

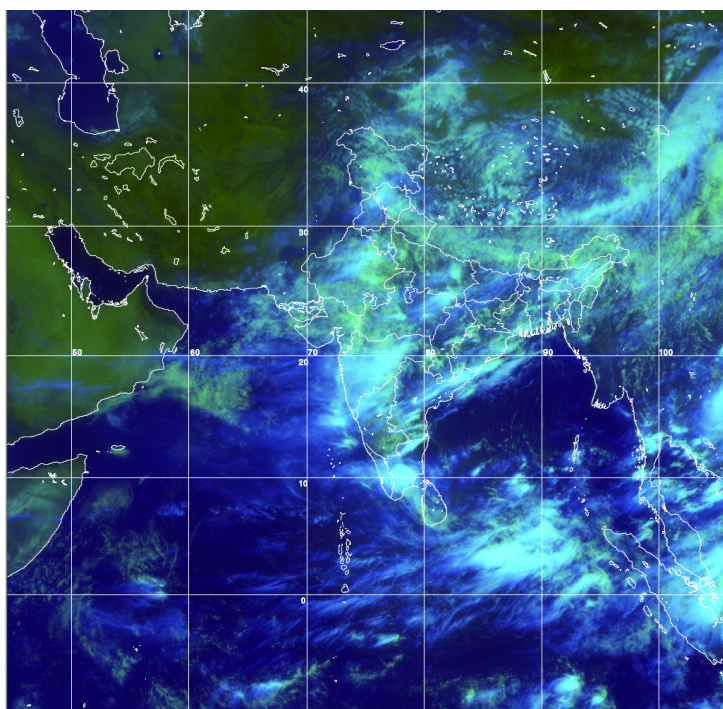


National Agromet Advisory Bulletin

Thursday, 19th August, 2010

(For the period 19th to 23rd August, 2010)

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Executive Summary

Weekly Summary of Agromet Advisory Services in India

The effect of long dry spell on crops in West Bengal, especially in South Bengal is still persisting mainly in 9 districts (Purulia, Bankura, Mursidabad, Birbhum, Burdwan, Hoogly, West Midnapur, Nadia and Malda) during this week. Most of the districts in Bihar and Jharkhand have also experienced adverse impact of persistent deficient rainfall situation. Due to long dry spell and erratic distribution of rainfall in these States, sowing / transplanting as well as other agricultural operations have been affected adversely. Rice seedlings at many places in these states either became over aged or wilted. The transplanted rice crops, which were established and at tillering stage, also faced severe moisture stress condition. Transplanting of rice could not be undertaken in considerable area due to deficient rainfall in affected districts of south Bengal. In Uttar Pradesh, impact of dry conditions is still prevailing in Northeastern Plain Zone (Bahraich, Shrawasti, Gonda, Kushinagar, Siddharthnagar, Maharajganj), which showed adverse effect on 50-60% of standing rice crop and 10-15% of maize crops. Many other districts of Uttar Pradesh (Ambedkar Nagar, Ballia, Banda, Barabanki, Basti, Deoria, Faizabad, Fatehpur, Jaunpur, Kanpur Dehat, Lucknow, Mau, RaiBareilly, Sant Ravidas Nagar, Unnao in East UP and Agra, Aligarh, Baghpat, Meerut, Muzzaffarnagar in West UP) also experienced long dry spell during last few weeks. However, due to occurrence of some rainfall during last week in some districts of these States, condition has improved for sowing of some alternate short duration and less moisture loving crops under contingency plan. Further improvement of condition is expected in view of likely occurrence of rainfall during next five days. Contingency plans for these States are mentioned below.

As there was rainfall during last week in some districts of Bihar and also good rain reported during last 24 hours in some districts of North Bihar (Samastipur, darbhanga, Vaishali, Champaran, Sitamari, Sheohar, Madhubani) and rain is also expected to occur at many places in Bihar, following contingency plan may be adopted by the farmers.

1. Urd (T-9, Navin, Pant Urd 19 etc.), pigeon pea (Bahar, Narendra, Arhar 1 etc.) and sunflower (Surya, Paradevic, Morden etc.) crops should be sown now. Kulthi and castor crops can also be taken at this time.
2. Yambeam, vegetables such as cauliflower, radish, pointed gourd etc. can be also be sown. Farmers are advised to transplant Kuwari, Patna Early, Pusa Katki, Pusa Deepali and Hajipur Agat varieties of cauliflower. Farmers are also advised to sow Rajendra Baigan-2, Rajendra Annapurna, Pant Rituraj, Pant Samrat, Swarn Pratibha and Arka Navnit varieties of brinjal at this time.
3. Provide life saving irrigation to standing rice crops where water is available, so that crops can sustain with occasional rains.
4. In upland areas where rice could not be transplanted owing to deficit rainfall, farmers are advised to take up tori and September arhar. September arhar can be sown after 25th August.

Considering rainfall occurred during last week in some districts of Jharkhand (Bokaro, East Singbhum, Godda, Hazaribagh and Lohardagga) and rainfall likely during next five days, following contingency measures may be taken.

1. In case of dry condition under upland situation, due to low water holding capacity, even under intermittent rainfall situation, at this point of time, no crop is recommended except sweet potato (Pusa Safed or Kalmegh) which can be safely transplanted upto September.
2. In present scenario farmers are advised for sowing of short duration crops like, urd (Pant U 19, Pant U 31, Birsa Urd 1, Shekher 2), moong bean (Pusa Vishal, Samrat, Medha), pegion pea (Birsa Arhar 1, Narendra Arhar 1, UPAS 120), kulthi (Madhu, Birsa Kulthi 1), niger (Birsa Nizer 1 & 2) and short duration maize (Vivek Makka, Hybrid- 9, Birsa Vikas Makka 1 & 2) on medium lands.
3. For low lands, the following advisories may be followed:
 - No fresh transplanting of rice is recommended after 15th August.
 - No direct sown rice or any other direct sown crop of even short duration is recommended as in case of moderate to heavy rain in Aug-Sept, submergence would cause almost complete failure of the

crops. Hence, farmers are advised for early *rabi* crops after August depending on soil moisture status.

As there is possibility of rain during next few days, following contingent planning may be undertaken by the farming community in different rainfall deficient districts of West Bengal.

