



# *National Agromet Advisory Service Bulletin*



*Friday 29<sup>th</sup> April 2016*

*(For the period 29<sup>th</sup> April to 3<sup>rd</sup> May 2016)*



*Issued by*

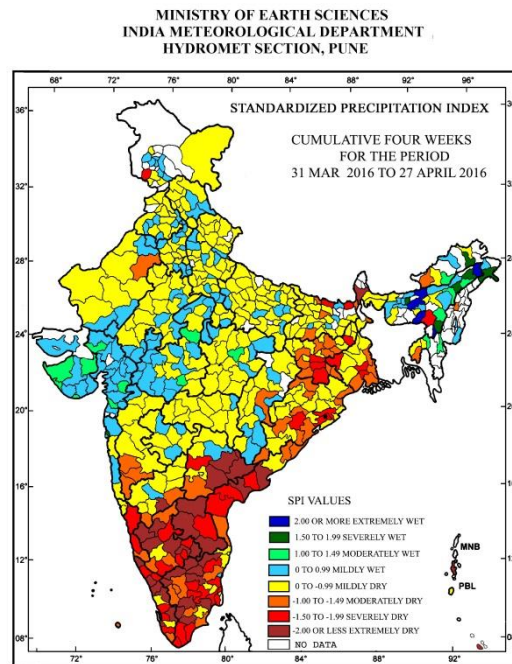
*National Agrometeorological Advisory Service Centre,  
Agricultural Meteorology Division,  
India Meteorological Department, Shivajinagar, Pune.*

**Weblink For**

District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

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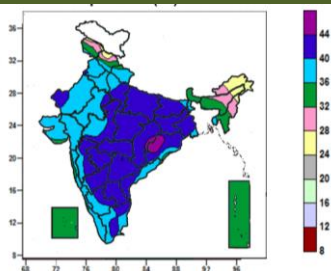
**Standardised Precipitation Index  
Four Weekly for the Period 31<sup>st</sup> March to 27<sup>th</sup> April 2016**



- Extremely/severely wet conditions experienced in few districts of Arunachal Pradesh; Assam; East Khasi Hills district of Meghalaya; Mumbai Suburban district of Konkan & Goa.
- Extremely/Severely dry conditions experienced in many districts of Andhra Pradesh; TamilNadu, Karnataka, Kerala; few districts of West Bengal; Telangana; Jaintia Hills districts of Meghalaya; Cuttack, Khurda, Kandhamal districts of Odisha; Dumka, Ranchi, West Singhbhum, Khunti districts of Jharkhand; Araria, Madhubani districts of Bihar; Rajouri district of Jammu & Kashmir.
- Moderately dry conditions experienced in few districts of West Bengal; Odisha; Jharkhand; West Delhi district of Delhi; West Kameng districts of Arunachal Pradesh; South Tripura district of Tripura; Kohima district of Nagaland, Gaya, Kishanganj, Samastipur, Sitamarhi districts of Bihar; Churu district of Rajasthan; Kolhapur, Sangli, Satara districts of Maharashtra; Raipur district of Chhattisgarh; Nellore, Srikakulam, Vizianagaram districts of Andhra Pradesh; Mahbubnagar district of Telangana; Coimbatore, Erode, Madurai, Ramanathapuram, Viluppuram, Tirupur districts of TamilNadu; Dakshin Kannada, Haveri, Raichur, Bellary, Kodagu, Mandya districts of Karnataka; Trivandrum districts of Kerala; Lakshadweep district of Lakshadweep.
- Rest of the country experienced moderately wet/ mildly dry/mildly wet conditions.

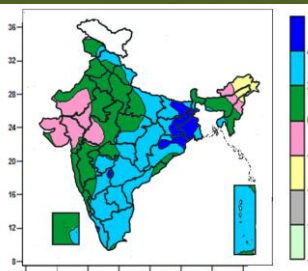
**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 27.04.2016**

**Actual Mean Maximum Temperature (°C) in India for the week ending 27.04.2016**



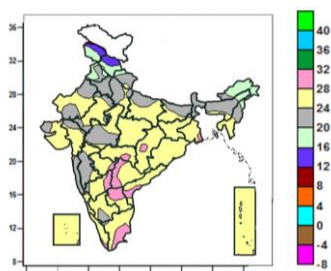
- Mean maximum temperature was between 44 to 48°C over some parts of Odisha and isolated pockets of Chhattisgarh.
- Mean maximum temperature was between 40 to 44°C over East Uttar Pradesh, East Madhya Pradesh, Jharkhand, Marathwada, Vidarbha, Telangana, Rayalaseema, many parts of West Uttar Pradesh, Bihar, Gangetic West Bengal, West Madhya Pradesh, Chhattisgarh, Odisha, Madhya Maharashtra, Coastal Andhra Pradesh, Interior Karnataka, some parts of Rajasthan, Tamil Nadu and isolated pockets of Panjab and Sub-Himalayan West Bengal.
- Mean maximum temperature was between 36 to 40°C over rest of the country except Jammu and Kashmir, North East India, Andaman & Nicobar Islands and Lakshadweep, many parts of Himachal Pradesh, and isolated pockets of Uttarakhand where it was between 24 to 36°C.

**Mean Maximum Temperature (°C) Anomaly in India for the week ending 27.04.2016**



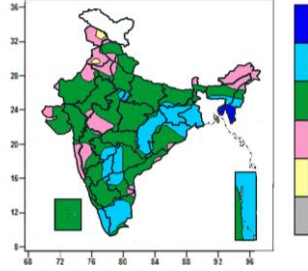
- Mean maximum temperature was above normal by 4 to 6°C over many parts of Jharkhand, Gangetic West Bengal, some parts of Bihar, Odisha and isolated pockets of North Interior Karnataka and Telangana.
- Mean maximum temperature was above normal by 2 to 4°C over Chhattisgarh, Rayalaseema, Tripura, many parts of Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Odisha, East Madhya Pradesh, Vidarbha, Telangana, Marathwada, Interior Karnataka, Coastal Andhra Pradesh, Tamil Nadu, Kerala and Andaman & Nicobar Islands, some parts of Jammu & Kashmir, West Bengal, Jharkhand, Lakshadweep and isolated pockets of Meghalaya, West Madhya Pradesh, Madhya Maharashtra and Coastal Karnataka.
- Mean maximum temperature was normal to near normal over rest of the country except many parts Arunachal Pradesh, some parts of Assam and Nagaland, where it was below normal by 2 to 4°C.

**Actual Mean Minimum Temperature (°C) in India for the week ending 27.04.2016**



- Mean minimum temperature was between 8 to 12°C over isolated pockets of Jammu & Kashmir.
- Mean minimum temperature was between 12 to 16°C over some parts of Jammu & Kashmir, Himachal Pradesh.
- Mean minimum temperature was between 16 to 20°C over many parts of Arunachal Pradesh, Jammu & Kashmir, Himachal Pradesh, Punjab, some parts of Assam and Nagaland.
- Mean minimum temperature was between 20 to 28°C over rest of the country except some parts of Telangana, Rayalaseema, North Interior Karnataka, Coastal Andhra Pradesh and Tamil Nadu and isolated pockets of Marathwada, Vidarbha, Chhattisgarh, Kerala and Lakshadweep, where it was between 28 to 32°C.

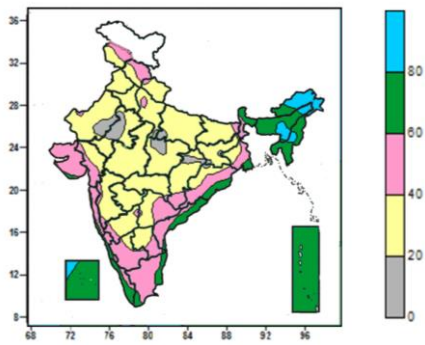
**Mean Minimum Temperature (°C) Anomaly in India for the week ending 27.04.2016**



- Mean minimum temperature was above normal by 4°C over Tripura, Mizoram, some parts of Manipur.
- Mean minimum temperature was above normal by 2 to 4°C over Gangetic West Bengal, many parts of Jharkhand, Manipur, Chhattisgarh, Tamil Nadu, Kerala, Andaman & Nicobar Islands, some parts of Assam and Meghalaya, Odisha, Marathwada, Telangana, Rayalaseema, North Interior Karnataka, and isolated pockets of West Uttar Pradesh, West Madhya Pradesh, Bihar, Vidarbha, Madhya Maharashtra, South Interior Karnataka.
- Mean minimum temperature was normal to near normal over rest of the country.

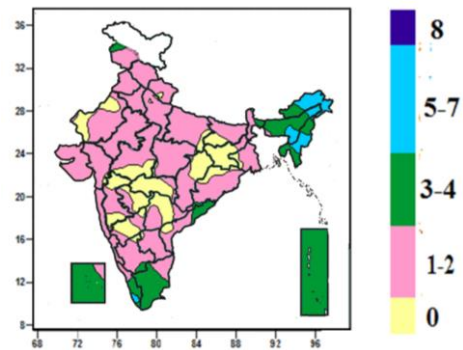
**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 27.04.2016**

**Relative Humidity (%) over India for the week ending 27.04.2016**



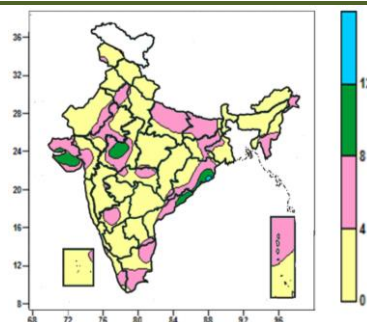
- Mean Relative humidity was above 80% over many parts of Arunachal Pradesh, some parts of Assam & Meghalaya, Manipur and isolated pocket of Lakshadweep.
- Mean Relative humidity was between 60 to 80% over Andaman & Nicobar Islands, Nagaland, Mizoram, Tripura, many parts of Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Manipur, Lakshadweep, Kerala, some parts of Arunachal Pradesh, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh, Coastal Karnataka, Tamil Nadu and isolated pockets of Saurashtra & Kutch, Konkan & Goa.
- Mean Relative humidity was between 20 to 60% over rest of the country except some parts of Rajasthan, East Madhya Pradesh, Chhattisgarh and isolated pockets Uttar Pradesh, Jharkhand and Odisha where it was below 20%.

**Cloud amount (okta) over India for the week ending 27.04.2016**



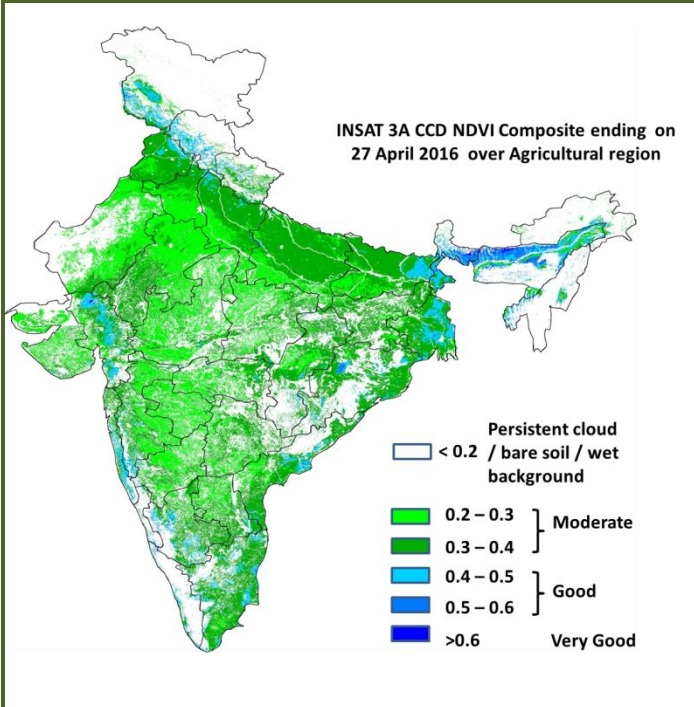
- Sky remained generally cloudy (5-7 okta) over many parts of Arunachal Pradesh, some parts of Assam & Meghalaya, Manipur, Mizoram and isolated pocket of Kerala.
- Sky remained partly cloudy/mainly clear (3-4 okta/1 to 2) over rest of the country except many parts of Jharkhand, Vidarbha, North Interior Karnataka some parts of West Rajasthan, West Madhya Pradesh, Chhattisgarh, Bihar, Madhya Maharashtra, Marathwada, Telangana, Odisha and isolated pockets of Uttarakhand, Uttar Pradesh, Gangetic West Bengal, Gujarat Region, East Madhya Pradesh, South Interior Karnataka, Rayalaseema, Coastal Andhra Pradesh where it was clear sky (0 okta).

**Wind speed (knots) over India for the week ending 27.04.2016**



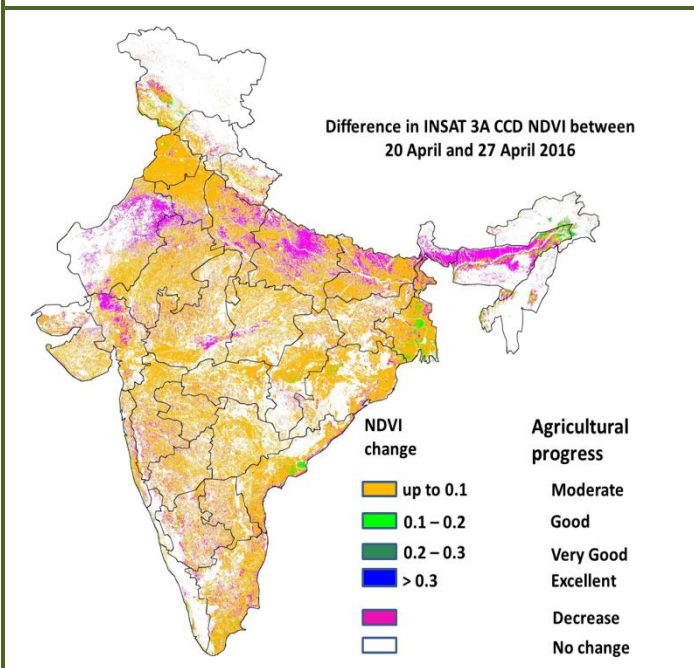
- Mean wind speed was 8 to 12 knots over some parts of Saurashtra & Kutch, West Madhya Pradesh, Odisha, and Coastal Andhra Pradesh.
- Mean wind speed was 4 to 8 knots over many parts of Haryana & Delhi, East Uttar Pradesh, Bihar, Jharkhand, Mizoram, Saurashtra & Kutch, Tamil Nadu, Andaman & Nicobar Islands, some parts of Rajasthan, Gujrat Region, Vidarbha, West Madhya Pradesh, Arunachal Pradesh, Odisha, Coastal Andhra Pradesh, North Interior Karnataka, Kerala and isolated pockets of Jammu & Kashmir, Panjab, West Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Telangana, Rayalaseema, and Lakshadweep.
- Mean wind speed was less than 4 knots over rest of the country.

