter. Rain/thundershowers would occur at many places over Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Assam & Meghalaya during the period.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over northeastern states.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - As rain/thundershowers would occur at many places over Assam and Meghalaya along with isolated heavy spells during the period, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In Assam, continue transplanting of *sali* rice. The proper age of seedling for transplanting is 21days for short duration varieties, 30-35 days for medium duration varieties and 35-40 days for long duration varieties. Replanting of dead hills or gap filling with seedlings of similar age should be done within 7-10 days of transplanting.
 - In Meghalaya, continue transplanting of *sali* rice, sowing of pigeon pea and planting of khasi mandarin. Complete transplanting of *sali* rice by the end of July. In water stressed upland fields, farmers are advised to grow tuber crops like sweet potato, colocassia, tapioca, etc. for better land utilization and risk minimization.
 - In Arunachal Pradesh, complete transplanting of local varieties and continue transplanting of HYV of *Kharif* rice utilising realised and expected rainfall.
 - In Upper Brahmaputra Valley Zone and Central Brahmaputra Valley Zone of Assam, continue transplanting of medium duration (130-135 days) *sali* rice varieties like Satyaranjan, Basundhara, Jaya, IR 36 etc till 15-20 August.
 - Continue sowing of arhar, groundnut and sesame in Hill Zone of Assam and complete sowing of sesame in Lower Brahmaputra Valley Zone of Assam.
 - In Upper Brahmaputra Valley Zone and North Bank Plain Zone of Assam, there is chance of continuing of the attack of fruit fly, red pumpkin beetle and epilechna beetle in summer gourds, spray Malathion 50 EC @ 1 ml per litre after current spells of rain.
 - Present weather of alternate dry and wet condition may favour occurrence of rotting of leaves and stems of beetle vine and quick wilt in black pepper in Central Brahmaputra Valley Zone of Assam. Prophylactic application of Bordeaux mixture in clear weather may prevent the spread/ outbreak of the disease.
 - In Hill Zone of Assam, due to humid weather, there is chance of red rot/ stem borer infestation in sugarcane. Plants showing symptoms of red rot and stem borer should be rouged out and buried or burned. Also continue soil drenching with 1.0% Bordeaux mixture or 0.05% Bavistin for managing banana wilt in banana after current spells of rain.
 - Due to prevailing humid weather conditions, there is chance of attack of aphid on black gram in Arunachal Pradesh. Spray Methyl Demeton 25 EC or Dimethoate @ 500 ml /500 litres of water per ha on non rainy days. Also there is chance of fruit flies in cucurbits, for control, spray Malathion @ 3ml per litre of water after current spells of rain.
 - **Nagaland, Manipur, Mizoram and Tripura:**
 - As rain/thundershowers would occur at many places over Nagaland, Manipur, Mizoram and Tripura during the

period, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops.

- In Mizoram, continue nursery sowing of rice and main field preparation for transplanting of rice utilizing the realized and expected rainfall.
- In Nagaland, continue transplanting of rice and sowing of soybean, groundnut and pulses like black gram, green gram utilizing the realized and expected rainfall. Right after transplanting of rice, adequate land submergence of around 5cm of water is necessary to prevent damage to establishing seedlings and for root development.
- Complete transplanting of main *kharif* rice by the end of July in Manipur. Continue nursery raising of early cauliflower in raised beds and undertake land preparation for transplanting of early cauliflower.
- In Mild Tropical Plain Zone of Tripura, continue transplanting of *aman* rice and continue sowing of vegetables.
- In Tripura, due to cloudy and humid weather there is chance of Panama wilt disease in banana. Drench with Bavistin @1g per liter of water and Trichodermaviride and pseudomonas fluorescence may be incorporated in the soil after current spells of rain. Also there are chances of attack of yellow stem borer in *aman* rice. To manage the attack, spray Validamycin 3L @ 2.5 ml or Hexaconazole 5 EC @ 2.0 ml per litre of water after current spells of rain.
- In Nagaland, cloudy weather is conducive for attack of thrips in chilli, spray 3% and 5% neem oil for control after current spells of rain.
- Suitable varieties are given in Annexure I.
 - **Animal Husbandry**
 - In the Northeastern States, animal sheds should be kept dry and avoid dampness during rainy days. Immunizations against FMD, HS and BQ in cattle & buffaloes and swine-fever in pigs may carry out during monsoon season. Keep pig sheds warm using gunny bags, straw, enclosure.
 - Monsoon weather could lead to gastrointestinal parasites infection in pigs and poultry in Tripura. Farmers are advised to keep good sanitary conditions in pig and poultry sheds.
 - In Nagaland, high humidity is favourable for occurrence of coccidiosis disease in poultry, provide anti-coccidial drugs.
 - **Fisheries**
 - In flood affected areas of Lower Brahmaputra Valley Zone of Assam, protect the fish ponds by putting nylon net or bamboo net around the ponds. Due to heavy rainfalls & muddy water influx from the surrounding areas, the ponds may result reduction of dissolved oxygen. Stirring the water with a bamboo pole will help in increasing the oxygen and protect the fishes from suffocation.

EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]



Sugarcane



Jute



Onion



Trasplanting of Rice

- **Realised Weather:** Rain/thundershowers occurred at most places over Odisha; at a few places over West Bengal & Sikkim and at isolated places over Bihar. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were above normal by 2-4°C at a few places over Sub-Himalayan West Bengal; at isolated places over Odisha and near normal rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Odisha during next 48 hours and at many places thereafter. Rain/thundershowers would occur at a few places over Jharkhand during next 48 hours and at many places thereafter. Rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim and at a few places over Bihar during the period. Rain/thundershowers would occur at many places over Gangetic West Bengal and Andaman & Nicobar Islands during next 48 hours and at a few places thereafter.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Odisha on 28th July. Heavy rainfall would occur at isolated places over Gangetic West Bengal on 28th and over Odisha on 29th and 30th July.
- **Weather Outlook:** Rain/thundershowers would occur at many places over east India.
- **Advisories:**
 - **West Bengal:**
 - As rain/thundershowers would occur at many places over Sub-Himalayan West Bengal and Sikkim during the period and over Gangetic West Bengal on 28th and 29th July, postpone irrigation, intercultural operations,

application of plant protection measures and fertilizers in the standing crops.

- In Sub Himalayan West Bengal, continue transplanting of *aman* rice utilizing the realised and expected rainfall.
- Continue transplanting of *aman* rice in Coastal Saline Zone and New Alluvial Zone of West Bengal. Continue nursery raising of tomato, and brinjal.
- In Laterite and Red Soil Zone, continue nursery sowing of *aman* rice. Complete dry seeding of Upland rice.
- In Laterite and Red Soil Zone, there is a chance of the attack of white-fly and jassid in ladies finger. To control these insects, apply Imidachloprid 17.8 S. L. @ 4 ml per 10 litre of water against white fly and Thiamethoxon@1g/10 liter of water against jassid after current spells of rain. In the prevailing weather situation, there is a chance of attack of fruit borer in chilli. To control these insects, spray Dichlorovos @ 1.5 – 2.0 ml per litre of water after current spells of rain.
- In Old Alluvial Zone of West Bengal, due to cloudy weather and high humidity, there is a chance of fruit and stem rot attack in chilli and brinjal. To manage this disease, spray Copper oxy Chloride 50WP @4g/litre water after current spells of rain.
- **Andaman & Nicobar Islands:**
- In Andaman & Nicobar Islands, undertake sowing of red gram under coconut plantation as intercrop.
- **Odisha:**
- As rain/thundershowers would occur at most/many places over Odisha during the period , along with isolated heavy to very heavy falls on 28th July, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
- In East and South Eastern Coastal Plain Zone of Odisha, continue transplanting of *kharif* rice under SRI cultivation utilizing the realised and expected rainfall and beushening in 21 days old direct sown rice in low land areas. Also continue sowing of ragi, maize, groundnut and sesame. Complete sowing of early duration sesame, cowpea, green gram and black gram in upland.
- In North Central Plateau Zone of Odisha, taking the advantage of recent rains beushening operation should be completed soon in direct seeded rice. Apply 50%N after current spells of rain.
- In Western Undulating Zone of Odisha, undertake transplanting of rice with 3 week aged seedlings and complete nursery sowing within this week if not done. Continue sowing of maize, arhar and cotton in upland areas taking the advantage of the realised and expected rainfall.
