

National Agromet Advisory Service Bulletin

Friday 31st October 2014

(For the period 31st October to 4th November 2014)



Issued by

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



Agromet Advisories for Saurashtra & Kutch and Gujarat region in view of the well marked low pressure

Under the influence of the well marked low pressure over northeast Arabian Sea, rainfall would occur at many places over Saurashtra & Kutch on 31st October. Squally wind speed reaching 35- 45 kmph gusting 55 kmph would prevail along and off Gujarat coast on 31st October.

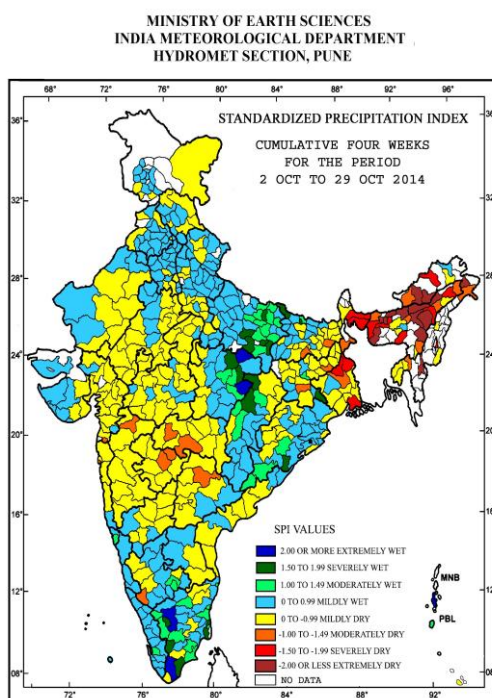
In view of the well marked low pressure, following agromet advisories are suggested:

- Postpone harvesting of matured pearl millet, groundnut and picking of cotton in North Saurashtra Zone, and harvesting of groundnut in South Saurashtra Zone. Keep already harvested produce at safer places.
- Postpone sowing of mustard and fennel in North West Zone and sowing of mustard, gram, peas, carrot and garlic in North Saurashtra Zone, sowing of *rabi* crops in South Saurashtra Zone.
- Arrange for drainage facilities to remove excess water from standing crop fields.
- Postpone irrigation, application of fertilizers and plant protection measures in standing crops in Saurashtra & Kutch.
- Provide mechanical support to young fruit plants to prevent lodging due to high winds in South Gujarat Heavy Rainfall Zone, South Gujarat Zone and North West Zone.
- Postpone harvesting and threshing of rice and pearl millet and picking of cotton in Middle Gujarat Zone, harvesting of matured rice in South Gujarat Heavy Rainfall Zone, harvesting of matured rice, groundnut and fruits in Bhal and Coastal Zone.

Standardised Precipitation Index

Four Weekly

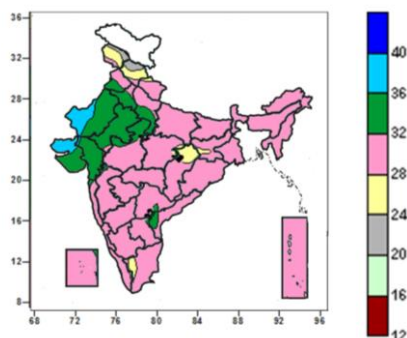
for the Period 2nd October to 29th October 2014



- Extremely/severely wet conditions experienced in Sheohar and West.Champaran districts of Bihar; Gajapati district of Odisha; East Singbhum district of Jharkhand; Allahabad, Chandauli, Pratapgarh, Sant Kabir Nagar, Varanasi districts of Uttar Pradesh; Rewa, Satna, Shahdol, Sidhi, Anuppur district of Madhya Pradesh; Bilaspur, Koriya districts of Chhattisgarh; Erode, Nagapattinam, Theni, Tirunelveli, Tuticorin, Tiruvarur districts of Tamilnadu.
- Extremely/ moderately/ severely dry conditions experienced in most district of Assam & Meghalaya; few places over Arunachal Pradesh, West Bengal, Maharashtra; Aizwal district of Mizoram, Imphal district of Manipur, North Tripura district of Tripura, Kodaku district of Karnataka, Karimnagar district of Telangana, Dadra & Nagar Havelli.
- Rest of the country experienced moderately wet, mild wet/dry conditions.

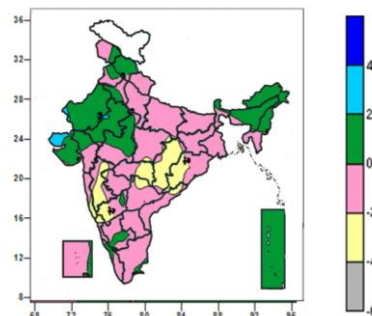
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 29.10.2014

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 29.10.2014



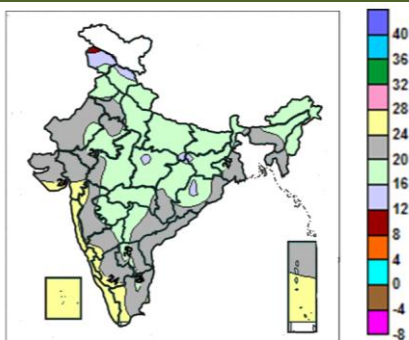
- 36 to 40 $^{\circ}\text{C}$ over some parts of Saurashtra & Kutch, West Rajasthan.
- 32 to 36 $^{\circ}\text{C}$ over many parts of West Uttar Pradesh, Punjab, Haryana, Delhi, Rajasthan, Gujarat some parts of West Madhya Pradesh and Andhra Pradesh.
- 28 to 32 $^{\circ}\text{C}$ over entire country except many parts of Jammu & Kashmir, Himachal Pradesh, Rajasthan, West Uttar Pradesh, Punjab, Haryana, Delhi, Rajasthan, Gujarat, some parts of Uttarakhand, Jharkhand, Chhattisgarh, East Madhya Pradesh and Tamil Nadu.
- 24 to 28 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Jharkhand, Chhattisgarh, East Madhya Pradesh and Tamil Nadu.
- 20 to 24 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir and Himachal Pradesh.

Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 29.10.2014



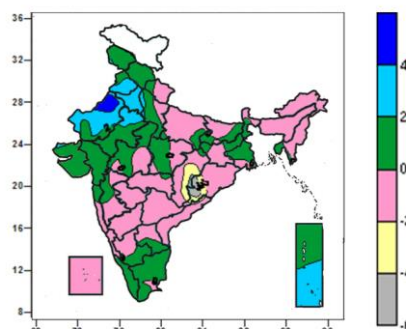
- 2 to 4 $^{\circ}\text{C}$ over some parts of Kutch.
- 0 to 2 $^{\circ}\text{C}$ over many parts of Himachal Pradesh, Rajasthan, Gujarat, West Madhya Pradesh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, some parts of Jammu & Kashmir, Punjab, Haryana, Mizoram, Interior Karnataka, Kerala and Tamil Nadu.
- 2 to -2 $^{\circ}\text{C}$ over entire country except many parts of Himachal Pradesh, Rajasthan, Gujarat, West Madhya Pradesh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Odisha, Chhattisgarh, Madhya Maharashtra, Goa, some parts of Jammu & Kashmir, Punjab, Haryana, Mizoram, East Madhya Pradesh, Vidarbha, Marathwada, Konkan, Telangana, Karnataka, Kerala and Tamil Nadu.
- -4 to -2 $^{\circ}\text{C}$ over many parts of Odisha, Chhattisgarh, Madhya Maharashtra, Goa, some parts East Madhya Pradesh, Vidarbha, Marathwada, Konkan, Telangana, and Coastal & North Interior Karnataka.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 29.10.2014



- 24 to 28 $^{\circ}\text{C}$ over many parts of Konkan & Goa, Coastal Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Gujarat, Madhya Maharashtra, Interior Karnataka and Tamil Nadu.
- 16 to 24 $^{\circ}\text{C}$ over entire country except many parts of Jammu & Kashmir, Konkan & Goa, Coastal Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Himachal Pradesh, East Uttar Pradesh, East Madhya Pradesh, Jharkhand, Odisha, Gujarat, Madhya Maharashtra, Interior Karnataka and Tamil Nadu
- 12 to 16 $^{\circ}\text{C}$ over many parts of Jammu & Kashmir, some parts of Himachal Pradesh, East Uttar Pradesh, East Madhya Pradesh, Jharkhand, Odisha.
- 8 to 12 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir.

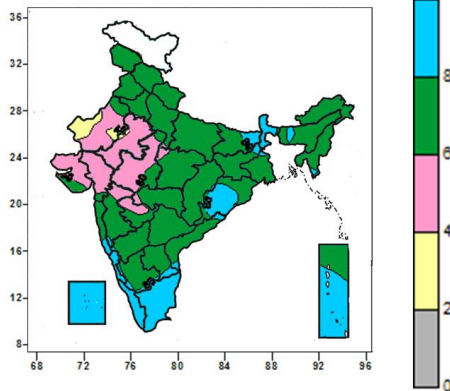
Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 29.10.2014



- 4 to 6 $^{\circ}\text{C}$ over some parts West Rajasthan.
- 2 to 4 $^{\circ}\text{C}$ over many parts of Punjab, Haryana, Delhi, West Rajasthan, Andaman & Nicobar Islands, some parts West Uttar Pradesh, East Rajasthan.
- 2 to -2 $^{\circ}\text{C}$ over entire country except many parts of Punjab, Haryana, Delhi, West Rajasthan, Andaman & Nicobar Islands, some parts West Uttar Pradesh, East Rajasthan, Chhattisgarh and Odisha.
- -4 to -2 $^{\circ}\text{C}$ over some parts of Chhattisgarh, Odisha.
- -6 to -4 $^{\circ}\text{C}$ over some parts of Chhattisgarh, Odisha.

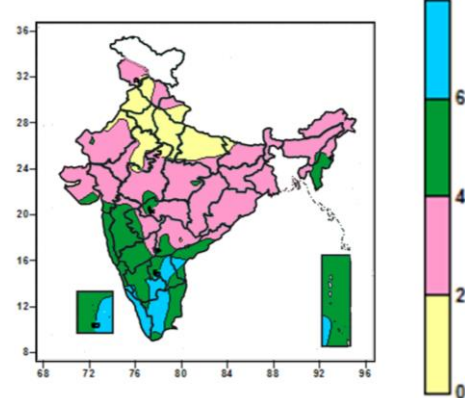
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 29.10.2014

Relative Humidity (%) over India for the week ending 29.10.2014



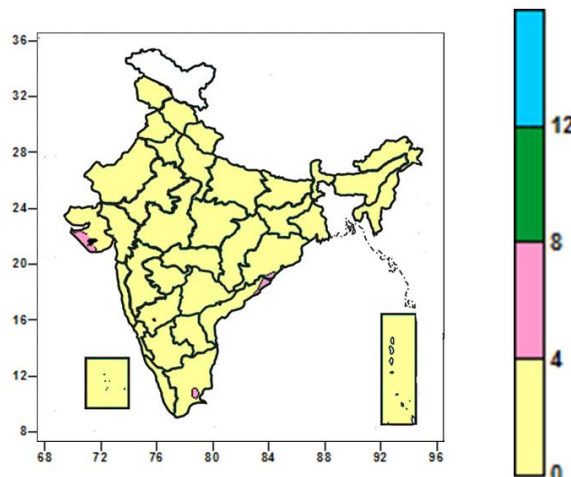
- 80 to 100% over many parts of Sub-Himalayan West Bengal & Sikkim, Odisha, Coastal Karnataka, Kerala, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Bihar, Jharkhand, Assam & Meghalaya, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka and Andaman & Nicobar Islands.
- 60 to 80% over entire country except many parts of Rajasthan, Gujarat, West Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Odisha, Coastal Karnataka, Kerala, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Bihar, Jharkhand, Assam & Meghalaya, Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka East Madhya Pradesh, Madhya Maharashtra, Marathwada and Andaman & Nicobar Islands.
- 40 to 60% over many parts of Rajasthan, Gujarat, West Madhya Pradesh, some parts of East Madhya Pradesh, Madhya Maharashtra and Marathwada.
- 20 to 40% over some parts of West Rajasthan.