**INSAT 3A CCD NDVI COMPOSITE ENDING ON 27<sup>th</sup> April 2016 OVER AGRICULTURAL REGION OF INDIA**



- Agricultural vigour is good over Gujarat, patches in East Bihar, north Coastal Andhra Pradesh, West Bengal, Assam, Coastal Maharashtra, South Interior Karnataka and Tamil Nadu where NDVI varies from 0.4 to 0.6. Agricultural growth was moderate 0.2 to 0.4 over most parts of Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Telangana, Maharashtra, Karnataka, Odisha and remaining parts of Gujarat.

**Difference in INSAT 3A CCD NDVI between 20<sup>th</sup> and 27<sup>th</sup> April 2016**



- Decrease in NDVI is observed over North-East region, West Rajasthan, Gujarat, patches in Uttar Pradesh, Bihar and Madhya Pradesh. Moderate progress of NDVI is observed over rest of the regions of India.

- INSAT 3A CCD NDVI composite maps for the week ending on 27<sup>th</sup> April 2016 for different States are given below in Annexure II.

## Weather Forecast for next 5 days valid upto 0830 hours of 4<sup>th</sup> May 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- Maximum temperatures is likely to rise by 1-2°C over northwest India during next 2 days.
- Due to dust/thunderstorm activity over northwest, central and east India, fall in maximum temperatures is very likely over the region and abatement of heat wave from 2<sup>nd</sup> May onwards.

### 5 Day Rainfall Forecast (MID DAY) 29<sup>th</sup> April 2016

Met Sub-divisions	29 April	30 April	01 May	02 May	03 May
1. Andaman & Nicobar Islands	ISOL	DRY	DRY	DRY	ISOL
2. Arunachal Pradesh	FWS	FWS	WS	SCT	FWS
3. Assam & Meghalaya	SCT	FWS	FWS	SCT	FWS
4. N.M.M. & T.	SCT	FWS	FWS	FWS	SCT
5. S.H. West Bengal & Sikkim	SCT	SCT	SCT	SCT	FWS
6. Gangetic West Bengal	ISOL	DRY	ISOL	ISOL	SCT
7. Odisha	ISOL	ISOL	ISOL	ISOL	ISOL
8. Jharkhand	DRY	DRY	DRY	DRY	SCT
9. Bihar	DRY	DRY	DRY	ISOL	SCT
10. East Uttar Pradesh	DRY	DRY	DRY	DRY	ISOL
11. West Uttar Pradesh	DRY	DRY	DRY	ISOL	SCT
12. Uttarakhand	ISOL	DRY	ISOL	SCT	SCT
13. Haryana, Chd & Delhi	DRY	DRY	ISOL	ISOL	SCT
14. Punjab	DRY	DRY	ISOL	ISOL	SCT
15. Himachal Pradesh	ISOL	DRY	ISOL	SCT	FWS
16. Jammu & Kashmir	ISOL	DRY	ISOL	FWS	FWS
17. West Rajasthan	DRY	DRY	ISOL	ISOL	ISOL
18. East Rajasthan	DRY	DRY	DRY	ISOL	ISOL
19. West Madhya Pradesh	DRY	DRY	DRY	ISOL	ISOL
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	ISOL
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	ISOL	ISOL	DRY	DRY	DRY
25. Marathwada	ISOL	ISOL	DRY	DRY	ISOL
26. Vidarbha	ISOL	ISOL	DRY	DRY	ISOL
27. Chhattisgarh	ISOL	ISOL	ISOL	ISOL	ISOL
28. Coastal Andhra Pradesh	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	ISOL	ISOL	ISOL	ISOL	ISOL
30. Rayalaseema	DRY	DRY	ISOL	ISOL	ISOL
31. Tamil Nadu & Puducherry	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	ISOL	ISOL	ISOL	DRY	DRY
34. South Interior Karnataka	ISOL	ISOL	ISOL	SCT	SCT
35. Kerala	ISOL	ISOL	SCT	SCT	FWS
36. Lakshadweep	ISOL	ISOL	DRY	DRY	DRY

#### % Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

### Weather Warning during next 5 days

- **29 April (Day 1):** Heat wave conditions very likely at a few places with severe at isolated over Odisha. Heat wave at a few places over Bihar and at isolated places over Gangetic West Bengal and Kerala. Thunderstorm accompanied with squall/hail likely at isolated places over Assam & Meghalaya.
- **30 April (Day 2):** Heat wave conditions very likely at a few places over Bihar and Odisha; at isolated places over and Gangetic West Bengal. Thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **01 May (Day 3):** Heat wave conditions very likely at isolated places over Bihar and Odisha. Dust/thunderstorm likely at isolated places over Punjab, Haryana, Chandigarh & Delhi and Rajasthan.
- **02 May (Day 4):** Dust/thunderstorm likely at a few places over Punjab and Haryana, Chandigarh & Delhi and at isolated places over West Uttar Pradesh and Rajasthan. Thunderstorm accompanied with squall/hail

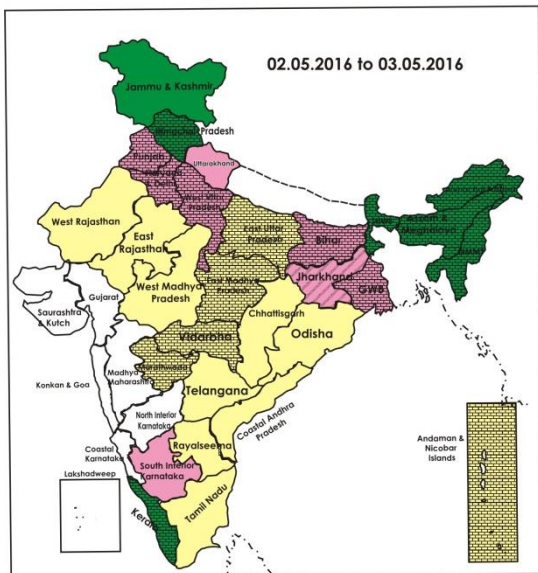
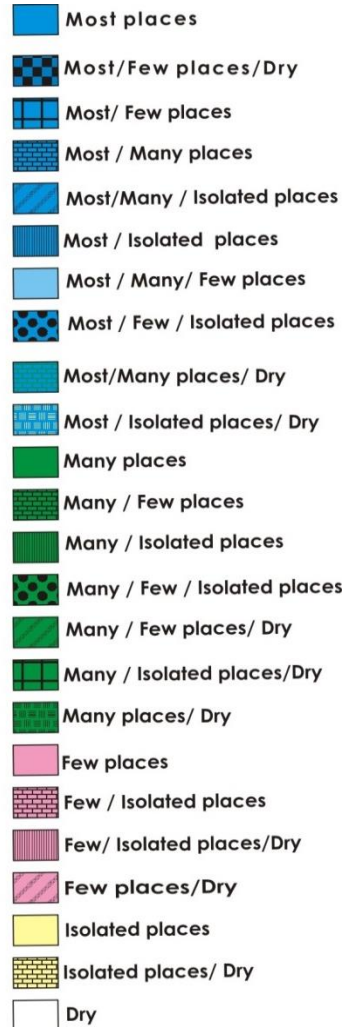
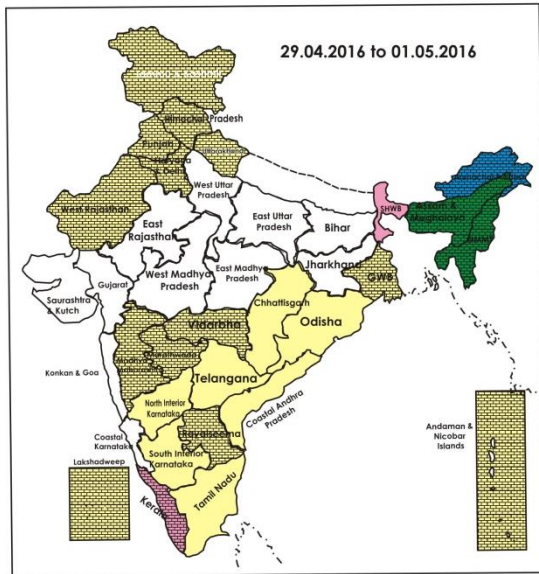
likely at isolated places over Jammu division of Jammu & Kashmir, Himachal Pradesh, Uttarakhand.

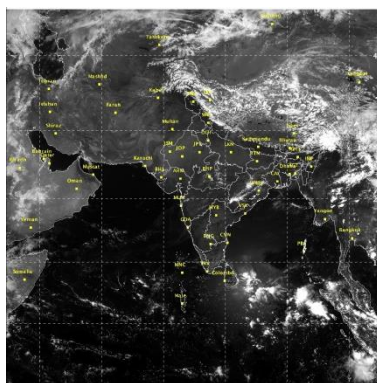
- **03 May (Day 5):** Thunderstorm accompanied with squall/hail likely at isolated places over Jammu division of Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Punjab. Thunderstorm accompanied with squall likely at isolated places over Haryana, Chandigarh & Delhi, Uttar Pradesh, Rajasthan, Bihar, Jharkhand and Gangetic West Bengal. Heavy rain likely at isolated places over Kerala.

**Weather Outlook for subsequent 2 days from 4<sup>th</sup> to 6<sup>th</sup> May 2016**

- Rain/thunderstorms likely at many places over northeastern states and at isolated places over plains of northwest, east and Peninsula India.
- Rain/snow likely at many places over Jammu & Kashmir , Himachal Pradesh and Uttarakhand.

**Weather Forecast Map (Valid upto 0830 hours of 4<sup>th</sup> May, 2016)**





### Salient Advisories

- As heat wave conditions prevailed and very likely to prevail at a few places over **Bihar** and **Odisha** on 29<sup>th</sup> and 30<sup>th</sup> April with severe at isolated places over Odisha on 29<sup>th</sup> April; at isolated places over **Gangetic West Bengal** on 29<sup>th</sup> and 30<sup>th</sup> April , over Bihar and Odisha on 1<sup>st</sup> May and over **Kerala** on 29<sup>th</sup> April, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas. Cover the young vegetable nurseries with polythene or with straw. Apply irrigation using drip and sprinkler wherever possible. Farmers are advised to adopt the following measures :
  - **For Livestock:** Cattles/goats may preferably be allowed for grazing during early morning and late evening to avoid exposure to extreme hot conditions and during hot hours, they must be tied and fed in shaded place or under the tree.
  - Sprinkle cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Undertake spraying of water on floor and roof of animal shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals.
  - Proper ventilation should be maintained for free circulation of air in the sheds. Provide plenty of clean drinking water to animals and use anti-stress medicines like Zee-stress.
  - **For poultry:** Cover water tank and lines with gunny bags to provide cool water, use foggers/fans and sprinklers to reduce temperature and to increase air flow, cover roofs of the sheds with coconut tree leaves or grass, white wash roofs and water tanks to reduce heat absorption, ensure proper cross ventilation to avoid ammonia accumulation and provide feed during cooler parts of the day (early morning or late evening). Add electrolytes and vitamin-C in drinking water.
- As thunderstorm accompanied with squall/hail likely at isolated places over **Assam & Meghalaya** on 29<sup>th</sup> and thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya and **Nagaland, Manipur, Mizoram & Tripura** on 30<sup>th</sup> April; over **Bihar, Jharkhand** and **Gangetic West Bengal** on 3<sup>rd</sup> May, farmers are advised to provide hail net/hail caps for orchard crops in Assam & Meghalaya on 29<sup>th</sup> April, arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops.
- As thunderstorm accompanied with squall/hail likely at isolated places over Jammu division of **Jammu & Kashmir, Himachal Pradesh** and **Uttarakhand** on 2<sup>nd</sup> and 3<sup>rd</sup> May; over **Punjab** on 2<sup>nd</sup> May and thunderstorm accompanied with squall likely at isolated places over **Haryana, Chandigarh & Delhi, Uttar Pradesh and Rajasthan** on 3<sup>rd</sup> May, farmers are advised to provide hail net/hail caps in orchard crops, arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops.
- As rain/thundershowers likely at most/many places over **Arunachal Pradesh** from 29<sup>th</sup> April to 1<sup>st</sup> May and on 3<sup>rd</sup> May, over **Assam & Meghalaya** on 30<sup>th</sup> April, 1<sup>st</sup> and 3<sup>rd</sup> May and over **Nagaland, Manipur, Mizoram & Tripura** from 30<sup>th</sup> April to 2<sup>nd</sup> May, farmers are advised to postpone irrigation, inter-cultural operations and application of plant protection measures and fertilizers to the standing crops. Provide adequate



drainage in standing crop fields.