- In North Eastern Plateau Zone of Odisha, continue sowing of maize, groundnut, green gram and black gram, ragi, arhar, maize and sesame, sowing of okra and cluster bean in North Central Plateau Zone of Odisha. Also continue nursery raising of brinjal, tomato and chilli in upland areas.
- In North Eastern Coastal Plain Zone of Odisha, due to submergence, damping off disease is likely to appear in seedlings and young plants of vegetables. To control it, spray Ridomil MZ @1.5g/ l or Copper oxychloride@3g/l of water after current spells of rain.
- **Bihar:**
- In Bihar, complete transplanting of rice varieties like Rajendra Bhagwati, Prabhat, Narandra 97, MTU-1010 and Rajendra Sweta in medium land and Swarna Sab-1, BPT-5204, MTU-7029, MTU-1001 and Rajshree in low land situation. Transplanting in upland areas should be avoided. Instead of that, undertake sowing of black gram(var. T-9, Navin), red gram (Bahar, Pusa-9, Malvia-13) and sweet potao (Rajendra mishrikhand-11).
- In North West Alluvial Plain Zone of Bihar, complete transplanting of rice in low and medium land areas with realised and expected rainfall. Continue sowing of arhar, urd and kulthi in upland areas. In upland and medium land areas, it is advised to plant brinjal, early tomato, chilli and onion in the ridge of main field and also sow cucurbit and cluster bean, radish, cumin and fenugreek.
- In North East Alluvial Plain Zone of Bihar, complete sowing of *kharif* okra and early brinjal, chilli, cauliflower. Undertake transplanting of *Kharif* onion. Continue transplanting of 20-25 days old paddy seedling in low and medium land areas with realised rainfall. Undertake planting of Mango, Litchi, Guava and Papaya
- **Jharkhand:**
- As rain/thundershowers would occur at many places over Jharkhand on 30th July, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops.
- In South Eastern Plateau Zone of Jharkhand, continue sowing of maize and pigeon pea, urad, moong, groundnut, soybean, sesame. Continue transplanting of rice in low and medium land areas with realised and expected rainfall.
- In Western Plateau Zone of Jharkhand, continue transplanting of rice in low and medium land areas and transplanting of finger millet. Continue sowing of medium duration varieties of maize for green cob and early duration varieties for grain purpose. Undertake sowing of green gram, black gram and pigeon pea.
- In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of urad, til and groundnut and continue transplanting of rice and planting of mango, guava and litchi.
- In South Eastern Plateau Zone of Jharkhand, weather is conducive for the attack of fruit and shoot borer in brinjal and okra and fruit fly in cucurbitaceous vegetables, spray Malathion @ 2 ml per liter of water for fruit and shoot borer and arrange Bait trap for control of fruit fly after current spells of rain.
- Suitable varieties are given in Annexure I.
- **Animal Husbandry**
- Keep the cattle in the sheds during heavy rainfall periods in Odisha.

- Provide dry and clean shelter to dairy animals in Old Alluvial Zone of West Bengal. Clean and hygienic water should be provided to dairy animals. De-worming and FMD-HS-BQ vaccination should be done to protect the livestock animals.
- In South Eastern Plateau Zone of Jharkhand, weather is favourable for the attack of FMD, HS, BQ Brucellosis and Anthrax in dairy animals. So, vaccination should be administered at earliest.
- **Poultry**
- In Nicobar Islands, South, North and Middle Andaman, newly hatched chicks should be provided warm condition with electric bulbs under enclosed dry area with sufficient feeding and watering facility.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane



Trasplanting of Rice



Okra



Green Gram

- **Realised Weather:** Rain/thundershowers occurred at a few places over Chhattisgarh and West Madhya Pradesh and at isolated places over East Madhya Pradesh. Maximum temperatures were above normal by 2-4°C at a few places over north Madhya Pradesh and near normal rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over West Madhya Pradesh during next 48 hours and at many places thereafter. Rain/thundershowers would occur at many places over East Madhya Pradesh and Chhattisgarh during the period.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over west Madhya Pradesh and Chhattisgarh on 29th and 30th July. Heavy rainfall would occur at isolated places over Madhya Pradesh and Chhattisgarh on 28th July and over east Madhya Pradesh on 29th and 30th July.
- **Weather Outlook:** Rain/thundershowers would occur at many places over Central India.
- **Advisories:**
 - **Madhya Pradesh:**
 - As rain/thundershowers would occur at most/many places over Madhya Pradesh during the period, along with heavy to very heavy rainfall at isolated places over West Madhya Pradesh on 29th and 30th July, heavy rainfall at isolated places over Madhya Pradesh on 28th, over East Madhya Pradesh on 29th and 30th July, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - Continue transplanting of rice and sowing of maize, soybean in east Madhya Pradesh utilising the realised and expected rainfall.
 - Continue sowing of early maturing varieties of moong, urad and nursery sowing of vegetables in Satpura Plateau Zone of Madhya Pradesh utilising the realised and expected rainfall
 - Undertake planting of orchard crops in already prepared pits in Bundelkand Zone of Madhya Pradesh.
 - In West Madhya Pradesh, continue sowing of early maturing varieties of maize (JVM 421, JM 12), red gram (UPAS 120, Pusa 9, TJT 501), sunflower (Modern, sesame variety TKG-8) and black gram (T 9, JU 86) after spells of heavy rain.
 - Due to cloudy and humid weather, there are chances of attack of aphids and jassids on vegetables in West Madhya Pradesh, spray Thiamethoxam @ 0.35 g per litre after current spells of rain.
 - **Chhattisgarh:**
 - As rain/thundershowers would occur at many places over Chhattisgarh during the period, along with isolated heavy to very heavy falls on 29th and 30th and heavy falls at isolated places on 28th July, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In Chhattisgarh Plain Zone, continue transplanting of rice and continue sowing of maize, soybean, moong and urad and nursery sowing /transplanting of *kharif* vegetables utilising the realised and expected rainfall.
 - Continue transplanting /line sowing of rice and transplanting of tomato, brinjal, cauliflower, cabbage and chilli in North Hill Zone and continue nursery sowing of rice, sowing of maize and urad in Bastar Plateau Zone of Chhattisgarh.
 - In Plain Zone of Chhattisgarh, there are chances of blast disease in rice nursery. Spray Carbendazim @ 1g or Tricyclozole @ 0.6 g per liter of water after current spells of rain.
 - Suitable varieties are given in Annexure I.

- **Animal Husbandry**

- In Madhya Pradesh and Chhattisgarh, keep animals in sheds during heavy rainfall periods, supplement cattle feeds with vitamins and energy food material along with calcium content to dairy animals. Vaccinate the milch cattle against H.F. and B.Q disease. Provide four to five hours of bulb light in Poultry Farms.

NORTH INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]



Trasplanting of Rice

Sugarcane

Bottle Gourd

Onion

- **Realised Weather:** Rain/thundershowers occurred at a few places over Himachal Pradesh and at isolated places over Haryana & Delhi, Uttar Pradesh and Punjab. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were above normal by 2-4°C at many places over Jammu & Kashmir; at a few places over Rajasthan, Haryana & Delhi and near normal rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Uttarakhand during next 24 hours; over Himachal Pradesh during next 48 hours and at most places thereafter. Rain/thundershowers would occur at many places over Jammu & Kashmir during next 48 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over West Uttar Pradesh during next 24 hours and over Punjab and East Uttar Pradesh during next 48 hours and at many places thereafter. Rain/thundershowers would occur at many places over Haryana & Delhi, East Rajasthan; at a few places over West Rajasthan during the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during the period.
- **Weather Outlook:** Rain/thundershowers would occur at many places over and northwest India adjoining to central India. Rain/thundershowers would also occur at many places over western Himalayan region.
- **Advisories:**
 - As rain/thundershowers would occur at most/many places in Jammu & Kashmir , Himachal Pradesh and Uttarakhand along with heavy rainfall at isolated places during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in crop fields to remove excess water.
 - **Jammu & Kashmir:**
 - Continue sowing of pulses like mash (var. Pant U-19, T-9) and moong (var.PDM-54, PS-16, PS-17, ML-131) in Intermediate Zone of Jammu & Kashmir, utilizing realised and expected rainfall.
 - Due to prevailing humid weather conditions, there are chances of fruit borer in turmeric and cucurbits in Sub Tropical Zone of Jammu & Kashmir. To control, spray Ridomil MZ @ 2.5 g per litre of water after current spells of rain.
 - Due to humid condition there are chances of aphid attack on vegetables, in Cold Arid Zone of Jammu & Kashmir. To control, apply Chloropyriphos 20EC @ 2 ml/litre of water, after current spells of rain
 - **Himachal Pradesh:**
 - Continue transplanting of rice, and complete sowing of mash and kulthi, in Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh utilizing the realised and expected rainfall
 - Continue nursery sowing of cauliflower and transplanting of cabbage in Bilaspur district of Mid-Hills Sub-Humid Zone of Himachal Pradesh.
 - Due to prevailing humid weather conditions, there are chances of attack of fruit borer in brinjal and bhindi in Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh. Spray Cypermethrin @ 565 ml (Ripcord 10EC) or Deltamethrin (Desis 2.8EC) in 750 ml of water per hectare after current spells of rain. To control the leaf spot and fruit rot diseases in tomato, brinjal, capsicum and chilli, spray Metamil/Redomil MZ @2.5 g per litre of water after current spells of rain and repeat after 15 days.
 - Due to prevailing humid weather conditions, there are chances of scab infestation in apple orchards in Mild Hills Sub-Humid Zone of Himachal Pradesh. Spray Miclobutanil (boon) @ 80g per 200 litres of water after current spells of rain.
 - **Uttarakhand:**
 - Complete transplanting of rice and maintain optimum water level. Complete sowing of sorghum, millets,