1. In uplands and medium lands, sowing of urd (Navin), arhar (Bahar and Pusa 9) etc. can be done.
2. Extra early duration (75 to 85 days) rice varieties like Turant dhan and Prabhat can be direct seeded in midlands upto 25th August.
3. Close planting (40-45 hills / sq. m) of long duration high yielding rice varieties upto 55 days old seedlings can be done in lowlands. Balanced use of P & K is required to avoid high yield loss due to delayed planting.
4. In rainfed low lands, photosensitive rice varieties upto 65 days old seedlings can be done @ 40-45 hill/sq. m.
5. Double transplanting of rice can be done with 45 days old seedlings of long duration or photosensitive varieties upto 30th August.
6. Weeding and mulching should be done in already sown maize, arhar and other crops facing drought.
7. Available ground water should be used to irrigate the field for sowing of pulses (urd, moong, arhar) and oil seeds (sesame, castor, ground nut) in uplands.
8. Maximum possible ground water should be used to save the rice nursery. Fertilizer should be applied judiciously. Avoid high N-dose.

Farmers in Uttar Pradesh are advised to select oilseeds, pulses, bajra and linseed for sowing as alternate crops. Farmers are also advised to undertake gap filling and adopt closer spacing for better crop stand.

Overall crop conditions in the remaining states are quite satisfactory and crop and location specific advisories are being issued to the farmers based on realized and forecast weather.

Distribution of rainfall (% departure from normal) of the districts receiving subdued rainfall in Uttar Pradesh, Bihar, Jharkhand and Gangetic West Bengal for last five Weeks

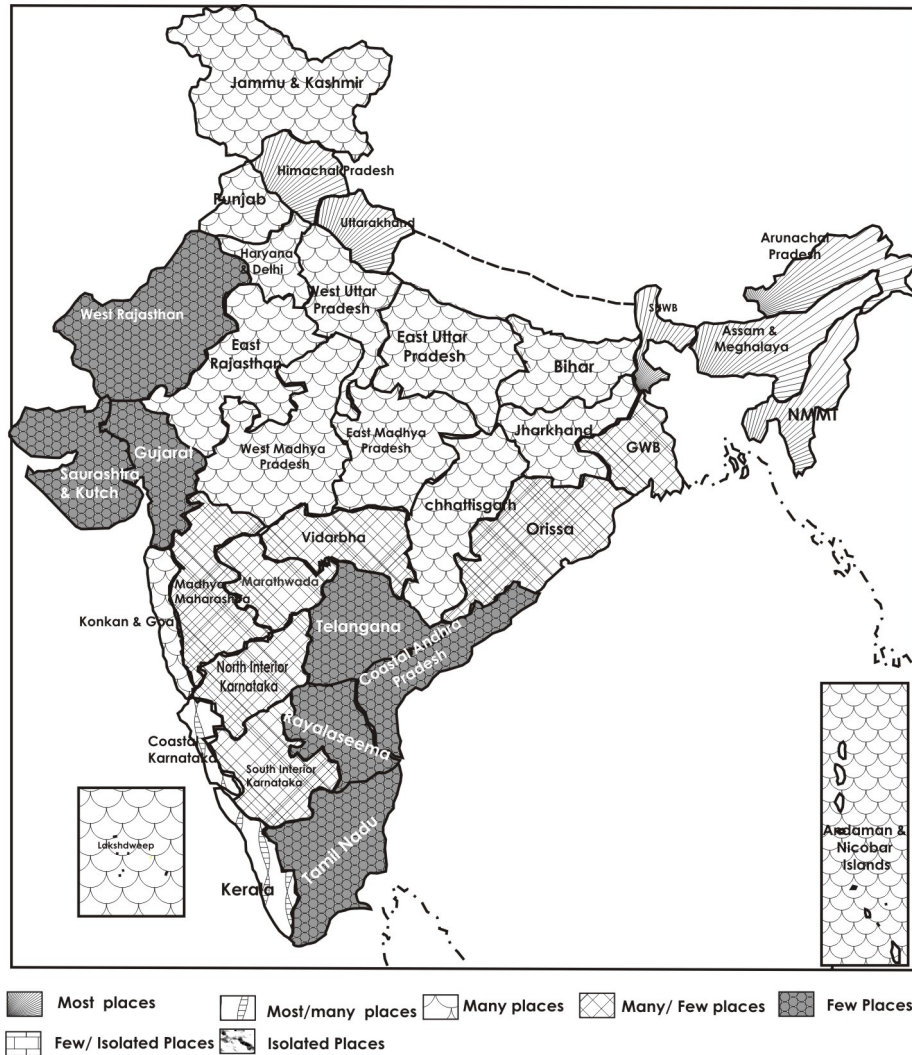
Uttar Pradesh					
More than 3 weeks continuously deficient to no rain					
East Uttar Pradesh	21.07.10	28.07.10	04.08.10	11.08.10	18.08.10
Ambedkar Nagar	17	-84	-83	-100	-78
Ballia	-41	-47	-95	-88	-57
Balrampur	-19	-29	-95	-95	-26
Banda	-20	-36	-33	-77	-81
Basti	1	-91	-89	-73	-56
Deoria	4	-63	-73	-90	-47
Faizabad	104	-48	-51	-85	-58
Jaunpur	-35	-39	-52	-100	-56
Kushi nagar	19	-53	-100	-99	-41
Maharajganj	-11	-33	-91	-96	-63
Mau	-29	-71	-100	-85	-54
RaiBareilly	-43	-45	-57	-87	-80
Sant Ravidas Nagar	4	-74	-75	-100	-77
West Uttar Pradesh					
Agra	-78	-59	-27	-92	-77
Aligarh	-86	-60	-28	-79	-31
Baghpat	-9	-70	-25	-81	-51
Meerut	-54	-28	-32	-83	-38
Muzaffarnagar	-1	-76	-45	-83	-35
3 weeks continuously deficient to no rain					
East Uttar Pradesh					
Bahraich	70	14	-90	-76	-73
Barabanki	-2	47	-80	-84	-81
Fatehpur	-31	-1	-66	-58	-52
Gonda	-9	-9	-81	-48	-26
Hardoi	71	113	-40	-82	-61
Kanpur City	43	27	-45	-90	-96
Kanpur Dehat	203	-11	-48	-83	-95
Lucknow	105	157	-44	-100	-79
Pratapgarh	11	62	-72	-100	-22
Shrawasti	103	28	-42	-30	-40
Sitapur	167	48	-82	-71	-45
Sonbhadra	-53	-5	-62	-96	-21
Unnao	120	57	-92	-95	-77
2 weeks continuously deficient to no rain					
East Uttar Pradesh					
Farrukhabad	95	37	-1	-53	-41
Mirzapur	-39	4	22	-83	-57
Varanasi	-20	-10	48	-87	-25
West Uttar Pradesh					
Auraiya	47	-51	65	-90	-54
Badaun	67	-66	30	-66	-35
Bareilly	243	-82	96	-26	-26
Bulandsahar	-35	-71	2	-94	-21