- As rain/snow would occur at many places over **Jammu & Kashmir** on 2<sup>nd</sup> and 3<sup>rd</sup> May and over **Himachal Pradesh** on 3<sup>rd</sup> May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Undertake harvesting of matured crops immediately and keep the harvested produce at safer places.
- As rain/thundershowers likely at many places over **Kerala** on 3<sup>rd</sup> May along with heavy rain at isolated places, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Undertake harvesting of matured *puncha* rice immediately and keep the harvested produce at safer places. Farmers are advised to utilize the rain water for raising rice nursery and also undertake rain water harvesting for agricultural activities.
- As dust/thunderstorm likely at a few places over **Punjab, Haryana, Chandigarh & Delhi** on 2<sup>nd</sup> May, at isolated places over Punjab, Haryana, Chandigarh & Delhi on 1<sup>st</sup> May; over **Rajasthan** on 1<sup>st</sup> and 2<sup>nd</sup> May and over **Uttar Pradesh** on 2<sup>nd</sup> May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane and keep harvested produce at safer places.
- In view of prevailing above normal temperature, apply light irrigation to vegetables in **Telangana**, green gram, black gram, sesame, groundnut (flowering), mango orchards, vegetable crops and lemon orchard in **Saurashtra & Kutch**, green gram and vegetables in **Jharkhand**, water melon, musk melon, summer vegetables, summer groundnut and summer green gram in **Vidarbha** during evening hours. Also undertake soil mulching or mulching with straw/polythene to conserve soil moisture.
- Undertake land preparation/sowing of the following summer crops:
  - In **Assam**, postpone sowing of *Capsularis* jute, summer green gram & black gram and transplanting of *ahu* rice as rain/thundershowers likely at many places on 30<sup>th</sup> April, 1<sup>st</sup> and 3<sup>rd</sup> May.
  - In **West Bengal**, continue transplanting of chilli and sowing of maize, bhindi and French bean in Sub-Himalayan West Bengal & Sikkim and in New Alluvial Zone, continue land preparation and sowing of jute.
  - In **Uttar Pradesh**, continue sowing of cowpea, maize, urad and mung.
  - In **Bihar**, continue sowing of summer maize and vegetables and in **Jharkhand**, continue sowing of green gram/black gram, maize and vegetables.
  - In **Punjab** and **Haryana**, continue planting of sugarcane and undertake sowing of *desi* cotton.
- As mainly dry weather would prevail, continue harvesting of wheat in **Uttar Pradesh, Bihar, Rajasthan, Uttarakhand, Punjab** and **Haryana**. In Krishna Godavari Zone of **Andhra Pradesh**, continue harvesting of Bengal gram and *rabi* black gram and in the Southern and Scarce Rainfall Zones, continue harvesting of groundnut.

### Detailed Zonewise Agromet Advisories

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



**Banana**



**Groundnut**



**Sugarcane**



**Cotton**

- **Realised Rainfall:** Rainfall occurred in Pathanamthitta district of Kerala. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - **Tamil Nadu:**
    - In the Cauvery Delta Zone, continue cultivation of blackgram (ADT 5 variety) under irrigated conditions, harvesting of matured rice fallow black gram and provide irrigation to sesame, sugarcane and rice fallow cotton

crops.

- In the Western Zone, since dry spell continues, provide irrigation to coconut palms on daily basis @ 100 litres per day per tree through drip irrigation and to mango crop to prevent fruit dropping. Undertake sowing of irrigated sorghum followed by irrigation.
- In the South Zone, continue providing irrigation to maize and sesamum and harvesting of matured chillies. To alleviate moisture stress in sugarcane (grand growth stage), spray Potash @ 2.5% and Urea @ 2.5% solution at 15 days interval and spray Kaolin @ 6% solution (60 g/litre) for reducing loss of water through transpiration. Under water scarcity situation follow alternate furrow and skip furrow irrigation.
- In the High Altitude Hilly Zone, continue providing irrigation with sprinkler in coffee to increase blossoming and higher yields.
- In the North Western Zone, continue spraying of 1% PPFM (Pink Pigmented Facultative Methylophs) to all crops to mitigate abiotic stress due to drought during this summer season.
- In the Cauvery Delta Zone, occurrence of aphid, thrips, mite, hoppers and white flies are noticed in rice fallow cotton and irrigated blackgram, due to the prevailing hot weather. To control, spray Azadirachtin @ 0.03% (3 ml/litre of water) along with sticking agent in the morning or evening using hand sprayer.
- In the North Eastern Zone, incidence of *spodoptera* larvae is noticed in groundnut due to prevailing hot weather conditions. To control the pest, spray Imidacloprid @ 17.8% SL 40-50 ml/acre or Quinalphos 25% EC 560 ml/acre.
- In the High Altitude Hilly Zone, due to hot weather conditions, there is chance of nematode infestation in carrot. To control, follow crop rotation.
- Suitable varieties for sowing are given in Annexure III.
- **Andhra Pradesh:**
  - In Krishna Godavari Zone, continue harvesting of Bengal gram and *rabi* black gram. In view of the prevailing hot weather, continue providing irrigation to *rabi* jowar at flowering to grain formation stage.
  - In the North Coastal Zone, continue planting of sugarcane using single budded setts/bud chip seedlings and give irrigations at frequent interval to keep the soil moist.
  - In the High Altitude Tribal Zone, continue harvesting of rice.
  - In the Southern Zone, continue harvesting of *rabi* groundnut.
  - In the Southern Zone, prevailing increasing temperature conditions are highly congenial for attack of mealy bug in vegetable crops mainly brinjal, tomato. To control, spray Malathion or Dimethioate @ 2 ml and mix with Sandowit @ 1 ml/litre of water.
  - In the North Coastal Zone, prevailing dry hot weather conditions are congenial for incidence of grassy shoot in sugarcane. To control, remove the affected plants and spray Dimethoate @ 2.0 ml/litre of water.
  - In the Scarce Rainfall Zone, leaf blast and sheath rot incidence is noticed in rice. Spray Tricyclazole @ 75 % 0.6g/ Isoprothiolin 40% @ 1.5ml @ 2.5ml/litre of water to control leaf blast and Validamycin @ 2ml/litre of water or Propiconazole @ 2ml/litre of water for sheath rot.
- **Telangana:**
  - In the Southern and Northern Telangana Zone, irrigate the ID crops during the evening hours to protect crops from prevailing heat wave conditions.
  - In the Northern Telangana Zone, continue harvesting of groundnut, maize and sesamum. Light irrigation may be provided to all vegetables through drip or check basin method and spray Potassium nitrate @ 5g/litre of water in the early hours in the morning.
  - In the Northern Telangana Zone, ring spot virus incidence was noticed in papaya. To control the vectors like aphids and whiteflies (transmit the disease), spray Dimethoate @ 2ml/litre of water.
  - In the Southern Telangana Zone, prevailing hot weather conditions are congenial for the incidence of fruit fly in mango. To control, hang the plastic containers with mixture of Methyl Eugenol @ 2 ml + Carbofuran 3G @ 3g/litre of water in the orchard to trap the flies in the container.
- **Karnataka:**
  - In Eastern Dry Zone of Karnataka, ragi, cowpea, sesame, black gram and green gram are recommended for sowing during month of May. Keep agricultural implements and seeds of ragi (Indaf -9), sesamum (Navile-1, T-7), cowpea (TVX-944, KBC-1), green gram (PS-16, PDM-84,178), black gram (Karagao-3, T-9, Rashmi (LBG-625) ready for sowing. Mulching and weeding is recommended in mango orchard to conserve soil moisture.
  - In Hill Zone, provide irrigation to areca nut, coconut and black pepper gardens either in furrows or by drip irrigation.
  - In Southern Dry Zone continue summer deep ploughing and keep the inputs ready for pre-monsoon sowing.
  - In North Dry Zone and North East Transition Zone, provide irrigation to sugarcane in alternative rows or irrigate the crop through drip irrigation and undertake earthing up in sugarcane.
  - In North East Dry Zone, to overcome the dry condition, the farmers are advised to follow some technology tips in sugarcane (knee high stage):
    - Apply 50 kg of Potash fertilizer per hectare with last irrigation.
    - Adopt alternate furrow irrigation method where there is scarcity of irrigation water.
    - Weed control through herbicides in late planted Sugarcane (2, 4-D @ 3.3 kg/ha).

- Mulching by dry leaves and grasses to conserve soil moisture.
  - Spraying of 2.5% urea or MOP in the situations of prolonged dry condition.
  - The hoeing in inter row spacing to create dust mulch to break soil capillaries for checking surface moisture loss.
- In North Transition Zone of Karnataka, continue picking of matured fruits of sapota. Apply irrigation in sugarcane either in alternate rows or by drip irrigation method in North Transition Zone and North East Transition Zone. Provide irrigation to vegetables and other crops.
- In North Transition Zone and North East Dry Zone, continue summer deep ploughing.
- **Kerala:**
- As heat wave conditions very likely to occur at isolated places over Kerala on 29<sup>th</sup> April, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas.
- As rain/thundershowers likely at many places over Kerala on 3<sup>rd</sup> May along with heavy rain at isolated places, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Undertake harvesting of matured *puncha* rice immediately and keep the harvested produce at safer places. Farmers are advised to utilize the rain water for raising rice nursery and also undertake rain water harvesting for agricultural activities.
- In the Problem Area Zone, continue land preparation for dry sowing of rice, provide irrigation to pepper and banana, mulching with dried leaves for reducing evapotranspiration.
- In the Southern Zone, undertake planting of bananas (poovan, njalippoovan, robusta and palayankodan varieties). Continue land preparation for sowing of *Virippu* rice after proper seed treatment to reduce the incidence of fungal diseases.
- In Southern Zone, fairly high humidity and high temperature conditions are congenial for red palm weevil in coconut, especially in young palms. As control measure, seal all the holes seen except the topmost one. Pour Dichlorvos (Nuvan 100 EC) @ 10 ml/litre of water.
- In the Problem Area Zone, prevailing hot weather condition is congenial for incidences of sucking pest like mites and thrips in vegetables. To control, spray Oberon @ 0.6g/litre of water. Monitor for white fly attack in vegetables. Yellow sticky trap must be installed in fields to control the attack on a non rainy day.
- In the Central Zone, prevailing increase in temperature is congenial for incidence of leaf rot and root wilt in coconut. To control, spray Bordeaux mixture @ 5g/litre on the top of the plant on a non rainy day.
- ❖ **Animal Husbandry**
- In the Krishna Godavari Zone of Andhra Pradesh, due to rise in temperature, avoid grazing of animals during day time, provide good thatched sheds for cooling, increase the frequency of drinking water facility and provide ragi and horsegram malts.
- In the Scarce Rainfall Zone, due to prevailing high temperature over Rayalaseema, cover water tank and lines with gunny bags to provide cool water, ensure cool drinking water available throughout the day, use foggers and sprinklers to reduce temperature, cover roofs with coconut tree leaves or grass, white wash the roofs and water tanks to reduce heat absorption, ensure proper cross ventilation to avoid ammonia accumulation use, use pedestrian fans to increase air flow and distribute feed in cooler parts of the day (early morning or late evening).
- In the North Coastal Zone of Andhra Pradesh, as high temperature is prevailing, keep the animals in shade and keep water available to the animals.
- In the Southern and Northern Telangana Zone, due to rise in temperature, protect the poultry birds by arranging fans and foggers in sheds, cover the sheds with paddy straw and arrange sprinklers, feed with wet mash to increase the feed intake and provide cool water for drinking and provide green fodder to milch animals to improve the butter percentage in the milk.
- In the Western Zone of Tamil Nadu, considering the high day time temperature, undertake artificial insemination in animal before 9 am or after 4 pm.
- In the North Western Zone and High Altitude Zone of Tamil Nadu, due to prevailing high temperature, avoid feeding poultry during day time and offer feed during early morning and late evening. Avoid accumulation of hot drinking water in the pipeline and add vitamin C in water and supplement sodium bicarbonate, electrolytes, minerals and amino acids.
- In North Interior Karnataka, leave the buffaloes in ponds during afternoon hours or sprinkle cold water 2-3 times a day on the body of the animal to overcome the heat, animals may preferably be grazed during early morning and late evening to avoid exposure to extreme hot conditions. To minimize thermal stress, keep animals under shade or tie the animals under the tree; it will also help in reducing the water requirement. Apply 4-6 inch thick hay thatch as a roofing material.
- In North East Transition Zone of Karnataka, due to increase in day temperature (42-43<sup>o</sup>C), maintain optimum temperature by applying 4 - 6 inch thick hay thatch as a roofing material. Use water for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature in poultry sheds. Provide cold water for poultry birds. Add electrolytes (KCl, NaCl and NaCO<sub>3</sub>) in feed and water. Leave the buffaloes in ponds during afternoon hours or sprinkle the cold water 2-3 times a day on the body of the animal to overcome the heat.