groundnut, soybean and pigeon pea in Bhabar & Tarai Zone of Uttarakhand. Complete sowing of direct seeded rice with short duration varieties like Pant-4, Narendra-359, and Saket-4 etc. in Sub Humid Sub tropic Zone of Uttarakhand.

- In Sub Humid Sub Tropic Zone of Uttarakhand, complete transplanting of late sown rice. To control weeds, apply Butachlor @ 3 liter or Anilophos @ 1 litre with 700-800 litre of water 7 DAT as post emergent herbicides after current spells of rain.

- **Punjab, Haryana and Delhi:**

- In Western Zone of Punjab, complete transplanting of rice with 25 to 30 days old seedlings utilizing realised rainfall, continue nursery sowing of basmati rice and complete sowing of okra and cow pea with expected rainfall.
- In Sub-Mountane and Undulating Plain Zone of Punjab, continue transplanting of rice and complete sowing of maize and continue sowing of mung, mash and til..
- In Central Plain Zone and in Western Plain Zone of Punjab, complete transplanting of rice and continue sowing of okra, radish and cucurbits.
- In Central Plain Zone of Punjab, high humidity is favourable for stem and fruit rot in chilli, spray Indofil M-45 @750 g in 250 litres of water after current spells of rain.
- Due to partly cloudy weather, there are chances to occurrence of sucking pest viz. white fly and jassid in cotton in Western Zone of Punjab. Monitor the crops and if pest population reaches ETL level, then spray Oberon @200ml/acre for white fly and Ulala @ 80 g/acre for the management of jassid after current spells of rain.
- In Eastern Zone of Haryana, transplant one month old rice seedlings. Continue sowing of guar, bajra and pulses with realised and expected rainfall.
- In Western Zone of Haryana, continue sowing of guar, bajra, pulses, fodder crops such as jowar mixed with cowpea to increase the nutritive value for continuous supply of green fodder and complete transplanting of rice by the end of this month.
- In Delhi, continue transplanting of rice, early cauliflower and brinjal. Undertake transplanting of brinjal, chilli and early cauliflower if the seedlings are ready. Undertake sowing of pigeon pea, maize, guar, bajra, cluster bean, spinach, amaranths, okra, cucurbits sweet corn, baby corn and soybean during the week with realised and expected rainfall.

- **Uttar Pradesh:**

- In Central Plain Zone of Uttar Pradesh, continue transplanting of rice and complete sowing of, jowar, urad and mung utilizing the realized and expected rainfall. After 25-30 days of sowing, undertake top dressing of Nitrogen @ 15-20 kg per ha in cucurbits and @ 35-40 kg per ha in ladies finger.
- Continue sowing of groundnut, arhar, jowar, urd, moong, maize and soybean and land preparation for planting of fruit crops like mango, papaya, guava, etc.in Bundelkhand Zone of Uttar Pradesh utilizing the realized and expected rainfall.
- In Western Plain Zone of Uttar Pradesh, continue sowing of guar, bajra, jowar and moong as fodder crops in uplands utilizing realized rainfall.
- Due to humid weather condition, there are chances of attack of white fly, jassids, thrips in ladies finger in Bundelkhand Zone of Uttar Pradesh. Spray Dimethoate 30 EC @ 800 ml per 800 litres of water after current spells of rain.
- Due to humid weather condition, there are chances of attack of stem borer or leaf roller in Maize in Central Plain Zone of Uttar Pradesh. Spray Phenitrothion 50 E.C. @ 500-700 ml in 700-800 litres of water per hectare or Quinolphos 25 E.C. @ 2 litres in 700-800 litres of water per hectare after current spells of rain.