State/Districts	21.07.10	28.07.10	04.08.10	11.08.10	18.08.10
Etah	10	-48	18	-68	-76
Etawah	33	-56	-4	-89	-67
Firozabad	-30	-78	21	-99	-64
Hamirpur	-2	-59	2	-90	-82
Jalaun	33	-21	2	-89	-70
Jhansi	1	-42	2	-82	-63
Jotirba Phule Nagar	153	-29	60	-100	-88
Lalitpur	-84	82	33	-60	-63
Mahamaya Nagar	-52	-31	-12	-94	-98
Mainpuri	-31	-51	-16	-100	-67
Mathura	-45	-66	11	-100	-26
Rampur	24	-83	17	-88	-44
Bihar					
More than 3 weeks continuously deficient to no rain					
Kathihar	-85	-90	-74	-90	-82
Samstipur	-25	-88	-58	-48	-54
3 weeks continuously deficient to no rain					
Bhagalpur	-24	1	-55	-98	-76
Bhojpur	-75	-5	-74	-95	-68
Gaya	-34	-1	-56	-81	-33
Jharkhand					
More than 3 weeks continuously deficient to no rain					
State/Districts	21.07.10	28.07.10	04.08.10	11.08.10	18.08.10
Chatra	-72	-58	-61	-65	-54
East Singbhum	-98	-44	-48	-72	-27
Gumla	-61	-56	-54	-86	-49
Ranchi	-83	-47	-60	-71	-58
3 weeks continuously deficient to no rain					
Dhanbad	-89	-16	-62	-77	-46
Palamau	-68	5	-77	-89	-62
2 weeks continuously deficient to no rain					
Giridih	-63	15	28	-49	-48
Pakur	-86	**	150	-100	-62
Sahebganj	**	**	19	-86	-88
West Singbhum	-93	-13	-12	-54	-61
West Bengal					
GWB					
More than 3 weeks continuously deficient to no rain					
Nadia	-100	-42	-47	-79	-58
West Midnapore	-80	-54	-35	-36	-40
GWB					
3 weeks continuously deficient to no rain					
Burdwan	-70	-10	-49	-82	-82
GWB					
2 weeks continuously deficient to no rain					
Bankura	-99	17	-34	-62	-40
Birbhum	-83	-29	-11	-92	-58
Hooghly	-59	-22	43	-74	-46
Purulia	-90	-12	-18	-46	-77

LEGEND

	EXCESS 20% OR MORE
	NORMAL +19% TO - 19%
	DEFICIENT - 20% TO - 59%
	SCANTY - 60% TO - 99%
	NO RAIN - 100%
**	DATA NOT AVAILABLE

Weather Forecast
(Valid upto 1430 hours of 22nd August, 2010)



Weather Outlook (upto 1430 hours IST of 24th August, 2010)

- Widespread rainfall activity would occur over Sub-Himalayan West Bengal & Sikkim, Bihar, Uttar Pradesh, Haryana, East Rajasthan, Uttarakhand, Himachal Pradesh, northeastern states, coastal Karnataka and Kerala.

Warning

- Heavy to very heavy rainfall would occur at a few places over Jammu division of Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 48 hours.
- Isolated heavy to very heavy rainfall would occur over Sub-Himalayan West Bengal & Sikkim, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Bihar, east Rajasthan and northeastern states during next 48 hours.

Zonewise Agromet Advisories

NORTH WEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, UP, RAJASTHAN]

- **Realised Rainfall:** Rain occurred in most of the districts in Himachal Pradesh, a few districts except Faridkot, Fatehgarh Sahib, Ferozpur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Moga, Nawashahar, Sangrur in Punjab, many districts in Haryana except Ambala, Bhiwani, Fatehabad, Hissar, Jhajar, Jind, Kurukshetra, Mahendragarh, Panchkula, most of the districts in Jammu & Kashmir, most of the districts in West Uttar Pradesh, Uttarakhand, East Rajasthan and West Rajasthan. No significant rainfall occurred in many districts of East Uttar Pradesh and West Uttar Pradesh during last week.
- **Rainfall Forecast:** Rainfall is likely at most places during next five days in Uttarakhand and Himachal Pradesh, many places at Jammu & Kashmir, East Uttar Pradesh, West Uttar Pradesh, Haryana, Delhi, Punjab and East Rajasthan and at a few places at West Rajasthan. Heavy to very heavy rainfall would occur at a few places over Jammu division of Jammu & Kashmir, Himachal Pradesh and Uttarakhand and at isolated places would occur over Punjab, Haryana, Delhi, Uttar Pradesh and East Rajasthan during next 48 hours.
- **Major Crops:**
 - Rice(early vegetative), jowar, pigeon pea and maize(early vegetative), vegetable crops (early vegetative) in Delhi
 - Rice (early vegetative), vegetables (transplanting / vegetative) in Himachal Pradesh.
 - Vegetable crops (flowering / fruiting / harvesting), rice (early vegetative), Early sown maize, groundnut and sunflower (early vegetative) in Jammu & Kashmir.
 - Sugarcane (vegetative), rice (early vegetative), soybean, jowar, bajra, pigeon pea and groundnut (sowing/early vegetative) in Uttarakhand.
 - Sugarcane (vegetative), cotton, maize (early vegetative), rice (early vegetative), mung, mash (sowing/early vegetative) in Punjab.
 - Sugarcane (vegetative), cotton (early vegetative), rice, guar, bajra(early vegetative) in Haryana.
 - Sugarcane (vegetative), vegetable crops (sowing/transplanting), black gram, green gram, sesamum, lobia, maize, pigeon pea + pulses, groundnut and sesamum(sowing) in Uttar Pradesh.
 - Sugarcane (vegetative), vegetable crops (flowering / fruiting / harvesting), maize, soybean, bajra, jowar, mung, cluster bean, sesamum and groundnut (early vegetative) in Rajasthan.
- **Advisory:**
 - In Uttar Pradesh, impact of dry conditions is still prevailing in Northeastern Plain Zone (Bahraich, Shravasti, Gonda, Kushinagar and Maharajganj), which showed adverse effect on 50-60% of standing rice crop and 10-15% of maize crops. Many other districts of Uttar Pradesh (Ambedkar Nagar, Ballia, Banda, Barabanki, Basti, Deoria, Faizabad, Fatehpur, Jaunpur, Kanpur Dehat, Lucknow, Mau, RaeBareilly, Sant Ravidas Nagar, Unnao in East UP and Agra, Aligarh, Baghpat, Meerut, Muzzaffarnagar in West UP) also experienced long dry spell during last few weeks. However, due to occurrence of some rainfall during last week in some districts, condition has improved for sowing of some alternate short duration and less moisture loving crops under contingency plan. Further improvement of condition is expected in view of likely occurrence of rainfall during next five days, following contingency plan may be adopted by the farmers.
 1. Farmers are advised to select short duration oilseeds, pulses, bajra and linseed for sowing as alternate crops and intercrops like tur + sesamum (2:2), tur + jowar(1:1), tur + black gram, green gram(2:2) (varieties in Annexure I).
 2. Farmers are also advised to undertake foliar spray Zinc Sulphate (0.5%) and Urea (2%) in rice, weeding, thinning and reducing plant population in already sown crops to save the crops from moisture stress.