**Banana**



**Rice**



**Okra**



**Cabbage**

- **Realised Rainfall:** Rainfall occurred in Changlang, East Siang, Lohit, Lower Dibang Valley, Papumpara, Tawang, Tirap Upper Siang, Upper Subansari and West Kameng districts of Arunachal Pradesh; all districts of Assam except Dhemaji, Karbi Anglong, Morigaon and Nagaon; East Garo Hills, East Khasi Hills, Ri-Bhoi, South Garo Hills and West Khasi Hills districts of Meghalaya; Aizwal and Saiha districts of Mizoram; Chandel, Imphal East, Imphal West and Thoubal districts of Manipur and North Tripura district of Tripura. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with squall/hail likely at isolated places over Assam & Meghalaya on 29<sup>th</sup> and thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 30<sup>th</sup> April, farmers are advised to provide hail net/hail caps in orchard crops on 29<sup>th</sup> April, arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops.
  - As rain/thundershowers likely at most/many places over Arunachal Pradesh from 29<sup>th</sup> April to 1<sup>st</sup> May and on 3<sup>rd</sup> May; over Assam & Meghalaya on 30<sup>th</sup> April, 1<sup>st</sup> and 3<sup>rd</sup> May and over Nagaland, Manipur, Mizoram & Tripura from 30<sup>th</sup> April to 2<sup>nd</sup> May, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields.
    - **Assam, Meghalaya & Arunachal Pradesh:**
      - In Assam, drain out excess water from rice nursery, maize, green gram, black gram and vegetable fields.
      - In Hill Zone of Assam, continue transplanting of normal *ahu* rice and planting of banana after current spells of rain.
      - In Lower Bramhapurtra Valley Zone of Assam, continue sowing of *ahu* rice with selection of right varieties like Rasi, IR-36 of normal direct seeded/transplanted *ahu* rice after current spells of rain. Continue sowing of *bao* rice.
      - In Upper Bramhaputra Valley Zone of Assam, continue sowing of *bao* rice and in Barak Valley Zone of Assam, undertake planting of lemon after current spells of rain.
      - In Central Bramhaputra Valley Zone of Assam, complete sowing of normal direct seeded early *ahu* rice and transplanting of early *ahu* rice at the earliest. Continue sowing of *bao* rice, summer vegetables, *Capsularis* jute and planting of ginger, turmeric, papaya and spring sugarcane after current spells of rain.
      - In North Bank Plain Zone of Assam, farmers are advised to complete transplanting of early *ahu* rice, continue planting of the high yielding varieties of ginger & turmeric, banana after current spells of rain. Farmers of flood affected areas where water has remained stagnant for 10-15 days are advised to sow suitable *bao* varieties namely Jalashree, Jalkuwari, Swarna sub-1 etc. and in low lying areas where water remained for long time are advised to sow Dhusuri, Maguri, Kekua, Ranga bao, Negheri etc. within April. Also undertake sowing of the HYV of maize (Ganga-5; High Starch etc.) or composite maize (NLD, Dhawal, Naviot etc.) seed after current spells of rain. Undertake planting of banana with dwarf variety banana (Jahaji) and medium tall variety (Chenichampa, Malbhog, Barjahaji).
      - In Meghalaya, continue sowing of maize in high and mid altitude region and continue sowing of bottle guard and ash guard and nursery bed preparation for brinjal and tomato after current spells of rain. Continue land preparation and sowing of *jhum* rice after current spells of rain.
      - In Arunachal Pradesh, continue sowing/transplanting of summer vegetables like cucumber, sponge gourd, bottle gourd and ladies finger after current spells of rain. Continue nursery sowing/transplanting of rice after current spells of rain. Avoid water stagnation in the newly sown vegetable field.
      - In Arunachal Pradesh, spray Triazophos 40 EC @ 4 ml/litre against stem borer in rice nursery as well as in main field after current spells of rain.
      - In Hill Zone of Assam, there is chance of attack of trunk borer/shoot borer in khasi Mandarin due to the prevailing weather conditions. The affected branches/shoots should be pruned and destroyed without causing any injury to the trunk or main branches. Paint the main trunk upto one metre from the base with Sevin/ Monocrotophos + lime and water (1:1:25). At the late stage of infestation plug the hole with cotton soaked in Nuvan (0.07%) or Dimecron (0.05%) and plastered it with wet clay. Also apply Deltamethrin (Decis 2.8 EC) @ 0.5ml/litre or Malathion 50 EC @ 2ml/litre against shoot and fruit borer attack in bhindi after current spells of rain.
      - In Lower Bramhapurtra Valley Zone of Assam, in the prevailing weather, there is chance of attack of case worm and hispa in early transplanted *ahu* rice at tillering stage. Apply Quinalphos 25EC, Monocrotophos 40EC and Chlorpyrifos 20EC @ 0.025%, 0.04% and 0.02%. Also apply Deltamethin (Decis 2.8 EC) @ 0.5 ml/litre or

Dichlorovors 100 EC @ 0.5 ml/ litre or Malathion 50 EC @ 2 ml/litre to control fruit and shoot borer in summer vegetable like okra, different gourd family vegetables, cucumber after current spells of rain.

- In North Bank Plain Zone of Assam, spray Mencozeb (Dithene M-45) @ 2g/litre or Carbendezime (Dirosol) @1g/litre of water for controlling blast disease in *early ahu* rice at tillering stage after current spells of rain.
- In Barak Valley Zone of Assam, there may be Gundhi bug attack in the *boro* rice fields; to control the pest apply Malathion @ 1.5 ml/litre of water after current spells of rain.
- In Meghalaya, there may be attack of blast, rice Gundhi bug and stem borer in *boro* rice during flowering/milking stage. To control blast spray Carbendazim @ 1g/litre of water, spray Malathion 5% dust @ 6.25kg/ha against rice gandhi bug and Chloropyriphos @ 0.02% or Monocrotophos @ 0.04% against stem borer after current spells of rain.

▪ **Nagaland, Manipur, Mizoram and Tripura:**

- In Nagaland, continue sowing of okra, cowpea and cucurbits after current spells of rain. Undertake pit preparation for plantation of fruit crops after current spells of rain.
- In Manipur, complete transplanting of 35-40 days of old seedlings of pre-*kharif* rice at the earliest and maintain water depth of 2-3cm in the field after transplanting. Continue planting of ginger/turmeric and land preparation for sowing of soybean, groundnut, black gram and pit preparation for fruit plants like banana, lime, lemon, orange, kiwi after current spells of rain. Undertake land preparation for sowing of *kharif* rice.
- In Mizoram, continue transplanting of brinjal and chilli in the main fields and sowing of French bean, cow pea and maize after current spells of rain.
- In Tripura, complete land preparation for sowing of *Jhum* rice at the earliest. Keep water level in the fields of *boro* rice 5 cm during flowering stage.
- In Manipur, apply few granules of Carbofuran 3G at maize whorl at vegetative stage against stem borer after current spells of rain.
- In Tripura, there is chance of attack fruit and shoot borer on summer brinjal and tomato. Apply Cypermethrin @ 1.5 ml or Flubendamid 0.5 ml per litre of water to manage the attack after current spells of rain.
- Suitable varieties for sowing are given in Annexure III.

❖ **Animal Husbandry:**

- In Northeastern states, carry out immunizations against FMD, HS and BQ in cattle & buffaloes and swine-fever in pigs during this time. Due to increase in temperature, keep the poultry house well ventilated during day time.
- In Barak Valley Zone of Assam, increase of temperature with increasing humidity is not suitable for animal in this condition. Farmers may feed their animals at night time and feed as much as possible green grass with small pieces.
- In Tripura, undertake vaccination against swine fever in pig and deworming in calves.

❖ **Fishery:**

- In Assam, complete the work of digging or re-digging of fish pond by next one or two weeks. After digging, apply FYM 2400 kg and Lime 80 kg per kani before rain.

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



*Green gram*



*Sugarcane*



*Groundnut*



*Banana*

- **Realised Rainfall:** Weather remained dry over the region.

• **Advisories:**

▪ **Maharashtra:**

- In Marathwada, apply irrigation at regular intervals to summer groundnut, sugarcane, orchard crops like banana, pomegranate, fig and vegetable crops in morning or evening hours. Apply micro irrigation like drip irrigation to sugarcane instead of flood irrigation and apply mulch with sugarcane trash to preserve soil moisture in the field. Make arrangement for shade to protect newly planted mango trees and vegetable crops from scorching sun.
- In Madhya Maharashtra, apply irrigation to summer groundnut, vegetable crops and banana orchards. Also apply irrigation to sugarcane by alternate furrow method. Reduce the duration between two irrigations. Apply mulch sugarcane with trash to preserve soil moisture in the field. Protect the newly planted fruit crops from sunburn by providing shade. Keep the orchards free from dried grass to safeguard it against fire burn during summer.
- In Vidarbha, maintain water level of 5-8 cm in summer rice field in East Vidarbha. In view of prevailing high temperatures ( above 40 °C), apply light and frequent irrigation to water melon, musk melon, summer vegetables, summer groundnut and summer green gram.
- In Konkan, the Mango fruits are at ripening stage in some parts of the region. Harvest the mature fruits during

early morning or in late evening. Keep the harvested fruits in shade to prevent spongy tissue. Do not apply water to the trees bearing mature fruits. New graft and newly planted fruit saplings may be protected from sun burn by erecting temporary shed. Apply irrigation to cashew and coconut at regular intervals. Undertake harvesting of already matured rice crop.

- Due to prevailing temperature in Marathwada region, there may be attack of stemborer in sugarcane; spray Chlorpyrifos @ 2.5 ml/litre of water.

▪ **Gujarat:**

- In North West Zone of Gujarat, under high temperature forecast (40-41 degree C), apply irrigation in cucurbits, groundnut (pegging), pearl millet (flag leaves/ear head stages). Undertake plucking of matured ladies finger.
- In Middle Gujarat Zone, provide irrigation to pearl millet, green gram, pomegranate, sapota, lemon and papaya orchards. Pluck matured fruits regularly. Cover papaya fruits using gunny bags and provide support to heavy fruiting plants. Carry out the intercultural operations in pearl millet.
- In South Gujarat Heavy Rainfall Zone, apply irrigation (5cm) in transplanted rice field 2 days after disappearance of water. Carry out intercultural operations in groundnut and green gram. Apply irrigation in cluster bean (at 10-12 days interval), sugarcane, green gram, groundnut, sweet corn as per requirement. Undertake mulching in mango and cucurbits. Apply light irrigation in mango to reduce fruit drop and undertake mulching with paddy straw or black polythene.
- In North Saurashtra Zone, apply light and frequent irrigation to green gram, black gram, sesame, groundnut (flowering), mango orchards, vegetable crops and in lemon orchard.
- In South Gujarat Zone, spray 2 % urea solution in guava orchard to reduce the harvest time by 2 to 4 weeks.
- In South Saurashtra Zone, apply irrigation to groundnut (at 6 to 7 days interval) and vegetable crops. Keep the vegetable crops weed free.
- In North Gujarat Zone, under high temperature condition, cover papaya fruits using gunny bags and provide support to heavy fruiting plants; apply irrigation in groundnut crop (peg initiation stage), pearl millet, pomegranate, sapota, lemon and papaya orchards. Spray 0.1% FeSo<sub>4</sub> @ 100 g with 10 g Citric Acid solution to correct chlorosis in groundnut. Pluck matured fruits and vegetables like bhindi, tomato, cucumbers, watermelon and muskmelon. Continue harvesting of matured onion bulbs and keep the bulbs at well aerated place.
- In Bhal and Coastal Zone, carry out weeding and inter cultural operations in timely sown cluster bean and green gram and apply irrigation at 8 to 10 days interval. Cover papaya fruits using gunny bags. Pluck matured vegetables viz. bhindi, tomato, cucumbers, water melon and muskmelon regularly.
- In present weather conditions attack of thrips and white fly has been reported in gourds, cluster bean, water melon, brinjal and tomato in North Saurashtra Zone; to control, spray neem seed extract @ 500 ml or neem seed oil @ 50 ml or neem oil @ 40 ml and Acetamiprid 20 % SP @ 5 g/10 litres of water at 15 days interval. Due to high temperature, mites infestation is observed in lemon orchard; to control, spray Propargite 57 % EC @1 ml/litre of water.

❖ **Animal Husbandry**

- In Gujarat, keep animals under shade or in sheds during noon hours, avoid grazing of animals during hot time, provide plenty of cool water mixed with minerals for drinking and shower the animals with cold water two to three times in a day. Increase the green fodder quantity for feeding. Supplementary feeding of vitamins A and D should be given. Provide ragi and horse gram malts.

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



*Rice*



*Okra*



*Maize*



*Green gram*

- **Realised Rainfall:** Rainfall occurred in East Sikkim, North Sikkim and West Sikkim districts of Sikkim. Weather remained mainly dry/dry over rest of the region.

• **Advisories:**

- As heat wave conditions prevailed and very likely to prevail at a few places over Bihar and Odisha on 29<sup>th</sup> and 30<sup>th</sup> April with severe at isolated places over Odisha on 29<sup>th</sup> April; at isolated places over Gangetic West Bengal on 29<sup>th</sup> and 30<sup>th</sup> April, over Bihar and Odisha on 1<sup>st</sup> May, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas.

▪ **West Bengal:**

- As rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim on 3<sup>rd</sup> May, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Conserve rain water for agricultural activities.
- In New Alluvial Zone, continue land preparation and sowing of improved variety of jute. Before sowing, seeds should be treated with Carbendazim @ 2 to 3 g per Kg of seed. As there is no forecast of rainfall farmers are advised to irrigate the vegetable crops and jute.
- In Laterite and Red soil zone, undertake harvesting of rice crop as early as possible and keep the rice bundles for drying for 2-3 days in the field.
- In Coastal Saline Zone, as dry weather would prevail, complete harvesting of *boro* rice. After the harvesting, keep for sun drying and threshing.
- In Hill Zone, continue transplanting of round chilli and planting of ginger should be completed within 1<sup>st</sup> fortnight of May. Undertake pit preparation for new orchard of mandarin orange.
- In Old Alluvial Zone, undertake planting of elephant foot yam in the main field treated with Bavistin or Mancozeb @ 2gram/litre of water.
- In Laterite and Red Soil Zone, due to hot weather condition, wilting may occur in groundnut and sesamum at pod development stage, apply light irrigation.
- In New Alluvial Zone, high temperature and humidity may cause fungal fruit rot & stem rot diseases of summer vegetables. To control, apply Carbendazim @ 1g per litre of water at 7 days interval.
- In Hill Zone, in the prevailing weather condition, there may be mite infestation in tomato and bhindi and white fly attack in gerbera. Spray Fenazaquin 10% EC @ 125g active ingredient/ha for controlling mite infestation and use yellow sticky traps for controlling white fly on non rainy day.
- In Coastal Saline Zone, due to increased temperature fruit borer and red spider mite may attack in brinjal and okra at fruiting stage. Spray Spinosad @ 1.5ml/litre of water for fruit borret attack. Spray Properzite (Omite) @ 0.5ml/litre of water along with sticker like tipol or soap solution for red spider mite attack on a non rainy day.
- In Terai Zone, weather is congenial for attack of fruit and shoot borer, collar rot in brinjal. Apply Cartap hydrochloride 50 SP @1 g/litre of water or Pheromone trap (Leucilure) 12-14 nos. per ha. For collar rot, undertake soil drenching with Chlorothanil @1 gm+Carbendazim @ 2g/litre of water on a non rainy day.
- In Old Alluvial Zone, During this time fruit cracking may occur due to high temperature, low humidity and low moisture condition. To control fruit cracking irrigate the orchard at regular interval and spray of 1% Borax at 15 days interval. To control fruit drop of litchi, spray NAA (Planofix) @ 3-4 ml/15 litre of water on a non rainy day.