- **Rajasthan:**

- As rain/thundershowers would occur at many places over East Rajasthan during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
- Complete sowing of short duration varieties of *kharif* crops like pearl millet, cowpea, green gram, moth bean and urad bean etc. in Semi Arid Eastern Plain Zone and also complete sowing of bajra, til, moong, urad and also undertake nurse raising of tomato and brinjal in Flood Prone Eastern Plain Zone of Rajasthan, utilizing the realised and expected rainfall.
- Complete sowing of short duration varieties of soybean in Southern Humid Plain Zone of Rajasthan, utilizing the realised and expected rainfall.
- Continue sowing soybean, moong, urad, til, groundnut and arhar in South Eastern Humid Plain Zone utilizing the realised and expected rainfall.
- In West Rajasthan continue sowing of black gram, geen gram, cluster bean and sesame. Improved varieties in cluster bean like RGC-936, black gram (RBU-38, T-9), green gram (SML-668, K851), Sesame (RT-46, RT-125) may be preferred. Intercropping of Groundnut cv. JL-24, Pratap mungphali-2 with sesame at 6:2 row ratio is suggested.
- Continue sowing of moong, moth, guar and til in Irrigated North Western Plain Zone & Arid Western Plain Zone of Rajasthan utilizing the realised and expected rainfall.
- Due to warm and humid climate, there is chances of white fly in cotton in Irrigated North Western Plain Zone of Rajasthan. To control spray Dryzophose @ 40 EC in 2,5 ml or Ectamipride @ 20 S.P in 0.4 mg per litre of water, after current spells of rain

- **Floriculture**

- Due to prevailing humid weather condition there are chances of attack of blue beetle in balsam, zenia, cleome and rose in Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh. For control, spray Cypermethrin @ 20 ml in 10 litres of water after current spells of rain. In poly houses attack of thrips and mites is also expected. For control spray Rogor @ 20 ml in 10 litres of water for thrips and for beetle spray Diclofol @ 20 ml in 10 litres of water. To control thrips in tagets spray Rogor @ 20 ml in 10 litres of water

- **Horticulture**

- Continue planting of mango, guava and lemon saplings in Bhabar and Tarai Zone of Uttarakhand, utilizing realised and expected rainfall.
- Due to prevailing humid weather condition, there are chances of attack of citrus canker in horticultural crops like peach, pear, plum, almonds, apricot and apple in Mid-Hills Sub-Humid Zone of Himachal Pradesh. Spray Malathion @ 10 ml or Metasystox @ 10 ml per 10 litres after current spells of rain. Keep the basins of the plants free from weeds and arrange for drainage.
- Due to prevailing humid weather condition there be chance of Black tip disease in mango crop, to control spray borax @ 1 % or other alkaline solutions like caustic 0.8 % or washing soda 0.5 % regularly at 10 days interval in Sub Humid Sub Tropic Zone of Uttarakhand, after current spells of rain.

- **Animal Husbandry:**

- Keep cattle indoors during heavy rainfall periods in Uttarakhand, Himachal Pradesh and East Rajasthan.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Trasplanting of Rice

