

# National Agromet Advisory Service Bulletin

**Friday 13<sup>th</sup> February 2015**

**(For the period 13<sup>th</sup> to 17<sup>th</sup> February 2015)**



**Issued by**

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

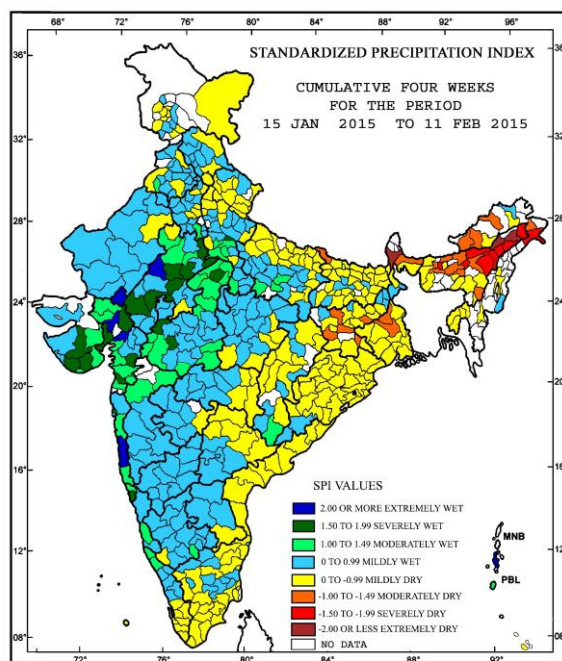


## Standardised Precipitation Index

### Four Weekly

for the Period 15<sup>th</sup> January 2015 to 11<sup>th</sup> February 2015

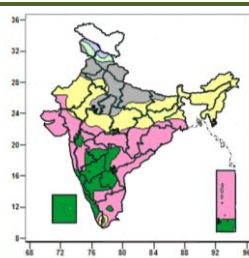
MINISTRY OF EARTH SCIENCES  
INDIA METEOROLOGICAL DEPARTMENT  
HYDROMET SECTION, PUNE



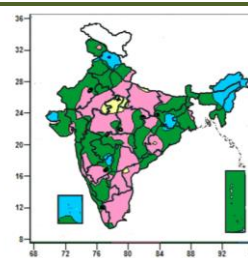
- Extremely/severely wet conditions experienced in few districts of Rajasthan; Gwalior, Indore, Ratlam districts of Madhya Pradesh; few districts of Gujarat region; Ratnagiri and Mumbai Suburban districts of Maharashtra and South Goa. Kanshiram Nagar district of Uttar Pradesh.
- Extremely /severely dry conditions experienced in Changlang district of Arunachal Pradesh; few districts of Assam; Darjeeling district of West Bengal.
- Moderately dry conditions experienced in many districts of Arunachal Pradesh; few districts of Assam; Jalpaiguri, Birbhum, Burdwan districts of West Bengal; Chatra, Dhanbad, Gumla, Ranchi and Seraikela districts of Jharkhand; West Champaran district of Bihar.
- 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 11.02.2015

**Actual Mean Maximum Temperature (°C) in India for the week ending 11.02.2015**



**Mean Maximum Temperature (°C) Anomaly in India for the week ending 11.02.2015**



- 28 to 36°C over Maharashtra, Karnataka, Andhra Pradesh, Telangana, Odisha, Lakshadweep, Andaman & Nicobar Islands, many parts of Gujarat State, Chhattisgarh, Gangetic West Bengal, Kerala and Tamil Nadu, few parts of Jharkhand, Madhya Pradesh, isolated parts of West Rajasthan.

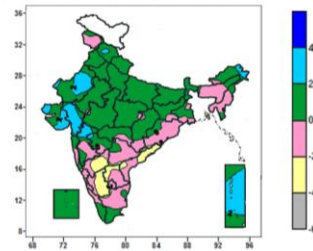
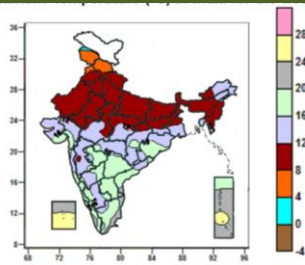
- -4 to -2°C over few parts of Madhya Pradesh and isolated parts of East Rajasthan, Uttar Pradesh and Coastal Andhra Pradesh.
- -2 to 2°C over entire country except Arunachal Pradesh, Nagaland, many parts of Assam & Meghalaya, Manipur, Himachal Pradesh, Lakshadweep, few parts of Madhya

- 24 to 28<sup>0</sup>C over North East India, Sub-Himalayan West Bengal & Sikkim, many parts of Bihar, Jharkhand, Rajasthan, Madhya Pradesh, Haryana & Delhi, few parts of Gangetic West Bengal, Chhattisgarh, East Uttar Pradesh and isolated parts of West Uttar Pradesh, Kerala and Tamil Nadu.
- 20 to 24<sup>0</sup>C over Punjab, Uttarakhand, many parts of Uttar Pradesh, Himachal Pradesh, few parts of Haryana & Delhi, East Rajasthan, Madhya Pradesh, isolated parts of Jammu & Kashmir, West Rajasthan and Bihar.
- 12 to 20<sup>0</sup>C over many parts of Himachal Pradesh, Jammu & Kashmir.

- Pradesh, Jharkhand, Kutch, isolated parts of East Rajasthan, Uttar Pradesh, Coastal Andhra Pradesh, Punjab, Marathwada, North Interior Karnataka, Odisha and Gangetic West Bengal.
- 2 to 4<sup>0</sup>C over Arunachal Pradesh, Nagaland, many parts of Assam & Meghalaya, Manipur, Himachal Pradesh, Lakshadweep, few parts of Jharkhand, Kutch, isolated parts of Punjab, Marathwada, North Interior Karnataka, Odisha and Gangetic West Bengal.

**Actual Mean Minimum Temperature (°C) in India for the week ending 11.02.2015**

**Mean Minimum Temperature (°C) Anomaly in India for the week ending 11.02.2015**



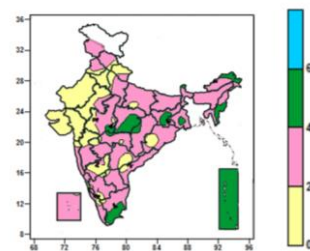
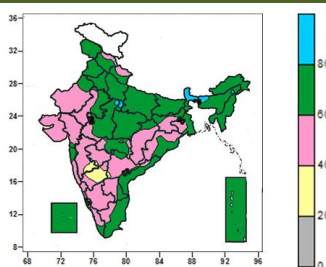
- 0 to 4<sup>0</sup>C over isolated parts of Jammu & Kashmir.
- 4 to 8<sup>0</sup>C over many parts of Jammu & Kashmir, Himachal Pradesh, isolated parts of Punjab.
- 8 to 12<sup>0</sup>C over Uttarakhand, Haryana & Delhi, Uttar Pradesh, Bihar, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Manipur, many parts of Punjab, Jharkhand, Assam & Meghalaya, Nagaland, Mizoram, Madhya Pradesh, few parts of Arunachal Pradesh, Tripura, Gangetic West Bengal, isolated parts of Himachal Pradesh, Chhattisgarh and Madhya Maharashtra.
- 12 to 20<sup>0</sup>C over entire country except Uttarakhand, Haryana & Delhi, Uttar Pradesh, Bihar, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Manipur, many parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Jharkhand, Assam & Meghalaya, Nagaland, Mizoram, Madhya Pradesh, Andaman & Nicobar Islands, few parts of Arunachal Pradesh, Tripura, Gangetic West Bengal, Kerala, Tamil Nadu, isolated parts of Chhattisgarh and Madhya Maharashtra, Andhra Pradesh.
- 20 to 28<sup>0</sup>C over Lakshadweep, many parts of Andaman & Nicobar Islands, few parts of Kerala, Tamil Nadu, isolated parts of Andhra Pradesh.

- -4 to -2<sup>0</sup>C over many parts of Interior Karnataka, few parts of Andhra Pradesh, isolated parts of Odisha, Tamil Nadu.
- -2 to 2<sup>0</sup>C over entire country except many parts of Gujarat State, Interior Karnataka, Andaman & Nicobar Islands, few parts of West Rajasthan, Madhya Maharashtra, Arunachal Pradesh, Andhra Pradesh, isolated parts of Himachal Pradesh, Odisha, Marathwada and Tamil Nadu.
- 2 to 4<sup>0</sup>C over many parts of Gujarat State, Andaman & Nicobar Islands, few parts of West Rajasthan, Madhya Maharashtra, Arunachal Pradesh, isolated parts of Himachal Pradesh and Marathwada.

**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 11.02.2015**

**Relative Humidity (%) over India for the week ending 11.02.2015**

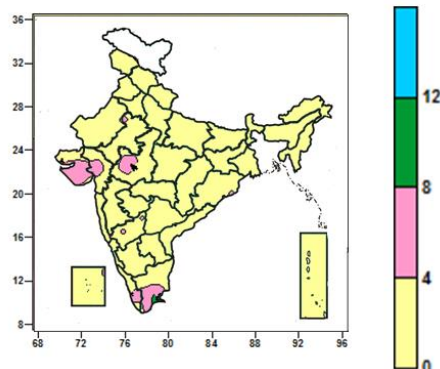
**Cloud amount (okta) over India for the week ending 11.02.2015**



- 80 to 100% over Sikkim, few parts of Sub-Himalayan West Bengal, isolated parts of West Uttar Pradesh, West Madhya Pradesh and Assam & Meghalaya.
- 60 to 80% over entire country except Sikkim, Goa, South Interior Karnataka, Coastal Karnataka, many parts of Gujarat State, Konkan, Madhya Maharashtra, Marathwada, West Rajasthan, Telangana, Rayalaseema, Kerala, Chhattisgarh, Jharkhand, Odisha, few parts of West Bengal, Uttarakhand, East Rajasthan, North Interior Karnataka, isolated parts of West Uttar Pradesh, West Madhya Pradesh and Assam & Meghalaya, Himachal Pradesh, Vidarbha and Coastal Andhra Pradesh.
- 40 to 60% over Goa, South Interior Karnataka, Coastal Karnataka, many parts of Gujarat, Konkan, Madhya Maharashtra, Marathwada, West Rajasthan, North Interior Karnataka, Telangana, Kerala, Rayalaseema, Chhattisgarh, Jharkhand, Odisha, few parts of Uttarakhand, East Rajasthan, Gangetic West Bengal and isolated parts of Himachal Pradesh, West Madhya Pradesh, Vidarbha and Coastal Andhra Pradesh.
- 20 to 40% over many parts of North Interior Karnataka and isolated parts of Madhya Maharashtra, Marathwada and Telangana.

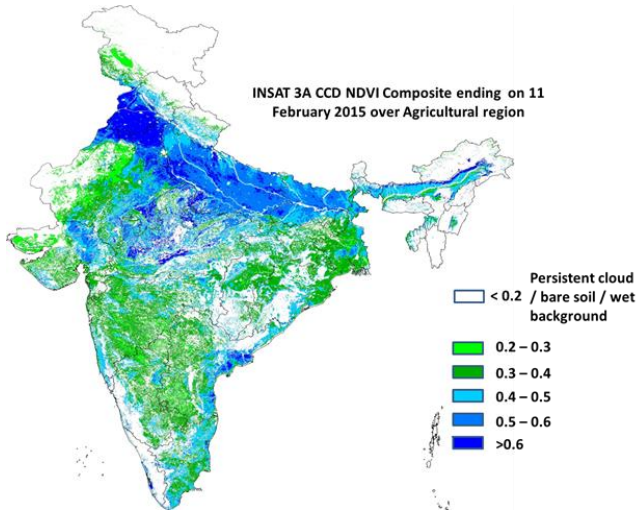
- 4 to 6 okta over Manipur, Andaman & Nicobar Islands, many parts of Mizoram, East Madhya Pradesh, few parts of Sikkim, Tamil Nadu, Arunachal Pradesh, Gangetic West Bengal, Jharkhand, isolated parts of West Madhya Pradesh, Chhattisgarh and Vidarbha.
- 2 to 4 over entire country except West Rajasthan, Gujarat State, Haryana & Delhi, Manipur, Andaman & Nicobar Islands, many parts of Mizoram, East Madhya Pradesh, East Rajasthan, Uttarakhand, North Interior Karnataka, few parts of Sikkim, Tamil Nadu, Arunachal Pradesh, Gangetic West Bengal, Jharkhand, West Madhya Pradesh, Odisha, Telangana, Madhya Maharashtra, isolated parts of Chhattisgarh and Vidarbha, Himachal Pradesh, Punjab, Uttar Pradesh, Konkan, Marathwada, Coastal & South Interior Karnataka, Andhra Pradesh and Kerala.
- 0 to 2 okta over West Rajasthan, Gujarat State, Haryana & Delhi, many parts of East Rajasthan, Uttarakhand, North Interior Karnataka, few parts of West Madhya Pradesh, Odisha, Telangana, Madhya Maharashtra, isolated parts of Himachal Pradesh, Punjab, Uttar Pradesh, Konkan, Marathwada, Vidarbha, Coastal & South Interior Karnataka, Andhra Pradesh, Kerala and Tamil Nadu.

#### Wind speed (knots) over India for the week ending 11.02.2015



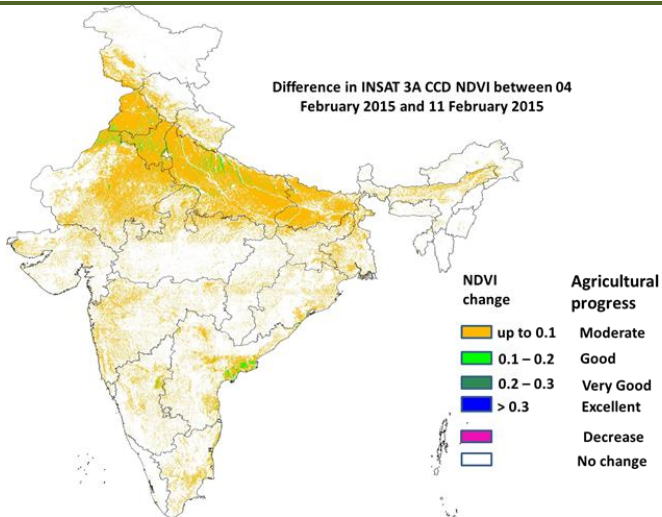
- 8 to 12 knots over isolated parts of Tamil Nadu.
- 4 to 8 knots over many parts of Saurashtra, few parts of West Madhya Pradesh, Gujarat region, Tamil Nadu and Kerala and isolated parts of North Interior Karnataka, East Rajasthan and Kutch.
- 0 to 4 knots over entire country except many parts of Saurashtra, few parts of West Madhya Pradesh, Gujarat region, Tamil Nadu and Kerala and isolated parts of North Interior Karnataka, East Rajasthan and Kutch.