▪ **Andaman and Nicobar Islands**

- In South, North and Middle Andaman, Apply booster dose of Trichoderma and Basicillus powder @ 1 kg by mixing with 50 kg FYM for better plant disease management and growth promotion in vegetable crops.
- In Nicobar, Mulch the basins of coconut with coconut husk/leaves/grass to conserve soil moisture.

▪ **Odisha:**

- In East and South Eastern Coastal Plain Zone, postpone transplanting of summer vegetables till the end of heatwave conditions, otherwise plant in the evening and cover with paper cap during day time. Apply irrigation in groundnut crops at flowering stage. Cover the young vegetable nurseries with polythene or with straw. Resort to drip and sprinkler irrigation practices wherever possible.
- As mainly dry weather along with high temperature is prevailing, apply light and frequent irrigation in maize at tasseling stage in North Eastern Coastal Plain Zone and in sugarcane crop during the tillering stage in Western Undulating Zone.
- In East and South Eastern Coastal Plain Zone and North Central Plateau Zone increased temperature may favour the egg laying of stemborer in rice. To attract the butterflies, place 4 Pheromon Traps/acre, collect the adults and destroy them by burning them under soil or by burying. Also YMV infestation has been found in summer pulses. Spray Rogor @ 20 ml/10 litre water to control the white fly.
- In Western Undulating Zone, continue harvesting matured crops as dry weather is forecasted up to 01.05.2016.
- In Western Undulating Zone and North Central Plateau Zone, dry weather may increase the water requirement of crops. Plan for irrigation observing the soil moisture and crop need.
- In East and South Eastern Coastal Plain Zone, infestation of thrips has been occurred in summer groundnut. Spray 2 ml Endosulphan in 1 litre water. Increased temperature may aggravate the white ant and white grub attack in groundnut. Go for thorough soil drenching with Chloropyriphos @ 2ml/litre of water.
- In North Central Plateau Zone, abrupt rise in maximum temperature and widening of gap between day and night temperature will aggravate disease and pest problem like Blast, Stem borer. Use pheromone trap @ 20-25 no. per hectare for control of adult population of stem borer. Go for alternate spray of Fipronil @ 2ml/litre and Indoxacarb @ 0.6ml/litre at 15days interval when stem borer population reaches at ETL level. In case of Blast attack, spray Tricyclazole @ 0.5g/litre or Kasugamycin @1.5g/litre of water.
- In North Eastern Coastal Plain Zone, the higher differential between day and night temperature will aggravate whitefly problem in summer green gram. To control whitefly, spray Thiomethoxam @ 80g/acre.
- In Mid Central Table Land Zone, due to very high temperature the papaya fruits are affected by papaya mealy bug. To control, spray Propenophos @ 2ml/litre of water. For better result add surfactant like APSA 80 @ 5ml/10

litre.

- In Mid Central Table Land Zone, due to high temperature there is thrips attack in onion. Yellow or white sticky traps may be used along field edges to monitor the initial migration of thrips into a field. Cleaning plant debris from the field and the surrounding area may aid in controlling thrips.
- In Mid Central Table Land Zone, due to high temperature and wide difference in maximum and minimum relative humidity there is severe infestation of white fly and aphids in groundnut, green gram and black gram and other vegetables. Spray Thiamethoxam @ 1g/3l of water to control it. Spray during morning hours.
- In West Central Table Land Zone, the milking stage in rice is susceptible to attack of gundhi bug. The adult and nymph suck the juice from developing grain at early stage of grain development. To control it, broadcast Quinalphos 1.5% dust @ 10 kg/acre.
- In North Eastern Ghat Zone, stem borer infestation has been found. Spray 2 ml Chlorpyrifos or Monocrotophos or Quinalphos in 1 litre of water or apply granular Carbofuran in the leaf whorls.

#### ▪ **Bihar:**

- In South Bihar Alluvial zone, complete harvesting of matured wheat and store the grains after threshing in safe places. Irrigate the vegetable crops at regular interval, so that temperature of the soil could be balanced and loss of water through evapotranspiration could be compensated by irrigated water.
- In North West Alluvial Plain Zone, continue sowing of elephant foot yam and fodder crop. Continue harvesting wheat, arhar and *rabi* maize crop.
- In North East Alluvial Zone, continue land preparation and sowing of jute. Maintain minimum water level of 2-3cm in boro rice fields.
- In North West Alluvial Plain Zone, in prevailing weather condition pumpkin beetle and mite infestation may be found in Cucurbitaceous crop and lady's finger. To control pumpkin beetle spray Dichlorvos 76 EC @ 1 ml /litre of water and to control mite spray of Ethion @ 1.5-2 ml/litre of water on non rainy day.
- In North East Alluvial Zone, prevailing temperature and humidity is congenial for incidence of yellow stem borer in rice and maize. For control, apply Fipronil 0.3% GR @ 20-25 Kg/ha or Chlorantranilprale 0.4% GR @ 10 Kg/hectare. To control fruit & shoot borer in brinjal or tomato, apply Indoxicarb 15.8 EC @ 1ml/litre of water.

#### ▪ **Jharkhand:**

- In Western Plateau Zone, continue sowing of vegetables like sponge gourd, bottle gourd, pumpkin, water melon, musk melon etc. Continue sowing of green gram and broadcasting of urea in standing vegetable crops. To conserve the moisture, undertake intercultural operations in vegetables.
- In South Eastern Plateau Zone, continue sowing of summer moong.
- In Central and North Eastern Plateau Zone, if irrigation facilities are available, cultivate summer maize with high yielding variety - Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid), HQPM (Hybrid) with recommended dose of fertilizer.
- In Western Plateau Zone, as mainly dry weather is prevailing, irrigate the fruit bearing trees at regular interval. Spray Planofix @ 5 ml per 10 litre of water to check dropping of tiny fruits. Spray Sulfex @ 2 g per litre of water against Powdery mildew disease.
- In South Eastern Plateau Zone, high temperature favours blast disease occurrence in summer rice. Hence, spraying of Tricyclazole @ 0.5 g per liter of water is recommended. Don't broadcast urea for 4-5 days after the application of chemicals. Maintain water level upto 3-4 cms.
- In South Eastern Plateau Zone, in mango, to increase the size as well as for controlling fruit dropping, it is advisable to spray, Planofix or Acimone or Multiplex @ 5-10 ml per litre of water. Spray Malathion 50 % @ 2 ml along with Carbendazim and Sulfex @ 2-3 g per litre of water control the insects attack and anthracnose disease. In litchi, to protect from mites and bug attack on leaves, spray Dicofol @ 2 ml per litre of water for mites and Monocrotophos @ 1ml per litre of water for bug.
- In Central and North Eastern Plateau Zone, to control Pirella nymph and adult on sugarcane crop spray Monocrotophos or Emidaclorpid @ one litre per hectare. And for shoot borer apply Chlorpyrifos 10 G granules 2 to 3g in apical leaf part in 30 day after transplanting.
- In South Eastern Plateau Zone, summer moon is at vegetative elongation stage, apply light and frequent irrigation.
- In Central and North Eastern Plateau Zone, in mango fruit there may be attack of anthracnose disease, (symptom – in fruit there is brown and black spot and fruit drop), to control apply Indofil M- 45@ 2.5 g/litre of water.
- In Western Plateau Zone, the day temperature remained 40°C or above for last few days and same will prevail for next few days. Hence, apply irrigation in fields of different vegetables, crops and fruit trees at a regular interval. Farmers wishing to cultivate ginger and turmeric may arrange the improved seeds for timely sowing.
- Suitable varieties for sowing are given in Annexure III.

#### ❖ **Animal Husbandry**

- As heat wave conditions are prevailing and also very likely to prevail at isolated places over Bihar, Gangetic West Bengal and Odisha from 29<sup>th</sup> April to 1<sup>st</sup> May, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Grazing/feeding of cattle/goats may be done during morning/evening hours. Leave the buffaloes in ponds during afternoon hours or sprinkle the cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Water



can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals. Proper ventilation should be maintained for free circulation of air in the sheds. Provide plenty of clean drinking water to animals and water troughs should be regularly cleaned.

- In Hill Zone of West Bengal, cattle should be vaccinated yearly against Haemorrhagic Septicaemia (HS) and Black Quarter (BQ) before onset of monsoon.
- In South, North and Middle Andaman, Nicobar provide clean drinking water to poultry birds to overcome the gastrointestinal problem and for deworming consult with the local veterinary doctor.

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



*Cauliflower*



*Green gram*



*Okra*



*Sugarcane*

- **Realised Rainfall:** Rainfall occurred in Bastar district of Chhattisgarh. Weather remained dry over rest of the region.
- **Advisories:**
  - **Madhya Pradesh:**
    - In Satpura Plateau Zone, as dry weather is prevailing, apply irrigation in cucurbits, moong and maize.
    - In Malwa Plateau Zone, apply irrigation in moong, urad, vegetables, mango, orange and pomegranate orchards. Undertake picking up of matured okra and cucurbit crops.
    - In Kymore Plateau and Satpura Hill Zone, as temperature is rising, apply irrigation in cucurbit crops, vegetables, moong and urad. In Nimar Valley Zone, continue sowing of okra.
    - In Bundelkhand Zone, apply irrigation in orchard crops. Undertake seed bed preparation for sowing of *khari* onion.
    - In Central Narmada Valley Zone, as dry weather would prevail, apply irrigation in orchards, moong and vegetables.
    - In Jhabua Hill Zone, apply irrigation in moong, tomato, chilli, brinjal, okra, onion crops. Continue harvesting of vegetables.
    - In Jhabua Hill Zone, due to rise in temperature, there may be attack of sucking pests in moong, spray Thiamethoxam or Acetamiprid @ 0.35-0.45 g/litre of water.
    - In the prevailing temperature conditions, there are chances of attack of red pumpkin beetle and fruit fly in cucurbits in Bundelkhand Zone and Grid Zone. Spray Triazophos 40 E.C. @ 2 ml per litre of water or Malathion 50 E.C. @ 1ml per litre of water for their control.
    - Suitable varieties for sowing are given in Annexure III.
  - **Chhattisgarh:**
    - In North Hill Zone, as temperature is rising, apply irrigation in summer rice, moong, sugarcane, orchards and vegetables. Undertake digging up of matured onion and garlic.
    - In Bastar Plateau Zone, continue intercultural operations in cucurbit crops and apply irrigation at regular intervals.
    - In Chhattisgarh Plain Zone, continue sowing of green gram, sesame and black gram. Apply irrigation in summer rice and orchards.
    - In Bastar Plateau Zone, there may be attack of mango hopper in mango. Spray Dimethoate @ 1.5ml/litre of water.
    - In Chhattisgarh Plain Zone, due to prevailing weather there may be chance of attack of thrips on green gram, apply Imidacloprid @ 1ml dissolved in 3 litre of water and spray 200 litre per acre.
  - ❖ **Animal Husbandry**
    - In Madhya Pradesh and Chhattisgarh, due to prevailing high temperature special attention should be given to milch animals, provide adequate water and green fodder to animals and keep them in shade.

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



*Wheat*



*Sugarcane*



*Cauliflower*



*Okra*

- **Realised Rainfall:** Rainfall occurred in Kulgam district of Jammu & Kashmir. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with squall/hail likely at isolated places over Jammu division of Jammu & Kashmir, Himachal Pradesh and Uttarakhand on 2<sup>nd</sup> and 3<sup>rd</sup> May; over Punjab on 2<sup>nd</sup> May and thunderstorm accompanied with squall likely at isolated places over Haryana, Chandigarh & Delhi, Uttar Pradesh and Rajasthan on 3<sup>rd</sup> May, farmers are advised to provide hail net/hail caps in orchard crops, arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops.
  - As dust/thunderstorm likely at a few places over Punjab, Haryana, Chandigarh & Delhi on 2<sup>nd</sup> May, at isolated places over Punjab, Haryana, Chandigarh & Delhi on 1<sup>st</sup> May; over Rajasthan on 1<sup>st</sup> and 2<sup>nd</sup> May and over Uttar Pradesh on 2<sup>nd</sup> May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane and keep harvested produce at safer places.
  - **Jammu & Kashmir:**
    - As rain/snow would occur at many places over Jammu & Kashmir on 2<sup>nd</sup> and 3<sup>rd</sup> May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Undertake harvesting of matured crops immediately and keep the harvested produce at safer places.
    - In Sub Tropical Zone, continue sowing of summer moong and mash in irrigated areas. Continue sowing of summer fodder (maize+cowpea+charri) and bajra. Harvest late sown wheat crop immediately and keep the harvested produce at safer places.
    - In Intermediate Zone, continue transplanting of tomato, brinjal, cucumber, bottle gourd and bitter gourd and sowing of okra and maize. Continue transplanting of seedling of chilli after dipping in 2% Bavistine solution in well drained fields to avoid wilt attack on the crop. Harvest matured mustard crop immediately and keep the harvested produce at safer places.
    - In Valley Temperate Zone continue transplanting of cole, solanaceous and cucurbits crops in the main field continue sowing of summer radish.
    - In cold Arid Zone of Jammu and Kashmir, continue harvesting of cabbage, broccoli, Chinese cabbage, beet leaf, lettuce, spinach, coriander in clear weather. Harvest turnip crop immediately and keep the harvested produce at safer places in the lower belts of the district. In the lower & middle belts replant the carrot roots in the fields for seed production. Sow the Cucurbits in the polybags & raise Solanaceous & Cruciferous crops nursery.
    - In Sub Tropical Zone, there may be chances of alternaria blight on tomato crop. To control spray Mancozeb @ 2.5gm/litre of water after current spells of rain.
  - **Uttarakhand:**
    - In Bhabar and Tarai Zone, continue harvesting of mustard, potato, tomato and sugarcane crop in clear weather. Apply irrigation to onion, garlic, mango and litchi crop.
    - In Hill Zone, continue nursery sowing of tomato crop. Continue sowing of French bean and okra.
    - In Sub Humid and Sub Tropic Zone, continue harvesting of mid sown wheat crop in clear weather.
  - **Himachal Pradesh:**
    - In Sub-Montane and Low Hills Sub-Tropical Zone, complete sowing of sunflower and fodder crops such as maize, cowpea, chari and bajra in irrigated areas. Continue sowing of cucurbits such as cucumber, bitter gourd, bottle gourd and summer squash, ageti okra, French bean and radish. Complete sowing of zaidmoong and mash in irrigated areas. Continue transplanting of tomato, brinjal, chilli and capsicum.
    - In Mid Hills Sub-Humid Zone, complete sowing of bhindi, cucurbits, French bean, moong and mash and nursery raising and transplanting of tomato, chilli, capsicum and brinjal and. Continue sowing of fodder crops like maize, cowpea and soybean. In high hilly regions undertake sowing of peas, turnip, carrot, palak.
    - In High Hills Temperate Dry Zone, complete the pruning operations in apple orchard.
    - In Mid Hills Sub-Humid Zone, weather is conducive for attack of purple blotch in onion, for control spray Redomil MZ @ 25 g per 10 litres of water on a non rainy day.
    - In Mid Hills Sub-Humid Zone, weather is conducive for attack of red pumpkin beetle in cucurbitaceous crops, for control spray Diclorvos 76 EC (DDVP) @ 1 ml per litre of water on a non rainy day.