Sugarcane

Rice Nursery

Okra

- **Realised Weather:** Rain/thundershowers occurred at many places over Madhya Maharashtra, Konkan & Goa; at isolated places over Vidarbha and Marathwada. Weather remained mainly dry/dry over rest parts of the region. Maximum temperatures were below normal by 2-4°C at many places over Maharashtra and at isolated places over Konkan & Goa.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Konkan & Goa during the period. Rain/thundershowers would occur at many places over Gujarat Region, Madhya Maharashtra, Marathwada and Vidarbha during the period. Rain/thundershowers would occur at a few places over Saurashtra & Kutch during next 48 hours and at many places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Gujarat region, Konkan & Goa during the period. Heavy rainfall would occur at isolated places over Vidarbha and Madhya Maharashtra on 29th and 30th July.
- **Weather Outlook:** Rain/thundershowers would occur at most places along west coast and at many places over Gujarat. Rain/thundershowers would occur at a few places over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - As rain would occur at most places over Konkan & Goa and at many places over rest of Maharashtra during the period along with heavy spells at isolated places over Konkan and Vidarbha during the period, over Madhya Maharashtra on 29th and 30th July, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in crop fields to remove excess water.
 - In Konkan, drain out excess water from rice, finger millet and vegetable fields and postpone fertilizer application. Complete transplanting with 20-22 days old seedlings of rice and finger millet. Maintain water level upto 2-3 cm in early transplanted rice.
 - In Madhya Maharashtra complete transplanting of rice in Western parts of Kolhapur, Pune and Nasik districts. In north Madhya Maharashtra (Dhule, Nandurbar, Jalgaon and Ahmednagar), continue sowing of contingency kharif crops like sunflower (Bhanu and Phule Raviraj), bajra (hybrid varieties shraddha, shanti, saburi and improved varieties ICTP-8203 and ICMV-133), red gram (Vipula), bean (Varun) and sesame. Intercropping of pearl millet + redgram in 2:1, sunflower + redgram in 2:1, and guar + redgram in 2:1 ratios. In South Madhya Maharashtra except in Solapur district continue sowing of contingency crops like sunflower, sesame, pearl millet, red gram, horse gram and moth bean. Intercropping of pearl millet+redgram in 2:1, sunflower+redgram in 2:1, and guar+redgram in 2:1 ratios.
 - In Marathwada, continue sowing of contingency kharif crops like cotton, red gram (BSMR-736, BSMR-853), bajra

(GHB-558, Shraddha, AHB-166) and sunflower. Adopt intercropping systems like cotton + pigeon pea (6:1), bajra + pigeon pea (3:3), etc. for minimizing risk.

- In west Vidarbha, continue sowing of sunflower, red gram (PKV-Tara) short duration improved varieties. Intercropping of sunflower + red gram may be undertaken. In east Vidarbha, continue transplanting of rice.
- Prevailing humid weather in Pune region is congenial for the incidence of Buck Eye Rot in premature tomato fruits; collect and destroy the infested fruits and spray Metalaxyl 8 % + Mancozeb 64 % @ 20 g per 10 litres of water with sticker after current spells of rain.
- **Gujarat:**
- Due to non-receipt of rainfall in earlier weeks in most of the districts of Gujarat, normal *kharif* crops like cotton, pigeon pea, castor, pearl millet and other crops could not been sown. As there is improvement in rainfall during last two weeks over Gujarat and likely to continue during next fortnight, contingency plan for different regions of Gujarat may be undertaken as given below.
- **Gujarat region:**
- **For South and Middle Gujarat region:**
 - Prefer soybean cv. GS-1,GS-2, JS-335.
 - Prefer short duration varieties in Sunflower (cv. Modern and EC-68414 and Guj-1) and Sesame (cv. Guj. Tal 1,2, 10), blackgram (cv. T-9, Guj. Udid-1), Greengram (cv. GM-4, K-851, Meha), Cowpea (cv. Guj. Cowpea 1,2,4, Pusa Falguni).
 - Sowing of grain Sorghum (cv. GJ-35,36 and 37) and Fodder sorghum (cv. S-1049, C-10-2, Gundari, GFS 4,5) is recommended to overcome future fodder shortages.
 - In Baroda and Panchmahal districts, undertake drill sowing of rice cv.GR 5,8,9, Sathi 34-36, IR-28, ADR-1 and Sukhvel-20.
- **North Gujarat Region:**
 - In sesame varieties like Guj.Tal-1,2,10, in sunflower - Modern, EC 68414 and in bajra, GHB- 538,732
- **For Saurashtra region:**
 - In blackgram, T-9, Guj. Udid-1 and Greengram - GM-4, K-851, Meha are suggested.
 - For fodder purpose, sorghum cv. CSH-6 and CFS-4 are recommended.
 - In sesame cv. Purva-1, in cotton - G. cot-13, 21, 23, V-797, in pigeonpea - cv. BDN-2,ICPL-87,GT-100, GT-101, Vaishali may be preferred.
- Cloudy weather condition is favourable for outbreak of sucking pest in vegetables in South Gujarat Heavy Rainfall Zone. To control, spray Dimethoate (40%) or Methyl-o-Demonate (25%) @10 ml in 10 lit. of water after current spells of rain.
- **Animal Husbandry**
- In Gujarat, clean animal byres and spray neon insecticide 1 to 1.5 ml per liter of water for control ecto parasites in animal house. Spray phenyl in the animal shed to avoid flies, mosquitoes. Make arrangement for artificial light to birds to maintain egg production. Keep fodder in safe place to avoid spoilage due to rainfall.