## INSAT 3A CCD NDVI COMPOSITE ENDING ON 11<sup>th</sup> FEBRUARY 2015 OVER AGRICULTURAL REGION OF INDIA



- Very good ( $> 0.6$ ) agricultural vigour is observed over the states of Punjab and Haryana, a few patches in Madhya Pradesh, Eastern Rajasthan, Uttar Pradesh and north coastal region of Andhra Pradesh. Vegetation is good (0.4-0.6) over entire Uttar Pradesh, many parts of Bihar, northern and eastern parts of West Bengal, East Rajasthan, north Gujarat and western parts of Saurashtra, coastal Andhra Pradesh, Tamil Nadu, eastern and coastal parts of Odisha. Some parts of central Bihar, few pockets in northwest Rajasthan, central Madhya Pradesh showed a considerable increase in the NDVI value. The NDVI remained within the range of 0.3 to 0.4 over few parts in Maharashtra, parts of Karnataka, Telangana and central Rajasthan.

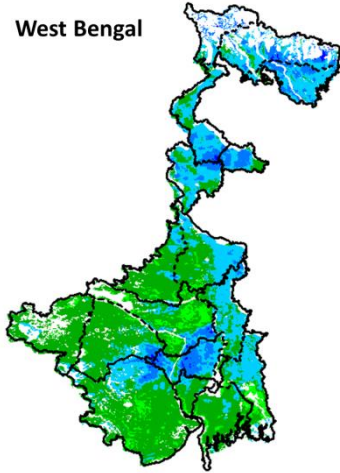
### Difference in INSAT 3A CCD NDVI between 4<sup>th</sup> February 2015 and 11<sup>th</sup> February 2015



- Moderate progress (up to 0.1) in NDVI was observed over the entire Indo-Gangetic plains, except a very few pockets in south eastern Punjab, Central Haryana, northern Uttar Pradesh and coastal parts of Andhra Pradesh were good progress (0.1-0.2) in NDVI was observed. Moderate change was observed over Rajasthan, Northern Madhya Pradesh, Gujarat, West Bengal, Odisha, Jharkhand and Chhattisgarh. Not much change was observed in Maharashtra and the southern peninsular region of India.

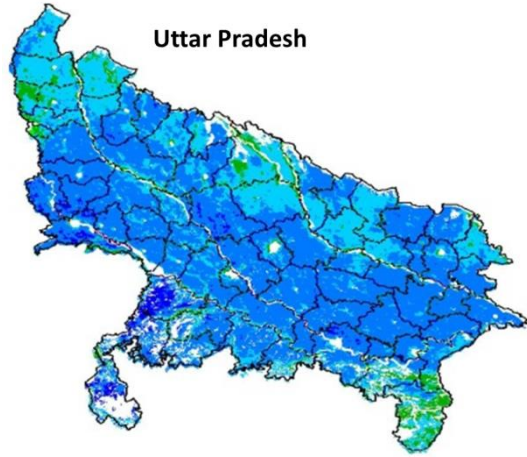
**INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 11<sup>th</sup>  
FEBRUARY 2015 FOR DIFFERENT STATES**

**West Bengal**



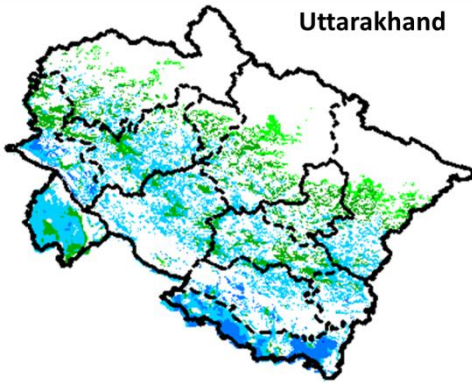
Agricultural vigour is good over most of the southern parts of West Bengal, whereas rest of the northern and central parts show higher values of NDVI in patches varying from 0.4-0.6.

**Uttar Pradesh**



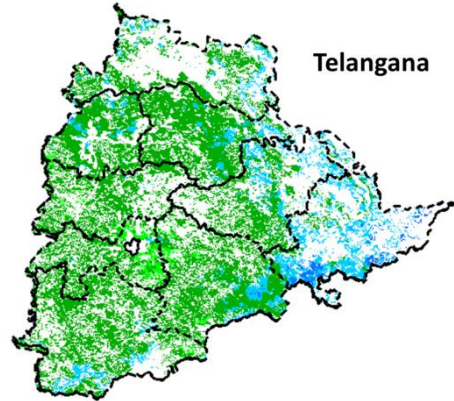
Agricultural vigour is good for the entire state of Uttar Pradesh where NDVI values varies from 0.4 -0.6.

**Uttarakhand**



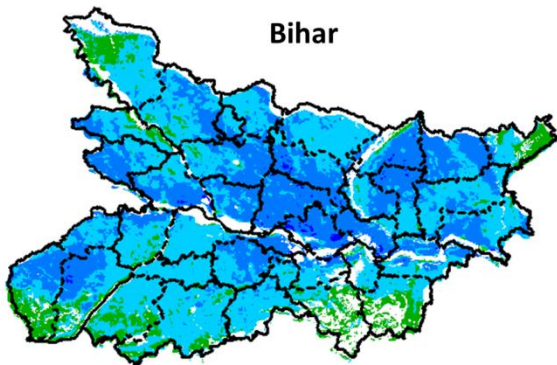
NDVI values vary from 0.2 - 0.5 over Uttarakhand. Higher values are seen in the southern part of Uttarakhand.

**Telangana**



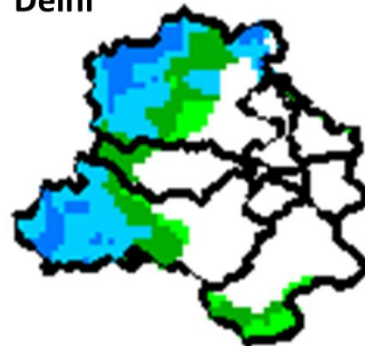
Agricultural vigour is good in pockets of eastern Telangana where NDVI values vary from 0.4 - 0.5. In the southern and western parts of the Telangana values of NDVI varies from 0.2- 0.3.

**Bihar**



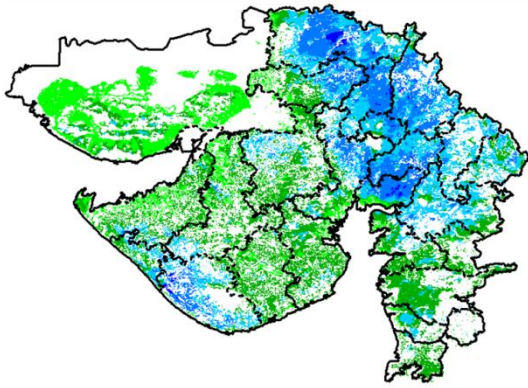
The entire state of Bihar shows comparatively a high value (0.4-0.6) of NDVI, except for few pockets in south eastern and south western Bihar region.

**Delhi**



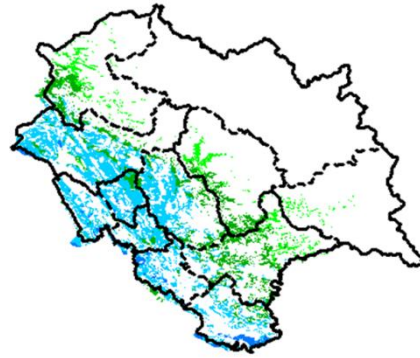
Agriculture vigour is good over western part of Delhi. NDVI values lies between 0.4-0.5. NDVI values are normal over central and western part of the state.

### Gujarat



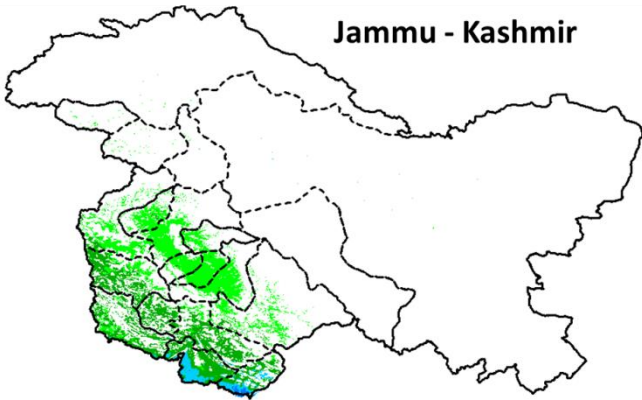
Agriculture vigour is good over parts of Eastern, northern Gujarat and Saurashtra where NDVI values lies between 0.4-0.5. Whereas normal NDVI is observed in Kutch.

### Himachal Pradesh



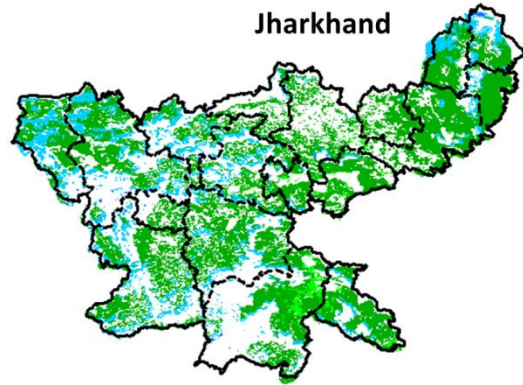
Agriculture vigour is good over south western parts of Himachal Pradesh with NDVI values varying between 0.4-0.5. Whereas, isolated patches of normal NDVI are observed in the state.

### Jammu - Kashmir



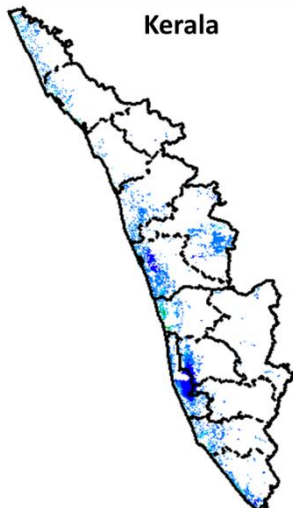
Agriculture vigour is normal all over Jammu. NDVI values vary in between 0.2-0.3 in south western parts.

### Jharkhand



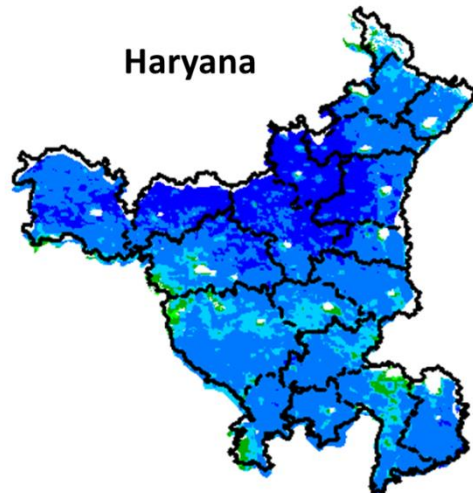
Agriculture vigour is good 0.3-0.4 in patches over central to western part of the Jharkhand. Rest of the parts shows normal NDVI values.

### Kerala



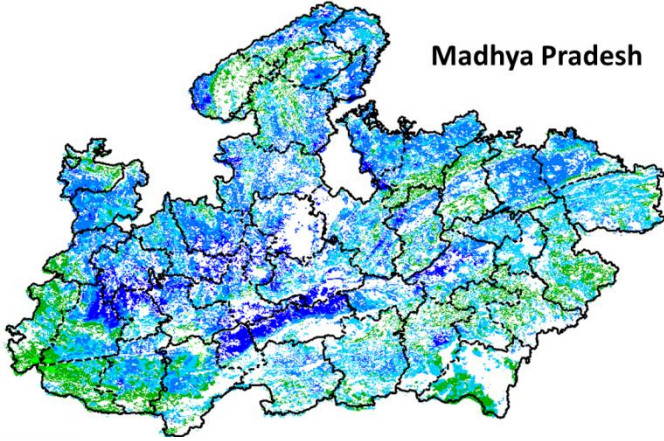
Some pockets in south coastal parts of Kerala show NDVI values varying from 0.5 - 0.6, whereas rest of agricultural vigour of Kerala shows normal values of NDVI.

### Haryana



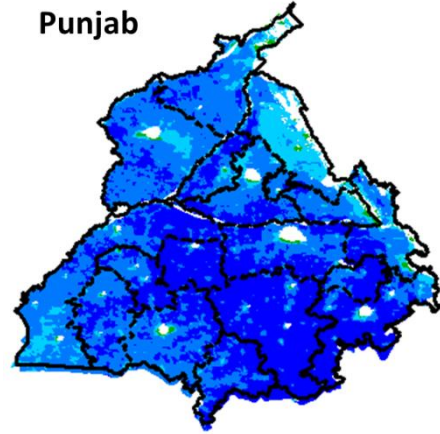
Agriculture vigour is good; NDVI values were 0.5-0.6 over most of the parts of Haryana.

### Madhya Pradesh



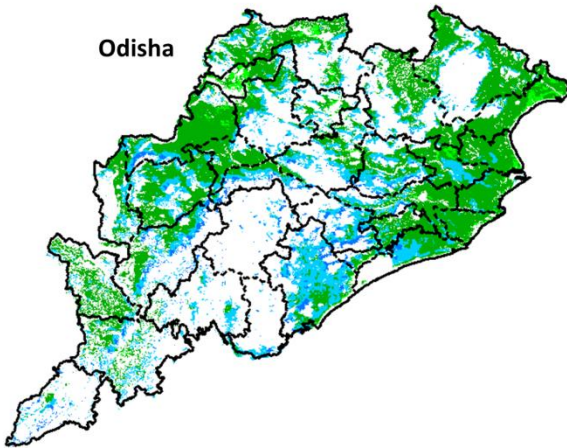
Agricultural vigour is good over central and western region of Madhya Pradesh showing higher values of NDVI varies from 0.5 - 0.6. The overall Vegetation vigour is good over the entire state of Madhya Pradesh.