- In Mid Hills Sub-Humid Zone, weather is conducive for attack of moth in potato crop, for control spray Cypermethrin 25 EC @ 1 ml per litre of water on a non rainy day.
- In Sub-Montane and Low Hills Sub-Tropical Zone, under prevailing weather conditions, there may be chances of incidence of Dieback disease in onion is observed in some pockets, for control spray Indofil-M 45 @ 25 g per 10 litres of water or Redomil MZ @ 25 g per 10 litres of water on a non rainy day.
- **Rajasthan:**
  - As dry weather is prevailing, apply irrigation in standing crop and all vegetables as per requirement.
  - In East Rajasthan, continue field preparation for sowing of zaid moong and planting of sugarcane, apply irrigation in maize in Southern Humid Plain Zone. In Flood Prone Eastern Plain Zone, continue harvesting of matured wheat and gram continue raising of nursery summer chilli, summer marigold, sowing of okra and leafy vegetables like spinach and amaranthus and also transplanting of tomato.
  - In Southern Humid Plain Zone, complete sowing of mung, groundnut and fodder like SSG-59-3, MP chari, Rajasthan chari, Pratap maize chari-6A.
  - In Sub Humid Southern Plain and Aravali Hill Zone, apply irrigation in vegetables. Complete harvesting of matured normal sown wheat and barley crop. Continue sowing of cucurbits also papaya in nursery.
  - In Semi-Arid Eastern Plain Zone, undertake picking of summer watermelon and muskmelon.
  - In Arid Western Plain Zone, continue land preparation for sowing of cotton. Continue harvesting of matured crops like cumin, coriander, fennel and isabgol at ripening stage. Continue transplanting of chilli. Continue sowing of green fodder viz. pearl millet, sorghum and cowpea.
  - In Irrigated North Western Plain Zone, continue harvesting of matured wheat and gram. Continue sowing of cotton. Continue sowing of zaid moong (SML 668). Continue land preparation for sowing of summer moong.
  - In Transitional Plain Zone of Inland Drainage, due to rise in temperature, there may be chances of attack of Hadda beetle & Red pumpkin beetle in cucurbits, for control undertake dusting of Malathion 5% or Methyl Parathion 2 % @ 25 Kg per hectare.
  - In Transitional Plain Zone of Inland Drainage, due to rise in temperature, there may be chances of attack of fruit borer in tomato and chilli, for control, apply NPV (Nuclear Polyhedrosis Virus) when 50 % flowering has been completed in the crops.
  - In Flood Prone Eastern Plain Zone, due to rise in temperature, there may be chances of attack of mosaic in bhindi and chilli, for control spray Malathion 50 EC @ 1 ml per litre of water.
  - In Irrigated North Western Plain Zone, due to rise in temperature, there may be chances of attack of thrips and leaf miner in kinnow fruits, for control spray Monocrotophos 36 SL @ 1 ml. per litre of water.
  - In Irrigated North Western Plain Zone, due to rise in temperature, there may be chances of fruit drops in kinnow plants, for control spray 2-4 D ( horticulture grade) @ 2 g per 100 litres of water or spray mixture of Propineb 70 WP @ 2 g and Gibbrellic Acid @ 20 mg per litre of water.
  - In Arid Western Plain Zone and Semi-Arid Eastern Plain Zone due to rise in temperature, there may be chances of attack of fruit fly in watermelon and muskmelon, for control spray Malathion 50 EC @ 1 ml per litre of water.
  - In Arid Western Plain Zone, due to rise in temperature, there may be chances of attack of fruit borer in tomato for control spray Acephate 75 S.P. @ 0.5 gm. per litre of water.
- **Punjab, Haryana and Delhi:**
  - In Western Plain Zone of Punjab, continue sowing of cotton, complete sowing of summer mung and mash, continue sowing of okra, spring maize and planting of sugarcane. Continue transplanting of chilli and cucurbits on the ridges. Apply light and frequent irrigations to newly planted fruit orchards.
  - In Undulating Plain Zone of Punjab, undertake intercultural operations in vegetable crops from time to time to conserve soil moisture as temperature is expected to increase. Irrigate the nursery plant of mango and litchi and other fruit crops twice in a week according to the prevailing weather conditions.
  - In Central and Undulating Plain Zone of Punjab, continue planting of sugarcane and summer pulses.
  - In Central, Western and Undulating Plain Zone of Punjab, continue planting of peach, plum, pear, pomegranate and ber plants.
  - In Western Zone of Punjab, undertake transplanting of chilli, tomato, bell pepper. Undertake sowing of cotton, cucurbits, round gourd, sponge gourd, and other summer vegetables viz. okra, and cluster bean. Irrigate the vegetable crops.
  - In Undulating Plain Zone of Punjab, complete the harvesting/threshing of matured oilseed crops and store the product in proper place. In Central Plain Zone of Punjab, continue harvesting/threshing of mustard crop.
  - In Western Zone of Haryana, undertake harvesting and threshing of wheat crop. Continue sowing of green gram and black gram. Complete the sowing of leafy vegetable, bottle gourd, cucumber, ridge gourd summer radish and direct sowing with certified seed and apply the irrigation as per the requirement of vegetables crops. Undertake the sowing of cotton. Complete the sowing of fodder crop i.e. gwar, maize, bajra. Undertake transplanting of young seedlings of brinjal, chilli and direct sowing of cucurbits. Irrigation should be done after transplantation. Apply light irrigation to matured onion and garlic crops. In Eastern Zone, complete the planting of sugarcane and undertake harvesting of wheat crop.
  - In Western Semi-Arid Zone of Delhi, apply light irrigation to all standing and vegetable crops, continue sowing of green gram, black gram . Undertake sowing of okra, French bean, cluster bean, baby corn and fodder crops such as sorghum, bajra and maize.

- In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of fruit borer in tomato and bell pepper, for control spray Profenofos @ 600ml per acre or Decis @ 160 ml per acre or Fame @ 30 ml per acre in 100 litres of water at 14 days of intervals.
- In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of red pumpkin beetle in cucurbits, for control spray Carbaryl @ 75 to 150 gm per acre in 50 to 100 litres of water and repeat after 10 days intervals. The incidence of the powdery mildew disease may be reduced by spraying the ber plantation with karathane 40 EC @ 50 ml or Bayleton 25 WP 50 g per 100 litres of water.
- In Undulating Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of fruit borer larvae in tomato, for control spray Fame 480 SL @ 30 ml or Fenvalerate 20 EC @ 100 ml or Deltamethrin 2.8 EC @ 160 ml or Cypermethrin 25 EC @ 80 ml. in 80 to 100 litres of water per acre.

▪ **Uttar Pradesh:**

- As dry weather is prevailing, apply irrigation in standing crop and all vegetables as per requirement.
- In Central Plain Zone, continue harvesting of matured wheat, barley, gram, pea and oat. Continue planting of sugarcane. Continue sowing of summer fodder crops like cowpea, maize, lobia and sowing of urad, mung, lobia, bhindi as inter crop in sugarcane, land preparation and sowing of cowpea, maize, garlic, turmeric. Continue sowing of sunhemp and dhaincha for green manuring. Continue nursery sowing of brinjal and *kharif* onion and transplanting of guava.
- In Eastern Plain Zone, continue sowing of bhindi, tinda, torai, cucurbits, and bottle guard and radish. Continue sowing of lobia, maize, urad, mung and transplanting of onion.
- In Western Plain Zone, continue harvesting of matured wheat and sowing baby corn and summer fodder crops jowar, bajra, lobia, maize. Continue transplanting of tomato, chilli and sowing of bhindi, cucurbits, planting of autumn sugarcane and sowing of sunflower, urad, mung, maize.
- In Bundelkhand Zone, apply irrigation in mung, bhindi, torai, cucurbits, cabbage, cauliflower, tomato, brinjal and chilli as per requirement.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of red insect in pumpkin and leaf hopper in green gram and black gram; for control of red insect in pumpkin, spray Endosulphan 20 EC @ 200 to 300 ml per litre of water and for control of leaf hopper in green gram and black gram spray Endosulphan 35 EC @ 1.25 litres per 1000 litres of water.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of grass hopper and hairy caterpillar in sunflower; for control, spray Phosphamidon 250 ml or Endosulphan 35 EC @ 1.25 litres in 600 litres of water.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of purple blotch/ stemphylium in onion, for control, spray Mencozeb @ 2.5 g or Copper Oxychloride @ 3 g per litre of water in clear weather.
- In North Eastern plain Zone, due to prevailing weather condition, there may be chances of attack of blight in *rabi* maize, for control, spray Mencozeb 0.2% @ 400 g or Carbendazim 0.2% @ 400 g in 200 litres of water per acre.
- Suitable varieties for sowing are given in Annexure III.

❖ **Horticulture:**

- In Western Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit drop in mango; for control spray N.A.A. @ 15 mg per litre of water.
- In North Eastern Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of mango hopper and mealy bug in mango trees; for control, spray mixture of 0.2 % Emidacloprid @ 400 ml and 0.2 % Carbendazim @ 400 g per 200 litres of water per 20 plants.
- In Sub-Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh, there may be chance of attack of aphid in pomegranate; for control, spray Emidacloprid @ 60 ml per 200 litres of water on a non rainy day.
- In Transitional Plain Zone of Inland Drainage of Rajasthan, due to rise in temperature, there may be chances of flower and fruit drops in citrus fruits; for control, spray Planofix @ 1 ml per 4.5 litres of water.
- In Semi-Arid Eastern Plain Zone of Rajasthan, due to rise in temperature, there may be chances of attack of mango hopper in mango, for control, spray Malathion 50 EC @ 1 ml per litre of water.
- In Intermediate Zone of Jammu and Kashmir, farmers are advised to whitewash lower portion of the trunk of fruit trees on clear sunny day with a solution of Copper Sulphate to avoid infestation of fungal disease and insect pests.

❖ **Animal Husbandry**

- In Sub-Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh, for milch animals, follow schedule of 1 kg feed+50 g mineral mixtures per 2 litres of milk. Get the animals vaccinated against Foot and Mouth disease.
- In sub tropical Zone of Jammu Kashmir, farmers are advised to add calcium supplement in the feed of dairy animals and heifers especially fed rice straw these days to prevent calcium deficiency and intestinal blockage. Sheeps and goats need to be vaccinated against Sheep and Goat pox. Black Quarter vaccination must be carried among heifers above 4 month age.
- In Valley Temperate Zone of Jammu and Kashmir, farmers are advised to vaccinate sheeps and goats against Enterotoxaemia (ETV vaccine 2ml/sub cut) and FMD (FMD vaccine 1ml /Intra muscular).

❖ **Floriculture**

- In sub tropical Zone of Jammu Kashmir undertake nursery land preparation for summer annuals. Collect seeds from winter annuals (Calendula, pansy etc.) which are at harvesting stage.

- In Valley Temperate Zone of Jammu & Kashmir, undertake land preparation for planting liliun, gladiolus and dahlia.
- ❖ **Apiculture:**
- In Sub Tropical Zone of Jammu and Kashmir, migrate bee colonies near to floral resources. Prepare colonies for honey flow. It is the right time to start bee keeping especially for beginners as pollen and nectar are in plenty and bee activity is at its peak.