- As rainfall is likely at many places during next five days in most/many places during next five days in Uttarakhand, Himachal Pradesh, Jammu & Kashmir, East Uttar Pradesh, West Uttar Pradesh, Haryana, Delhi, Punjab and East Rajasthan, farmers are advised to postpone irrigation to the standing crops. Arrange for draining out excess water and also withhold sowing / transplanting in view of heavy to very heavy rain during next 48 hours in Jammu division of Jammu & Kashmir and also in the above mentioned remaining States.
- Farmers in Delhi are advised to start sowing of amaranthus, radish, spinach, coriander etc. (varieties in Annexure I) utilizing the rainfall during last week.
- Farmers in mild hills sub humid zone (Kullu, Mandi and Seobagh) in Himachal Pradesh are advised to undertake planting of evergreen plants like mango, litchi, guava, citrus, loquat and amla utilizing rainfall during last week. Farmers in sub-montane and low hills sub-tropical zone (Chamba, Hamirpur, Una and Kangra districts) are advised to undertake nursery sowing of cauliflower.
- Farmers in Flood Prone Eastern Plain Zone (Alwar, Bharatpur, Dholpur, Karauli and Sawai Madhopur districts) in Rajasthan are advised to undertake transplanting of marigold, balsom and xenia utilizing the rainfall during last week.
- Farmers in Semi Arid Eastern Plain Zone (Dausa, Ajmer, Tonk and Jaipur districts) in Rajasthan are advised to undertake transplanting of papaya utilizing rainfall received during last week.
- Farmers in hill Zone(Tehri Garhwal, Rudraprayag, Champawat, Uttarkashi, Pitorgarh, Bageshwar and Almora) in Uttarakhand are advised to undertake sowing of turnip, raddish, salad vegetables, beet root and sowing/transplanting of cabbage and broccoli in medium hilly region utilising the rainfall during last week.
- Farmers in sub tropical zone (Reasi district) and intermediate zone(Doda, Rajouri and Udhampur) in Jammu & Kashmir are advised to undertake transplanting of cabbage, cauliflower and knol khol utilizing rainfall realized during last week.
- Farmers in Eastern zone(Bhiwani, Fatehabad, Hissar, Jhajjar, Mahendrgarh, Mewat, Rewari, Rohtak and Sirsa districts) in Haryana are advised to undertake transplanting of fruit crops utilizing rainfall during last week.
- Farmers in flood affected areas of western zone(Kurushetra and Ambala districts) in Haryana are advised to undertake transplanting preferably upto 30th August and sowing of alternate crops like toria upto September end.
- Farmers in western zone of Punjab (Bathinda, Moga, Muktsar, Mansa, Sangrur districts) and Central Plain Zone (Amritsar, Kapurthala, Fatehgarh Sahib, Ludhiana, Jalandhar) are advised to undertake planting of evergreen fruit plants like citrus and guava as weather is suitable for the establishment of fruit plants.
- Weather is conducive for attack of white fly in cucurbits in mid hills sub humid zone(Kullu, Mandi, Seobagh districts) in Himachal Pradesh, spray acephate @0.05%(7g/litre of water) and direct the spray on lower leaves.
- Undertake spraying and intercultural operations after current spells of rain in Uttarakhand, Himachal Pradesh, Jammu & Kashmir, East Uttar Pradesh, West Uttar Pradesh, Haryana, Delhi, Punjab and East Rajasthan. Continue the above mentioned operations on a non rainy day in West Rajasthan.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]

- **Realised Rainfall:** Bargarh, Boudh, Cuttack, Gajapati, Jharsuguda, Kandhamal, Keonjhar, Malkangiri, Nawapara, Nawarangpur, Nayagarh, Puri, Rayagada and Sundargarh districts of Orissa, Bokaro, East Singbhum, Godda, Gumla, Hazaribagh and Lohardagga districts of Jharkhand, Howrah, East Midnapore, Murshidabad, 24 Parganas (N), 24 Parganas (S) and West Midnapore districts of Gangetic west Bengal and most of the districts of Bihar (except Begusarai, Bhagalpur, Bhojpur, Kathihar, Samstipur districts), Sub Himalayan West Bengal and Sikkim received rain during last week.
- **Rainfall Forecast:** Rain is likely to occur at most places over Sub Himalayan West Bengal and Sikkim and at many places in Bihar and Jharkhand during the period. Rain is also likely at many places in Orissa and

Gangetic West Bengal during next 24 hours and decrease thereafter. Isolated heavy to very heavy rainfall would occur over Sub Himalayan West Bengal and Sikkim and also in Bihar during next 48 hours.

- **Major Crops:**

- Rice (seedling / early tillering / tillering), maize (seedling / early vegetative / vegetative), sesamum, sunflower, groundnut, soybean, castor, black gram, green gram, arhar and vegetables like tomato, cabbage, ladies finger, French bean etc. (sowing / early vegetative / vegetative) in Bihar and Jharkhand.
- Rice (seedling / early tillering / tillering) and maize, groundnut, pulses, soybean, sesamum, ragi, cotton, vegetable crops (germination / early vegetative / vegetative) in Orissa.
- Sugarcane (vegetative), vegetable crops (sowing / germination / early vegetative / vegetative / flowering / fruiting / harvesting), jute (vegetative / harvesting), *aus* rice (flowering / grain formation), *aman* rice (transplanting / early vegetative / tillering), pulses (sowing / germination / early vegetative / vegetative), sesame and groundnut (sowing / germination / early vegetative / vegetative) in West Bengal.
- Large cardamom (capsule formation / transplantation of suckers from nursery / capsule maturity), orange (fruiting), seed potato (maturity / harvesting), summer potato (tuberization / maturity), maize (cob maturity / harvesting), *kharif* vegetable and off season vegetables (harvesting), ginger (vegetative), rice (tillering flag leaf initiation) in Sikkim.