Cloud amount (okta) over India for the week ending 29.10.2014



- 6 to 8 okta over many parts of Tamil Nadu, Kerala, some parts of Coastal Andhra Pradesh, Rayalaseema, Coastal & South Interior Karnataka Lakshadweep and Andaman & Nicobar Islands.
- 4 to 6 okta over many parts of Karnataka, Coastal Andhra Pradesh, Rayalaseema, Konkan & Goa, Madhya Maharashtra, Mizoram, Tripura, Lakshadweep, Andaman & Nicobar Islands, some parts of Mizoram, Gujarat, West Madhya Pradesh, Telangana, Marathwada, Vidarbha and Tamil Nadu.
- 0 to 4 okta over entire country except many parts of Karnataka, Coastal Andhra Pradesh, Rayalaseema, Konkan & Goa, Madhya Maharashtra, Mizoram, Tripura, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Mizoram, Gujarat, West Madhya Pradesh, Marathwada, Vidarbha Coastal Andhra Pradesh, Rayalaseema, Telangana, Coastal & South Interior Karnataka, Lakshadweep and Andaman & Nicobar Islands.

Wind speed (knots) over India for the week ending 29.10.2014



- 4 to 8 knots over some parts of Saurashtra, South Coastal Odisha and North Coastal Andhra Pradesh.
- 0 to 4 knots over entire country except some parts of Saurashtra, South Coastal Odisha and North Coastal Andhra Pradesh.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 3rd November, 2014)

- Rain/thundershowers would occur many places over Saurashtra & Kutch during the period.
- Rain/thundershowers would occur at many places over Kerala on 31st; at a few places on 1st and at many places thereafter.
- Rain/thundershowers would occur at many places over and Lakshadweep during next 24 hours and at a few places thereafter.
- Rain/thundershowers would occur at a few places over West Rajasthan and at isolated places over Jammu & Kashmir and Konkan & Goa during the period.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and over Gujarat region during next 48 hours and at isolated places thereafter.
- Rain/thundershowers would occur at a few places over Tamil Nadu & Puducherry during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at isolated places over Coastal Karnataka during next 48 hours and over Coastal Andhra Pradesh during next 24 hours and at a few places thereafter.
- Rain/thundershowers would occur at a few places over East Rajasthan on 31st; at isolated places on 1st and dry weather would prevail thereafter.
- Rain/thundershowers would occur at isolated places over Uttarakhand on 31st; dry weather would prevail on 1st and rain/thundershowers would occur at isolated places thereafter.
- Rain/thundershowers would occur at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Sub-Himalayan West Bengal & Sikkim during next 24 hours and over West Uttar Pradesh, Haryana & Delhi, Himachal Pradesh and West Madhya Pradesh during next 48 hours and dry weather would prevail thereafter.
- Dry weather would prevail over Rayalaseema and South Interior Karnataka during next 24 hours and rain/thundershowers would occur at isolated places thereafter.
- Dry weather would prevail over Gangetic West Bengal, Odisha, Jharkhand, Bihar, East Uttar Pradesh, Punjab, East Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Marathwada, Vidarbha, Telangana and North Interior Karnataka during the period.
- Slight fall in minimum temperature by 1-2^oC over Punjab, Haryana & Delhi and Uttar Pradesh during next 1-2 days.
- Shallow fog may occur at isolated places over Punjab, Haryana & Delhi and West Uttar Pradesh.

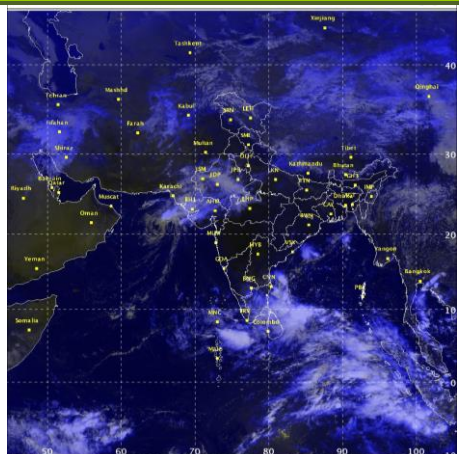
Weather Warning during next 3 days

- **31 October (Day 1):** Heavy to very heavy rainfall would occur at isolated places over Saurashtra & Kutch. Squally wind speed reaching 35-45 kmph gusting 55 kmph would prevail along and off Gujarat coast. Fishermen are advised not to venture into the sea along and off Gujarat coast.
- **01 November (Day 2):** Heavy rainfall would occur at isolated places over coastal Tamilnadu and south coastal Andhra Pradesh.
- **02 November (Day 3):** Heavy rainfall would occur at isolated places over coastal Tamilnadu, south coastal Andhra Pradesh and Kerala.

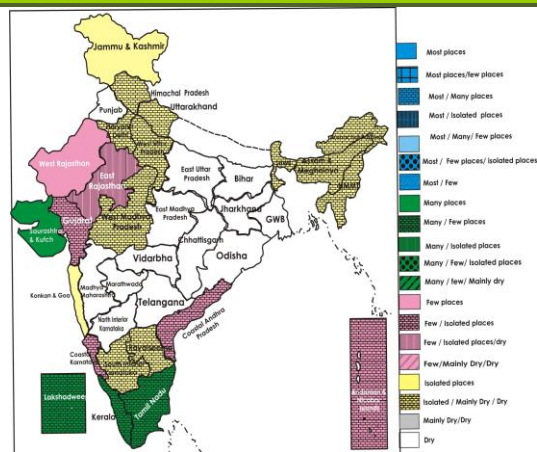
Weather Outlook for subsequent 4 days from 3rd November to 7th November 2014

- Rain/thundershower would occur at many places over south Peninsular India and Andaman & Nicobar Islands.
- Rain/thundershower would occur at a few places over Lakshadweep and at isolated places over northeastern states.
- Weather would be dry over rest of the country.
- A fresh western disturbance would effect Western Himalayan Region from 3rd November onwards.

Satellite image dated, 31.10.2014, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 3rd November 2014)



Other Salient Advisories

- As rain/thundershowers would occur at many places over Tamilnadu on 2nd November along with isolated heavy rainfall over Coastal Tamil Nadu on 1st & 2nd November, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crop fields to remove excess water in Coastal **Tamil Nadu**.
- If rice crop is damaged (20%) due to flooding in the Western Zone of **Tamil Nadu**, drain out the water and spray 1% KCL after receding of flood water. If the crop is fully lost, undertake raising of short duration rice or pulse crop.
- Continue sowing of mustard, linseed and field pea, land preparation for sowing of *rabi* vegetables, in Kymore Plateau and Satpura Hill Zone and undertake sowing of mustard, green pea, gram and planting of potato in Gird Zone of **Madhya Pradesh**.
- Continue land preparation and sowing of *rabi* crops like toria, green pea, mustard, gram, linseed etc. and planting of early potato in North Hill Zone of **Chhattisgarh**.
- Continue sowing of early wheat, planting of potato and sowing of early varieties of pea and onion in Lower and Mid Hills regions of Sub-Montane and Low Hills Sub-Humid Tropical Zone of **Himachal Pradesh**
- In Undulating Plain Zone of Punjab, undertake sowing of long duration wheat, lentil and continue sowing of gram.
- In Sub Montane Undulating Zone of **Punjab**, undertake sowing of wheat, gram, lentil, oilseeds and linseed.
- In Western Zone of **Haryana**, prepare the fields for sowing of mustard and gram. As dry weather would prevail, harvest matured guar, bajra and continue the picking of matured cotton bolls of early sown cotton.
- In **Maharashtra**, continue sowing of *rabi* safflower, wheat, irrigated gram and planting of pre-seasonal sugarcane in Madhya Maharashtra, prepare the field for sowing of *rabi* safflower, irrigated gram and wheat in Marathwada and continue sowing of safflower and rainfed gram in Vidrabha.

Detailed Zonewise Agromet Advisories

SOUTH INDIA [TAMIL NADU, TELANGANA, ANDHRA PRADESH, KARNATAKA, KERALA]



Rice



Sugarcane



Cotton



Soybean

- **Realised Rainfall:** Rain/thundershowers occurred in all districts of Tamil Nadu and Kerala; all districts of Coastal and South Interior Karnataka; all districts of North Interior Karnataka except Bidar and Gulbarga; all districts of Andhra Pradesh except East Godavari, Srikakulam and Vishakapatnam; Khammam, Mahbubnagar and Nalgonda districts of Telangana. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Kerala on 31st; at a few places on 1st and at many places thereafter. Rain/thundershowers would occur at isolated places over Coastal Karnataka during next 48 hours and over Coastal Andhra Pradesh during next 24 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Tamil Nadu & Puducherry during next 48 hours and at many places thereafter. Dry weather would prevail over Rayalaseema and South Interior Karnataka during next 24 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over Telangana and North Interior Karnataka during the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over coastal Tamilnadu and south coastal Andhra Pradesh on 1st and 2nd November and over Kerala on 2nd November.
- **Weather Outlook:** Rain/thundershower would occur at many places over south Peninsular India.
- **Advisories:**
 - **Andhra Pradesh**
 - As rain/thundershowers would occur at a few places over Coastal Andhra Pradesh on 2nd & 3rd November along with isolated heavy falls over south coastal Andhra Pradesh on 1st & 2nd November, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crop fields to remove excess water in south coastal Andhra Pradesh.
 - Continue sowing of *rabi* groundnut and Bengal gram in Scarce Rainfall Zone of Rayalaseema. Due to the prevailing humid weather, sucking pest incidence in cotton is observed in some parts of Anantapuram district in Scarce Rainfall Zone of Rayalaseema which is likely to continue. For control, Monochrotophos /Methyl dematon+ water @ 1:4 ratio may be applied on the stem with brush at 20,40,60 DAS .
 - **Telangana:**
 - Undertake sowing of maize, groundnut and sunflower in Southern Telangana.
 - Due to heavy rains, nutrient deficiency symptoms are observed in tuber crops in Southern Telangana Zone. To control, undertake top dressing with 16 kg Nitrogen & 16 kg Potash fertilizer per acre.
 - **Karnataka:**
 - Continue land preparation and sowing of wheat and sowing of *rabi* crops like sunflower, safflower, horse gram (PHG-9), sesame, cowpea, chickpea, and maize in the North Dry Zone of Karnataka.
 - Continue sowing of *rabi* sunflower in Central Dry Zone; maize, sorghum, Bengal gram and sunflower in North East Dry Zone and wheat, sorghum and Bengal gram in North East Transition Zone of Karnataka utilizing the realized rainfall.
 - Cloudy weather and light rainfall is congenial for incidences of tikka disease and pod borer in groundnut in the Eastern Dry Zone of Karnataka. Spray Carbendiazim @ 0.5g/litre of water to control tikka and Methomyl or Indoxicarb @ 2.0 ml/litre of water to control pod borer.
 - In the Southern Dry Zone of Karnataka, blast disease has been noticed in rice due to wet and humid conditions. To manage the disease, remove the weed hosts around the field and spray Carbendazim @ 1g/ litre of water or Tricyclozoal @0.6 g/litre of water.
 - **Kerala:**
 - As rain/thundershowers would occur at many places in Kerala on 31st October & 2nd November along with isolated heavy falls on 2nd November, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crop fields to remove excess water.
 - Undertake planting of banana, sowing of vegetables and fodder grass as intercrops in coconut gardens in the Southern Zone of Kerala.