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

### Annexure I

#### Week by week Rainfall Distribution

Sub-Divisions	13.04.16		20.04.16		27.04.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	193.7	55	70.8	-28	237.1	-28
Dibang Valley	32.0	-57	17.0	-69	8.0	-69
East Kameng	16.1	-50	22.3	-41	16.1	-41
East Siang	188.5	356	67.9	41	155.0	41
Kurung Kumey	**	**	**	**	**	**
Lohit	118.1	30	124.2	69	217.2	69
Lower Dibang Valley	565.3	663	287.4	423	356.6	423
Lower Subansari	**	**	**	**	**	**
Papumpare	132.9	311	73.3	30	155.8	30
Tawang	127.0	457	135.0	251	200.0	251
Tirap	214.4	186	105.8	57	169.6	57
Upper Siang	76.0	-12	32.0	-56	133.0	-56
Upper Subansari	82.2	558	18.0	-25	50.7	-25
West Kameng	0.0	-100	8.9	-77	37.4	-77
West Siang	5.0	-95	1.0	-99	1.0	-99
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	57.8	84	46.2	9	97.0	99
Barpeta	60.7	93	74.0	74	122.6	152
Bongaigaon	46.0	55	72.6	50	122.4	117
Cachar	41.3	-32	150.6	174	228.6	274
Chirang	28.8	-3	67.0	39	134.0	137
Darrang	**	**	**	**	**	**
Dhemaji	0.0	-100	1.0	-97	0.0	-100
Dhubri	0.8	-96	66.1	74	36.1	-16
Dibrugarh	152.0	232	86.8	49	150.6	152
Goalpara	2.4	-94	166.8	258	77.5	35
Golghat	14.0	-51	112.6	184	112.6	280
Hailakandi	37.2	-23	112.2	150	302.5	362
Jorhat	64.5	45	146.5	210	195.3	349
Kamrup(Rural)	62.9	121	200.3	397	138.4	262
Kamrup(Metro)	9.2	-68	105.3	161	47.9	25
Karbi Anglong	3.7	-82	60.7	170	11.3	-67

Karimganj	87.3	22	254.0	289	281.2	244
Kokrajhar	3.7	-92	148.3	263	61.7	-22
Lakhimpur	73.8	116	45.1	23	111.1	146
Morigaon	11.0	-46	89.6	258	10.8	-66
N.C.Hills	44.7	-13	126.4	123	285.7	469
Nagaon	6.6	-75	82.4	175	11.9	-65
Nalbari	77.1	89	109.1	246	155.9	293
Sonitpur	9.4	-71	45.1	22	130.2	270
Sibsagar	69.7	122	87.4	155	217.6	609
Tinsukia	152.9	247	114.8	132	155.6	214
Udalgiri	62.9	78	110.8	126	176.6	405
<b>Meghalaya</b>						
East Garo Hills	20.8	-48	125.4	289	61.0	-28
East Khasi Hills	183.2	202	374.9	375	332.1	363
Jaintia Hills	5.0	-91	20.0	-69	1.0	-99
Ribhoi	0.0	-100	39.4	68	21.8	-55
South Garo Hills	0.0	-100	18.0	-53	20.0	-62
West Garo Hills	0.0	-100	86.6	127	12.6	-76
West Khasi Hills	7.0	-72	14.0	-66	46.0	5
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	4.5	-85	75.6	142	44.6	-31
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	34.0	2
Serchhip	0.0	-100	4.8	-73	2.6	-94
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	3.0	-78	43.0	69	49.0	717
Churachandpur	**	**	**	**	**	**
Imphal east	13.6	-63	49.3	48	117.6	339
Imphal west	38.0	64	57.4	84	316.7	1549
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	10.0	-68	34.0	12	144.0	1090
Ukhrul	1.0	-95	1.0	-95	2.0	-85
<b>Nagaland</b>						
Dimapur	3.3	-86	97.3	1058	4.7	-63
Kephire	**	**	**	**	**	**
Kohima	0.6	-97	23.5	49	0.4	-98
Longleng	**	**	**	**	**	**
Mokokchung	0.0	-100	1.0	-97	2.0	-92
Mon	**	**	**	**	**	**
Paran	**	**	**	**	**	**
Phek	0.0	-100	33.0	109	9.0	-65
Tuensang	**	**	**	**	**	**

Wokha	3.0	-90	1.0	-95	0.0	-100
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	8.2	-81	45.2	-31	5.6	-91
NorthTripura	18.8	-65	89.3	14	81.7	38
SouthTripura	0.0	-100	0.4	-99	5.4	-88
West Tripura	0.0	-100	16.1	-70	3.9	-92
<b>Himachal Pradesh</b>						
Bilaspur	2.0	-65	0.3	-94	0.7	-91
Chamba	18.2	194	9.8	-37	2.8	-69
Hamirpur	0.0	-100	4.7	-29	1.7	-77
Kangra	1.9	-81	8.3	-12	0.7	-91
Kinnaur	49.0	154	42.9	119	7.9	-42
Kullu	23.3	19	46.1	147	8.7	-42
Lahaul and Spiti	13.8	-49	28.9	3	10.7	-49
Mandi	6.0	-55	6.0	-49	8.5	1
Shimla	17.1	47	15.2	16	5.2	-43
Sirmaur	7.7	120	0.7	-91	0.3	-93
Solan	6.5	-5	0.4	-95	1.2	-69
Una	0.2	-96	1.0	-73	0.0	-100
<b>Punjab</b>						
Amritsar	0.0	-100	0.0	-100	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100
Faridkot	0.0	-100	0.0	-100	0.5	-62
Fatehgarh Saheb	0.0	-100	0.0	-100	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	5.1	-32	0.5	-94	0.0	-100
Hoshiarpur	1.4	-68	0.6	-85	0.1	-95
Jalandhar	0.0	-100	0.4	-92	0.8	-36
Kapurthala	0.0	-100	0.0	-100	0.5	-50
Ludhiana	0.0	-100	0.0	-100	0.0	-98
Mansa	0.0	-100	0.0	-100	0.0	-100
Moga	0.0	-100	0.0	-100	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.3	-94	0.0	-100	2.1	-23
Patiala	0.7	-63	0.0	-100	0.0	-100
Ropar	0.3	-90	0.0	-100	1.0	-33
Sangrur	0.0	-100	0.0	-100	0.3	-72
Mohali	2.0	-29	3.0	-42	0.0	-100
TarnTaran	0.0	-100	0.0	-100	0.0	-100
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	4.2	90	0.3	-81	0.4	-76
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.6	-78	0.1	-99	0.3	-80
Faridabad	0.0	-100	0.0	-100	0.0	-100
Fatehabad	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.0	-100	0.0	-100	0.3	-58

Hissar	0.0	-100	0.0	-100	0.0	-100
Jhajar	0.0	-100	0.0	-100	0.0	-100
Jind	0.0	-100	0.0	-100	0.0	-100
Katihah	0.0	-100	0.0	-100	0.0	-100
Karnal	0.7	-76	0.0	-100	0.0	-100
Kurukshetra	0.8	-53	0.0	-100	0.0	-100
Mahendragarh	0.0	-100	0.0	-100	0.0	-100
Mewat	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	0.0	-100
Panchkkula	4.2	145	0.5	-87	0.0	-100
Panipat	0.0	-100	0.0	-100	0.0	-100
Rewari	0.0	-100	0.0	-100	0.0	-100
Rohtak	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	0.0	-100	0.0	-100
Yamunanagar	5.2	52	1.7	-59	0.0	-100
<b>Delhi</b>						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	0.0	-100	0.0	-100	0.0	-100
New Delhi	0.0	-100	0.0	-100	0.0	-100
North Delhi	0.0	-100	0.0	-100	0.0	-100
North East Delhi	0.0	-100	0.0	-100	0.0	-100
North West Delhi	0.0	-100	0.0	-100	0.0	-100
South Delhi	0.0	-100	0.0	-100	0.0	-100
South West Delhi	0.0	-100	0.0	-100	0.0	-100
West Delhi	0.0	-100	0.0	-100	0.0	-100
<b>Jammu &amp; Kashmir</b>						
Anantnag	32.0	27	31.0	4	17.3	-29
Badgam	32.9	114	27.8	33	11.0	-47
Bandipore	**	**	**	**	**	**
Baramula	40.1	-6	42.2	-15	11.4	-67
Doda	34.5	29	33.5	15	13.6	-32
Ganderbal	49.6	164	15.6	-22	17.6	-14
Jammu	5.8	-33	1.8	-79	2.2	-52
Kargil	**	**	**	**	**	**
Kathua	4.7	-45	1.9	-55	0.5	-88
Kistwar	**	**	**	**	**	**
Kulgam	28.9	15	31.1	5	22.6	-7
Kupwara	33.3	16	15.4	-59	6.4	-81
Ladakh(Leh)	0.0	-100	0.7	-67	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	24.5	29	23.7	6	10.7	-46
Rajouri	10.4	117	3.0	-68	9.5	164
Ramban	49.0	83	31.4	8	5.9	-71
Reasi	13.8	-25	6.5	-56	1.4	-84
Samba	1.6	-81	0.0	-100	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	43.0	129	30.6	53	10.5	-49



Udhampur	5.9	-68	5.0	-66	14.0	56
<b>East Madhya Pradesh</b>						
Anuppur	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.1	-93	0.0	-100	0.1	-99
Chhatarpur	0.0	-100	0.0	-100	0.0	-100
Chindwara	0.0	-100	0.0	-100	0.0	-100
Damoh	0.0	-100	0.0	-100	0.0	-100
Dindori	0.0	-100	0.0	-100	0.0	-100
Jabalpur	0.0	-100	0.0	-100	0.0	-100
Katni	0.0	-100	0.0	-100	0.0	-100
Mandla	1.3	-37	0.0	-100	0.0	-100
Narsingpur	0.0	-100	0.0	-100	0.0	-100
Panna	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	0.0	-100	0.0	-100
Sagar	0.0	-100	0.0	-100	0.0	-100
Satna	0.0	-100	0.0	-100	0.0	-100
Seoni	0.0	-100	0.0	-100	0.0	-100
Shahdol	0.0	-100	0.0	-100	0.0	-100
Sidhi	0.0	-100	0.0	-100	0.0	-100
Singrauli	0.0	-100	0.0	-100	0.0	-100
Tikamgarh	0.0	-100	0.0	-100	0.0	-100
Umaria	0.0	-100	0.0	-100	0.0	-100
<b>West Madhya Pradesh</b>						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	0.0	-100	0.0	-100
Bhind	0.0	-100	0.0	-100	0.0	-100
Bhopal	0.0	-100	0.0	-100	0.0	-100
Burhanpur	0.0	-100	0.0	-100	0.0	-100
Datia	0.0	-100	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	0.0	-100
Gwalior	0.0	-100	0.0	-100	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	0.0	-100	0.0	-100
Indore	0.0	-100	0.0	-100	0.0	-100
Jhabua	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	0.0	-100	0.0	-100
Rajgarh	0.0	-100	0.0	-100	0.0	-100
Ratlam	0.0	-100	0.0	-100	0.0	-100

Sehore	0.0	-100	0.0	-100	0.0	-100
Shajapur	0.0	-100	0.0	-100	0.0	-100
Sheopur Kalani	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.0	-100	0.0	-100	0.0	-100
Ujjain	0.0	-100	0.0	-100	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100
<b>Chhattisgarh</b>						
Bastar	0.2	-97	0.0	-100	23.0	164
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.5	-89	0.0	-100	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	1.8	50
Durg	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	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	0.0	-100
Kawardha	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.5	-92	0.0	-100	2.9	-48
Raigarh	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-99
Rajnandgaon	0.2	-91	0.0	-100	0.0	-100
Surguja	0.5	-73	0.0	-100	0.0	-100
<b>East Uttar Pradesh</b>						
Allahabad	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	0.0	-100	0.0	-100	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.0	-100
Bahraich	0.0	-100	0.0	-100	0.0	-100
Ballia	0.0	-100	0.0	-100	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100
Banda	0.0	-100	0.0	-100	0.0	-100
Barabanki	0.0	-100	0.0	-100	0.0	-100
Basti	0.0	-100	0.0	-100	0.0	-100
Chandauli	0.0	-100	0.0	-100	0.0	-100
Deoria	0.0	-100	0.0	-100	0.0	-100
Faizabad	0.0	-100	0.0	-100	0.0	-100
Farrukhabad	0.0	-100	0.0	-100	0.0	-100
Fatehpur	0.0	-100	0.0	-100	0.0	-100
Gazipur	0.0	-100	0.0	-100	0.0	-100
Gonda	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	0.0	-100	0.0	-100	0.0	-100
Hardoi	0.0	-100	0.0	-100	0.0	-100
Jaunpur	0.0	-100	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	0.0	-100
Kanpur City	0.0	-100	0.0	-100	0.0	-100
Kanpur Dehat	0.0	-100	0.0	-100	0.0	-100
Kaushambi	0.0	-100	0.0	-100	0.0	-100

Kheri	0.0	-100	0.5	-78	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	0.0	-100	0.0	-100	0.0	-100
Maharajganj	0.0	-100	0.0	-100	0.0	-100
Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
RaiBareilly	0.0	-100	0.0	-100	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnmagar	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	0.0	-100	0.0	-100	0.0	-100
Sonbhadra	0.0	-100	0.0	-100	0.0	-100
Sultanpur	0.0	-100	0.0	-100	0.0	-100
Unnao	0.0	-100	0.0	-100	0.0	-100
Varanasi	0.0	-100	0.0	-100	0.0	-100
<b>West Uttar Pradesh</b>						
Agra	0.0	-100	0.0	-100	0.0	-100
Aligarh	0.0	-100	0.0	-100	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100
Badaun	0.0	-100	0.0	-100	0.0	-100
Baghpat	0.0	-100	0.0	-100	0.0	-100
Bareilly	0.1	-89	0.0	-100	0.0	-100
Bijnor	0.0	-100	0.0	-100	0.0	-100
Bulandsahar	0.0	-100	0.0	-100	0.0	-100
Etah	0.0	-100	0.0	-100	0.0	-100
Etawah	0.0	-100	0.0	-100	0.0	-100
Firozabad	0.0	-100	0.0	-100	0.0	-100
GBNagar	0.0	-100	0.0	-100	0.0	-100
Ghaziabad	0.0	-100	0.0	-100	0.0	-100
Hamirpur	0.0	-100	0.0	-100	0.0	-100
Jalaun	0.0	-100	0.0	-100	0.0	-100
Jhansi	0.0	-100	0.0	-100	0.0	-100
Jotiba Phule Nagar	0.0	-100	0.0	-100	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	0.0	-100
Lalitpur	0.0	-100	0.0	-100	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	0.0	-100	0.0	-100	0.0	-100
Mainpuri	0.0	-100	0.0	-100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	0.0	-100	0.0	-100	0.0	-100
Moradabad	0.1	-80	0.0	-100	0.0	-100
Muzzaffarnagar	4.7	211	0.0	-100	1.0	107
Pilibhit	0.0	-100	0.7	-71	0.0	-100
Rampur	0.0	-100	0.0	-100	0.0	-100
Saharanpur	0.0	-100	3.7	162	1.3	122