- **Advisories:**

- As rain is likely to occur at most places over Sub Himalayan West Bengal and Sikkim and at many places in Bihar and Jharkhand during the period and also at many places in Orissa and Gangetic West Bengal during next 24 hours, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures in these regions. As isolated heavy to very heavy rainfall would occur over Sub Himalayan West Bengal and Sikkim and also in Bihar during next 48 hours, arrange for draining out excess water and also withhold sowing / transplanting during this period.
- The effect of long dry spell on crops in West Bengal, especially in South Bengal is still persisting mainly in 9 districts (Purulia, Bankura, Mursidabad, Birbhum, Burdwan, Hoogly, West Midnapur, Nadia and Malda) during this week. Most of the districts in Bihar and Jharkhand have also experienced adverse impact of persistent deficient rainfall situation. Due to long dry spell and erratic distribution of rainfall in these States, sowing / transplanting as well as other agricultural operations have been affected adversely. Rice seedlings at many places in these states either became over aged or wilted. The transplanted rice crops, which were established and at tillering stage, also faced severe moisture stress condition. Transplanting of rice could not be undertaken in considerable area due to deficient rainfall in affected districts of south Bengal. However, due to occurrence of some rainfall during last week in some districts of these States, condition has improved for sowing of some alternate short duration and less moisture loving crops under contingency plan. Further improvement of condition is expected in view of likely occurrence of rainfall during next five days. Contingency plans for these States are mentioned below.
- As there was rainfall during last week in some districts of Bihar and also good rain reported during last 24 hours in some districts of North Bihar (Samastipur, darbhanga, Vaishali, Champaran, Sitamari, Sheohar, Madhubani) and rain is also expected to occur at many places in Bihar, following contingency plan may be adopted by the farmers.
 1. Urd, pigeon pea and sunflower crops should be sown now. Kulthi and castor crops can also be taken at this time.
 2. Yambeam, vegetables such as cauliflower, radish, pointed gourd etc. can be grown profitably. Farmers are advised to transplant cauliflower and to sow brinjal at this time.
 3. Provide life saving irrigation to standing rice crops where water is available, so that crops can sustain with occasional rains.
 4. In upland areas where rice could not be transplanted owing to deficit rainfall, farmers are advised to take up tori and September arhar. September arhar can be sown after 25th August.

- Considering rainfall occurred during last week in some districts of Jharkhand (Bokaro, East Singhbhum, Godda, Hazaribagh and Lohardagga) and rainfall likely during next five days, following contingency measures may be taken.
 1. In case of dry condition under upland situation, due to low water holding capacity, even under intermittent rainfall situation, at this point of time, no crop is recommended except sweet potato (Pusa Safed or Kalmegh) which can be safely transplanted upto September.
 2. In present scenario farmers are advised for sowing of short duration crops like, urd, moong bean, pigeon pea, kulthi, niger and short duration maize on medium lands.
 3. For low lands, the following advisories may be followed:
 - No fresh transplanting of rice is recommended after 15th August.
 - No direct sown rice or any other direct sown crop of even short duration is recommended as in case of moderate to heavy rain in Aug-Sept, submergence would cause almost complete failure of the crops. Hence, farmers are advised for early *rabi* crops after August depending on soil moisture status.
- As there is possibility of rain during next few days, following contingent planning may be undertaken by the farming community in different rainfall deficient districts of West Bengal.
 1. In uplands and medium lands, sowing of urd, arhar etc. can be done.
 2. Extra early duration (75 to 85 days) rice varieties can be direct seeded in midlands upto 25th August.
 3. Close planting (40-45 hills / sq. m) of long duration high yielding rice varieties upto 55 days old seedlings can be done in lowlands. Balanced use of P & K is required to avoid high yield loss due to delayed planting.
 4. In rainfed low lands, photosensitive rice varieties upto 65 days old seedlings can be done @ 40-45 hill/sq. m.
 5. Double transplanting of rice can be done with 30-45 days old seedlings of long duration or photosensitive varieties upto 30th August.
 6. Weeding and mulching should be done in already sown maize, Arhar and other crops facing drought.
 7. Available ground water should be used to moist the field for sowing of pulses (urd, moong, arhar) and oil seeds (Sesame, castor, Ground nut) in uplands.
 8. Maximum possible ground water should be used to save the rice nursery. Fertilizer should be applied judiciously. Avoid high N-dose.

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

- **Realised Rainfall:** Most of the districts of Arunachal Pradesh (except East Kameng, Lower Subansiri and Upper Subansiri districts) and Assam (except East Garo Hills, Goalpara, Kamrup and Nalbari districts) received rainfall during last week. Some of the remaining districts of the States of this region also received some rainfall.
- **Rainfall Forecast:** Rainfall is likely to occur at most places in the region during the period. Isolated heavy to very heavy rainfall would occur over the region during next 48 hours.
- **Major Crops:**
 - Vegetables (flowering / fruiting / harvesting), sugarcane (cane development), maize, jute, mesta (vegetative), *sali* rice (transplanting / early vegetative / seedling / tillering), *ahu* rice (transplanted summer rice) (flowering / grain formation) and arhar, cotton and sesamum (sowing / germination / early vegetative / vegetative) in Assam.
 - Rice (booting and panicle initiation), pulses (vegetative / flowering / pod formation), sesame (early vegetative / vegetative / flowering / pod formation), vegetables (early vegetative / vegetative / flowering / fruiting) and maize (tasseling / silking / cob formation) in Arunachal Pradesh.
 - Upland rice (flowering / grain formation), *aman* rice (transplanting / early vegetative / tillering) and vegetables like pumpkin, ridge gourd, cucumber, ladies finger (sowing / vegetative) in Tripura.

➤ *Sali* rice (transplanting / early vegetative / tillering), arhar and potato (sowing / planting / early vegetative / vegetative), ladies finger, bottle gourd, pumpkin, ridge gourd, cucumber, bitter melon, snake melon etc. (sowing / germination / early vegetative / vegetative), tomato, chilli and brinjal (transplanting / early vegetative / vegetative) and maize (vegetative) in Meghalaya.