### Punjab



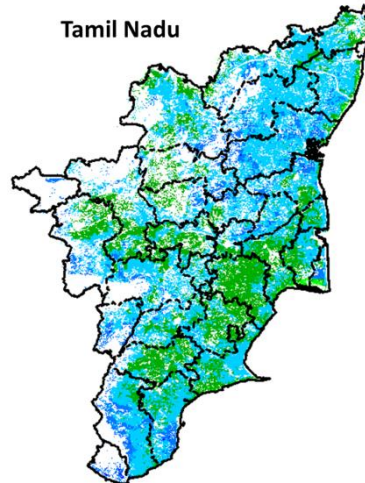
Agricultural vigour is comparatively good for all over Punjab with NDVI values varying from 0.5-0.6. South - East districts of Punjab showing dominantly higher NDVI values more than 0.6.

### Odisha



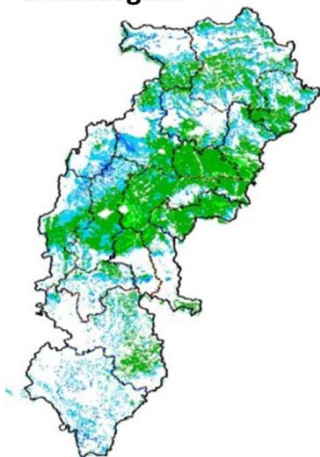
Agricultural vigour is good for east coast and south eastern part of Odisha with NDVI values of 0.3 - 0.5 whereas central and south coast show normal values of NDVI.

### Tamil Nadu



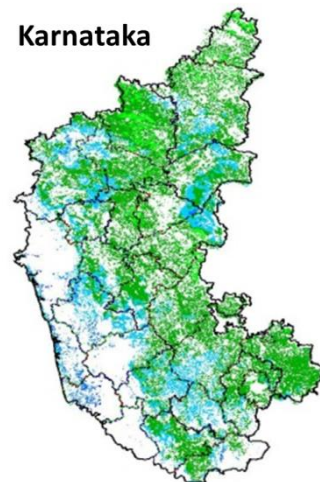
Agricultural vigour is good over Tamil Nadu with NDVI values varying from 0.4 - 0.6.

### Chhattisgarh



Agriculture vigour is good all over western and southern part of Chhattisgarh where NDVI values lies in between 0.3-0.5. NDVI values are normal over eastern, central and northern part of the state.

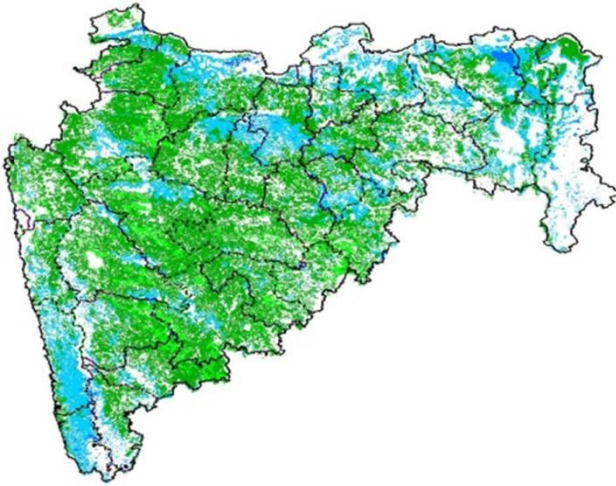
### Karnataka



Agriculture vigour is good over South-Central parts of Karnataka which lies in between 0.3-0.5. Rest of the part show normal condition where NDVI values vary up to 0.2-0.3.

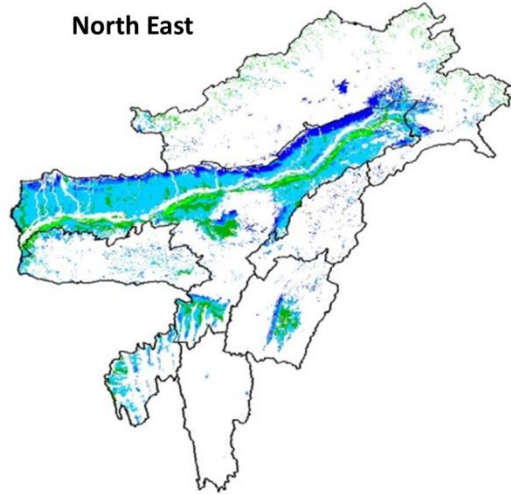


### Maharashtra



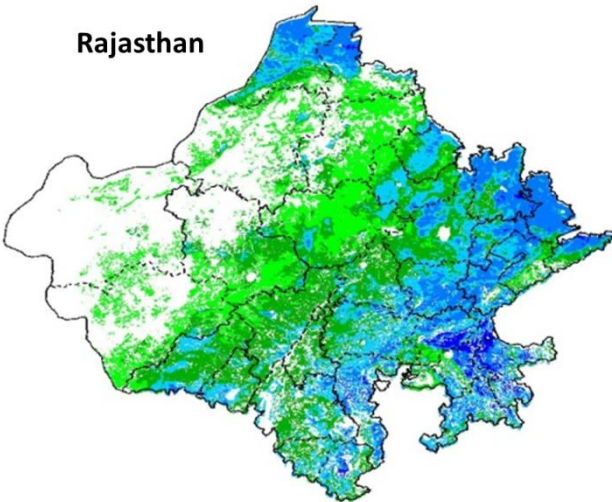
Agricultural vigour is good over Western coastal, Vidarbha and northern Marathwada region of Maharashtra with NDVI values of 0.3 - 0.5. Whereas NDVI is moderate over central and southern parts of Marathwada region.

### North East



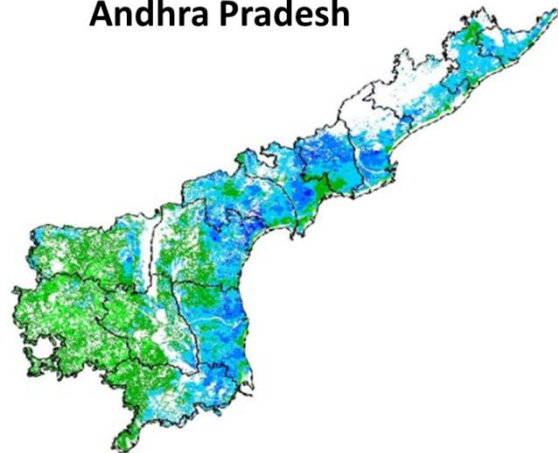
Agriculture vigour is good in valleys of northern hilly range of North-East states which covers most of the part of Assam. NDVI values vary from 0.4-0.5 in this region. In north-east part of Assam, NDVI values are more than 0.6. Isolated patches of normal NDVI conditions are observed all over NE region.

### Rajasthan



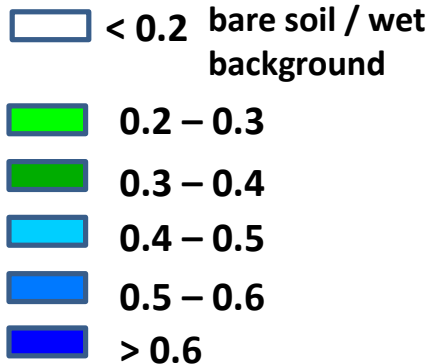
In the eastern and northern part of Rajasthan NDVI shows higher values from 0.5-0.6. Whereas, Agricultural vigour is moderate over the central Rajasthan with NDVI values varying from 0.2 - 0.3.

### Andhra Pradesh



Agriculture vigour is good (0.4 - 0.5) over central and coastal parts of Andhra Pradesh. The NDVI is normal over rest of the part of the state.

### Persistent cloud /



## Weather Forecast

### Weather Forecast for next 3 days (upto 0830 hours IST of 16<sup>th</sup> February, 2015).

- Rain/thundershowers would occur at isolated places over Odisha during the period.
- Rain/thundershowers would occur at isolated places over Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Bihar, Jharkhand, Chhattisgarh and Tamil Nadu & Puducherry during next 24 hours; over Arunachal Pradesh and Gangetic West Bengal during next 48 hours and dry weather would prevail thereafter.
- Dry weather would prevail over Andaman & Nicobar Islands during next 24 hours; rain/thundershowers would occur at isolated places on 14<sup>th</sup> and dry weather would prevail thereafter.
- Dry weather would prevail over rest parts of the country during the period.
- Fog would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Tripura during morning hours.
- No significant change in night temperatures likely over northwest & adjoining central India during next 48 hours and rise by 2-3°C thereafter.

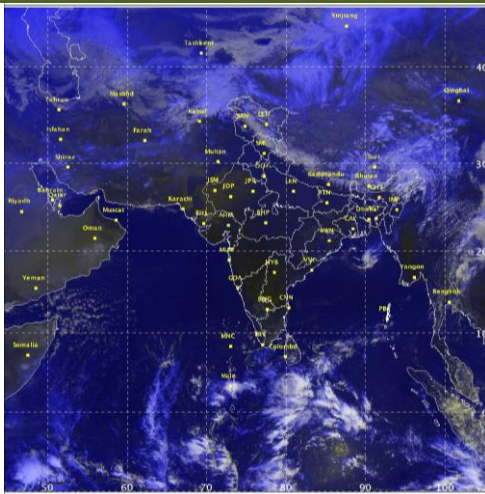
### Weather Warning during next 3 days

- **13 February (Day 1):** Hailstorm would occur at isolated places over Odisha and West Bengal & Sikkim.
- **14 February (Day 2):** No weather warning.
- **15 February (Day 3):** No weather warning.

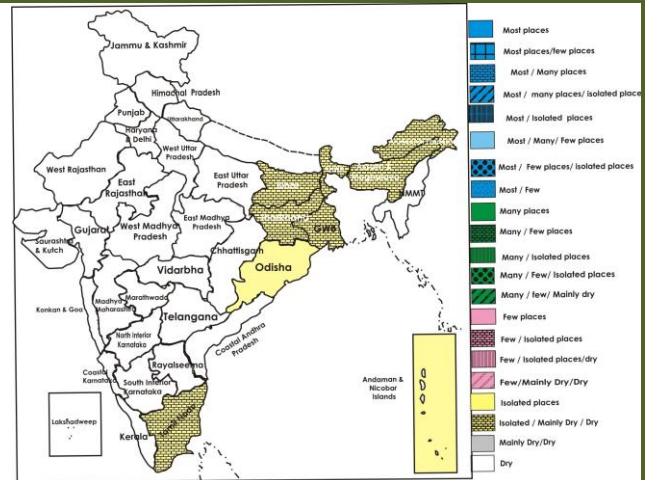
### Weather Outlook for subsequent 4 days from 16<sup>th</sup> to 20<sup>th</sup> February, 2015

- A fresh Western Disturbance would affect Western Himalayan region from 15<sup>th</sup> and plains of northwest India from 16<sup>th</sup> onwards. It would cause isolated heavy precipitation over western Himalayan region on 16<sup>th</sup> & 17<sup>th</sup>.
- Rain/thundershowers would occur at isolated places over northeastern states, Odisha and extreme south peninsular India on 15<sup>th</sup> & 16<sup>th</sup>.

### Satellite image dated, 13.02.2015, 0600 UTC



### Weather Forecast Map (Valid upto 0830 hours of 16<sup>th</sup> February, 2015)



## Detailed Zonewise Agromet Advisories

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



*Sorghum*



*Sugarcane*



*Chilli*



*Rice Transplanting*

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over extreme south peninsular India on 15<sup>th</sup> & 16<sup>th</sup> February.
- **Advisories:**
  - **Andhra Pradesh:**
    - Complete harvesting of red gram and Bengal gram in Anantapur district of Scarce Rainfall Zone.
    - As dry weather is prevailing, apply light and frequent irrigation to mango crop to get synchronised flowering in the Southern Zone.
    - Prevailing dry weather and increase in temperature is congenial for the incidence of smut in sugar-cane in the North Coastal Zone. Spray Propiconazole @ 1 ml/litre of water immediately after rationing to manage the incidence.
    - In the Scarce Rainfall Zone, prevailing dry weather and low temperature conditions are congenial for incidence of stem borer in maize. For control, undertake application of Carbofuran 3 G granules @ 3kg/acre.
    - High temperature during day time is congenial for incidence of sucking pests in cotton in the Krishna Godavari Zone. Undertake stem application of Monochrotophos based on the intensity of pest attack as control measure.
    - Prevailing dry weather is congenial for incidence of leaf folder in rice in the Southern Zone, spray Cartahydrochloride granules @ 8 kilo/acre, if the crop is in early stages and Chlorpyrifos or Quinolphos @ 2.5 ml/litre of water or Cartahydrochloride 2 g or Flubendamide 0.2 ml/litre of water on 20-30 days crop to manage the incidence.
    - **Telangana:**
      - Prevailing dry weather is congenial for incidence of stem borer in 20-25 days old transplanted rice in the Southern Telangana Zone. To control, spray Cartap Hydrochloride @ 2 g or Acephate @ 1.5 g per litre of water.
      - Rise in temperature and dry weather condition is congenial for the incidence of tobacco caterpillar in *rabi* groundnut in the Northern Telangana Zone, spray Thiodicarb @ 1.0 / litre of water to manage.
    - **Karnataka:**
      - Complete harvesting of Bengal gram, pigeon pea, *rabi* sorghum and safflower in the North East Transition Zone.
      - As dry weather is prevailing, apply irrigation in ragi crop which is at ear head emergence stage and continue harvesting of red gram and Bengal gram in the Eastern Dry Zone.
      - As dry weather is prevailing, apply irrigation to wheat and continue planting of sugarcane in the North Transition Zone and North East Transition Zone.
      - As dry weather is prevailing, continue sowing of maize with assured irrigation in the Southern Transition Zone.
      - Prevailing dry weather is congenial for incidence of sucking pests in tomato, lady's finger and water melon. To control spray 2 ml Dimethoate @ one litre of water or 1 g Acetamidid @ one litre of water.
    - **Kerala:**
      - Undertake land preparation for *puncha* rice crop in some pockets and summer vegetables in the Southern Zone.
      - In the Problem Area Zone, continue harvesting of pepper, continue mulching with crop residue and dried leaves in coconut, banana and nutmeg fields to reduce evapotranspiration and provide irrigation to nutmeg according to increase in temperature.
      - Prevailing dry and humid weather is congenial for incidence of powdery mildew on rubber plant in the Problem Area Zone. Spray Sulfex @ 2 g/litre of water to manage the incidence, if noticed.
      - There is chance of stem bleeding in coconut due to prevailing dry weather in the Central Zone. Chisel out the affected tissues completely, paint the wound with Tridemorph 5% and apply Tridemorph @ 25 ml in 25 litres of

water as soil drenching in four months.