- Due to prevailing humid and wet weather Foot rot and Pollu disease is observed in pepper in the Problem Area Zone of Kerala. Drench the basal portion of the vines with 2% pseudomonas solution followed by application of trichoderma enriched cowdung+ neem cake @1kg /vine as a control measure for foot rot and spray Mancozeb 3g/litre of water to control Pollu disease after current spells of rain.
- High relative humidity is congenial for the incidence of bud rot disease in coconut in the Central Zone of Kerala. Spray 1% Bordeaux mixture with gum on the crown, remove the affected parts and apply 1% Bordeaux paste to control the incidence after current spells of rain.
- Prevailing humid and wet weather conditions are congenial for the incidences of sheath blight and sheath rot in rice in the Southern Zone of Kerala. Spray Bavistin 200 g/litre of water or Propiconazol 150 ml/ 200 litre of water after current spells of rain.
- **Tamil Nadu:**
- As rain/thundershowers would occur at many places over Tamilnadu on 2nd November along with isolated heavy falls over Coastal Tamil Nadu on 1st & 2nd November, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crop fields to remove excess water in Coastal Tamil Nadu.
- Continue transplanting of *thaladi* rice in the Cauvery Delta Zone of Tamil Nadu .
- If paddy crops are damaged (20%) due to flooding in the Western Zone of Tamil Nadu, drain the water and spray 1% KCL. Undertake raising of short duration rice or pulse crop, if the crop is totally lost.
- Wet weather and frequent drizzling is congenial for downy mildew incidence in grapes in the Western Zone of Tamil Nadu. Spray 1% Bordeaux mixture if noticed. Also high relative humidity and minimum temperature is congenial for leaf folder incidence in rice crop. Spray Phasalone @.5ml or Dichlorvos @ 2ml /liter of the water, if the incidence is severe. Apply the chemicals after current spells of rain.
- Leaf spot in black gram and green gram is observed in the South Zone of Tamil Nadu due to prevailing high cloud cover and humidity. Spray Carbendazim @ 1 g/ litre of water or Mancozeb 2 g/ litre of water to control leaf spot after current spells of rain.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- Avoid feeding of wetted concentrates to the animals to avoid diahorrea and water stagnation must be avoided in cattle and poultry sheds to avoid mosquito breeding in the Western Zone of Tamil Nadu.

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



Rice



Okra



Cole Crops (Nursery)



Green Gram

- **Realised Rainfall:** Rainfall occurred in Jorhat district of Assam; Ribhoi district of Meghalaya; Serchhip district of Mizoram and Dhalai district of Tripura. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 24 hours and dry weather would prevail thereafter.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershower would occur at isolated places over northeastern states.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Lower Bramhaputra Valley Zone and North Bank Plain Zone of Assam, continue sowing of rapeseed/ mustard and nursery sowing of winter tomato and planting of potato.
 - In Hill Zone of Assam, continue nursery raising of winter vegetables. Continue land preparation and sowing of black gram and green gram.
 - In Barak Valley Zone and Upper Bramhaputra Valley Zone of Assam, continue land preparation for sowing of rapeseed and mustard and planting of potato.
 - In Central Bramhaputra Valley Zone of Assam, continue transplanting of cole crops, land preparation and sowing of *rabi* pulses like lentil, rajmah, pea, lathyrus and oilseeds, land preparation for sowing of wheat and planting of potato.
 - In Meghalaya, drain out water from the fields of *Kharif* rice which is at maturity stage and undertake harvesting if 80 % of the spikelets are turned yellow. Continue harvesting of groundnut. Land preparation and sowing of

- peas, mustard/rapeseed and planting of potato may be continued.
- In Arunachal Pradesh, drain out water from the fields of normal transplanted *kharif* rice 7-10 days before harvesting to hasten maturity.
- In the prevailing hot weather condition, there is chance of attack of rice blast and stem borer in *Sali* rice in Hill Zone of Assam. Spray Hinosan @ 1ml /litre of water against rice blast and spray Chloropyriphos (20%) @ 2 ml/litre against stem borer. Also for control of shoot borer in turmeric and ginger, spray Rogor @ 0.05%.
- In Manipur, continue harvesting of groundnut, black gram and matured *kharif* rice. Continue sowing of rapeseed/ mustard and land preparation and planting of potato.
- In Mizoram, continue sowing of pea, mustard and toria.
- In Mild Tropical Plain Zone of Tripura, continue harvesting of *aman* rice, land preparation for sowing of *rabi* maize and sesame , nursery sowing of winter vegetables and planting of potato . Apply mulching in early cauliflower, brinjal and radish.
- In Nagaland, continue nursery sowing of winter vegetables. Continue land preparation for toria and harvesting of matured *jhum* rice and soybean.
- In Mizoram, weather is congenial for attack of stem borer, gundhi bug and leaf blast in rice, spray Monocrotophos @ 20 ml/10 litres water or Imidacloprid @ 20 ml/10 litres of water against stem borer. Spray Monocrotophos 36 WSC @ 1.5 ml/litre of water against gundhi bug. Spray Triclozole (Beam) @ 0.5 g/litre against leaf blast.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- In Meghalaya, provide poultry birds (day old to 25 days old) artificial heating through lighting of electric bulb to protect from low temperature.
- In Tripura, present weather condition is favourable for infestation of round worm, flukes and tapeworms in pigs. De-worming may be done under recommendation and supervision of authorized practitioner.

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



Sugarcane

Groundnut

Onion

Rice

- **Realised Rainfall:** Rainfall occurred in Ramgarh district of Jharkhand; Lakhisarai district of Bihar; North & Middle Andaman and South Andaman districts of Andaman & Nicobar Islands. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Sub-Himalayan West Bengal & Sikkim during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over Gangetic West Bengal, Odisha, Jharkhand and Bihar during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershower would occur at many places over Andaman & Nicobar Islands. Weather would be dry over rest of the region.
- **Advisories:**
 - **West Bengal:**
 - Undertake field preparation for sowing of wheat and planting of Potato in Laterite and Red Soil Zone of West Bengal. Continue land preparation for nursery sowing of winter vegetables.
 - In New Alluvial Zone, undertake land preparation for sowing of mustard and nursery sowing of winter vegetables.
 - In Coastal Saline Zone, continue transplanting of cabbage, cauliflower, tomato and planting of potato. Also prepare land for sowing of early mustard variety like agrani, panchali.
 - In Old Alluvial Zone, continue nursery sowing/ sowing of winter vegetables like radish, broccoli. Continue land preparation for sowing of mustard and harvesting of matured *aman* rice.
 - In Terai Zone, continue transplanting of early cabbage, cauliflower. Continue land preparation for planting of potato, nursery sowing of chilli, tomato, radish and broccoli.
 - Due hot and humid weather, there is a chance of attack of stem borer in *aman* rice in New Alluvial Zone. Spray Carbosulfan 25 EC @ 2 ml / litre or Profenphos 40% + Cypermethrin 4% @ 1 ml / litre of water against stem

borer.

- In Terai Zone, due to hot and humid weather, there is chance of attack of neck blast in *aman* rice, spray Carbendazim @ 1 g /litre of water.
- **Andaman and Nicobar**
- In North and Middle Andaman, undertake harvesting of matured rice and dry the seeds to safe moisture level of 10 % after threshing.
- In Nicobar, undertake intercultural operations in vegetables on a non rainy day.
- **Odisha:**
- Continue sowing of mustard, sunflower and sesame, nursery sowing of onion and transplanting of cole crops in East and South Eastern Coastal Plain Zone of Odisha.
- In North Central Plateau Zone of Odisha, undertake land preparation and sowing of wheat.
- In East and South Eastern Coastal Plain Zone of Odisha, present weather is optimum for sowing of rainfed groundnut in river banks, green pea and mustard. Also undertake nursery raising of onion and sowing of sunflower under irrigated condition.
- In North Eastern Coastal Plain Zone of Odisha, due to high humid weather, there is chance of blast and Sheath rot/blight in rice. To manage blast, apply Tricyclazole @ 0.5 g/litre of water or Kasugamycin @ 1.5 g/litre of water. For control of Sheath rot/blight, alternate application of Hexaconazole @ 400 ml/acre and Thiophanate methyl @ 300 g/acre at two weeks interval is advised.
- In North Eastern Plateau Zone of Odisha, due to cloudy and high humid weather, there is chance of Tikka leaf spot in groundnut. To control, spray Mancozeb @ 2.5 g per liter of water.
- Prevailing humidity and temperature are conducive for incidence of leaf roller and case worm in rice in East and South Eastern Coastal Plain Zone of Odisha. To control, spray Triozophos or Fipronil or Hostathion @ 200 ml in 200 litres of water per acre.
- In Western Undulating Zone of Odisha, bacterial leaf blight has been observed in rice and likely to spread in the present weather. Spray Streptocycline @0.1g + Carbendazim @ 2g in one litre of water with mixing sticker @ 0.5ml/litre of water. Spray 200 litres of pesticide solution per acre preferably during morning hours.
- **Bihar:**
- In North West Alluvial Plain Zone of Bihar, continue field preparation for sowing of *rabi* crops like maize, wheat, gram and planting of potato. Continue land preparation in the upland areas for sowing of rapeseed. Continue sowing of rai and coriander. Continue sowing of pea, sunflower, garlic and lentil. Continue harvesting of matured rice.
- In North East Alluvial Zone of Bihar, undertake sowing of lentil, peas, rai and transplanting of mature seedlings of cauliflower, cabbage, broccoli and tomato in raised bed. Undertake harvesting of matured rice.
- Due to prevailing humid weather condition, there is chance of attack of gundhi bug in rice in North West Alluvial Plain Zone and South Bihar Alluvial Zone, apply Folidol dust @ 10-15 kg per hectare in the early morning.
- **Jharkhand:**
- In Western Plateau Zone of Jharkhand, continue land preparation for sowing of different *rabi* crops like gram, lentil, linseed etc. Also continue sowing of rapeseed, mustard and rainfed wheat. Continue planting of early potato and sowing of green peas. Continue harvesting of already matured rice.
- In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of toria, mustard, green pea and potato.
- In South Eastern Plateau Zone of Jharkhand, continue land preparation/sowing of chick pea. Undertake nursery raising of onion. After harvesting of rice, undertake sowing of rainfed wheat.
- Due to humid weather, there are chances of infestation beetles in pigeon pea in South Eastern Plateau Zone of Jharkhand, spray Chlorpyrifos @ 1.5 ml per liter of water for control.
- Suitable varieties are given in Annexure II.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane



Rice



Okra



Onion

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over West Madhya Pradesh during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over East Madhya Pradesh and

Chhattisgarh during the period.

- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - Undertake land preparation and sowing of mustard, green pea, gram and planting of potato in Gird Zone of Madhya Pradesh.
 - Undertake land preparation for sowing of wheat, gram and planting of winter sugarcane in Vindhya Plateau Zone of Madhya Pradesh.
 - Continue sowing of vegetable pea (cv. Arkel) and field preparation for planting of potato in Kymore Plateau and Satpura Hill Zone and Malwa plateau Zone.
 - Continue harvesting of soybean in Nimar Valley Zone and in Malwa plateau Zone.
 - Continue harvesting of matured soybean, green gram, black gram, groundnut and maize in Jhabua Hills Zone. Continue land preparation for sowing of mustard, gram and wheat and keep inputs ready. Continue nursery sowing of early winter vegetables (tomato, chilli, brinjal, cauliflower, cabbage, capsicum), sowing of early green pea and planting of early potato. Apply irrigation in cotton at flowering/boll formation stage under moisture stress condition.
 - Due to cloudy weather there are chances of attack of sucking pest in vegetables in Vindhya Plateau Zone of Madhya Pradesh, spray Imidacloprid or Thiamethoxam @ 0.35 g per litre of water.
 - **Chhattisgarh:**
 - Continue harvesting of matured rice in Chhattisgarh Plain Zone, North Hill Zone and keep it in the field for proper sun drying for 1-2 days.
 - Continue land preparation and sowing of *rabi* crops like toria, green pea, mustard, gram, linseed etc. and planting of early potato in North Hill Zone and Chhattisgarh Plain Zone utilising the available soil moisture.
 - Undertake nursery sowing of cauliflower, tomato, brinjal, chilli etc. in Chhattisgarh Plain Zone.
 - Undertake land preparation for sowing of toria, green pea and linseed in Bastar Plateau Zone.
 - Suitable varieties are given in Annexure II.

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



Rice



Sugarcane



Bottle Gourd



Onion

- **Realised Rainfall:** Rainfall occurred in Uttarkashi district of Uttarakhand. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over West Rajasthan and at isolated places over Jammu & Kashmir during the period. Rain/thundershowers would occur at isolated places over Uttarakhand on 31st; dry weather would prevail on 1st and rain/thundershowers would occur at isolated places thereafter. Rain/thundershowers would occur at a few places over East Rajasthan on 31st; at isolated places on 1st and dry weather would prevail thereafter. Rain/thundershowers would occur at isolated places over West Uttar Pradesh, Haryana & Delhi and Himachal Pradesh during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over East Uttar Pradesh and Punjab during the period. Slight fall in minimum temperature by 1-2^oC over Punjab, Haryana & Delhi and Uttar Pradesh during next 1-2 days. Shallow fog may occur at isolated places over Punjab, Haryana & Delhi and West Uttar Pradesh.
- **Weather Warning:** Nil.
- **Weather Outlook:** A fresh western disturbance would effect Western Himalayan Region from 3rd November onwards. Weather would be dry over the region.
- **Advisories:**
 - **Jammu & Kashmir:**
 - Undertake land preparation for sowing of oat and continue sowing of wheat, barley, toria, mustard, pea, gram, lentil, vegetables viz. (cauliflower, cabbage, radish and knoll khol) in Intermediate Zone of Jammu & Kashmir.
 - In Sub-Tropical Zone of Jammu & Kashmir, undertake land preparation for sowing of wheat, mustard, toria, ghobi sarson, pulses viz. chickpea, pea and lentil, direct sowing of vegetable crops like radish, spinach, peas,

methi, coriander, turnip and planting of potato and garlic. Continue transplanting of knolkhol, broccoli, cabbage & cauliflower.

- Undertake land preparation for sowing of vegetables viz. peas, spinach and methi and planting of garlic in Valley Temperate Zone of Jammu & Kashmir.

- **Himachal Pradesh:**

- Continue sowing of early wheat, planting of potato and sowing of early varieties of pea and onion in Lower and Mid Hills regions of Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Continue sowing of radish, turnip, carrot and fenugreek and transplanting of cabbage, cauliflower and broccoli. Continue sowing of gobhi sarson, linseed and sowing of berseem, lucerne and oats as fodder crops during *rabi* season. Continue sowing of barley in high altitude areas.
- Complete sowing of radish, turnip and spinach in Mid Hills Sub-Humid Zone of Himachal Pradesh. Continue nursery preparation for sowing of late season cauliflower (Pusa-snowball) and cabbage with available soil moisture.
- Under prevailing humid weather condition, there are chances of attack of cut worm in cauliflower in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Apply Chloropyriphos 20 EC @ 80ml in 1kg sand in the fields.
- Under prevailing humid weather condition, there are chances of attack of canker in apple in Mid Hills Sub Humid Zone of Himachal Pradesh. Spray Carbendazim or Copper Oxy Chloride @ 600g per 200 litres of water.

- **Uttarakhand:**

- Continue land preparation for sowing of wheat and planting of potato in Hill Zone. Continue transplanting of onion and sowing of garlic, mustard, palak, methi, radish, early toria, pea.
- After harvesting of matured rice and soybean, undertake land preparation and sowing of wheat and continue sowing of mustard and planting of autumn sugarcane in Bhabar and Tarai Zone of Uttarakhand. Also continue sowing of vegetables viz. pea, coriander, spinach and radish.
- Undertake sowing of mustard, chickpea, pea, nursery sowing of vegetables like brinjal, tomato and planting of potato. Complete harvesting of rice, *kharif* maize and pulses like urad /moong and continue field preparation for planting of winter sugarcane in Sub Humid Sub Tropical Zone of Uttarakhand.

- **Punjab, Haryana and Delhi:**

- In Western Undulating Zone of Punjab, continue nursery sowing of mid-season cauliflower, desi varieties of radish, carrot under irrigation and turnip and planting of mango, litchi and apply irrigation in rice, cotton and maize.
- In Central Plain Zone of Punjab, continue sowing of desi varieties of carrot, radish and turnip crops and undertake transplanting of tomato under irrigation. Continue planting of potato and nursery sowing of cauliflower. Continue harvesting of matured maize and groundnut in Ludhiana district. Continue planting of early maturing autumn sugarcane.
- In Undulating Plain Zone of Punjab, undertake sowing of long duration wheat, lentil and continue sowing of gram.
- In Western Zone of Punjab, complete harvesting of rice. Undertake sowing of raya, gobhi sarson, *rabi* onion, carrot, tomato. Prepare the field for planting of potato.
- In Western Zone of Haryana, prepare the fields for sowing of mustard and gram and arrange the certified seeds for mustard and gram. As dry weather would prevail, harvest matured guar, bajra and continue the picking of matured cotton bolls of early sown cotton.
- Present weather is favourable for attack of top borer in sugarcane in Western Zone of Haryana, apply Carbofuran 3G @13 kg or Phorate 10G @ 8 kg in furrows and apply light irrigation.
- In Delhi, continue transplanting of onion seedlings and planting of early potato, winter sugarcane. Continue land preparation for sowing of early mustard, pea and early toria and sowing of radish, spinach, sarson, *rabi* onion, carrot and coriander. Complete the harvesting of rice.

- **Uttar Pradesh:**

- Continue harvesting of early varieties of rice in Eastern Plain Zone and Central Plain Zone of Uttar Pradesh. Maintain 5cm water level in rice at grain formation stage.
- Undertake planting of potato and sowing of Lahi, lentil, linseed and berseem with available soil moisture in Allahabad, Fatehpur, Pratapgrah, Chitrakut and Kaushambi districts of Central Plain Zone of Uttar Pradesh.
- As dry weather would prevail, apply irrigation in late sown rice in Central Plain Zone of Uttar Pradesh. Undertake planting of potato and sowing of rapeseed, gram, peas and maize with available soil moisture.
- Continue sowing of gram, peas, lentil, rapeseed and mustard and planting of potato with available soil moisture in Basti, Faizabad, Sant Kabir Nagar and Gorakhpur districts of Eastern Plain Zone of Uttar Pradesh.
- Undertake land preparation for sowing of garlic, coriander and fenugreek in Eastern Plain Zone of Uttar Pradesh.
- Continue sowing of taramira, alsii, berseem and planting of sugarcane and potato in Western Plain Zone of Uttar Pradesh with available moisture.
- Undertake sowing of peas, lentil, gram, mustard and rapeseed in Jhansi district of Bundelkhand Zone of Uttar Pradesh. Keep the inputs ready for sowing of drought resistant varieties of wheat.
- Under prevailing hot weather condition, there are chances of attack of army bug in rice in Central Plain Zone of Uttar Pradesh. For control, spray Chlopyriphos 20 EC or Quinolphos 25Ec @ 1.5 ml per 400-600 litres of water.

▪ **Rajasthan:**

- Undertake sowing of lentil and continue land preparation and sowing of mustard, barley, nurse sowing of cauliflower, cabbage and planting of potato in Flood Prone Eastern Plain Zone of Rajasthan.
- Undertake land preparation and sowing of wheat, lentil, gram in South eastern Humid Plain Zone of Rajasthan
- Continue land preparation and sowing of lucerne, taramira, methi and mustard in Transitional Plain Zone of Inland Drainage of Rajasthan.
- Undertake field preparation for the sowing of wheat and barley and complete sowing of mustard and gram. Continue nursery sowing of cauliflower and radish and rainfed taramira, toria in Semi Arid Eastern Plain Zone of Rajasthan.
- Continue sowing of cummin, rapeseed (sarson) in Arid Western Plain Zone (Jodhpur) of Rajasthan.
- Continue land preparation and sowing of rapeseed, gram, linseed in irrigated North Western Plain Zone of Rajasthan.
- In Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, continue sowing of wheat gram and mustard and continue harvesting of maize and sorghum.
- Present weather is congenial for attack of mealy bug on mango, guava and pomegranate trees in Semi Arid Eastern Plain Zone of Rajasthan. To control, mix Quinalphos @ 1.5 % and Methyl Parathion 2% dust @ 50-100 g per tree pit in soil at a depth of 10-25 cm on a non rainy day.
- Suitable varieties are given in Annexure II.

• **Floriculture**

- Undertake nursery raising of winter flowers in poly houses in Sub Montane and Low Hills Sub-Tropical; Zone of Himachal Pradesh. For the control of blue beetle in roses and balsam, spray Cypermythrin @0.05%. Present weather is conducive for attack of mites in carnation. For control, spray Cypermythrin @0.05% at 15 days interval.

• **Animal Husbandry:**

- Under prevailing humid weather condition, there are chances of attack of ticks and mites on animals in Sub Montane and Low Hills Sub-Tropical; Zone of Himachal Pradesh and Intermediate Zone of Jammu & Kashmir. For control spray Butox @ 2.0 ml per litre of water. Clean the cowshed with phenyl and keep the animal sheds dry and clean.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Rice

Sugarcane

Cotton

Soybean

- **Realised Rainfall:** Rainfall occurred in North Goa, Sindhudurg and South Goa districts of Konkan & Goa, Kolhapur district of Madhya Maharashtra. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Saurashtra & Kutch and at isolated places over Konkan & Goa during the period. Rain/thundershowers would occur at a few places over Gujarat Region during next 48 hours and at isolated places thereafter. Dry weather would prevail over Madhya Maharashtra, Marathwada and Vidarbha during the period.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Saurashtra & Kutch on 31st. Squally wind speed reaching 35-45kmph gusting 55 kmph would prevail along and off Gujarat coast on 31st. Fishermen are advised not to venture into the sea along and off Gujarat coast on 31st October.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, complete harvesting of already matured mid late and late maturing rice variety and matured finger millet during morning hours. Continue nursery sowing of brinjal, chilli, cabbage and knol khol on raised beds.
 - In Madhya Maharashtra, maintain water level upto 8 cm in rice fields in grain formation stage. Apply irrigation to sugarcane, vegetables and grapes, banana and pomegranate orchards and early sown *rabi* jowar. Complete harvesting of already matured soybean and groundnut. Complete harvesting of matured rice in Kolhapur region and start harvesting of matured rice in Western ghat region and Western parts of Pune district. Undertake intercultural operations like weeding and fertilizer application in sugarcane, vegetables, early sown *rabi* jowar and orchards. Utilizing available soil moisture, continue sowing of *rabi* safflower and wheat. Also continue sowing of irrigated gram and planting of pre-seasonal sugarcane.
 - In Marathwada, apply irrigation to sugarcane and vegetables. Undertake intercultural operation like weeding and

fertilizer application to sugarcane, early sown *rabi* jowar and vegetables. Prepare field for sowing of *rabi* safflower, irrigated gram and wheat. Complete harvesting of already matured soybean and sunflower. Start picking fully opened cotton boll (irrigated and early sown) during morning hours.