• **Advisory:**

- As rainfall is likely to occur at most places over the States of this region, postpone sowing, irrigation, intercultural operation and application of fertilizer and plant protection measures to the standing crops. Resume sowing and application of fertilizer and plant protection measures after current spells of rain. Also arrange for draining out excess water from the fields to protect the crops from water logging.
- Farmers in Assam are advised to undertake transplanting of three weeks old seedlings for *sali* rice in the main field and sowing of black gram and green gram with the realized rainfall in Diphu Hills Zone, sowing of jute (for seed purpose), sesamum, black gram and finger millet in Lower Brahmaputra Valley Zone, transplanting of *sali* rice and sowing of early cauliflower and pulses like black gram and green gram in Upper Brahmaputra Valley Zone, transplanting of *sali* rice and sowing of sesamum and early brinjal in Barak Valley Zone, transplanting of *sali* rice and sowing of *kharif* pulses and early vegetables like early cauliflower and radish in Central Brahmaputra Valley Zone and transplanting of *sali* rice in North Bank Plain Zone.
- Transplanting of *sali* rice is affected in some districts of Assam by stagnant water in the field due to heavy rainfall. Farmers of these areas are advised to transplant or sow short duration HYV rice varieties like Luit, Kapili, Kolong, Dishang etc. within 1st week of September. More over long duration cultivars like Monohar Sali, Andrew Sali and Gitesh can also be transplanted with 60 days seedlings, where as Praful can be transplanted with 90 days old seedlings. Farmers from the flood affected areas should select cultivars like *Jalashree*, *Jalkuwari*, *Plaban* etc. which remain alive under water up to 15 days before panicle initiation stage. Farmers are advised to plant 6-8 seedlings per hill in flood affected areas.
- Farmers in Arunachal Pradesh are advised to complete sowing of vegetable crops like French bean, pumpkin, okra, etc.
- Farmers in Manipur are advised to undertake sowing of French bean and planting of mid-season variety of cauliflower.
- Recommended varieties of major crops to be sown in different States of the region are mentioned in Annexure I.
- Due to continuous rainfall, mandarin orchards are facing severe infestation of insects *viz*, leaf miner, aphids etc. in Mizoram; for managing leaf miner and aphids, weekly spray of neem seed extract or mahua @ 2 % are found quite effective.
- Continuous rainfall has also resulted in trunk and bark eating caterpillar infestation in khasi mandarin in Mizoram. Regular monitoring and killing of larvae by inserting wire inside the tunnel or inserting cotton wetted with kerosene or petrol followed by application of bordeaux mixture (1:1.5:10).
- High rainfall along with high humidity is conducive for the incidence of lygaid bug in beans in Mizoram; spray the crop with phosphamidon @ 0.5 ml / litre of water.
- Due to high rainfall along with high humidity, ginger is severely infested by soft rot in Mizoram; drenching the affected plant with blitox @ 0.25% is recommended.
- The weather is favorable for the multiplication of aphids as well as blight disease in colocasia in Nagaland. Farmers are advised to apply appropriate plant protection measures.
- As there is chance of rain at most places over the region, farmers are advised to apply plant protection measures after current spells of rain.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- **Realised Rainfall:** All the districts in Kerala, all the districts in Karnataka except Bangalore, Belgaum, Chamrajnagr, Dharwad, Haveri, Chitradurga, Davangare, Hassan, Kolar, Mandya, Mysore and Tumkur districts, all the districts in Andhra Pradesh except Srikakulam and Visakappattinam districts and in

Chennai, Kanchipuram, Darmapuri, Nagappattinam, Nigiris, Perambalur, Salem, Thirunelveli and Thiruvannamalai districts in Tamil Nadu.

- **Rainfall Forecast:** Rain is likely to occur at most/many places in Coastal Karnataka and Kerala and at a few/many places over Interior Karnataka during next three days. Rain is likely at a few places over Andhra Pradesh and Tamil Nadu.
- **Major Crops:**
 - *Viirippu* rice is at panicle initiation / flowering stage. Nendran banana, Mango, Nutmeg and banana are in harvest stage. This is time for planting of black pepper, ginger, turmeric, tapioca, cocoa, cashew and vegetables in Kerala.
 - *Kuruvai* rice (panicle initiation/flowering), groundnut (pegging), sugarcane (grand growth), banana (fruit bearing stage) in Tamil Nadu.
 - *Kharif* crops viz., maize is at silking stage, paddy crop is at tillering stage, and groundnut is at flowering in Andhra Pradesh.
 - *Kharif* crops viz., pigeon pea, groundnut, bajra, castor, horsegram, sesamum, maize and navane, etc (vegetative stage) and sugarcane (cane development) in Karnataka.
- **Advisories:**
 - Rain is likely to occur at most/many places in Karnataka and Kerala during next three days; farmers are advised to postpone intercultural operations, application of fertilizers and pesticides and irrigation to plantation crops and vegetable crops.
 - As there was rain in all the districts of Andhra Pradesh except Srikakulam and Visakappattinam districts, postpone irrigation to the crops. Apply irrigation to the crops in the above districts as there was no rainfall during last week.
 - Farmers in Krishna Godavari Zone (West Godavari, Krishna) are advised to take up paddy transplanting. If nursery is not raised so far, select short duration varieties and raise nursery immediately. Farmers in High Altitude Tribal Zone (East Godavari, Khammam) are advised to continue transplanting Long duration varieties like Swarna and BPT 5204.
 - Farmers in North East transition zone (Bidar) in Karnataka are advised to raise nursery for brinjal, tomato, cabbage and cauliflower.
 - Good amount of rainfall has been received in most of the places in the North Dry Zone (Bijapur) district during last week. As per the forecast, light to moderate amount of rainfall is expected during the next three days. Taking advantage of these rains sowing of sunflower, castor, horsegram, desi cotton (Jayadhar and Suyodhar) may be continued.
 - Farmers in North East Dry Zone (Gulbarga, Raichur) are advised to start/continue sowing of cotton and sunflower. Varieties / hybrids of cotton is mentioned in Annexure I.
 - Farmers in Cauvery Delta Zone in Tamil Nadu are advised to undertake sowing of rice nursery for samba/thaladi utilizing Mettur dam water (varieties in Annexure I).
 - Due to forecast of higher wind speed in Hill Zone of Karnataka, Southern Zones of Tamil Nadu and Problem Area Zone of Kerala, there is a possibility of lodging of sugarcane and banana plants. Therefore farmers are advised to provide staking for plants.
 - Present weather conditions in Scarce Rainfall Zone of Rayalaseema (Ananthpur, Kurnool) and Southern Telangana Zone (Hyderabad, Medak, Rangareddy, Nalgonda) are favourable for the incidence of Spodoptera in groundnut; spray Quinolphos @ 2 ml or Monocrotophos @ 1.6 ml per litre of water. Also there are chances of incidences of early leaf spot in Groundnut in Kurnool. Spray Mancozeb @ 3 g or Hexaconazole @ 2 ml per litre of water.
 - Due to intermittent rainfall there are chances of infestation of case worm in rice in Coastal Zone (Udupi, Dakshi Kannada) in Karnataka. Hence, farmers are advised to drain the paddy field, pull the rope across the crop by holding rope ends on either side of the field and spray Quinolphos @ 2ml/lit of water to

control. Due to higher humidity, low temperature and frequent rains it is likely that brown leaf spot rice on tillering stage may occur, hence farmers are advised to spray Dithane M -45 2g/lit of water. Due to prevalence of higher relative humidity, arecanut crop may be infested with *kolerogo*; farmers are advised to undertake spraying of 1% Bordeaux mixture to control.