- Warm climate is congenial for the increase in population of insect vectors which spread viral diseases in vegetables in Southern Zone. Apply Dimethoate @ 1.5 ml/ litre to prevent vectors.

▪ **Tamil Nadu:**

- Complete harvesting of matured samba rice in the Cauvery Delta Zone.
- Undertake sowing of summer irrigated sesame and provide irrigation to all irrigated crops since there is increase in temperature and low humidity in the Western Zone.
- As mainly dry weather would prevail, continue sowing of lady's finger under irrigated conditions in the South Zone.
- Undertake planting of onions in the North Western Zone.
- Undertake sowing of vegetables crop under irrigated condition in the Southern Zone.
- Incidence of thrips was noticed in rice nursery due to prevailing dry weather in the Cauvery Delta Zone. To control, Spray Chlorpyrifos @ 2.5 ml/litre of water.
- Suitable varieties are given in Annexure II.

▪ **Animal Husbandry**

- Undertake preventive measures to protect animals from Anthrax disease and vaccinate sheep and goat against pneumonia & blue tongue disease in the Scarce Rainfall Zone of Andhra Pradesh.
- Undertake de-worming of sheep and goats to control endo-parasites in the Cauvery Delta Zone and vaccinate animals against the foot and mouth disease in the Western Zone of Tamil Nadu.

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



*Rice transplanting*



*Mustard*



*Potato*



*Cabbage*

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Assam & Meghalaya during next 24 hours; over Arunachal Pradesh during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.  
Fog would occur at isolated places over Assam & Meghalaya and Tripura during morning hours.
- **Weather Warning:** Nil
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over the region.
- **Advisories:**
  - **Assam & Meghalaya, Arunachal Pradesh:**
    - In North Bank Plain Zone of Assam, continue land preparation for direct seeded *ahu* rice, summer green gram & black gram and sowing of *okra*.
    - In Hill Zone of Assam, undertake nursery bed preparation for early *ahu* rice and sowing of cucurbits and *okra*.
    - In Lower and Central Brahmaputra Valley Zone of Assam, continue transplanting of *boro* rice of about 45 days old (5- 6 leave stage) seedlings. Maintain 6 cm of standing water in the main fields of transplanted *boro* rice. Continue gap filling in *boro* rice after 10-15 days after transplanting.
    - In Lower Brahmaputra Valley Zone of Assam, continue sowing of sunflower and *okra*. Continue land preparation for planting of sugarcane in upland area. Apply irrigation to *rabi* maize, lentil, rapeseed and mustard.
    - In Central Brahmaputra Valley Zone of Assam, continue land preparation and sowing of summer green gram, black gram, summer vegetables, capsularis jute and pointed gourd.
    - In Barak Valley Zone of Assam, continue nursery bed preparation for summer vegetables like brinjal and tomato.
    - In Barak Valley Zone, Central Brahmaputra Valley Zone and Upper Brahmaputra Valley Zone of Assam, continue harvesting of rape seed/mustard when 75-80% siliquae turn yellow in colour.
    - In Hill Zone of Assam, due to humid weather, late blight and leaf eating caterpillars may be found in tomato and cole crops. Apply Ridomil MZ-72 @ 2 g/ litre of water and Indofil M-45 @ 2.5 g / litre at 15 days interval to protect against late blight and spray Malathion 50 EC @ 1.5 ml/litre against caterpillars.
    - In Central Brahmaputra Valley Zone of Assam, humid weather is congenial for wilt in lentil, linseed and khesari crops. Drench the soil with Bavistin @ 1 ml/litre of water.

- In Meghalaya, due to humid weather, there is chance of attack of blast /brown spot disease in *boro* rice. Spray Carbendazim @ 1g/litre of water against blast/brown spot. Also spray Chlorpyrifos 20 EC or Dimethoate 30 EC @ 2 ml/litre of water against aphid in mustard/ rapeseed.
- In Barak Valley Zone of Assam, due to foggy weather there is chance of stem borer/leaf folder/leaf tissue scrapped in white parallel line in *boro* rice. Apply Chlorpyrifos 50 EC @ 1.5 ml/ litre of water to control the attack.
- In North Bank Plain Zone of Assam, due to foggy weather there is chance of blast in *boro* rice, spray Mancozeb 0.2% @ 2 g/litre or Carbendazim 0.1% @ 1 g/litre of water to control the attack. Also minimum temperature favours for occurrence of potato tuber moth disease in potato, spray Chlorpyrifos 20 EC @ 1 ml/litre.
- **Manipur, Mizoram, Nagaland and Tripura:**
- In Nagaland, apply light irrigation in pea. Apply mulching in vegetables and cole crops. Continue land preparation and sowing for summer moong /urad and harvesting of toria/ mustard.
- In Mild Tropical Plain Zone of Tripura, apply light irrigation on every alternate day in cole crops, banana, mustard, maize and lentil. Undertake mulching after irrigation to conserve moisture. Continue transplanting of summer brinjal and tomato. Maintain 2 to 3cm standing water in the field of *boro* rice at tillering stage.
- In Nagaland, humid weather is favourable for occurrence of Pseudostem Weevil in banana. Remove the dried and diseased leaves and kill the weevil.
- In Mizoram, due to humid weather condition, there is chance of infestation of aphids in pea. For control, apply Imidachloprid @ 1.5 ml/litre of water.
- In Tripura, due to humid weather, there is chance of attack of aphids in mustard. Spray Monocrotophos @ 2ml per litre of water to manage the attack.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- In Barak Valley Zone of Assam, prevailing cold weather is favourable for attack of pneumonia in newly born chicks. Special care must be taken against pneumonia.

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



*Sugarcane*



*Wheat*



*Rice transplanting*



*Onion*

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Odisha during the period. Rain/thundershowers would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Bihar and Jharkhand during next 24 hours; over Gangetic West Bengal during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over Andaman & Nicobar Islands during next 24 hours; rain/thundershowers would occur at isolated places on 14<sup>th</sup> and dry weather would prevail thereafter. Fog would occur at isolated places over Bihar and Sub-Himalayan West Bengal & Sikkim during morning hours.
- **Weather Warning:** Hailstorm would occur at isolated places over Odisha and West Bengal & Sikkim on 13<sup>th</sup> February.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over Odisha on 15<sup>th</sup> & 16<sup>th</sup> February.
- **Advisories:**
  - **West Bengal:**
    - As hailstorm would occur at isolated places over West Bengal & Sikkim on 13<sup>th</sup> February, farmers are advised to use hail net for orchard crops and provide mechanical support to vegetables to protect from mechanical damage.
    - In Coastal Saline Zone, Old Alluvial and Terai Zone, continue transplanting of *boro* rice.
    - In New Alluvial Zone of West Bengal, as dry weather is prevailing apply irrigation to wheat and *boro* rice. Keep 3-5 cm stagnant water in the transplanted *boro* rice field.
    - In Laterite and Red Soil Zone of West Bengal, as dry weather is prevailing, apply irrigation to wheat and vegetables. Undertake harvesting of matured mustard.
    - Due to cold weather condition, there are chances of attack of aphids and semi-lopper in vegetables and mustard during its fruiting stage in Hill Zone. To control semi lopper, apply Indoxacarb @ 1.5ml/litre of water with

sticker, and Imidacloprid 17.8 SL @ 3 ml /10 litre of water or Quinalphos 25 EC @ 2 ml/ litre of water to control aphid infestation.

- In Old Alluvial Zone and Terai Zone, due to low temperature and foggy weather, there is chance of attack of late blight in potato. For control, spray Mancozeb @ 2 g /litre of water and Blitox @ 4 g/litre of water alternately at 7-10 days interval by completely wetting the leaves.
- In New Alluvial Zone of West Bengal, due to partly cloudy weather, there are chances of late blight in potato and leaf blight in chilli. To control late blight, spray Blitox or Mancozeb @ 2.5 g / litre of water at an interval of 5-7 days, thrice or Cymoxanil 8% + Mancozeb 64% @ 3 g per litre of water and to control leaf blight spray Blitox @ 2.5 to 3 g /litre of water at an interval of 20 days.
- In Laterite and Red Soil Zone of West Bengal, due to low temperature aphids attack may be found in wheat during its heading stage. Spray Dimethoate (ROGOR) 30 EC @ 1.75 ml/litre of water to control the attack.

▪ **Andaman and Nicobar Islands:**

- In South, North and Middle Andaman districts, due to cloudy weather, there may be possibility of attack of thrips, leaf hopper and other sucking pests in vegetables. Spray Imidacloprid @ 2 ml /litre and Acephate 2 g/litre alternatively once in two weeks.

▪ **Odisha:**

- As hailstorm would occur at isolated places over Odisha on 13<sup>th</sup> February, farmers are advised to use hail net for orchard crops and provide mechanical support to vegetables to protect from mechanical damage.
- In Western Undulating Zone of Odisha, as dry weather is prevailing, apply irrigation to vegetables and onion. Continue harvesting of matured cotton, sugarcane, arhar and niger. Complete nursery sowing for summer rice. Continue field preparation for planting of sugarcane.
- In East and South Eastern Coastal Plain Zone, continue nursery sowing of rice and ragi, sowing of sunflower and groundnut and planting of sugarcane.
- In North Eastern Plateau Zone of Odisha, as dry weather is prevailing, apply irrigation in rice nursery. Continue land preparation for transplanting of rice.
- In North Eastern Coastal Plain Zone of Odisha, as dry weather is prevailing, apply irrigation to rapeseed and mustard which are at flowering stage.
- In North Eastern Coastal Plain Zone of Odisha, rise in temperature will favour the incidences of stem borer population in rice nurseries. To control it, spray Traizophos or Chloropyriphos @ 2 ml/litre of water.
- In North Eastern Plateau Zone of Odisha, due to cool weather, there is chance of powdery mildew in pulses, spray wettable Sulphur @ 1 kg per acre.
- In East and South Eastern Coastal Plain Zone of Odisha, cloudy weather may favour the infestation of aphids in potato. To control spray Dimethoate @ 400 ml or Imidachloprid @ 50 ml in 200 litres water per acre.
- In East and South Eastern Coastal Plain Zone of Odisha, cloudy and cold weather is favourable for the infestation of powdery mildew in mustard and pulses. Spray Copper Oxychloride @ 1 kg or 800 g Dethane-M 45/acre in 200 litres water to control leaf blight disease.

▪ **Bihar:**

- In South Bihar Alluvial Zone, as dry weather is prevailing, apply irrigation to onion. Undertake harvesting of matured tobacco. Continue harvesting of early sown potato, stop irrigation 15 days before harvesting.
- In North West Alluvial Plain Zone of Bihar, as dry weather is prevailing, apply irrigation to pea, garlic, onion and vegetables. Complete transplanting of *rabi* onion. Undertake sowing of summer vegetables. Continue harvesting of early sown matured mustard and potato, stop irrigation 15 days before harvesting. Undertake sowing of okra and planting of sweet potato.
- In North East Alluvial Zone of Bihar, continue planting of spring sugarcane. Complete transplanting of *boro* rice and nursery sowing of summer rice. Continue harvesting of early sown potato. Continue sowing of cucumber, bottle gourd, muskmelon, watermelon, bitter gourd, ridge gourd and ladies finger. Continue transplanting of onion.
- In South Bihar Alluvial Zone, cool and humid weather is favourable for the attack of aphids in mustard/toria, spray Cartap Hydrochloride or Metasystox or rogor @ 1.5 ml/litre of water.

▪ **Jharkhand:**

- In Western Plateau Zone, continue sowing of cucurbitaceous vegetables like sponge gourd, bottle gourd, pumpkin, watermelon, muskmelon etc. Farmers, who have already raised the seedlings in polythene bag, may transplant the seedlings in the main field @ 2-3 seedlings per pit. Apply light irrigation after transplanting of seedlings. Continue transplanting of 21 days old seedling of rice. Continue harvesting of mustard.
- In South Eastern Plateau Zone of Jharkhand, apply irrigation in wheat and mustard. Continue nursery sowing of summer rice. Continue nursery sowing of vegetables like bottle gourd, khira, kakri, sponge gourd, ridge gourd, bitter gourd, okra, brinjal and Shimla mirch and continue transplanting of matured seedlings.
- In Central & North Eastern Plateau Zone of Jharkhand, continue land preparation for sowing of vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, watermelon and muskmelon. Continue nursery sowing of summer rice and undertake transplanting of 12-15 days old rice seedlings. Continue transplanting of onion and harvesting of potato. Undertake harvesting of pigeon pea. If there is sufficient moisture for irrigation; undertake cultivation of high yielding variety of summer maize.
- Suitable varieties are given in Annexure II.

- **Animal Husbandry**

- In Bihar and Jharkhand it is advised to keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to cattle.