- In Vidarbha, as dry weather is prevailing, apply irrigation in vegetables and orange, sweet lime orchards. Apply fertilizers and undertake intercultural operations in vegetables. Maintain water level up to 8 cm in rice fields in East Vidarbha. Prepare the field and continue sowing of safflower and *rainfed* gram with the help of available soil moisture. Soybean is at maturity stage, complete harvesting of matured crop and prepare harvested field and undertake sowing of safflower and gram. Continue harvesting of early maturing rice crop in East Vidarbha.
- Humid weather in Pune region is congenial for infestation of downy mildew in grapes; spray Metalaxyl 8% +Mancozeb 64% @ 20 g per 10 litres water and repeat same after 10 to 12 days interval.
- Due to partly cloudy weather, there may be attack of Heliothis (green boll worm) in Vidarbha, spray HANPV 250 LE per ha in 10 litres of water. If attack exceeds ETL, spray Spinosad 45 SC 2.22 mm per 10 litres of water.
- Due to light rain and humid weather in Sub Montane Zone of South Madhya Maharashtra there may be attack of white woolly aphids in sugarcane; remove dried leaves and use Thimata @4 kg per acre.

▪ Gujarat

- Under the influence of the well marked low pressure area over northeast Arabian Sea, rainfall would occur at many places over Saurashtra & Kutch on 31st October. Squally wind speed reaching 35- 45 kmph gusting 55 kmph would prevail along and off Gujarat coast on 31st October.

In view of the well marked low, following agromet advisories are suggested:

- Postpone harvesting of groundnut in North Gujarat Zone and North West Zone, harvesting of matured pearl millet, groundnut and picking of cotton in North Saurashtra Zone, harvesting and threshing of rice and pearl millet and picking of cotton in Middle Gujarat Zone, harvesting of matured rice South Gujarat Heavy Rainfall Zone, harvesting of matured rice, groundnut and fruits in Bhal and Coastal Zone and harvesting of groundnut in South Saurashtra Zone. Keep already harvested produce at safer places.
 - Postpone sowing of mustard, gram and fennel in North Gujarat Zone, sowing of mustard and fennel in North West Zone, sowing of wheat, gram, mustard and fennel in Bhal and Coastal Zone, sowing of mustard, gram, peas, carrot and garlic in North Saurashtra Zone, sowing of *rabi* crops in South Saurashtra Zone and sowing of chickpea, sweet corn and planting of sugarcane in South Gujarat Heavy Rainfall Zone and South Gujarat Zone.
 - Undertake propping in sugarcane in South Gujarat Heavy Rainfall Zone, South Gujarat Zone and provide mechanical support to young fruit plants to prevent lodging due to high winds in South Gujarat Heavy Rainfall Zone, South Gujarat Zone and North West Zone.
 - Postpone harvesting and threshing of rice and pearl millet and picking of cotton in Middle Gujarat Zone, harvesting of matured rice in South Gujarat Heavy Rainfall Zone, harvesting of matured rice, groundnut and fruits in Bhal and Coastal Zone.
 - Arrange drainage facilities in standing crop fields in Saurashtra & Kutch.
- Suitable varieties are given in Annexure II.
 - **Animal Husbandry**
 - In Saurashtra & Kutch, keep animals indoor during heavy rainfall period and keep fodder at safer places to avoid spoilage due to heavy rainfall and high wind speed.

Districtwise realised rainfall and % departure for past three weeks is given below in Annexure I.

Annexure I

Week by week Rainfall Distribution

Sub-Divisions	15.10.14		22.10.14		29.10.14	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Tamil Nadu						
Ariyalur	30.5	-5	108.1	106	31.7	-31
Chennai	4.9	-84	288.8	238	89.4	15
Coimbatore	29.4	-9	88.3	123	106.9	143
Cuddalore	12.3	-69	237.3	282	56.3	-7
Dharmapuri	24.3	-40	27.8	-32	125.2	258
Dindigul	25.5	-38	161.2	215	112.0	153
Erode	25.3	-21	76.7	91	187.5	392
Kanchipuram	2.2	-93	132.5	97	51.7	-24
Kanyakumari	27.8	-39	123.6	78	57.8	6

Karikal	6.6	-84	347.1	439	75.1	-30
Karur	6.2	-81	78.8	102	98.7	229
Krishnagiri	23.5	-38	37.6	-2	95.9	206
Madurai	27.7	-37	42.0	-29	63.4	38
Nagapattinam	29.0	-13	336.6	344	86.5	15
Namakkal	6.6	-82	40.9	2	85.1	168
Nilgiris	50.5	12	153.6	185	101.9	80
Perambalur	19.7	-57	57.0	11	106.6	157
Puducherry	21.4	-44	261.7	301	89.5	-10
Pudukottai	42.9	29	65.6	54	44.7	21
Ramanathapuram	21.8	-38	183.1	234	53.6	5
Salem	27.1	-38	61.8	32	86.9	118
Sivaganga	34.2	-21	116.6	138	62.7	29
Thanjavur	38.2	22	130.7	153	42.2	-16
Theni	32.7	-13	92.5	99	109.8	141
Tirunelveli	25.4	-15	246.0	389	73.8	65
Tirupur	24.5	-22	94.7	140	142.1	285
Tiruvallur	2.5	-92	138.1	143	67.2	16
Tiruvannamalai	9.7	-76	37.3	-26	40.8	-6
Tiruvarur	24.5	-25	238.1	291	43.8	-24
Toothukudi	17.5	-43	208.9	322	50.1	21
Trichy	7.7	-80	61.4	39	53.4	46
Vellore	15.7	-55	30.7	-18	43.2	34
Villupuram	5.2	-84	104.5	107	69.8	49
Virudhunagar	4.6	-88	35.2	-34	55.5	22
Kerala						
Alappuzha	38.6	-49	119.3	60	73.9	-2
Kannur	35.7	-33	103.3	117	92.0	84
Ernakulam	51.8	-26	139.5	120	123.0	77
Idukki	65.2	-20	90.7	2	161.8	143
Kasaragod	80.0	39	110.7	169	97.0	83
Kollam	46.4	-47	116.1	33	73.2	-10
Kottayam	70.5	-7	154.1	133	117.1	60
Kozhikode	106.1	73	117.4	132	82.8	25
Malappuram	65.3	-10	107.9	48	89.5	56
Palakkad	69.0	14	65.0	3	74.3	25
Pathanamthitta	55.8	-32	138.0	61	78.6	-14
Thiruvananthapuram	29.2	-53	138.5	90	36.9	-42
Thrissur	106.8	60	100.0	49	99.2	54
Wynad	40.4	-14	62.5	29	87.3	64
Karnataka						
Coastal Karnataka						
Dakshin Kannada	33.5	-36	72.7	52	86.8	79
Udupi	35.7	-20	50.9	22	105.0	140
Uttar Kannada	28.7	-17	3.7	-86	76.0	176

N I Karnataka						
Bagalkote	16.6	-31	1.2	-94	50.1	137
Belgaum	13.3	-43	5.2	-78	64.5	223
Bidar	12.1	-38	1.4	-91	10.6	-44
Bijapur	3.5	-85	0.1	-99	34.5	55
Dharwad	18.7	-33	4.4	-84	47.0	149
Gadag	12.3	-55	1.8	-93	21.9	15
Gulbarga	4.0	-79	1.2	-92	17.7	-15
Haveri	24.7	-21	0.5	-98	61.0	211
Koppal	3.2	-87	6.1	-65	81.3	299
Raichur	0.4	-98	1.4	-92	37.8	122
Yadgir	3.2	-87	0.4	-98	37.2	19
S I Karnataka						
Bangalore Rural	53.2	35	18.7	-38	103.2	300
Bangalore Urban	74.2	117	26.9	-12	82.2	246
Bellary	12.3	-50	3.6	-82	75.4	223
Chamarajnaragar	21.2	-36	21.6	-37	91.4	171
Chichballapur	6.4	-83	17.8	-33	50.1	113
Chickmagalur	15.8	-57	14.7	-58	71.5	114
Chitradurga	22.8	-16	3.7	-81	112.9	468
Davangere	48.5	61	1.6	-93	62.1	197
Hassan	25.3	-27	29.5	-6	50.5	51
Kodagu	16.0	-67	19.1	-54	28.9	-28
Kolar	19.7	-44	8.4	-67	61.3	148
Mandya	40.6	12	27.1	-10	59.4	109
Mysore	45.0	20	32.2	0	42.7	33
Ramnagara	43.2	5	23.5	-28	68.6	139
Shimoga	17.4	-46	2.0	-92	62.1	138
Tumkur	17.4	-45	17.0	-31	92.7	243
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	46.0	9	11.7	-77	9.5	-72
Guntur	2.2	-91	7.0	-82	128.1	351
Krishna	3.1	-91	21.3	-54	61.3	120
Nellore	8.6	-74	52.6	-35	93.4	39
Prakasam	2.6	-91	19.3	-61	70.6	76
Sirkakulam	185.6	363	5.6	-89	3.5	-91
Visakhapatnam	147.3	261	15.3	-69	13.7	-60
Vizianagram	224.7	484	23.5	-55	21.8	-27
West Godavari	19.2	-57	7.8	-84	24.6	-25
Rayalaseema						
Anantapur	11.2	-54	1.5	-92	75.6	306
Chittoor	14.3	-53	41.5	7	52.0	49
Cuddapah	2.8	-88	9.1	-74	69.9	181
Kurnool	1.0	-95	6.2	-71	61.4	247

Telangana						
Adilabad	3.0	-80	2.2	-89	16.9	17
Hyderabad	3.5	-80	0.0	-100	15.6	-31
Karimnagar	4.0	-71	0.2	-99	6.9	-62
Khammam	15.1	-39	17.5	-12	50.1	227
Mehabubnagar	2.2	-87	1.4	-91	21.9	57
Medak	9.2	-37	2.1	-86	12.3	-40
Nalgonda	1.2	-95	3.6	-84	70.9	330
Nizamabad	3.9	-68	1.4	-93	8.1	-61
Rangareddy	8.9	-52	5.7	-64	18.8	8
Warangal	4.8	-71	6.6	-59	15.5	-7
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	19.2	-71	18.3	-72	4.0	-82
Dibang Valley	**	**	**	**	**	**
East Kameng	0.0	-100	0.6	-99	0.0	-100
East Siang	34.7	-1	26.7	-35	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	4.1	-87	8.5	-77	0.0	-100
Lower Dibang Valley	9.3	-78	48.6	33	0.4	-97
Lower Subansari	**	**	**	**	**	**
Papumpara	10.3	-85	22.6	-53	3.5	-59
Tawang	6.0	-91	0.0	-100	13.0	-33
Tirap	4.2	-90	9.8	-81	12.4	-8
Upper Siang	23.8	-66	45.2	-27	5.6	-85
Upper Subansari	0.0	-100	9.8	-68	0.0	-100
West Kameng	0.0	-100	14.6	-68	0.0	-100
West Siang	1.5	-95	14.0	-47	2.5	-93
Assam & Meghalaya						
Assam						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	13.0	-66	0.0	-100	0.0	-100
Bongaigaon	16.6	-68	0.0	-100	0.0	-100
Cachar	63.9	38	6.4	-80	1.0	-94
Chirang	38.0	-26	16.2	-45	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	45.0	53	0.0	-100
Dhubri	9.1	-75	0.0	-100	0.0	-100
Dibrugarh	1.1	-97	17.6	-31	0.1	-99
Goalpara	17.1	-68	0.3	-99	3.5	-71
Golghat	9.4	-70	12.1	-33	0.1	-99
Hailakandi	66.4	43	36.2	34	0.6	-93
Jorhat	5.7	-83	12.4	-39	22.9	82
Kamrup(Rural)	0.0	-100	36.0	68	0.0	-100