Annexure I List of varieties

Andhra Pradesh:

Castor: PCH-111, PCH-222, Kranti, GCH-4, Haritha

Irrigated groundnut: Kadiri-6, Kadiri-9, Narayani and dharani

Red gram: black soils LRG-41, ICPL-85063 and for red soils PRG-158, PRG-100.

Tamil Nadu:

Kuruvai rice : ADT 36, ADT 43, ADT 45 and ADT 47

Samba rice : CR 1009/Savithri/Ponmani and ADT 50

Assam:

Sali rice: Ranjit, Bahadur, Vasundhara, Kushal, Piyoli, Moniram, Rangali, Bhogali, Ketkijah

Long duration varieties: Pankaj, Mashuri, Manohar Sali and other tall varieties.

Short duration varieties : Vivek Dhan 82

Groundnut : TG-1A, JL-24

Pigeon pea : T-21

Sesame : SP1181, GOURI, VINAYAK

Meghalaya:

Red gram : UPAS-120, ICPL 87 (short duration), WB 20, Pusa 9 & Sarita (long duration)

Odisha

Rice: Heera, ZHU-11-26, Pathara, Vandana, Khandagiri and Parijat

Ragi: Dibyasingh, Godavari, Subhra, Vairabi, Neelachala, Chilika

Maize: Navjot, Sakti-1, Decan-103, Ganga-5, Kargil

Groundnut: Smruti, TAG-26, TAG-24, ICGS-11, JL-24

Sesame: Kanak, Kalika, Uma, Usha, Tilotama, Nilima, Prachi

Greengram: K-851, PDM-11, PDM-54, OUM-11-5

Blackgram: T-9, Pant U-11, Pant U-19, Pant U-30

Cowpea: SEB-2, Pusa Barsati Niger: Deomali, Niger-1 and for Okra: Utkal Gourav.

West Bengal

Aman rice: BCC-17, BCC-33, BCC-02, BCC-01, BCC-09

Banana : Mortoman, Chapa, Kathali, Singapuri

Tomato: Avinash-2, 448

Jharkhand:

Rice: short duration: Birsa Dhan - 108, Birsa Vikas Dhan 109 & 110, Vandana etc.

Maize: short duration: Birsa maize-1, Birsa Vikas maize-2 etc

Pigeon Pea: Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671

Groundnut: short duration: A.K.-12-24, Birsa Bol

Urd: T 9, Pant U 19, 30, 35 and Birsa urd 1

Moong: Pusa Vishal, S M L 668, K 885, P S 16, Pant Moong 2 and P D M 11.

Arhar: Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days),

Soybean: Birsa soybean 1, Birsa safed soybean 2;

Chhattisgarh

Rice - MTU 1010, Mahamaya, IR 36, IR 64

Maize - Pusa early, Navjot 3, Chandana 3

Ragi - JPU 28, JPU 45, JK 155

Uttar Pradesh

Urd: Uttara, Narendra urd-1, Pant Urd-30, Type-27,66, Shekhar-1,2,3, Azad-1,2,3, WBU-108

Moong: Pant-1,3,4, Samrat, Narendra Moong-1, Malaveey- Jyoti,-Janchetana, Janpriya, Jagruti, Jankalyani, Samrat, Asha, Neha, Shweta, MH-215, IPM-23

Groundnut: TG-37A, Kaushal, Amber

Jowar: Bundela, CSV-13, 15,17; CSH-14, 16, 18, 23

Bajra: WCC-75, Raj-171, ICMB-155, Pusa-322, 23, ICMH-451

Maize: Azad Uttam, Shweta

Arhar: Upas-120, Narendra-1A, Bahar

Soybean: PK-472, JS-335, MAUS-47, NRC-37

Lobia: UPC-4200

Jammu & Kashmir:

Mash : Pant U-19, Uttra, T-9)

Moong : ML-131,PDM-54,SML-668, PS-16.

Maize : Vivek-25,Vivek QPM-9 HM-5 and HQPM-1