### CENTRAL INDIA [M.P., CHHATTISGARH]



*Sugarcane*



*Wheat*



*Mustard*



*Onion*

- **Realised Rainfall:** Rainfall occurred in Ashoknagar and Guna districts of West Madhya Pradesh. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Chhattisgarh during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period. No significant change in night temperatures likely over central India adjoining to northwest India during next 48 hours and rise by 2-3°C thereafter.
- **Weather Warning:** Nil.
- **Advisories:**
  - **Madhya Pradesh:**
    - Undertake transplanting of seedlings of summer vegetables like tomato, brinjal, chilli, okra, cabbage and cauliflower on the prepared beds and sowing of cucurbitaceous crops in Malwa Plateau Zone.
    - Continue picking up of matured vegetables like pea, tomato, brinjal, chilli etc. in Vindya Plateau Zone.
    - Continue harvesting of matured potato and sowing of summer okra and cowpea in Kymore Plateau and Satpura Hill Zone.
    - Continue land preparation for sowing of summer moong in Nimar Valley zone.
    - Continue weeding and hoeing in onion and garlic in Bundelkhand Zone and transplanting of tomato, chilli, brinjal and cucurbitaceous crops in the field.
    - Due to humid weather, there are chances of attack of sucking pests in vegetables in Jhabua Hill Zone; spray Thiomithaxam @ 0.35 g per litre of water.
    - Due to cloudy weather there are chances of attack of semi lopper in cauliflower and cabbage crops in Bundelkhand Zone, spray Malathion 50 E.C. @ 1 ml per litre of water.
  - **Chhattisgarh:**
    - Undertake nursery sowing of cucurbitaceous crops and sowing of groundnut and sesame in Bastar Plateau Zone.
    - Undertake transplanting of summer rice. Continue sowing of cucurbitaceous crops, leafy vegetable, cowpea and okra in North Hill Zone. Undertake harvesting of matured mustard and potato.
    - As mainly dry weather is prevailing, apply irrigation in wheat at flowering stage in Plain Zone and North Hill Zone of Chhattisgarh.
    - Undertake intercultural operations, followed by irrigation in sugarcane crop at knee height stage in Chhattisgarh Plain Zone.
    - Due to humid weather, there are chances of stem borer disease in maize in Bastar Plateau Zone, spray Carbofuran 3G @ 20 kg per hectare.
- **Animal Husbandry**
  - Provide green fodder along with mineral mixture and fresh water for milch animals in Madhya Pradesh. Increase light duration in poultry farms.

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



*Wheat*

*Sugarcane*

*Mustard*

*Cabbage*

- **Realised Rainfall:** Rainfall occurred in Anantnag and Kupwara districts of Jammu & Kashmir. Weather remained dry/mainly dry over rest of the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi and Uttar Pradesh during morning hours. No significant change in night temperatures likely over northwest India during next 48 hours and rise by 2-3°C thereafter.
- **Weather Warning:** Nil.
- **Weather Outlook:** A fresh Western Disturbance would affect Western Himalayan region from 15<sup>th</sup> and plains of northwest India from 16<sup>th</sup> onwards. It would cause isolated heavy precipitation over western Himalayan region on 16<sup>th</sup> & 17<sup>th</sup> February.
- **Advisories:**
  - **Jammu & Kashmir:**
    - In Sub Tropical and Intermediate Zone of Jammu & Kashmir, continue field preparation for nursery sowing of tomato, brinjal and chilli, sowing of beans and cucumber.
    - Undertake sowing /transplanting of tomato, brinjal and chillies in Intermediate Zone of Jammu & Kashmir. Apply ½ N and full dose of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O as basal dose.
    - In Sub Tropical and Intermediate Zone of Jammu & Kashmir, due to dry weather and temperature variation there may be incidence of collar rot, wilt and root rot in chickpea crop. For control of rot rogue out the severely infected plants and drench affected areas with Thiram @ 0.2 % or Carbendazim @ 0.1 %.
  - **Uttarakhand:**
    - In Bhabar and Tarai Zone of Uttarakhand, continue sowing of potato at high hills with irrigation facilities. Also continue nursery sowing of tomato and capsicum.
    - In Hill Zone of Uttarakhand, continue nursery sowing of tomato, brinjal and capsicum.
    - Due to humid weather with low temperature, there is attack of leaf hopper in brinjal, and tomato in Sub humid Sub Tropic Zone of Uttarakhand. To control, apply Dichlorvos @ 1 ml/litre of water.
  - **Rajasthan:**
    - Continue field preparation for sowing of summer groundnut in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.
    - Due to increase in day temperature aphids may become hyper active in mustard crop in Flood Prone Eastern Plain Zone of Rajasthan. Regularly monitor the field boundaries for aphid and destroy the infested branches/twigs.
    - Due to increase in day temperature there may be attack of pod borer in gram crop to control dust Melathion 5% or Methyl Parathion 2% @ 20-25 kg/ha before flowering and pod formation.
    - Due to change in temperature in Semi Arid Eastern Plain Zone of Rajasthan, mustard crop may be affected with white rust & stem rot. To control white rust spray Blitox 50 @ 3 g or Mancozeb @ 2 g per litre of water and to control stem rot spray fungicide Bavistin @ 1.0 g per litre water. Also *heliolithis* infestation in gram, spray Quinalphos 25 EC @ 1200 ml/ha or Indoxacarb @ 200 ml/ha along with water at the time of flowering.
  - **Himachal Pradesh:**
    - Undertake sowing of radish on flat beds or by making ridges at a distance of 30x5 cm in Sub-Montane and Low Hills Sub-Humid Tropical Zone with available moisture.
    - With available soil moisture, apply second dose of nitrogen in wheat and vegetables and last dose in cabbage and cauliflower in Sub-Montane and Low Hills Sub-Humid Tropical Zone.
    - In Mid Hills Sub-Humid Zone, continue planting of onion at a distance of 15x10cm.
    - Under prevailing low temperature and cloudy weather condition, yellow rust are appearing in the wheat crop in the form of yellow powder/stripes on the leaves, to control spray the tilt (Propiconazole) 25 EC/Folicure (Tebuconazole) 25 EC/Bayletan 25 WP @ 0.1% i.e. 30ml or 30 g per 30 litres of water per kanal and repeat the spray after 15 days interval in Sub-Montane and Low Hills Sub-Humid Tropical Zone. There is chance of attack



of aphids on mustard, spray Dimethoate 30 EC or Cypermethrin 10 EC @ 1 ml/litre of water. For the control of aphids and leaf eating caterpillars in cauliflower, cabbage, spray Malathion 50 EC @ 1 ml/litre of water.

➤ Under prevailing low temperature and cloudy weather condition, there is chance of attack of aphids in mustard and Gobi sarson in Mid Hills Sub-Humid Zone. To control spray 750 ml Cypermethrin or Metasystax in 750 litre of water/ha. Downy mildew is expected in cruciferous vegetables, for control spray Redomil M-Z @ 25 g per litre of water at 15 days interval.

➤ Under low temperature condition, there are chances of incidence of collar rot in apple in Mild Hills Sub Humid Zone. For control, spray Ridomil @ 75 g per 20 litres of water or Bavistin @ 15-20 g/20 litres of water or Dithane-M-45 @ 90-100 g/15 litres of water.

▪ **Punjab, Haryana and Delhi:**

➤ Continue planting of sugarcane in Western Plain Zone of Punjab.

➤ Under prevailing dry weather condition, apply irrigation to newly planted plants and mustard in Undulating Plain Zone of Punjab.

➤ In Western Semi-Arid Zone of Delhi, undertake nursery sowing of ladies finger, cucurbitaceous crops and vegetables like chilli, tomato and brinjal and transplanting of young seedlings of tomato, chilli and cole crops.

➤ Due to rise in temperature, there may be attack of termite in wheat in Western Semi-Arid Zone of Delhi. To control, spray Chloropyriphos @ 1 litre mixed in 50 kg of sand in the evening hours with subsequent irrigation.

➤ Due to high humidity in Eastern Zone of Haryana, there are chances of incidence of white rust in late sown mustard crop, late blight in potato and tomato and there may be attack of thrips on timely sown onion crop. Undertake constant monitoring to control the pest and diseases.

➤ Due to high humidity, late blight infestation may occur in potato crop in Undulating Plain Zone of Punjab. To control, spray Indofil M45 @ 500-700 per acre.

➤ Cloudy weather condition is favourable for attack of yellow rust in wheat crop in Central Plain Zone of Punjab. To control spray the crop with tilt 25 EC/Shine 25 EC/Bumper 25 EC or Folicur 25 EC @ 200 ml or Bayleton 25 WP @ 200 g in 200 litres of water/acre.

➤ Under prevailing cloudy weather condition, there is chance of incidence of yellow rust in wheat in Undulating Plain Zone of Punjab and Western Semi-Arid Zone of Delhi. To control, spray Tilt (Propiconazole) 25 EC/folicure (Tebuconazole) 25 EC/Bayleton 25 WP @ 0.1% i.e. 30 ml or 30 g per 30 litres of water per kanal and repeat the spray after 15 days interval.

➤ Due to foggy weather, constant monitoring of Pink stem borer in wheat crop. Incidence observed in South-Western region of Punjab, if the attack reached above ETL then spray Quinalphos 25EC @ 800ml/acre.

▪ **Uttar Pradesh:**

➤ Undertake sowing of ladies finger, lobia and continue nursery sowing of tomato and chilli, sowing of summer maize in Central plain Zone with available soil moisture. Also undertake sowing of gourd at a distance of 3-4x0.75 m.

➤ Undertake top dressing of remaining half dose of nitrogen in sugarcane 110-120 days after sowing and in wheat at tillering and second at panicle initiation stage in Central Plain zone utilizing available soil moisture.

➤ Continue land preparation for planting summer sugarcane and transplanting of onion and sowing of urad and moong in Eastern Plain Zone.

➤ Complete sowing tomato, chilli and brinjal in Bundelkhand Zone. Continue planting of onion.

➤ Under prevailing foggy weather condition, there is chance of blight disease in gram and potato in Central Plain Zone. For control of blight in gram, spray Zinc Manganese Carbamate @ 2 kg in 800 litres of water/ha at 10 days interval and for control of blight in potato, spray Mancozeb @ 2 g or Blitox per litre of water.

➤ Due to foggy weather condition, there is also chance of attack of aphids in mustard in Central Plain Zone. For control of aphids, spray Malathion 50 EC @ 2 ml or Dimethoate 30 EC or Chloropyriphos @ 0.5ml or Imidachloprid @ 1.5 ml per litre of water/ha. For control of Alternaria blight in mustard, spray Blitox @ 2.5 kg per hectare. For control of blight in potato, apply Cymoxanil+ Mancozeb or Metalaxyl+ Manozeb @ 1.5g per litre of water.

➤ Under foggy weather condition, there is chance of powdery mildew in peas in Bundelkhand Zone. For control, apply soluble Sulphur 80EC @2 kg or Tridemorph 80 EC @500ml in 500-600 litres of water per ha. There is also chance of attack of fruit borer in arhar and fruit borer and semi-looper in gram. For control of fruit borer in arhar, spray B.T. @ 1 kg or Indascarb 14.5 SC @ 400 ml or Quinalphos 25 EC @ 1.5 litres and for control of semi-looper in gram, spray BT @ 1kg or Malathion 50EC @ 2.5-3 kg in 500-600 litres of water.

➤ Under foggy weather condition, there is chance of attack of fruit fly and fruit borer in arhar in Eastern Plain Zone. For control, spray Imidicloprid @ 1 litre in 800-1000 litres of water/ha in Eastern Plain Zone.

➤ Under foggy weather condition, there are chances of incidence of *Alternaria* blight in mustard and late blight in potato in North Eastern Plain Zone. Spray Quinalphos @ 1g or Ridomil MZ @ 2 g/litre of water for control of *Alternaria* blight in mustard and for control of late blight in potato, spray Ridomil MZ @ 2 g + Coper Oxichloride @ 1g per litre of water. For control of attack of aphids in potato and mustard, spray Imidachloprid @ 1ml/litre of water. For control of blight disease in wheat, spray Mancozeb @ 2 ml/litre of water.

➤ Suitable varieties are given in Annexure II.

• **Floriculture**

- Under prevailing low temperature, red scales are observed in roses in Sub-Montane and Low Hills Sub-Humid Zone of Himachal Pradesh. For control, spray Carbofuran @ 1 teaspoon per plant.
- **Apiculture**
- In view of prevailing low temperature, give winter packing immediately to bee colonies in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Check the colonies for nectar and give artificial food to honey bees as there is scarcity of flowers during these days. Keep colonies in sun on clear day.
- **Animal Husbandry**
- Due to prevailing low temperature in Punjab, Haryana & Delhi, East Rajasthan, Himachal Pradesh and Uttar Pradesh, keep cattle in cowsheds to protect them from cold. Also give 40-50g mineral mixture with the daily feed. Also make arrangements in poultry houses for protection of birds from cold. Due to light rain, there are chances of spread of H.S. (Haemorrhagic Septicemia or Gall Ghotu) in cattle. Vaccinate the animals.
- Due to prevailing low temperature in Western Zone of Haryana, cover the animal sheds and provide dry bedding during night. New born calves need special care, so provide them dry bedding and clothing (Jhull).

### WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



*Banana*

*Sugarcane*

*Sorghum*

*Mango*

- **Realised Rainfall:** Weather remained dry/mainly dry over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period.
- **Weather Warning:** Nil.
- **Advisories:**
  - **Maharashtra:**
    - In Konkan, as dry weather is likely to prevail, apply irrigation to groundnut (at 10–12 days interval), vegetables. Apply fertilizers and undertake intercultural operations in groundnut, vegetable crops and mango and cashew orchards. Considering day temperature (upto 34°C) and canopy apply 150 to 200 litres of water per mango tree at 15 days interval. Apply grass mulch in lateritic soil to avoid water loss. To avoid fruit dropping spray *Amrashakti* @ 1 litre per four trees in 25 litres of water on inflorescence. Maintain 2-3 cm water level in transplanted rice and finger millet field for first 8-10 days and maintain water level upto 5 cm at vegetative stage.
    - In Madhya Maharashtra, as dry weather prevailed, apply irrigation to vegetables, sugarcane, wheat, gram and pomegranate, banana orchards. Continue intercultural operations like weeding and apply fertilizers in sugarcane and vegetables. Complete preparatory tillage and continue planting of *suru* sugarcane. Continue sowing of summer groundnut and summer sunflower. Continue harvesting of already matured *rabi* jowar.
    - In Marathwada, as dry weather prevailed during last week and dry weather is likely to prevail, apply irrigation in gram (pod development stage), wheat (milk stage) and vegetables. Apply irrigation to sugarcane by drip irrigation or by alternate furrow method due to water stress condition also apply mulch of crop residue or sugarcane trash to preserve moisture. To reduce moisture loss from the soil dust mulching may be done in late sown jowar. Undertake intercultural operations in vegetables and sugarcane. Continue planting of *suru* sugarcane and summer okra.
    - In Vidarbha, as dry weather is prevailing, apply irrigation to vegetables, gram (pod development stage) and wheat (booting stage). Complete transplanting of 30 -35 days old summer rice seedlings. Maintain 2-3 cm water level in transplanted rice field. Continue sowing of summer groundnut, summer sesame and planting of watermelon, muskmelon and summer okra.
    - Due to cloudy weather in Vidarbha region there may be attack of hoppers in mango, spray Dimethioate 30% @ 10 ml per 10 litres of water.
    - Due to unseasonal rain and hail storm in last week in Marathwada region there may be infestation of pest and disease in banana orchards, spray Carbendazim 1 gm per litre of water.
  - **Gujarat:**
    - Continue sowing of groundnut and undertake sowing of green gram, vegetables like okra, cluster bean and cowpea in South Gujarat Heavy Rainfall Zone. Undertake transplanting of brinjal seedling. Harvest the matured spikes of castor.
    - As dry weather is prevailing and there is increase in temperatures apply irrigation to vegetables at an interval of 3 to 4 days in South Gujarat Zone.
    - Continue sowing of summer groundnut, vegetable crops (lady's finger, cluster bean, bottle gourd, sponge gourd,

ridge gourd and bitter gourd), watermelon and transplanting of tomato and brinjal in North Saurashtra Zone and land preparation for sowing of sesame and green gram and keep inputs ready. Apply irrigation in wheat (grain development stage), garlic and onion (bulb development stage).