- Problem of sucking pests and murda disease (in chilli) occur due to cloudy weather in North Transition Zone (Belghum, Dharwad, Haveri) in Karnataka. To control these, spray with 1.7 ml Rogar / 1.5 ml Metasystox + 2.5 ml Dicofol.
- Present weather condition in Problem Areas Zone (Kottayam) in Kerala is favourable for the incidences of leaf spot diseases and sheath blight in rice; apply Contaf @ 750ml/Ha. Also there are chances of incidences of leaf folder; release the egg parasite *Trichogramma chelonis* in paddy fields
- Very high cloud cover and moderate humidity forecasted during the coming days in Southern Zone: (Tirunelveli, Virudhnagar) are favourable for the incidence of leaf folder. For controlling spray monocrotophos 36 SL 1 litre / ha or chlorpyrifos 20 EC 1.25 litre / ha. Also there are chances of incidence of leaf spot in banana and internode borer in sugarcane. If the incidence is noticed, spray carbendazim 1 g / l or mancozeb 2 g / l along with sticking agent. For controlling internode borer in sugarcane, release the egg parasitoid *Trichogramma chilonis* 2.5 cc / ha / release for 6 times at 15 days interval starting from 4th month after planting.
- Plant protection measures may be undertaken after spells of rain in Karnataka and Kerala and on a non rainy day in Andhra Pradesh and Tamil Nadu.
- **Cattle and Buffaloes**
 - Prevailing weather conditions are congenial for the occurrence of Hemorrhagic, Septicemia and Black Quarter in cattle and ET and sheep pox in sheep in Andhra Pradesh. To prevent the diseases, vaccinate the animals.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Surendranagar district in Saurashtra and Kutch, many districts of Gujarat region (except Baroda, Broach, Dahod, Gandhinagar, Mehsana, Narmada, Navsari, Panchmahal and Patan) and most of the districts of Maharashtra (except Dhule, Nandurbar, Nasik, Pune, Satara, Nagpur and Washim) received good rain during last week.
- **Rainfall Forecast:** Rain is likely at many places in Konkan and Goa and at a few places in Gujarat and Saurashtra & Kutch during the period. Rain is also likely to occur at a few places in Madhya Maharashtra, Marathwada and Vidarbha during next 24 hours and increase thereafter.
- **Major Crops:**
 - *Kharif* rice (transplanting / early tillering in East Vidarbha and early tillering / tillering in Konkan, Kolhapur, Nashik & Pune (western parts) divisions), *kharif* jowar, bajra, sunflower (vegetative), soyabean, groundnut (vegetative / flowering), cotton (vegetative / floral bud initiation), red gram (early vegetative), moong (flowering / pod formation) and irrigated cotton (flowering / boll formation) in Maharashtra.
 - Rice (early vegetative / tillering), groundnut, cotton, maize, bajra, pigeon pea, soybean, sesamum, green gram and black gram (early vegetative / vegetative / flowering) and castor (sowing / germination) in Gujarat.
- **Advisory:**
 - As rain is likely at many places in Konkan and Goa during the period and at many places in Madhya Maharashtra, Marathwada and Vidarbha after 24 hours, postpone irrigation, intercultural operation and application of fertilizer and plant protection measures to the standing crops in these regions during the period. Also postpone irrigation in Surendranagar district of Saurashtra and Kutch and also in the districts of Gujarat region except Baroda, Broach, Dahod, Gandhinagar, Mehsana, Narmada, Navsari,

Panchmahal and Patan districts. Apply irrigation to the standing crops in the remaining districts of Saurashtra and Kutch and above mentioned districts of Gujarat region.

- Complete transplanting of rice in East Vidarbha of Maharashtra with 20 to 25 days old seedlings.
- Transplant seedlings of fennel in Bhal and Coastal Zone, North West Zone and North Gujarat zone of Gujarat State at 90 x 60 cm spacing after dipping in a solution of 0.4% copper fungicide during evening hours.
- Undertake sowing of castor in Middle Gujarat Zone, South Gujarat Zone and South Saurashtra Zone. Adopt seed rate of 6 to 8 kg / ha and spacing of 90 x 60 cm for sowing of castor.
- Also undertake transplanting of brinjal, chilli and tomato in North West Zone of Gujarat State.
- As there is less possibility of rain during next few days in Gujarat, carry out intercultural operation and weeding in crops. Farmers are also advised to apply first split dose of fertilizer 30-35 DAS and go for prophylactic spray during clear sky condition.
- Due to favourable weather condition, there is infestation of green semi looper & tobacco leaf eating caterpillar in soyabean in Vidarbha; spray 5% Neem extract or Endosulfan 35% @ 15 ml or Fenvalerate 20% @ 5 ml in 10 liters water.
- Due to cloudy & humid weather, Soyabean gets affected by leaf eating caterpillar (Spodoptera) in western Maharashtra plain zone; spray 500 ml S.L.N.P.V.(Magic) in 500 litres of water or 25% Cypermethrin 200 ml / ha in 500 litres of water.
- Due to continues cloudy weather there is infestation of sap sucking insects (white fly, aphids & jassids) in *kharif* cotton in Nasik, Nagpur, Latur, Amravati division and Ahmednagar district; spray Acitamaprid 20% @ 4 g with sticker in 10 liters of water.
- There may be incidence of downy mildew and powdery mildew on vegetables in Konkan due to congenial weather condition; spray Diathane M-45 or Diathane Z-78 each @ 2.5 g / litre of water at an interval of 10 to 15 days.
- Due to forecast of temperature in the range of 26 – 34⁰C and high humidity in coming days, there is chance of stem rot in chilli in North West Zone of Gujarat; drench with 1% *trichoderma viridi* to manage the disease.
- Due to congenial weather condition, the infestation of leaf webber in sesamum is initiated in North Saurashtra Zone of Gujarat; spray Endosulfan @ 20 ml / 10 litres of water.
- Apply plant protection measures after current spells of rain in Maharashtra.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rain occurred over all the districts of Madhya Pradesh except Rewa, Satna, Badwani, Tikamgarh, Bhind, Harda, Jhabua and Ratlam districts and all the districts in Chhattisgarh except Dhamtari, Jashpurnagar, Korla and Surguja districts during the period.
- **Rainfall Forecast:** Rain is likely at many places over Madhya Pradesh and Chhattisgarh for the next three days.
- **Major Crops:**
 - *Kharif* crop like soyabean, maize, sorghum, green gram and black gram (vegetative) in Madhya Pradesh.
 - *Kharif* crops like black gram, green gram, soyabean, maize, etc (vegetative), and Sugarcane (cane development) in Chhattisgarh. This is proper time for nursery sowing of rainy season vegetables.
- **Advisory:**
 - Postpone intercultural operations and application of fertilizers and pesticides in Madhya Pradesh and Chhattisgarh as rain is likely at many places.
 - Farmers in Kymore Plateau and Satpura Hill Zone (Jabalpur) are advised to continue transplanting tomato, brinjal and chilli and other vegetable crops and top dressing of urea as required. Also undertake planting of fruit crops in pits prepared at recommended distance.
 - Due to forecast of moderate wind speed, farmers in Bundelkhand Zone (Tikamgarh) in Madhya Pradesh are advised to provide support to pomegranate plants to prevent from lodging.