Kamrup(Metro)	52.9	65	1.5	-93	0.0	-100
Karbi Anglong	2.9	-88	0.0	-100	2.4	-60
Karimganj	39.7	-44	41.0	137	2.0	-93
Kokrajhar	26.7	-51	0.0	-100	0.0	-100
Lakhimpur	5.8	-85	28.2	-4	0.3	-97
Morigaon	21.8	-58	0.0	-100	1.2	-87
N.C.Hills	0.0	-100	4.3	-50	4.2	-95
Nowgong	7.9	-74	0.9	-96	1.5	-92
Nalbari	0.0	-100	13.0	-31	0.0	-100
Sonitpur	0.6	-98	7.8	-69	0.8	-94
Sibsagar	24.1	-8	32.2	105	1.3	-88
Tinsukia	23.7	-10	15.5	-53	0.0	-100
Udalgiri	7.3	-71	1.5	-90	0.5	-97
Meghalaya						
East Garo Hills	10.5	-51	9.0	-43	0.0	-100
East Khasi Hills	34.9	-53	0.3	-99	3.7	-89
Jaintia Hills	38.0	-73	0.0	-100	0.4	-91
Ribhoi	51.7	42	2.6	-93	32.9	92
South Garo Hills	17.0	-54	1.0	-94	0.0	-100
West Garo Hills	11.8	-68	0.2	-99	0.0	-100
West Khasi Hills	40.0	-50	0.0	-100	0.0	-100
NMMT						
Mizoram						
Aizwal	43.5	-25	1.1	-97	8.2	-77
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	104.0	180	58.0	93	15.0	-52
Serchhip	84.4	120	14.6	-60	35.4	89
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	38.0	-26	7.0	-71	16.0	-55
Churachandpur	**	**	**	**	**	**
Imphal east	17.7	-49	2.8	-78	6.6	-73
Imphal west	32.5	12	0.0	-100	0.1	-99
Senapati	14.0	-65	3.0	-79	9.0	-54
Tamenglong	**	**	**	**	**	**
Thoubal	26.0	33	36.0	334	11.0	-35
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	77.3	89	1.0	-93	2.4	-77
Kephire	**	**	**	**	**	**
Kohima	39.0	17	29.0	33	1.4	-93

Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	60	80	8	-63	7	-66
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	56.0	25	0.0	-100	25.0	3
North tripura	43.0	-14	3.3	-87	1.4	-94
South tripura	49.7	-8	7.6	-72	3.0	-87
West tripura	39.7	-22	25.1	8	6.4	-72
Himachal Pradesh						
Bilaspur	1.6	-71	0.0	-100	0.4	-84
Chamba	1.6	-78	2.7	-71	3.7	-44
Hamirpur	1.2	-92	0.0	-100	0.0	-100
Kangra	4.3	-63	0.1	-98	1.0	-72
Kinnaur	0.0	-100	0.7	-91	0.8	-83
Kullu	5.9	-12	2.4	-79	5.8	44
Lahaul and Spiti	0.0	-100	0.0	-100	0.0	-100
Mandi	5.0	-41	1.7	-75	2.6	-4
Shimla	9.8	3	0.0	-100	4.3	12
Sirmaur	10.3	-36	0.2	-97	0.4	-82
Solan	13.5	-16	0.0	-100	4.0	28
Una	7.1	12	0.0	-100	0.0	-100
Punjab						
Amritsar	1.6	-79	0.0	-100	0.3	-63
Barnala	6.5	44	0.0	-100	0.0	-100
Bhatinda	1.3	-65	0.0	-100	0.0	-100
Faridkot	0.0	-100	0.0	-100	0.0	-100
Fatehgarh Saheb	4.5	-13	0.0	-100	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	4.5	-53	0.0	-100	2.1	-6
Hoshiarpur	0.7	-92	0.0	-100	0.0	-100
Jalandhar	9.4	42	0.0	-100	0.1	-64
Kapurthala	16.5	90	0.0	-100	0.4	0
Ludhiana	2.3	-56	0.0	-100	0.5	0
Mansa	0.0	-100	0.0	-100	0.0	-100
Moga	0.0	-100	0.0	-100	0.0	-100
Muktesar	1.6	14	0.0	-100	0.0	-100
Nawashahar	2.5	-71	0.0	-100	0.4	-50
Patiala	7.6	36	0.0	-100	0.0	-100
Ropar	3.5	-40	0.0	-100	0.4	-64
Sangrur	9.2	67	0.0	-100	0.0	-100

Mohali	9.3	20	0.0	-100	0.0	-100
TarnTaran	4.1	-31	0.0	-100	1.0	43
Haryana, Chd, Delhi						
Haryana						
Ambala	16.0	63	0.0	-100	0.0	-100
Bhiwani	13.8	453	0.0	-100	0.2	-81
Chandigarh	10.3	40	0.0	-100	0.1	-92
Faridabad	0.3	-96	0.0	-100	0.0	-100
Fatehabad	20.7	1116	0.2	-95	0.0	-100
Gurgaon	4.3	47	0.0	-100	0.0	-100
Hissar	4.4	267	0.0	-100	0.5	-43
Jhajar	1.9	-31	0.0	-100	0.0	-100
Jind	9.4	310	0.0	-100	0.0	-100
Katihah	16.3	317	0.0	-100	0.0	-100
Karnal	33.3	266	0.0	-100	0.0	-100
Kurukshetra	8.9	33	0.0	-100	0.0	-100
Mahendragarh	8.4	146	11.4	442	4.0	-82
Mewat	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	0.0	-100
Panchkkula	5.5	-2	0.0	-100	0.0	-100
Panipat	3.7	-52	0.0	-100	0.0	-100
Rewari	0.0	-100	0.3	-84	0.0	-100
Rohtak	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.8	-60	0.0	-100	0.0	-100
Sonepat	0.1	-98	0.0	-100	0.0	-100
Yamunanagar	43.0	214	0.0	-100	0.0	-100
Delhi						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	0.0	-100	0.0	-100	0.0	-100
New Delhi	1.1	-84	0.0	-100	0.3	-50
North Delhi	0.0	-100	0.0	-100	0.3	-50
North East Delhi	0.0	-100	0.0	-100	0.0	-100
North West Delhi	0.3	-95	0.0	-100	0.0	-100
South Delhi	4.6	-33	0.0	-100	0.5	-17
South West Delhi	0.0	-100	0.0	-100	0.0	-100
West Delhi	0.0	-100	0.0	-100	0.0	-100
Jammu & Kashmir						
Anantnag	0.9	-92	0.4	-96	12.3	47
Badgam	1.0	-86	0.0	-100	6.9	-39
Bandipore	**	**	**	**	**	**
Baramula	6.2	-7	3.4	-78	11.8	23
Doda	1.4	-89	0.0	-100	2.8	-48
Ganderbal	9.4	49	3.2	-58	13.0	71
Jammu	1.7	-62	0.0	-100	0.3	-93
Kargil	**	**	**	**	**	**

Kathua	0.0	-100	0.0	-100	3.6	**
Kistwar	**	**	**	**	**	**
Kulgam	1.6	-86	1.5	-83	10.2	21
Kupwara	6.0	-55	0.8	-92	14.6	4
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100
Poonch	12.5	150	0.0	-100	11.8	219
Pulwama	0.3	-91	7.0	-11	9.9	47
Rajouri	7.1	42	0.0	-100	8.3	108
Ramban	2.7	-79	0.0	-100	7.3	35
Reasi	1.0	-93	0.0	-100	3.9	26
Samba	1.0	-78	0.0	-100	0.0	-100
Shopian	1.0	-74	2.0	-75	10.0	49
Srinagar	4.0	-36	1.6	-79	9.4	24
Udhampur	0.6	-96	0.0	-100	3.7	19
East Madhya Pradesh						
Anuppur	185.3	1539	0.0	-100	0.0	-100
Balaghat	34.0	170	0.0	-100	0.0	-95
Chhatarpur	15.6	55	0.8	-83	0.0	-100
Chindwara	11.3	-9	1.9	-59	0.0	-100
Damoh	16.2	84	2.0	-50	0.0	-100
Dindori	97.4	1102	0.0	-100	0.0	-100
Jabalpur	16.5	79	0.0	-100	0.0	-100
Katni	50.0	390	0.0	-100	0.0	-100
Mandla	58.6	486	0.0	-100	0.0	-100
Narsingpur	5.0	-37	0.0	-100	0.0	-100
Panna	37.7	550	0.0	-100	0.0	-100
Rewa	142.1	2582	0.0	-100	0.0	-100
Sagar	8.5	-14	0.5	-84	0.0	-100
Satna	81.2	1168	0.0	-100	0.0	-100
Seoni	13.3	0	9.0	95	0.0	-100
Shahdol	114.0	1627	0.0	-100	0.0	-100
Sidhi	191.2	2593	0.0	-100	0.0	-100
Singrauli	20.5	377	0.0	-100	0.0	-100
Tikamgarh	0.0	-100	0.0	-100	0.0	-100
Umaria	65.2	586	0.0	-100	0.0	-100
West Madhya Pradesh						
Alirajpur	2.3	-80	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	0.0	-100
Badwani	2.5	-84	0.0	-100	0.0	-100
Betul	3.5	-81	2.4	-54	0.0	-100
Bhind	0.3	-99	0.0	-100	0.0	-100
Bhopal	4.3	-57	8.1	88	0.0	-100
Burhanpur	0.0	-100	0.0	-100	0.0	-100
Datia	12.9	-23	0.0	-100	0.0	-100
Dewas	1.2	-90	0.0	-100	0.0	-100