- Continue land preparation for sowing of groundnut and sesame in North Gujarat Zone. As dry weather would prevail, apply irrigation in wheat (milk/grain development stage), mustard (pod development stage), and cotton, continue harvesting of matured spikes of castor and continue picking of matured bolls of cotton during early morning hours in North Gujarat and North West Zone.
- Continue land preparation for sowing of summer crops in Middle Gujarat Zone. As dry weather is prevailing apply irrigation in wheat crop (milk/grain formation stage).
- Apply irrigation in mustard (pod development stage) and wheat (milk stage), cotton (reproductive stage) in Bhal and Coastal Zone of Gujarat. Undertake harvesting of matured spikes of castor and continue picking of matured bolls of cotton during early morning hours.
- Due to rise in temperature there are chances of attack of aphid in wheat and potato in North Gujarat Zone, to control spray Metyle-O-Demeton 25 EC or Diamethote 30 EC @ 10 ml per 10 litres of water.
- Suitable varieties are given in Annexure II.

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

**Annexure I**  
**Week by week Rainfall Distribution**

Sub-Divisions	28.01.15		04.02.15		11.02.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	0.0	-100	7.0	-78	0.0	-100
Dibang Valley	**	**	59.0	87	0.0	-100
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	0.0	-100	25.9	16	1.7	-92
Kurung Kumey	**	**	**	**	**	**
Lohit	0.0	-100	12.0	-35	0.8	-94
Lower Dibang Valley	0.0	-100	16.4	-48	0.3	-99
Lower Subansari	**	**	**	**	**	**
Papumpara	1.0	-75	0.0	-100	6.6	-19
Tawang	0.0	-100	0.0	-100	0.0	-100
Tirap	0.0	-100	2.4	-86	0.0	-100
Upper Siang	0.0	-100	43.0	16	0.0	-100
Upper Subansari	0.0	-100	6.6	-60	1.0	-76
West Kameng	0.0	-100	0.0	-100	0.0	-100
West Siang	0.0	-100	17.5	-4	1.5	-91
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-100	0.0	-100	0.0	-100
Bongaigaon	0.0	-100	0.0	-100	0.0	-100
Cachar	0.0	-100	0.0	-100	0.0	-100
Chirang	0.0	-100	0.0	-100	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.0	-100	0.5	-84	0.0	-100
Dibrugarh	0.1	-99	2.3	-85	0.0	-100

Goalpara	0.0	-100	0.0	-100	0.0	-100
Golghat	0.0	-100	1.0	-82	0.0	-100
Hailakandi	0.0	-100	0.0	-100	0.0	-100
Jorhat	0.0	-100	0.2	-98	0.0	-100
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.0	-100	0.8	-83	0.0	-100
Karbi Anglong	0.0	-100	0.0	-100	0.0	-100
Karimganj	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	0.0	-100	0.0	-100	0.0	-100
Lakhimpur	0.1	-98	0.8	-94	0.1	-99
Morigaon	0.0	-100	0.2	-96	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	0.0	-100	0.0	-100
Nalbari	0.0	-100	0.3	-94	0.0	-100
Sonitpur	0.0	-100	0.3	-94	0.0	-100
Sibsagar	0.0	-100	1.4	-85	0.0	-100
Tinsukia	0.0	-100	4.3	-74	0.0	-100
Udalgiri	0.0	-100	0.0	-100	0.8	-90
<b>Meghalaya</b>						
East Garo Hills	0.0	-100	4.2	367	0.0	-100
East Khasi Hills	0.0	-100	1.8	-59	0.0	-100
Jaintia Hills	0.0	-100	5.0	-50	0.0	-100
Ribhoi	0.0	-100	0.0	-100	0.0	-100
South Garo Hills	0.0	-100	1.0	100	0.0	-100
West Garo Hills	0.0	-100	0.2	-60	0.0	-100
West Khasi Hills	0.0	-100	7.0	17	0.0	-100
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	0.0	-100	0.0	-100	0.0	-100
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	0.0	-100
Serchhip	**	**	**	**	**	**
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	0.0	-100	0.0	-100	0.0	-100
Imphal west	0.0	-100	0.0	-100	0.0	-100
Senapati	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	0.0	-100
Ukhrul	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	0.0	-100	0.5	-84	0.0	-100
Kephire	**	**	**	**	**	**

Kohima	0.0	-100	0.0	-100	0.0	-100
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	0.0	-100	0.0	-100	0.0	-100
North Tripura	0.0	-100	0.0	-100	0.0	-100
South Tripura	0.0	-100	0.0	-100	0.0	-100
West Tripura	0.0	-100	0.0	-100	0.0	-100
<b>Himachal Pradesh</b>						
Bilaspur	31.7	59	12.5	-47	0.0	-100
Chamba	43.5	19	67.6	96	0.0	-100
Hamirpur	44.3	111	26.8	14	0.0	-100
Kangra	37.7	90	40.3	88	0.0	-100
Kinnaur	34.9	28	48.7	49	0.2	-99
Kullu	50.3	94	52.4	148	0.3	-99
Lahaul and Spiti	35.3	-7	36.4	5	0.0	-100
Mandi	41.6	97	25.2	23	0.0	-100
Shimla	24.1	31	21.9	16	0.0	-100
Sirmaur	16.3	16	17.9	-2	0.0	-100
Solan	33.8	64	28.9	26	0.0	-100
Una	40.3	247	13.9	-12	0.0	-100
<b>Punjab</b>						
Amritsar	12.4	72	16.6	105	0.0	-100
Barnala	7.4	65	0.7	-92	0.0	-100
Bhatinda	11.2	272	10.3	130	0.0	-100
Faridkot	2.0	-58	14.0	289	0.0	-100
Fatehgarh Saheb	7.3	-24	8.0	-2	0.0	-100
Ferozpur	1.6	-29	3.9	-21	0.0	-100
Gurdaspur	15.5	-2	21.3	16	0.0	-100
Hoshiarpur	7.0	-38	9.2	-18	0.0	-100
Jalandhar	16.4	122	5.7	-33	0.0	-100
Kapurthala	6.2	-40	15.0	72	0.0	-100
Ludhiana	10.7	50	5.5	-34	0.0	-100
Mansa	3.0	-30	8.2	64	0.0	-100
Moga	3.0	-29	14.7	126	0.0	-100
Muktesar	6.0	33	10.8	163	0.0	-100
Nawashahar	18.9	66	6.0	-59	0.0	-100
Patiala	6.8	-25	20.5	120	0.0	-100
Ropar	23.2	113	11.2	24	0.0	-100
Sangrur	18.5	248	13.0	92	0.0	-100
Mohali	26.0	165	17.3	88	0.0	-100
TarnTaran	3.7	-35	8.4	62	0.0	-100
<b>Haryana,Chd,Delhi</b>						

<b>Haryana</b>						
Ambala	14.4	85	10.7	-21	0.0	-100
Bhiwani	8.0	61	0.0	-100	0.0	-100
Chandigarh	22.9	60	23.7	48	0.0	-100
Faridabad	14.8	244	0.0	-100	0.0	-100
Fatehabad	3.9	-37	11.0	279	0.0	-100
Gurgaon	5.3	154	0.0	-100	0.0	-100
Hissar	3.2	75	5.0	47	0.0	-100
Jhajar	7.7	167	0.0	-100	0.0	-100
Jind	2.8	25	7.0	30	0.0	-100
Katihah	2.7	-47	9.6	104	0.0	-100
Karnal	4.5	-41	14.9	102	0.0	-100
Kurukshetra	2.4	-68	5.6	-27	0.0	-100
Mahendragarh	8.5	166	0.0	-100	0.0	-100
Mewat	18.6	709	0.0	-100	0.0	-100
Palwal	21.8	738	0.0	-100	0.0	-100
Panchkkula	26.7	115	11.3	-25	0.0	-100
Panipat	2.1	-57	3.1	-48	0.0	-100
Rewari	10.8	671	0.0	-100	0.0	-100
Rohtak	2.6	-48	0.0	-100	0.0	-100
Sirsa	3.0	-14	4.4	2	0.0	-100
Sonepat	3.8	-7	0.6	-90	0.0	-100
Yamunanagar	4.3	-59	7.1	-32	0.0	-100
<b>Delhi</b>						
Central Delhi	5.0	4	0.0	-100	0.0	-100
East Delhi	4.0	-17	0.0	-100	0.0	-100
New Delhi	11.9	148	0.0	-100	0.0	-100
North Delhi	10.7	122	0.0	-100	0.0	-100
North East Delhi	2.0	-58	0.0	-100	0.0	-100
North West Delhi	2.8	-41	0.0	-100	0.0	-100
South Delhi	11.9	147	0.0	-100	0.0	-100
South West Delhi	11.3	134	0.1	-99	0.0	-100
West Delhi	5.0	4	0.0	-100	0.0	-100
<b>Jammu &amp; Kashmir</b>						
Anantnag	15.9	-48	45.7	93	28.0	84
Badgam	4.8	-79	37.9	181	4.0	-74
Bandipore	**	**	**	**	**	**
Baramula	20.9	-63	43.3	24	19.5	-66
Doda	35.4	-19	89.2	139	0.2	-99
Ganderbal	23.8	9	50.8	187	13.0	2
Jammu	10.9	-36	60.6	279	0.4	-94
Kargil	**	**	**	**	**	**
Kathua	10.4	-33	30.8	47	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	12.2	-60	40.7	72	9.8	-36
Kupwara	30.0	8	44.6	74	24.4	9
Ladakh(Leh)	1.7	39	0.5	-70	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	4.3	-65	17.0	40	6.8	-9

Rajouri	28.0	87	18.5	-11	10.2	28
Ramban	39.4	-10	87.2	134	3.9	-86
Reasi	20.4	-48	86.6	192	4.0	-79
Samba	7.8	-54	41.5	159	0.3	-96
Shopian	1.0	-92	23.0	90	6.0	-20
Srinagar	3.1	-86	29.7	68	6.5	-49
Udhampur	14.0	-64	34.9	18	1.5	-92
<b>East Madhya Pradesh</b>						
Anuppur	0.0	-100	0.4	-93	7.2	-12
Balaghat	0.0	-100	0.0	-100	0.9	-86
Chhatarpur	29.5	367	0.0	-100	9.9	129
Chindwara	0.0	-100	0.0	-100	5.9	10
Damoh	19.5	160	1.5	-25	2.0	-71
Dindori	5.0	39	1.0	-82	3.2	-45
Jabalpur	6.6	16	13.5	364	8.8	91
Katni	6.1	-16	1.8	6	15.8	193
Mandla	0.1	-97	0.0	-100	19.1	218
Narsingpur	8.8	159	1.2	-52	10.4	136
Panna	16.5	157	0.0	-100	12.7	127
Rewa	3.1	-54	21.5	496	0.7	-82
Sagar	10.7	138	0.0	-99	3.4	-19
Satna	10.8	50	10.0	170	5.6	-2
Seoni	0.0	-100	0.0	-100	18.2	152
Shahdol	0.0	-100	4.0	8	1.0	-79
Sidhi	7.4	6	7.4	95	0.0	-100
Singrauli	5.1	143	10.7	296	0.0	-100
Tikamgarh	8.0	86	0.0	-100	10.0	614
Umaria	0.5	-95	12.3	200	2.4	-65
<b>West Madhya Pradesh</b>						
Agar	0.0	-100	0.0	-100	3.3	200
Alirajpur	0.0	-100	0.0	-100	2.4	243
Asoknagar	15.3	1171	0.0	-100	21.0	813
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	2.1	13	0.0	-100	17.7	419
Bhind	23.9	1225	0.0	-100	1.3	-22
Bhopal	14.4	454	0.0	-100	0.0	-100
Burhanpur	0.0	-100	0.0	-100	13.1	1094
Datia	21.3	913	0.0	-100	8.7	212
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	1.5	275	0.0	-100	5.0	738
Guna	10.1	259	0.0	-100	26.5	755
Gwalior	33.0	1273	0.0	-100	5.7	126
Harda	0.4	-71	0.0	-100	11.5	219
Hosangabad	5.9	95	1.9	-3	11.1	184
Indore	15.9	1345	0.0	-100	1.8	80
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	0.0	-100	6.3	273
Khargone	0.0	-100	0.0	-100	0.7	-39
Mandsaur	0.0	-100	0.0	-100	4.8	494