- Farmers in Chhattisgarh Plain Zone are advised to undertake sowing of early varieties of cabbage, tomato, brinjal, chilli etc, in a raised nursery of about 6 inch with proper drainage system.
 - Farmers in Bastar Plateau Zone are advised to undertake replanting immediately as per availability of seedling, where late sown seedlings of paddy are affected due to flood. Sow black gram, sesame, horsebean or vegetables at places where upland paddy is destroyed due to flood water.
 - Due to favourable weather conditions there are chances of mild incidences of girdle beetle attack in soyabean in Jhabua Hills Zone (Jhabua) in Madhya Pradesh; spray Trizophos 40 EC @ 2.0 ml/litre of water to control. Also there are chances of incidences of semi-looper, pod borer and tobacco caterpillar in kharif pulses, farmers are advised to spray Trizophos 40 E.C. @ 2.0 ml/l for control.
 - Present weather condition in Chattisgarh Plain Zone (Bilaspur, Dhamtari, Durg, Janjgir, Kabirdham, Kanker, Kawardha, Korba, Mahasamund, Raigarh, Rajnandangaon, Raipur) is favourable for the incidence of tobacco caterpillar in soybean, groundnut and urd. Farmers are advised to keep watch over the crop and in the initial stage collect the caterpillars and destroy. In case of severe incidence farmers are advised for the spraying of Thiodon / Endosulphan @ 400-500 ml/acre mixed in 200 liter water.
- **Animal Husbandry:**
 - Looking to cloudy weather increase light duration in poultry farms to maintain egg production.
 - Provide proper aeration for cattle as humidity is rising.

Annexure I List of Varieties

Delhi

Coriander: Pant Haritama, hybrids.

Jammu & Kashmir

Cabbage: golden acre, pride of India

Cauliflower: Giant snow ball, pusa synthetic

knol khol: white Vienna and purple Vienna

Uttar Pradesh

Bajra: Hybrid: Pusa-322, Pusa-23, ISMH-451, Sankul: ICMV-155, WCC-75, ICTP-8203, Raj-171, Desi: Mainpuri

Pigeon pea : Bahar, Narendra arhar, Azad, malviya vikas, malviya chatmatkar

Black gram: TA-9, Pant Urid -19, Ta -65, Azad- 1, IPU-94-1, Narendra urd -1,

Green gram : Samrat, Narendra moong-1, T-44

Sesamum: Shekhar, Pragati

Haryana

Rice: Govind and PRH-10

Toria: T 9 and Sangam

Assam

Sali rice: Ranjit, Bahadur, Kushal, Mashuri.

Rice for flood affected areas: Jalashree, Plaban, Jalkonwari.

Short duration HYV Sali rice varieties (flood affected areas): like Luit, Kapili, Kolong, Dishang etc.

Long duration Sali rice varieties (flood affected areas): Monohar Sali, Andrew Sali and Gitesh, Praful etc.

Red gram: T-21.

Sesamum: AST-1, Madhavi, Vinayak, Punjab Til -1, Gauri, SG 1981, RT-1 etc.

Early varieties of cauliflower: Pusa Keteki, Pusa Dipalee, Early Kowari, Jowahar Moti etc.

Green gram: T-44, Kopergaon, K-851, ML-56, ML-131 etc.

Black gram: T-9, T-27, Pant U-19, T-122, SB 121 etc.

Jute (for seed purpose): .Tarun.

Bihar:

Urd: T-9, Navin, Pant Urd 19 etc.

Pigeon pea: Bahar, Narendra, Arhar 1 etc.

Sunflower: Surya, Paradevic, Morden etc.

Cauliflower: Kuwari, Patna Early, Pusa Katki, Pusa Deepali and Hajipur Agat.

Brinjal: Rajendra Baigan-2, Rajendra Annapura, Pant Rituraj, Pant Samrat, Swarn Pratibha and Arka Navnit.

Jharkhand:

Urd: Pant U 19, Pant U 31, Birsa Urd 1, Shekher 2.

Moong bean: Pusa Vishal, Samrat, Medha.

Pegion pea: Birsa Arhar 1, Narendra Arhar 1, UPAS 120.

Kulthi: Madhu, Birsa Kulthi 1.

Niger: Birsa Nizer 1 & 2.

Maize: Vivek Makka, Hybrid- 9, Birsa Vikas Makka 1 & 2.

West Bengal:

Extra early duration (75 to 85 days) rice varieties: Turant dhan and Prabhat.

Urd: Navin.

Arhar: Bahar and Pusa 9 etc.

Gujarat:

Castor: GCH-4, GCH-2 and GAUCH-1.

Fennel: Guj. Fennel- 2.

Karnataka

Red gram: TTB-7, BRG-1 and Hyd-3C

Ragi: Indaf-8, MR-1

Cotton: Bunny, Neeraja, Bhakti, Kanaka

Tamil Nadu:

Late samba and thaladi: ADT 38, ADT 46, improved white ponni, IR 20, Ambai 19,
Paiyur1, Trichy 1, Trichy 3 and Co 50.

Late Thaladi ADT 39 and ADT 42