Dhar	0.0	-100	0.0	-100	0.0	-100
Guna	13.6	46	0.0	-100	0.0	-100
Gwalior	0.1	-99	0.0	-100	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100
Hosangabad	8.3	-32	0.5	-87	0.0	-100
Indore	11.0	3	2.9	-44	0.0	-100
Jhabua	1.0	-92	0.0	-100	0.0	-100
Khandwa	0.0	-100	0.0	-100	0.0	-100
Khargone	0.0	-100	0.0	-100	0.0	-100
Mandsaur	0.0	-100	0.0	-100	0.0	-100
Morena	0.0	-100	0.0	-100	0.0	-100
Neemuch	1.7	-80	0.0	-100	0.0	-100
Raisen	4.2	-59	1.2	-50	0.0	-100
Rajgarh	0.0	-100	0.0	-100	0.0	-100
Ratlam	4.3	-71	0.0	-100	0.0	-100
Sehore	0.0	-100	17.8	456	0.0	-100
Shajapur	1.3	-90	0.0	-100	0.0	-100
Sheopur Kalani	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.5	-96	0.0	-100	0.0	-100
Ujjain	0.1	-99	0.0	-100	0.0	-100
Vidisha	0.4	-94	0.0	-100	0.0	-100
Chhattisgarh						
Bastar	90.0	397	1.4	-87	9.4	-29
Bijapur	66.9	170	3.6	-74	6.1	-49
Bilaspur	126.7	1356	0.1	-99	0.9	-89
Dantewara	80.3	265	16.2	-3	6.4	-47
Dhamtari	69.8	540	2.0	-81	6.2	-28
Durg	89.9	696	8.4	-13	4.0	-53
Janjgir	60.8	641	0.0	-100	0.0	-100
Jashpurnagar	20.6	30	0.0	-100	0.0	-100
Kanker	70.3	323	0.0	-100	7.5	-47
Korba	115.8	1295	4.1	-56	0.0	-100
Koriya	120.8	1676	0.0	-100	0.0	-100
Kawardha	140.8	1083	0.0	-100	1.0	-90
Mahasumund	43.4	221	0.4	-94	2.1	-73
Narayanpur	124.3	401	1.2	-89	15.7	25
Raigarh	36.9	167	0.0	-100	0.0	-100
Raipur	44.7	252	0.0	-100	4.3	-37
Rajandgaon	35.1	160	0.0	-100	1.2	-88
Surguja	22.0	110	0.0	-100	0.0	-100
East Uttar Pradesh						
Allahabad	110.2	1212	0.0	-100	0.0	-100
Ambedkar Nagar	105.0	881	0.0	-100	0.0	-100
Azamgarh	95.7	1176	0.0	-100	0.0	-100
Bahraich	48.5	199	0.0	-100	0.0	-100

Ballia	47.6	376	0.0	-100	0.0	-100
Balrampur	80.1	445	0.0	-100	0.0	-100
Banda	57.8	345	0.0	-100	0.0	-100
Barabanki	64.9	247	0.0	-100	0.0	-100
Basti	130.4	793	0.0	-100	0.0	-100
Chandauli	107.2	2002	0.0	-100	0.0	-100
Deoria	99.3	720	0.0	-100	0.0	-100
Faizabad	100.4	865	0.0	-100	0.0	-100
Farrukhabad	8.2	-49	0.0	-100	0.0	-100
Fatehpur	43.7	172	0.0	-100	0.0	-100
Gazipur	71.4	651	0.0	-100	0.0	-100
Gonda	81.7	417	0.0	-100	0.0	-100
Gorakhpur	122.5	498	0.0	-100	0.0	-100
Hardoi	22.7	-3	0.0	-100	0.0	-100
Jaunpur	69.3	653	0.0	-100	0.0	-100
Kannauj	15.2	-29	0.0	-100	0.0	-100
Kanpur City	54.7	132	0.0	-100	0.0	-100
Kanpur Dehat	3.2	-78	0.0	-100	0.0	-100
Kaushambi	40.5	232	0.0	-100	0.0	-100
Kheri	68.1	224	0.0	-100	0.0	-100
Kushi nagar	73.0	284	0.0	-100	0.0	-100
Lucknow	53.1	184	0.0	-100	0.0	-100
Maharajganj	165.0	682	0.0	-100	0.0	-100
Mau	92.7	679	0.0	-100	0.0	-100
Mirzapur	58.3	611	0.0	-100	0.0	-100
Pratapgarh	133.3	1002	0.0	-100	0.0	-100
RaiBareilly	40.6	89	0.0	-100	0.0	-100
Sahuji Maharajnagar	75.5	655	0.0	-100	0.0	-100
Sant Kabirnagar	133.0	857	0.0	-100	0.0	-100
Sant Ravidas Nagar	117.0	2194	0.0	-100	0.0	-100
Shrawasti	64.3	297	0.0	-100	0.0	-100
Sidharthnagar	135.9	794	0.0	-100	0.0	-100
Sitapur	54.2	175	0.0	-100	0.0	-100
Sonbhadra	39.8	398	0.0	-100	0.0	-100
Sultanpur	66.1	301	0.0	-100	0.0	-100
Unnao	57.5	129	0.0	-100	0.0	-100
Varanasi	83.5	971	0.0	-100	2.1	158
West Uttar Pradesh						
Agra	4.3	-44	0.0	-100	0.0	-100
Aligarh	11.7	7	10.4	197	0.0	-100
Auraiya	0.5	-97	0.0	-100	0.0	-100
Badaun	26.0	29	0.0	-100	0.0	-100
Baghpat	0.0	-100	0.0	-100	0.0	-100
Bareilly	16.3	-18	0.0	-100	0.0	-100
Bijnor	19.0	43	0.0	-100	0.0	-100

Bulandsahar	11.0	20	0.5	-86	0.0	-100
Etah	8.1	-49	0.0	-100	0.0	-100
Etawah	0.3	-98	0.0	-100	0.0	-100
Firozabad	17.8	52	0.0	-100	0.0	-100
GBNagar	9.0	-41	0.0	-100	0.0	-100
Ghaziabad	0.0	-100	0.0	-100	0.0	-100
Hamirpur	23.0	180	0.0	-100	0.0	-100
Jalaun	7.0	-51	0.0	-100	0.0	-100
Jhansi	15.0	22	0.0	-100	0.0	-100
Jotiba Phule Nagar	18.0	28	0.0	-100	0.0	-100
Kanshiramnagar	30.0	36	0.0	-100	0.0	-100
Lalitpur	0.5	-95	1.0	-86	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	7.6	0	0.0	-100	0.0	-100
Mainpuri	0.5	-97	0.0	-100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	1.4	-87	0.0	-100	0.0	-100
Moradabad	27.1	91	0.0	-100	0.5	-100
Muzzaffarnagar	7.0	-38	0.0	-100	0.0	-100
Pilibhit	20.5	27	0.0	-100	0.0	-100
Rampur	32.6	189	0.0	-100	0.0	-100
Saharanpur	32.7	175	0.0	-100	0.0	-100
Shahjahanpur	25.1	27	0.0	-100	0.5	-100
Uttarakhand						
Almora	27.5	37	2.4	-55	0.0	-100
Bageshwar	29.0	44	12.0	126	0.0	-100
Chamoli	24.4	50	2.3	-69	5.5	44
Champawat	56.0	54	19.5	76	0.0	-100
Dehradun	7.7	-64	0.0	-100	14.7	297
Garhwal Pauri	5.7	-75	0.0	-100	0.0	-100
Garhwal Tehri	3.9	-78	0.1	-99	0.5	-76
Haridwar	6.1	-53	0.0	-100	0.0	-100
Nainital	52.8	48	2.9	-51	0.5	-24
Pithorgarh	28.8	22	3.0	-59	0.5	-86
Rudraprayag	15.2	-14	0.0	-100	0.6	-78
Udham Sing Nagar	42.3	66	0.0	-100	0.0	-100
Uttarkashi	2.2	-89	0.1	-99	22.6	205
Bihar						
Araria	30.6	101	0.0	-100	0.0	-100
Arwal	10.8	28	0.0	-100	1.5	25
Aurangabad	18.6	95	0.0	-100	0.0	-100
Banka	30.4	81	0.0	-100	0.0	-100
Begusarai	38.7	249	0.0	-100	0.0	-100
Bhabua	36.1	335	0.0	-100	0.0	-100
Bhagalpur	8.4	-57	0.0	-100	0.0	-100

Bhojpur	34.1	337	0.0	-100	0.7	-65
Buxar	8.2	-4	0.0	-100	0.0	-100
Darbhanga	94.3	872	0.0	-100	0.0	-100
East Champaran	94.4	565	0.0	-100	0.0	-100
Gaya	7.7	0	0.0	-100	0.0	-100
Gopalganj	83.0	669	0.0	-100	0.0	-100
Jahanabad	14.4	41	0.0	-100	0.0	-100
Jamui	16.2	16	0.0	-100	0.0	-100
Kathihar	25.9	109	0.0	-100	0.0	-100
Khagadia	14.1	11	0.0	-100	0.0	-100
Kishanganj	13.1	-41	0.0	-100	0.0	-100
Lakhisarai	26.1	80	0.0	-100	27.5	277
Madhepura	10.7	-31	0.0	-100	0.0	-100
Madhubani	78.4	485	0.0	-100	0.0	-100
Monghyar	38.0	162	0.0	-100	0.0	-100
Muzaffarpur	34.3	129	0.0	-100	0.0	-100
Nalanda	2.4	-75	0.0	-100	0.0	-100
Nawada	2.8	-70	0.0	-100	0.0	-100
Patna	21.4	87	0.0	-100	11.3	842
Purnea	10.4	-32	0.0	-100	0.1	-96
Rohtas	24.7	184	0.0	-100	0.0	-100
Saharsha	6.0	-57	0.0	-100	0.0	-100
Samstipur	38.8	234	0.0	-100	0.0	-100
Saran	52.4	394	0.0	-100	2.0	-13
Sheikpura	14.8	37	0.0	-100	0.0	-100
Sheohar	180.2	1308	0.0	-100	0.0	-100
Sitamarhi	119.0	829	0.0	-100	0.0	-100
Siwan	66.4	672	0.0	-100	0.0	-100
Supaul	45.2	270	0.0	-100	0.0	-100
Vaishali	23.3	60	0.0	-100	0.0	-100
West Champaran	167.2	883	0.0	-100	0.0	-100
Jharkhand						
Bokaro	28.6	46	0.0	-100	1.0	-87
Chatra	28.5	138	0.0	-100	0.0	-100
Deoghar	27.9	126	0.0	-100	0.0	-100
Dhanbad	25.9	34	0.0	-100	0.3	-97
Dumka	49.9	101	0.0	-100	0.0	-100
East Singbhum	123.9	674	0.4	-97	5.5	-21
Garhwa	0.0	-100	0.0	-100	**	**
Giridih	34.5	114	0.0	-100	0.8	-86
Godda	18.7	9	0.0	-100	0.7	-82
Gumla	31.9	89	0.0	-100	3.4	-56
Hazaribagh	67.7	450	0.0	-100	0.3	-97
Jamtara	10.3	-44	0.0	-100	0.6	-95
Khunti	14.0	-33	0.0	-100	0.0	-100

Koderrna	10.9	-19	0.0	-100	0.0	-100
Latehar	13.0	5	0.0	-100	0.0	-100
Lohardagga	15.8	39	0.0	-100	0.0	-100
Pakur	38.8	6	0.0	-100	0.0	-100
Palamau	11.5	-19	0.0	-100	0.0	-100
Ramgarh	90.0	582	0.0	-100	29.4	539
Ranchi	37.7	131	0.0	-100	2.2	-76
Sahebganj	27.0	18	3.6	-67	0.0	-100
Saraikela	77.0	378	0.0	-100	2.0	-60
Simdega	26.6	84	27.5	116	1.4	-50
West Singbhum	20.2	20	4.2	-66	2.2	-52
East Rajasthan						
Ajmer	0.0	-100	0.1	-95	0.0	-98
Alwar	0.0	-100	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.0	-100	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100
Bundi	7.5	9	0.0	-100	0.0	-100
Chittorgarh	0.0	-100	0.0	-100	0.0	-100
Dausa	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	0.0	-100	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	4.8	45	9.9	1138	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	16.2	603	0.0	-100	0.7	-59
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
Rajsamand	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.0	-100	0.0	-100	0.0	-100
Sikar	4.4	142	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	8.4	664	0.0	-100
Udaipur	0.1	-98	0.0	-100	0.0	-100
West Rajasthan						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.9	-5	0.0	-100	0.0	-98
Hanumangarh	6.9	1271	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-96
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100