Morena	17.1	966	0.0	-100	4.5	277
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	11.0	547	2.4	41	0.0	-100
Rajgarh	8.0	323	0.0	-100	5.6	197
Ratlam	0.3	-33	0.0	-100	6.4	814
Sehore	3.4	70	0.0	-100	2.0	-31
Shajapur	4.1	130	0.0	-100	0.0	-100
Sheopur Kalani	19.0	1627	0.0	-100	0.5	-38
Shivpuri	24.4	1063	0.0	-100	6.5	242
Ujjain	0.2	-80	0.0	-100	2.2	44
Vidisha	23.3	870	0.0	-100	0.0	-100
<b>Chhattisgarh</b>						
Bastar	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.0	-100	0.1	-98	0.9	-84
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	1.0	-74	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	2.5	-28	2.8	13
Kawardha	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-100
Rajandgaon	0.0	-100	0.0	-100	0.4	-88
Surguja	0.0	-100	1.5	-68	0.3	-93
<b>East Uttar Pradesh</b>						
Allahabad	22.4	376	0.6	-87	0.5	-85
Ambedkar Nagar	16.0	290	0.0	-100	0.0	-100
Azamgarh	16.0	416	1.0	-74	0.0	-100
Bahraich	2.7	-40	4.0	0	0.0	-100
Ballia	11.3	278	0.0	-100	0.0	-100
Balrampur	0.0	-100	12.0	186	0.0	-100
Banda	26.7	404	0.0	-100	15.0	398
Barabanki	4.1	14	3.1	-24	0.0	-100
Basti	4.0	14	2.5	-24	0.0	-100
Chandauli	2.6	-54	3.3	-46	0.0	-100
Deoria	2.0	-38	0.0	-100	0.0	-100
Faizabad	5.2	-10	1.1	-69	0.0	-100
Farrukhabad	12.2	306	0.0	-100	0.0	-100
Fatehpur	10.8	82	0.0	-100	3.6	18
Gazipur	7.5	78	0.1	-97	0.0	-100
Gonda	0.5	-90	2.0	-55	0.0	-100
Gorakhpur	2.4	-35	0.2	-96	0.5	-88
Hardoi	8.9	97	0.0	-100	0.2	-95



Jaunpur	19.4	471	0.4	-87	0.0	-100
Kannauj	18.2	379	0.0	-100	1.6	-58
Kanpur City	11.9	261	0.0	-100	0.1	-97
Kanpur Dehat	12.2	352	0.0	-100	0.0	-100
Kaushambi	58.1	1163	0.0	-100	0.0	-100
Kheri	7.5	71	2.4	-58	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	9.0	115	1.0	-76	0.3	-89
Maharajganj	0.0	-100	2.0	-64	0.0	-100
Mau	4.7	51	0.0	-100	0.0	-100
Mirzapur	0.5	-91	0.0	-100	0.0	-100
Pratapgarh	35.0	821	0.0	-100	4.3	47
RaiBareilly	8.4	141	0.4	-91	1.4	-42
Sahuji Maharajnagar	33.3	552	0.0	-100	1.2	-72
Sant Kabirnnagar	4.0	43	1.0	-74	0.0	-100
Sant Ravidas Nagar	23.5	320	0.0	-100	0.0	-100
Shrawasti	0.0	-100	0.0	-100	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	4.7	10	0.8	-78	0.0	-100
Sonbhadra	2.7	-61	11.6	157	0.0	-100
Sultanpur	9.1	184	1.5	-60	1.2	-56
Unnao	9.0	137	1.0	-79	0.0	-100
Varanasi	15.5	259	1.5	-72	0.9	-79
<b>West Uttar Pradesh</b>						
Agra	27.3	521	0.0	-100	0.5	-78
Aligarh	17.3	456	0.0	-100	0.0	-100
Auraiya	6.5	171	0.0	-100	0.0	-100
Badaun	22.5	971	0.0	-100	0.0	-100
Baghpat	2.8	-33	1.0	-80	0.0	-100
Bareilly	19.3	285	0.3	-94	0.0	-100
Bijnor	8.4	-9	1.8	-70	0.0	-100
Bulandsahar	8.7	93	0.0	-100	0.0	-100
Etah	24.7	816	0.0	-100	0.0	-100
Etawah	4.3	55	0.0	-100	0.0	-100
Firozabad	24.9	728	0.0	-100	0.0	-100
GBNagar	15.5	223	0.0	-100	0.0	-100
Ghaziabad	14.8	168	0.3	-93	0.0	-100
Hamirpur	10.8	144	0.0	-100	15.3	365
Jalaun	14.0	509	0.0	-100	0.0	-100
Jhansi	17.1	469	0.0	-100	14.7	373
Jotiba Phule Nagar	5.7	13	0.0	-100	0.0	-100
Kanshiramnagar	55.0	1386	0.0	-100	0.0	-100
Lalitpur	9.7	93	0.0	-100	17.4	729
Mahamaya Nagar	29.0	1015	0.0	-100	0.0	-100
Mahoba	8.9	123	0.0	-100	13.2	560
Mainpuri	9.7	306	0.0	-100	0.0	-100
Mathura	3.5	46	0.0	-100	0.0	-100
Meerut	13.5	105	0.0	-100	0.0	-100
Moradabad	11.2	114	1.2	-73	0.0	-100

Muzaffarnagar	3.5	-57	0.4	-92	0.0	-100
Pilibhit	15.1	258	0.0	-100	0.0	-100
Rampur	11.4	81	0.0	-100	0.0	-100
Saharanpur	4.3	-48	6.3	-14	0.0	-100
Shahjahanpur	8.5	215	0.0	-100	0.0	-100
<b>Uttarakhand</b>						
Almora	9.7	-22	5.4	-64	0.0	-100
Bageshwar	7.5	-39	6.5	-57	0.0	-100
Chamoli	16.6	7	39.3	112	0.0	-100
Champawat	12.5	3	0.8	-93	0.0	-100
Dehradun	7.4	-48	7.0	-51	0.0	-100
Garhwal Pauri	2.8	-74	6.7	-47	0.0	-100
Garhwal Tehri	11.1	-39	13.4	-11	0.0	-100
Haridwar	6.9	-24	7.9	-17	0.0	-100
Nainital	14.9	24	3.5	-74	0.0	-100
Pithorgarh	11.0	-27	15.6	5	0.0	-100
Rudraprayag	6.4	-65	27.7	21	0.0	-100
Udham Sing Nagar	11.8	30	0.1	-98	0.0	-100
Uttarkashi	15.1	-18	34.6	131	0.0	-100
<b>Bihar</b>						
Araria	0.0	-100	0.0	-100	0.0	-100
Arwal	0.0	-100	3.4	17	0.0	-100
Aurangabad	3.7	-13	10.0	155	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100
Begusarai	0.0	-100	0.0	-100	0.0	-100
Bhabua	7.4	-11	7.9	83	0.0	-100
Bhagalpur	0.8	-84	4.0	-5	0.0	-100
Bhojpur	1.0	-70	2.1	-36	0.0	-100
Buxar	**	**	1.2	-57	0.0	-100
Darbhanga	0.0	-100	1.6	-58	0.0	-100
East Champaran	1.7	-38	0.0	-100	0.0	-100
Gaya	1.4	-68	5.4	32	0.0	-100
Gopalganj	0.0	-100	0.0	-100	0.0	-100
Jahanabad	1.4	-48	1.2	-52	0.0	-100
Jamui	0.0	-100	4.3	54	0.0	-100
Kathihar	0.0	-100	0.0	-100	0.0	-100
Khagadia	0.0	-100	5.1	36	0.0	-100
Kishanganj	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	0.0	-100	**	**	0.0	-100
Madhepura	0.0	-100	2.1	-25	0.0	-100
Madhubani	0.0	-100	0.0	-100	0.0	-100
Monghyar	0.0	-100	4.6	109	0.0	-100
Muzaffarpur	0.1	-96	0.3	-90	0.0	-100
Nalanda	0.7	-73	2.7	14	0.0	-100
Nawada	0.0	-100	2.0	-50	0.0	-100
Patna	1.6	-36	5.3	66	0.0	-100
Purnea	0.0	-100	0.8	-69	0.0	-100
Rohtas	3.3	19	3.3	-19	0.0	-100
Saharsha	0.0	-100	0.0	-100	0.0	-100

Samstipur	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100
Sheikpura	0.0	-100	0.0	-100	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	0.0	-100
Siwan	3.3	-24	0.0	-100	0.0	-100
Supaul	0.0	-100	0.9	-69	0.0	-100
Vaishali	7.1	146	2.3	-52	0.0	-100
West Champaran	0.0	-100	0.0	-100	0.0	-100
<b>Jharkhand</b>						
Bokaro	0.0	-100	2.6	-32	0.0	-100
Chatra	0.0	-100	0.0	-100	0.0	-100
Deoghar	0.0	-100	2.8	-34	0.0	-100
Dhanbad	0.0	-100	0.4	-90	0.0	-100
Dumka	0.0	-100	1.0	-80	0.0	-100
East Singbhum	0.0	-100	0.1	-99	0.0	-100
Garhwa	0.0	-100	**	**	0.0	-100
Giridih	0.0	-100	1.4	-39	0.0	-100
Godda	0.0	-100	13.5	399	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	0.0	-100	2.0	-63	0.0	-100
Jamtara	0.0	-100	1.1	-85	0.0	-100
Khunti	**	**	**	**	0.0	-100
Koderna	0.0	-100	10.2	82	0.0	-100
Latehar	2.1	-52	1.1	-86	0.0	-100
Lohardagga	0.0	-100	3.8	-59	0.0	-100
Pakur	0.0	-100	8.2	95	0.0	-100
Palamau	0.2	-96	19.6	244	0.1	-99
Ramgarh	0.0	-100	2.6	-61	0.0	-100
Ranchi	0.0	-100	2.0	-71	0.0	-100
Sahebganj	0.0	-100	10.4	148	0.0	-100
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100
West Singbhum	0.0	-100	1.2	-77	0.0	-100
<b>East Rajasthan</b>						
Ajmer	12.4	2379	0.0	-100	0.0	-100
Alwar	9.8	446	0.0	-100	0.0	-100
Banswara	0.1	-56	0.0	-100	0.0	-100
Baran	1.9	275	0.0	-100	0.2	-80
Bharatpur	23.4	1070	0.0	-100	0.0	-100
Bhilwara	3.7	817	0.0	-100	0.0	-100
Bundi	21.3	2948	0.0	-100	0.0	-100
Chittorgarh	10.9	2627	0.0	-100	0.5	52
Dausa	19.0	1362	0.0	-100	0.0	-100
Dholpur	25.7	2039	0.0	-100	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	9.3	1064	0.0	-100	0.1	-84
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	2.5	106	0.0	-100	0.0	-100

Karauli	9.8	446	0.0	-100	0.0	-100
Kota	8.1	1055	0.0	-100	0.6	-59
Pratapgarh	3.4	1600	0.0	-100	0.0	-100
Rajsamand	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	20.1	1730	0.0	-100	0.0	-100
Sikar	12.3	924	0.0	-100	0.0	-100
Sirohi	9.1	1711	0.0	-100	0.0	-100
Tonk	13.8	1873	0.0	-100	0.0	-100
Udaipur	8.4	2688	0.0	-100	0.0	-100
<b>West Rajasthan</b>						
Barmer	0.8	200	0.0	-100	0.0	-100
Bikaner	0.2	-81	2.5	79	0.0	-100
Churu	1.6	47	0.0	-100	0.0	-100
Hanumangarh	2.4	35	5.3	140	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.5	80	0.0	-100	0.0	-100
Nagaur	2.7	286	0.0	-100	0.0	-100
Pali	1.1	83	0.0	-100	0.0	-100
Sri Ganganagar	1.7	-4	0.1	-93	0.0	-100
<b>Gujarat Region</b>						
Ahmedabad	1.6	200	0.0	-100	0.0	-100
Anand	0.1	200	0.0	-100	0.0	-100
Banaskantha	2.1	314	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	0.0	-100	0.0	-100	0.0	-100
Dangs	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	2.0	900	0.0	-100	0.0	-100
Kheda	2.7	200	0.0	-100	0.0	-100
Mehsana	5.1	5011	0.0	-100	0.0	-100
Narmada	0.6	200	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	2.0	900	0.0	-100	0.0	-100
Sabarkantha	3.7	3614	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
<b>S K &amp; Diu region</b>						
Amreli	2.2	982	0.0	-100	0.0	-100
Bhavnagar	1.4	200	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.7	627	0.0	-100	0.0	-100
Junagarh	3.3	200	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100

Rajkot	1.1	200	0.0	-100	0.0	-100
Surendranagar	0.2	200	0.0	-100	0.0	-100
<b>Maharashtra &amp; Goa</b>						
<b>Konkan &amp; Goa</b>						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	0.0	-100	0.0	-100	0.0	-100
Raigad	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	0.0	-100	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>						
Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	0.0	-100	0.0	-100	0.0	-100
Jalgaon	0.4	-30	0.0	-100	5.8	544
Kolhapur	0.0	-100	0.0	-100	0.0	-100
Nandurbar	0.0	-100	**	**	**	**
Nasik	2.4	1075	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	0.0	-100	0.0	-100	0.0	-100
Satara	0.0	-100	0.0	-100	0.0	-100
Solapur	0.0	-100	0.0	-100	0.0	-100
<b>Marathwada</b>						
Aurangabad	0.0	-100	0.0	-100	2.5	1139
Beed	0.0	-100	0.0	-100	0.0	-100
Hingoli	**	**	**	**	7.5	276
Jalna	0.0	-100	0.0	-100	5.1	533
Latur	0.0	-100	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100
Usmanabad	0.0	-100	0.0	-100	0.0	-100
Parbhani	0.0	-100	0.0	-100	0.3	-69
<b>Vidarbha</b>						
Akola	0.1	-95	0.0	-100	0.9	-54
Amraoti	0.0	-100	0.0	-100	7.6	215
Bhandara	0.0	-100	0.0	-100	2.4	-53
Buldhana	0.0	-100	0.0	-100	2.8	112
Chandrapur	0.0	-100	0.0	-100	2.0	-14
Gadchiroli	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	0.0	-100	0.0	-99
Nagpur	0.0	-100	0.0	-100	9.4	168
Wardha	0.0	-100	0.0	-100	9.6	267
Washim	0.0	-100	0.0	-100	3.8	70
Yeotmal	0.0	-100	0.0	-100	3.9	179
<b>Odisha</b>						
Angul	0.0	-100	0.0	-100	0.0	-100
Balasore	0.0	-100	0.0	-100	0.0	-100
Bargarh	0.0	-100	0.0	-100	0.0	-100
Bhadrak	0.0	-100	0.0	-100	0.0	-100

Bolangir	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.0	-100	0.0	-100
Ganjam	0.0	-100	0.0	-100	0.0	-100
Jagatsingpur	0.0	-100	0.0	-100	0.0	-100
Jajpur	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100
Keonjhar	0.0	-100	0.3	-95	0.0	-100
Khurda	0.0	-100	0.0	-100	0.0	-100
Koraput	0.0	-100	0.0	-100	0.0	-100
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	0.0	-100	0.2	-96	0.0	-100
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100
Puri	0.0	-100	0.0	-100	0.0	-100
Rayagada	0.0	-100	0.0	-100	0.0	-100
Sambalpur	0.0	-100	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.1	-99	0.0	-100
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	1.1	-95	3.1	-86	3.5	-81
North & Middle Andaman	0.0	-100	3.9	34	0.0	-100
South Andaman	0.0	-100	3.2	-59	0.0	-100
<b>GWB</b>						
Bankura	0.0	-100	0.8	-90	0.0	-100
Birbhum	0.0	-100	0.2	-94	0.0	-100
Burdwan	0.0	-100	0.0	-100	0.0	-100
East Midnapore	0.0	-100	0.0	-100	0.0	-100
Hooghly	0.0	-100	0.5	-91	0.0	-100
Howrah	0.0	-100	0.0	-100	0.0	-100
Kolkata	0.0	-100	0.0	-100	0.0	-100
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (N)	0.0	-100	0.1	-98	0.0	-100
Purulia	0.0	-100	1.0	-94	0.0	-100
24 Pargana (S)	0.0	-100	0.0	-100	0.0	-100
West Midnapore	0.0	-100	0.4	-93	0.0	-100
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	0.0	-100	0.1	-96	0.0	-100
Darjeeling	0.0	-100	0.0	-100	0.0	-100
East Sikkim	0.0	-100	0.0	-100	0.0	-100

Jalpaiguri	0.0	-100	0.0	-100	0.0	-100
Malda	0.0	-100	13.4	332	0.0	-100
North Dinajpur	0.0	-100	0.0	-100	0.0	-100
North Sikkim	0.0	-100	0.0	-100	0.0	-100
South Dinajpur	0.0	-100	7.6	204	0.0	-100
South Sikkim	0.0	-100	0.0	-100	0.0	-100
West Sikkim	0.0	-100	0.0	-100	0.0	-100
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshin Kannada	0.0	-100	0.0	-100	0.0	-100
Udupi	0.0	-100	0.0	-100	0.0	-100
Uttar Kannada	0.0	-100	0.0	-100	0.0	-100
<b>N I Karnataka</b>						
Bagalkote	0.0	-100	0.0	-100	0.0	-100
Belgaum	0.0	-100	0.0	-100	0.0	-100
Bidar	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Dharwad	0.0	-100	0.0	-100	0.0	-100
Gadag	0.0	-100	0.0	-100	0.0	-100
Gulbarga	0.0	-100	0.0	-100	0.0	-100
Haveri	0.0	-100	0.0	-100	0.0	-100
Koppal	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	0.0	-100	0.0	-100
Yadgir	0.0	-100	0.0	-100	0.0	-100
<b>S I Karnataka</b>						
Bangalore Rural	0.0	-100	0.0	-100	0.0	-100
Bangalore Urban	0.0	-100	0.0	-100	0.0	-100
Bellary	0.0	-100	0.0	-100	0.0	-100
Chamarajnar	0.0	-100	0.0	-100	0.0	-100
Chichballapur	0.0	-100	0.0	-100	0.0	-100
Chickmagalur	0.0	-100	0.0	-100	0.0	-100
Chitradurga	0.0	-100	0.0	-100	0.0	-100
Davangere	0.0	-100	0.0	-100	0.0	-100
Hassan	0.0	-100	0.0	-100	0.0	-100
Kodagu	0.0	-100	0.0	-100	0.0	-100
Kolar	0.0	-100	0.0	-100	0.0	-100
Mandya	0.0	-100	0.0	-100	0.0	-100
Mysore	0.0	-100	0.0	-100	0.0	-100
Ramnagara	0.0	-100	0.0	-100	0.0	-100
Shimoga	0.0	-100	0.0	-100	0.0	-100
Tumkur	0.0	-100	0.0	-100	0.0	-100
<b>Kerala</b>						
Alappuzha	1.0	-77	0.0	-100	3.6	-59
Kannur	0.0	-100	0.0	-100	0.0	-100
Ernakulam	0.0	-100	0.0	-100	0.0	-100
Idukki	0.0	-100	0.0	-100	0.0	-100
Kasaragod	0.0	-100	0.0	-100	0.0	-100
Kollam	1.0	-76	3.1	-37	0.0	-100
Kottayam	0.0	-100	0.9	-56	0.2	-96

Kozhikode	0.0	-100	0.0	-100	0.0	-100
Malappuram	0.0	-100	0.0	-100	0.0	-100
Palakkad	0.0	-100	0.0	-100	0.0	-100
Pathanamthitta	0.0	-100	2.5	-17	0.0	-100
Thiruvananthapuram	0.6	-90	0.0	-100	0.0	-99
Thrissur	0.0	-100	0.0	-100	0.0	-100
Wynad	0.0	-100	0.0	-100	0.0	-100
<b>Tamil Nadu</b>						
Ariyalur	4.0	700	0.0	-100	0.0	-100
Chennai	3.2	540	0.0	-100	0.0	-100
Coimbatore	0.0	-100	0.0	-100	0.0	-100
Cuddalore	7.9	424	0.0	-100	0.0	-100
Dharmapuri	0.0	-100	0.0	-100	0.0	-100
Dindigul	0.0	-100	0.0	-100	0.0	-100
Erode	0.0	-100	0.0	-100	0.0	-100
Kanchipuram	0.9	-16	0.0	-100	0.0	-100
Kanyakumari	0.6	-84	1.0	-74	0.0	-100
Karikal	0.4	-81	0.0	-100	0.0	-100
Karur	0.0	-100	0.0	-100	0.0	-100
Krishnagiri	0.0	-100	0.0	-100	0.0	-100
Madurai	0.0	-100	0.0	-100	0.0	-100
Nagapattinam	9.6	58	0.0	-100	0.0	-100
Namakkal	0.0	-100	0.0	-100	0.0	-100
Nilgiris	1.2	-52	0.0	-100	0.0	-100
Perambalur	2.0	300	0.0	-100	0.0	-100
Puducherry	0.1	-93	0.0	-100	0.0	-100
Pudukottai	0.0	-100	0.0	-100	0.0	-100
Ramanathapuram	0.3	-87	0.0	-100	1.9	-63
Salem	0.0	-100	0.0	-100	0.0	-100
Sivaganga	0.0	-100	0.0	-100	0.0	-100
Thanjavur	0.9	18	0.0	-100	0.0	-100
Theni	1.8	66	0.0	-100	0.0	-100
Tirunelveli	0.4	-88	0.3	-96	0.2	-98
Tirupur	0.0	-100	0.0	-100	0.0	-100
Tiruvallur	0.2	-84	0.0	-100	0.0	-100
Tiruvannamalai	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	3.5	76	0.0	-100	0.0	-100
Toothukudi	0.0	-100	0.0	-100	2.7	-37
Trichy	1.2	133	0.0	-100	0.0	-100
Vellore	0.0	-100	0.0	-100	0.0	-100
Villupuram	1.2	70	0.0	-100	0.0	-100
Virudhunagar	0.0	-100	0.0	-100	0.0	-100
<b>Andhra Pradesh</b>						
<b>Coastal Andhra Pradesh</b>						
East Godavari	0.0	-100	0.0	-100	0.0	-100
Guntur	0.0	-100	0.0	-100	0.0	-100
Krishna	0.0	-100	0.0	-100	0.0	-100
Nellore	0.0	-100	0.0	-100	0.0	-100
Prakasam	0.0	-100	0.0	-100	0.0	-100



Sirkakulam	0.0	-100	0.0	-100	0.0	-100
Visakhapatnam	0.0	-100	1.3	-3	0.0	-100
Vizianagram	0.0	-100	0.0	-100	0.0	-100
West Godavari	0.0	-100	0.0	-100	0.0	-100
<b>Rayalaseema</b>						
Anantapur	0.0	-100	0.0	-100	0.0	-100
Chittoor	0.0	-100	0.0	-100	0.0	-100
Cuddapah	0.0	-100	0.0	-100	0.0	-100
Kurnool	0.0	-100	0.0	-100	0.0	-100
<b>Telangana</b>						
Adilabad	0.0	-100	0.0	-100	0.0	-100
Hyderabad	0.0	-100	0.0	-100	0.0	-100
Karimnagar	0.0	-100	0.0	-100	0.0	-100
Khammam	0.0	-100	0.0	-100	0.0	-100
Mehabubnagar	0.0	-100	0.0	-100	0.0	-100
Medak	0.0	-100	0.0	-100	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	0.0	-100	0.0	-100
Rangareddy	0.0	-100	0.0	-100	0.0	-100
Warangal	0.0	-100	0.0	-100	0.0	-100

### 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

#### Karnataka

**Sunflower:** Mordern, K.B.S.H-1, 41, 42 and 44

**Maize:** Ganga-11, Deccan-103, N.A.C-6002 & 6004, Nityashree

**Groundnut:** ICGS-11, K-134, Chintamani-2(KCH-2)

**Ragi:** Indaf-5, GPU-26 and 48

**Sugar-cane:** Co-86032, Co-94012

#### Tamil Nadu:

**Lady's finger:** Arka Anamika, Arka Abhay and Arka Kranthi and hybrids like CoBh H 1 and Co3

**Irrigated sesame:** TMV 4, TMV 6 and SVPR1

#### Assam

**Sunflower:** Jwalamukhi.

**Green gram:** Pratap, T-44, Kopergaon, AAU-39, K-851 and ML-55.

**Black gram:** T-9, Pant-U-19, UG-157.

**Direct seeded ahu rice:** Banglami, Rangadoria, Ahu joha, Rasi, Banglami, Rangadoria, Ahu joha, Rasi.

**Okra:** Pusa Sawani, Arka Anamika, Parbhdani Kranti

#### Odisha

**Sunflower:** Morden, Sunrise, Surya and Hybrid varieties like KBSH-1, KBSH-3 and MSFH.

**Groundnut:** Smruti, TAG-27, TAG – 24 and JL-24

**Onion:** Nasik Red, Patna Red, Pune Red, Bellary Red, Pusa Ratnar, Pusa Madhavi, Arka Niketan ,Arka Pragati

**Ragi:** HYVs. like Subhra, Vairabi, Dibyasingh, Nilachala, Subhra, Godavari and Chilka.

### **Bihar**

**Boro rice:** Gutum, Prabhat, Richaria, Dhanlaxmi, SarojRajendraBhagvati, and R.A.U

**Sweet Potato:** Cross 4 and Rajendra shakarkand 35

**Okra:** Parvani kranti, Arka abhay, Arka anamika, Barsha Uphar, KS 312, Okra 4, Punjab 7, Pant Bhindi 1

### **Jharkhand:**

**Summer Rice:** IR-36, IR-64, Naveen, lalat, Parijat (80-85 days).

**Summer maize:** Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid), HQPM (Hybrid)

### **Jammu & Kashmir**

**Onion:** Agrifound Parvati, Pusa red, N-53.

### **Uttarakhand**

**Tomato:** VL Tomato-3, Pant T-3, Him Sona, Him Shikhar.

**Capsicum:** California Vander, Pus Dipti, Anupam. Heera, Indira, Supriya & Bharat.

**Potato:** Kufri- Jyoti, Ashok, Anand

### **Himachal Pradesh**

**Wheat:** HPW-155, HPW-89, HPW-147, HPW-236, HPW-211 in low and mid hill and HPW-155, HPW-236, HPW-42 in high hill

**Late variety of Cauliflower:** broccoli

**Cauliflower:** Pusa-snowwall

**Radish:** Japanese white, Chinese pink and mino early white

**Turnip:** PTWG-1

**Carrot:** Pusa kesar

**Fenugreek:** I.C. 74, Kasoori

### **East Uttar Pradesh**

**Wheat:** Narendra-1012, HD-2824, 2733, HP-1731, UP-2382, PWD-343, CVW-38, DBW-39, UO-2382, HUU-510

**Wheat (Late varieties):** Malaveey-234, HP-1633, H-1744, Narendra-1014, UP-2425

**Onion:** Pusa red, Kalynpur red, light red

**Lentil:** T-8, Pant L-406, 234

**Chilli:** Patasi-1, Jwala, Sadabahar

**Lobia:** lobia 263, Pusa Phaguni

**Tomato:** Pant T-2, Azad T-2, Narendra-1,2,4,5,6

### **West Uttar Pradesh:**

**Wheat (non-irrigated):** K-9644, Maghar (K-8027), Mandakini (K-9351), Indra (K-8962), Gomati (K-9465), HDR-77, HD-2888

**Wheat (Irrigated):** K-307, DBW-17, PBW-343,502,550, GW-366, K-1006, 607,402, DVW-39

KRL-210, 213, 19, K-8434(Prasad), NW-1067

**Lentil:** Narendra-1, DPL-62, Pant-5, L-4076, K-75, HUL-57, Shekhar-3, 2, IPL-81

**Sunflower:** No.1, PAC- 302, SH-322

### **Punjab**

**Sugarcane:** CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89

### **Rajasthan**

**Groundnut:** T.A.G.24, T.G.37A, G.G.2, D.H.86.

### **Maharashtra**

#### **Madhya Maharashtra**

**Groundnut:** SB-11, JL-286, Phule Unati, TPG-41, TG-26 or JL-501.

**Sunflower:** SS-56, Modern, EC-68414 or bhanu and hybrid varieties like KBSH-1 or phule Raviraj or MSFH-17.

#### **Marathwada**

**Jowar:** Parbhani Moti or Parbhani Jyoti.

**suru Sugarcane:** CO-86032, COM- 7125, CO-8014 or CO-740

**Okra:** Parbhani Kranti

#### **Vidarbha**

**Groundnut:** TAG-24, TG-26 or SB-11.

**Water Melon:** Sugar baby, Arka Jyoti or Arka Manik.

**Okra:** Arka Anamika, Parbhani Kranti, Akola Bahar or Phule Utkarsha.

**Sesamum:** AKT-101 or NT-11-99.

**Gujarat**

**Groundnut:** GG-2, 5 and 7, TAG-24, TG-37-A, TPG-41, GG-2, GJG-3.

**Sesamum:** G.Til-2, G.Til-3.