Sri Ganganagar	2.2	80	0.0	-100	0.0	-100
Gujarat Region						
Ahmedabad	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	1.2	-88	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
DNH	0.9	-93	0.0	-100	0.0	-100
Dahod	1.4	-85	0.0	-100	0.0	-100
Daman	0.0	-100	0.0	-100	0.0	-100
Dangs	40.0	113	12.0	-12	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.2	-97	0.0	-100	0.0	-100
Narmada	2.1	-82	0.0	-100	0.0	-100
Navsari	4.1	-73	0.0	-100	0.0	-100
Panchmahal	0.4	-96	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	2.0	-73	0.0	-100	0.0	-100
Surat	3.0	-69	3.2	17	0.0	-100
Tapi	6.2	-10	0.0	-100	0.0	-100
Valsad	6.2	-60	0.0	-100	0.0	-100
S K & Diu region						
Amreli	1.1	-82	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	1.1	-65	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-99	0.0	-100	0.0	146
Porbandar	10.6	171	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100
Maharashtra & Goa						
Konkan & Goa						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.1	-99	0.1	-98
North Goa	40.2	34	14.8	-55	143.3	476
Raigad	11.6	-64	0.0	-100	0.7	-93
Ratnagiri	13.3	-61	5.4	-78	18.0	36
Sindhudurg	45.8	42	11.5	-54	79.6	342
South Goa	34.3	21	18.2	-43	185.2	774
Thane	12.6	-52	1.1	-92	0.1	-99
Madhya Maharashtra						
Ahmednagar	7.5	-66	9.5	-25	1.9	-80
Dhule	1.0	-93	0.8	-84	0.0	-100

Jalgaon	0.3	-98	1.4	-66	0.0	-100
Kolhapur	11.7	-56	4.9	-79	47.6	154
Nandurbar	5.5	-65	5.7	61	0.0	-100
Nasik	15.3	-23	4.8	-54	0.8	-88
Pune	4.5	-78	4.2	-73	5.3	-58
Sangli	9.0	-63	11.2	-42	17.6	14
Satara	16.1	-18	8.9	-53	8.7	-38
Solapur	7.4	-69	8.0	-53	7.7	-48
Marathwada						
Aurangabad	3.4	-84	7.7	-17	0.4	-95
Beed	3.1	-84	5.6	-59	0.0	-100
Hingoli	2.7	-87	1.8	-80	1.0	-91
Jalna	6.8	-69	5.9	-32	1.0	-86
Latur	12.8	-30	8.2	-34	3.3	-76
Nanded	4.5	-72	0.1	-99	4.8	-61
Usmanabad	4.3	-80	7.0	-59	5.6	-53
Parbhani	1.1	-95	0.8	-94	0.4	-95
Vidarbha						
Akola	0.0	-100	0.0	-99	0.3	-97
Amraoti	1.6	-91	2.4	-58	0.9	-88
Bhandara	5.9	-60	0.4	-94	0.0	-100
Buldhana	0.3	-98	11.9	74	0.4	-93
Chandrapur	3.3	-73	0.1	-99	7.6	-29
Gadchiroli	27.7	76	0.0	-100	1.3	-85
Gondia	43.3	290	7.5	2	0.3	-98
Nagpur	2.2	-84	21.1	284	0.3	-98
Wardha	9.1	-1	10.0	24	2.2	-82
Washim	6.2	-70	13.3	93	0.1	-98
Yeotmal	0.4	-97	2.2	-78	1.2	-88
Odisha						
Angul	86.8	254	9.0	-61	0.5	-97
Balasore	101.1	126	3.2	-89	0.0	-99
Bargarh	27.5	127	2.3	-81	1.0	-79
Bhadrak	115.0	149	9.8	-72	0.0	-99
Bolangir	16.2	12	3.7	-74	3.7	-63
Boudh	33.1	1	8.9	-52	0.0	-100
Cuttack	131.0	322	50.2	104	0.1	-99
Deogarh	52.4	322	0.0	-100	0.7	-91
Dhenkanal	74.5	135	13.1	-48	1.1	-94
Gajapati	322.7	730	23.7	-41	7.4	-20
Ganjam	149.6	270	12.5	-76	2.8	-91
Jagatsingpur	104.5	209	7.0	-81	0.1	-99
Jajpur	113.3	217	17.6	-40	0.1	-99
Jharsuguda	27.4	37	0.5	-96	2.4	-62
Kalahandi	21.8	82	4.6	-70	2.8	-66

Kandhamal	148.3	351	16.7	-9	0.8	-94
Kendrapara	106.0	160	6.0	-83	0.0	-100
Keonjhar	82.8	185	8.1	-71	0.7	-94
Khurda	116.7	207	19.9	-39	0.0	-99
Koraput	177.4	423	21.2	-43	7.5	-49
Malkangiri	188.4	588	35.4	44	6.0	-64
Mayurbhanj	87.3	213	8.6	-65	0.2	-98
Nawapara	43.5	285	12.0	10	3.7	-47
Nawarangpur	87.5	233	5.9	-64	10.6	-34
Nayagarh	132.6	233	15.0	-36	0.0	-100
Puri	60.2	51	20.6	-46	0.4	-99
Rayagada	97.2	231	7.7	-73	3.9	-37
Sambalpur	40.0	223	0.0	-100	2.7	-67
Sonepur	18.4	84	0.0	-100	0.7	-92
Sundargarh	27.3	75	1.8	-80	1.5	-76
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	72.9	-11	17.0	-73	17.8	-73
North & Middle Andaman	78.7	32	9.7	-76	26.7	-49
South Andaman	71.1	0	1.5	-97	33.5	-44
GWB						
Bankura	19.0	-7	0.0	-100	2.8	-81
Birbhum	7.5	-67	0.8	-96	1.1	-90
Burdwan	15.1	-30	2.7	-86	3.7	-69
East Midnapore	86.0	94	0.7	-97	0.0	-99
Hooghly	19.6	-5	0.0	-100	1.7	-89
Howrah	16.8	-41	0.0	-100	0.0	-100
Kolkata	17.1	-50	0.0	-100	0.3	-98
Murshidabad	10.2	-67	0.0	-100	4.0	-64
Nadia	37.3	27	0.0	-100	0.8	-95
24 Pargana (N)	23.7	-14	0.0	-100	0.0	-99
Purulia	41.4	107	0.3	-99	3.8	-48
24 Pargana (S)	78.9	54	0.0	-100	0.9	-98
West Midnapore	52.8	153	10.5	-39	0.2	-98
SHWB & Sikkim						
Cooch Behar	21.5	-38	0.0	-100	0.0	-100
Darjeeling	39.3	41	1.1	-94	4.7	-42
East Sikkim	14.8	-75	0.0	-100	1.2	-91
Jalpaiguri	29.4	-29	0.2	-99	5.8	-40
Malda	12.2	-48	0.0	-100	0.0	-100
North Dinajpur	2.2	-95	0.0	-100	0.0	-100
North Sikkim	25.2	-68	0.7	-98	4.9	-86
South Dinajpur	28.5	3	0.0	-100	0.0	-100
South Sikkim	28.6	-52	0.0	-100	8.4	-39
West Sikkim	47.0	-40	3.0	-92	12.0	-66

Legends

	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%) deficient rainfall	**	Data not available

Annexure II List of varieties

Tamil Nadu

Late Samba/ Thaladi rice: ADT 38, ADT 46, ADT 49, Improved white Ponni, IR 20, ASD 19, Paiyur1, TRY 1, TRY 3, CO 48, CO 49, BPT 5204 and CO 50

Direct seeded rice: (White Ponni or ADT 39)

Assam

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

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

Radish : Pusa Deshi, Pusa Chetki, Pusa Himani

Cauliflower : Improved Japanese, Pusa Synthetic, Pusa Snowhall and Main Crop Patna.

Early maturity Cabbage varieties : Golden Acre, Pride of India, Pusa Mukta (Sel – 8).

Early maturity Knol Khol : White Vienna.

Winter brinjal : Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Samrat

Meghalaya

Pigeon pea: short duration : UPAS-120, ICPL 87. long duration WB 20, Pusa 9 & Sarita.

Cabbage: H-139, Pride of India

Cauliflower: Meghalaya Local

Carrot: New Karoda, Nantesh

Radish: Local genotype

Broccoli: Puspa, Aiswarya

French bean: Naga Local

Pea: Arkel (for vegetables), TRC P8, TRC P9, Prakash, Rachna.

Potato: Kufri Joyti, Kufri Megha, Kufri Giriraj, Kufri Girdhari, Kufri Himsona, Kufri Himalini.

Pea: Arkel (for vegetables), TRC P8, TRC P9, Prakash, Rachna.

Tripura

Tomato: Trishul, Allrounder, T- 1408, T- 1458, Anup.

Cauliflower: CFL- 4048, Pusa early synthetic, Kamaya, Suhasihi.

Cabbage: BC- 76, Pusa Drum Head, Pusa Synthetic.

Broccoli: Everest, Ayeshwaria.

Odisha

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

Banana: Mortoman, Chapa, Kathali, Singapuri.

Tomato: Avinash-2, 448.

Cabbage: Pride of India, Pusa early, Kranti.

Cauliflower: Jawhar moti, Bharat Jyoti, Early banaras

Bihar

Shakarkand: Rajendra Shakarkand- 5, Rajendra Shakarkand-35, Rajendra Shakarkand-43, Rajendra Shakarkand-47, Kalmegh and Rajendra Shakarkand-92.

Pigeon Pea: arhar: Bahar, Pusa 9, Narendra Arhar 1

Urd: T-9, Pant U-19, Pant Urd 31, PDU-1

Radish: Pusa Chetki, Pusa Himani, Pusa Rashmi, Japani Saphed

Pointed gourd: Rajendra Parwal-1, Rajendra parwal-2, FP1 and 3

Jharkhand:

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),

Maize: short duration variety: Birsa Vikas Maize-2 and medium duration variety: Birsa Maize-1.

Madhya Pradesh

Gram: JG-130, JG-11, JG-315, JG-16

Wheat: Sujata, HW-2004, HI-1500

Winter Sugarcane: KJN 86-572, KJN 86-141

Green Pea: Arkel, PSM-3

Jammu & Kashmir

Berseem: Mescavi, Pusa Giant, BL-1 and Vardan

Uttarakhand

Pea: VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel

Potato: Kufri- Jyoti, Ashok, Anand

Toria : Pant Toria-30, 303, 507 or local varieties.

Himachal Pradesh

Peas: Palam Triloki, Arkel, VL-7 and Matar Ageta

Late variety of Cauliflower: broccoli

East Uttar Pradesh

Cabbage: Imprabad Japani, Pusa chipali and Pusa kartiki

Radish: Japani white, Pusa chetakij, Hisar Muli No.1 and kalyanpur-1

Toria: T-9, T-36, Pant -30,303, B-9

Potato: Kuferi - Chandramukhi, Bahar

Mustard: Basati, Maya, Kanti, Urvashi, Narendra, Swarna-8, Narendra Ageti-4

Ageti Matar: Kashi - Nandini, Uday, Mukti, Arkel, Azad-3

West Uttar Pradesh:

Toria: Sangam, TL-17, 67

Ageti matar: Azad P-3, Arkel

Maharashtra

Madhya Maharashtra

rabi jowar: Selection-3, Phule Mauli, Phule Anuradha in light soil, Phule Chitra, Maldandi-35-1 in medium soil and Phule Vasudha, Phule Yashodha in black soil

Safflower: Bhima or Phule Kusuma

Marathwada

Jowar: Parbhani Moti or Parbhani Jyoti.

Gujarat:

Pea: Pusa Pragati.

Carrot: Pusa Rudhira and Pusa Kesar.