Shahjahanpur	0.0	-100	0.0	-100	0.0	-100
<b>Uttarakhand</b>						
Almora	5.2	-22	0.6	-91	1.8	-69
Bageshwar	2.8	-59	0.0	-100	0.0	-100
Chamoli	5.1	-54	2.7	-78	0.4	-93
Champawat	0.0	-100	5.0	-53	0.0	-100
Dehradun	4.5	-21	6.3	2	1.1	-64
Garhwal Pauri	6.0	114	0.0	-100	0.0	-100
Garhwal Tehri	11.3	64	1.7	-82	1.9	-65
Haridwar	0.5	-78	0.0	-100	0.0	-100
Nainital	4.3	18	2.8	-53	1.7	-66
Pithorgarh	4.5	-38	6.5	-51	2.0	-84
Rudraprayag	11.4	-1	10.3	-26	0.5	-97
Udham Sing Nagar	0.5	-29	7.3	170	0.1	-98
Uttarkashi	7.2	-43	2.5	-80	4.5	-51
<b>Bihar</b>						
Araria	0.0	-100	1.0	-88	0.0	-100
Arwal	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.0	-100	0.0	-100	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100
Begusarai	**	**	0.0	-100	0.0	-100
Bhabua	0.0	-100	0.0	-100	0.0	-100
Bhagalpur	0.0	-100	0.0	-100	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	**	**	0.0	-100	0.0	-100
Darbhanga	0.0	-100	0.0	-100	0.0	-100
East Champaran	0.0	-100	2.9	-30	0.0	-100
Gaya	0.0	-100	0.0	-100	0.0	-100
Gopalganj	0.0	-100	0.0	-100	0.0	-100
Jahanabad	**	**	0.0	-100	0.0	-100
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	0.0	-100	0.0	-100	0.0	-100
Khagadia	0.0	-100	0.0	-100	0.0	-100
Kishanganj	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	0.0	-100	0.0	-100	0.0	-100
Madhepura	0.0	-100	0.0	-100	**	**
Madhubani	0.0	-100	0.0	-100	0.0	-100
Monghyar	**	**	0.0	-100	0.0	-100
Muzaffarpur	0.0	-100	0.0	-100	0.0	-100
Nalanda	**	**	0.0	-100	0.0	-100
Nawada	**	**	0.0	-100	0.0	-100
Patna	0.0	-100	0.0	-100	0.0	-100
Purnea	0.0	-100	0.0	-100	**	**
Rohtas	0.0	-100	0.0	-100	0.0	-100
Saharsha	**	**	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
Sheohar	**	**	0.0	-100	0.0	-100

Sitamarhi	0.0	-100	0.0	-100	0.0	-100
Siwan	**	**	0.0	-100	0.0	-100
Supaul	0.0	-100	0.0	-100	0.0	-100
Vaishali	**	**	0.0	-100	0.0	-100
West Champaran	0.0	-100	8.2	140	0.0	-100
<b>Jharkhand</b>						
Bokaro	0.0	-100	0.0	-100	0.0	-100
Chatra	0.0	-100	0.0	-100	0.0	-100
Deoghar	0.0	-100	3.3	33	0.0	-100
Dhanbad	0.0	-100	0.4	-89	0.0	-100
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singbhum	2.4	-52	0.0	-100	0.0	-100
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	0.0	-100	0.5	-92	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.7	-87	0.0	-100	0.0	-100
Hazaribagh	0.0	-100	0.0	-100	0.0	-100
Jamtara	0.0	-100	0.6	-60	0.0	-100
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	0.0	-100	0.0	-100
Lohardagga	0.0	-100	0.0	-100	0.0	-100
Pakur	0.0	-100	0.0	-100	0.0	-100
Palamau	0.1	-88	0.0	-100	0.0	-100
Ramgarh	0.0	-100	0.0	-100	0.0	-100
Ranchi	0.0	-100	0.0	-100	0.0	-100
Sahebganj	0.0	-100	0.0	-100	0.0	-100
Saraikela	2.5	-25	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100
West Singbhum	0.0	-100	0.0	-100	0.0	-100
<b>East Rajasthan</b>						
Ajmer	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	0.0	-100	0.0	-100
Udaipur	0.0	-100	0.0	-100	0.0	-100
<b>West Rajasthan</b>						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.0	-100	0.0	-100	0.0	-100
Hanumangarh	0.0	-100	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	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.9	-23	0.0	-100	0.0	-100
<b>Gujarat Region</b>						
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	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	**	**	**	**
Dangs	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100
<b>Maharashtra</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	0.1	-86	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	0.0	-100	0.0	-100	0.0	-100
Kolhapur	2.6	-51	0.0	-100	0.0	-100
Nandurbar	0.0	-100	0.0	-100	0.0	-100
Nasik	0.0	-100	0.0	-100	0.0	-100
Pune	0.0	-100	0.1	-94	0.0	-100
Sangli	0.4	-91	0.0	-100	0.0	-100
Satara	0.3	-89	0.7	-82	0.0	-100
Solapur	4.3	65	0.0	-100	0.0	-100
<b>Marathwada</b>						
Aurangabad	0.0	-100	0.0	-100	0.0	-100
Beed	0.6	-71	0.0	-100	0.0	-100
Hingoli	2.5	7	0.0	-100	0.0	-100
Jalna	0.2	-70	0.0	-100	0.0	-100
Latur	5.1	130	0.0	-100	0.0	-100
Nanded	1.3	-53	0.0	-100	0.0	-100
Usmanabad	2.4	9	0.0	-100	0.0	-100
Parbhani	0.8	-53	0.0	-100	0.0	-100
<b>Vidarbha</b>						
Akola	0.0	-100	0.0	-100	0.0	-100
Amraoti	0.0	-100	0.0	-100	0.0	-100
Bhandara	1.4	-48	0.0	-100	0.0	-100
Buldhana	0.0	-100	0.0	-100	0.0	-100
Chandrapur	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100
Gondia	0.2	-90	0.0	-100	0.0	-100
Nagpur	3.6	62	0.0	-100	0.0	-100
Wardha	0.0	-100	0.0	-100	0.0	-100
Washim	0.0	-100	0.0	-100	0.0	-100
Yeotmal	0.0	-99	0.0	-100	0.0	-100
<b>Odisha</b>						
Angul	0.0	-100	0.0	-100	0.0	-100
Balasore	7.6	-24	5.7	-63	0.2	-99
Bargarh	0.0	-100	0.0	-100	0.0	-100
Bhadrak	0.0	-100	0.1	-99	0.0	-100
Bolangir	0.1	-98	1.3	-78	5.3	15
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	2.1	-81	0.8	-94
Gajapati	0.1	-99	0.0	-100	0.4	-99
Ganjam	0.1	-99	0.0	-100	2.3	-82
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	0.8	-90
Kandhamal	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100
Keonjhar	0.0	-100	0.0	-100	6.3	-56
Khurda	0.0	-100	0.0	-100	0.0	-100
Koraput	0.0	-100	0.0	-100	1.9	-87
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	2.0	-75	9.6	-39	1.1	-94
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.8	-92	0.0	-100	15.6	-38
Nayagarh	2.2	-66	0.0	-100	10.5	-15
Puri	0.1	-95	0.0	-100	0.0	-100
Rayagada	5.7	-47	0.0	-100	5.5	-55
Sambalpur	0.0	-100	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.0	-100
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	4.4	-78	0.0	-100	0.6	-98
North & Middle Andaman	0.0	-100	0.0	-100	0.0	-100
South Andaman	0.0	-100	0.0	-100	0.0	-100
<b>GWB</b>						
Bankura	0.0	-100	0.8	-92	0.0	-100
Birbhum	0.0	-100	0.0	-100	0.0	-100
Burdwan	0.0	-100	0.0	-100	0.0	-100
East Midnapore	5.1	11	0.9	-88	0.0	-100
Hooghly	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Purulia	0.0	-100	0.1	-99	0.0	-100
24 Pargana (S)	0.0	-100	0.0	-100	0.0	-100
West Midnapore	3.4	-58	8.5	-40	0.0	-100
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	2.0	-86	20.5	-37	0.0	-100
Darjeeling	0.0	-100	12.0	-61	2.6	-94
East Sikkim	19.9	-54	70.2	88	115.5	163
Jalpaiguri	1.1	-93	20.0	-23	7.6	-82
Malda	0.0	-100	0.0	-100	0.0	-100








North Dinajpur	**	**	**	**	**	**
North Sikkim	8.6	-88	63.7	38	111.0	111
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	8.1	-78	16.7	-62
West Sikkim	1.0	-99	34.0	-26	33.0	-37
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshina Kannada	0.4	-95	9.1	0	0.0	-100
Udupi	0.0	-100	0.0	-100	0.0	-100
Uttara Kannada	1.1	-74	0.0	-100	0.0	-100
<b>N I Karnataka</b>						
Bagalkote	11.2	167	0.0	-100	0.0	-100
Belagavi	4.1	-32	0.0	-100	0.1	-99
Bidar	7.1	30	3.3	-19	0.0	-100
Dharwad	3.2	-61	2.3	-80	0.0	-100
Gadag	17.5	166	0.0	-100	0.0	-100
Haveri	7.8	3	0.0	-100	0.1	-99
Kalaburgi	4.2	24	0.1	-98	0.9	-83
Koppal	0.0	-100	0.0	-100	0.0	-100
Raichur	2.9	-22	0.0	-100	0.0	-100
Vijayapura	0.8	-79	0.4	-92	0.0	-100
Yadgir	1.1	-75	0.0	-100	0.1	-99
<b>S I Karnataka</b>						
Ballari	0.0	-100	0.5	-91	0.0	-100
Bangalore Rural	0.0	-100	0.0	-100	2.3	-81
Bangalore Urban	1.9	-68	0.0	-100	5.4	-58
Chamarajanagar	2.6	-79	1.4	-93	4.9	-77
Chikaballapur	0.0	-100	2.8	-55	2.0	-75
Chikkamagaluru	6.5	-41	4.3	-68	0.2	-99
Chitradurga	1.1	-77	0.8	-83	0.0	-100
Davangere	0.0	-100	0.3	-95	0.0	-100
Hassan	13.9	47	21.3	92	0.0	-100
Kodagu	5.8	-70	7.8	-59	2.0	-93
Kolar	0.0	-100	0.0	-100	0.0	-100
Mandya	5.9	-30	4.6	-57	6.3	-57
Mysuru	4.1	-65	6.3	-56	10.5	-46
Ramanagara	2.8	-66	0.0	-100	1.0	-94
Shivamogga	0.5	-93	0.4	-96	0.0	-100
Tumakuru	0.0	-100	0.9	-89	0.0	-100
<b>Kerala</b>						
Alappuzha	4.2	-87	9.3	-66	5.0	-85
Kannur	1.0	-92	0.0	-100	0.0	-100
Ernakulam	30.8	21	5.0	-81	2.7	-90
Idukki	21.6	-27	8.4	-79	4.0	-90
Kasaragod	0.0	-100	0.0	-100	0.0	-100
Kollam	11.1	-65	19.5	-48	16.4	-64
Kottayam	25.2	-30	10.7	-62	6.4	-76
Kozhikode	0.3	-99	0.0	-100	0.0	-99
Malappuram	4.6	-79	0.0	-100	0.2	-99

Palakkad	1.6	-93	2.0	-91	0.0	-99
Pathanamthitta	34.1	-13	11.8	-73	38.3	-24
Thiruvananthapuram	28.0	4	17.2	-40	9.8	-65
Thrissur	35.2	91	0.7	-96	1.5	-93
Wayanad	4.4	-77	3.2	-83	3.0	-87
<b>Tamil Nadu</b>						
Ariyalur	0.0	-100	0.0	-100	0.0	-100
Chennai	0.0	-100	0.0	-100	0.0	-100
Coimbatore	19.1	105	0.6	-96	0.7	-96
Cuddalore	0.0	-100	0.0	-100	0.0	-100
Dharmapuri	0.0	-100	0.0	-100	0.0	-100
Dindigul	6.0	-45	1.1	-93	0.5	-97
Erode	11.9	60	1.3	-89	1.3	-91
Kanchipuram	0.0	-100	0.0	-100	0.0	-100
Kanyakumari	16.0	-30	2.5	-91	4.1	-81
Karikal	0.0	-100	0.0	-100	0.0	-100
Karur	1.9	-75	0.0	-100	0.5	-96
Krishnagiri	1.2	-78	0.2	-98	2.5	-82
Madurai	14.5	25	0.0	-100	1.3	-91
Nagapattinam	0.0	-100	0.0	-100	0.0	-100
Namakkal	5.3	-23	0.0	-100	0.0	-100
Nilgiris	7.6	-64	0.2	-99	5.2	-76
Perambalur	0.0	-100	0.0	-100	0.0	-100
Puducherry	0.0	-100	0.0	-100	0.0	-100
Pudukottai	0.0	-100	0.0	-100	0.0	-100
Ramanathapuram	6.5	-39	0.0	-100	0.5	-97
Salem	0.0	-100	0.0	-100	2.8	-79
Sivaganga	12.5	47	0.0	-100	0.0	-100
Thanjavur	0.0	-100	0.9	-88	0.0	-100
Theni	7.6	-46	1.0	-94	2.7	-87
Tirunelveli	2.0	-89	2.9	-83	9.4	-37
Tirupur	12.5	67	0.0	-100	0.0	-100
Tiruvallur	0.0	-100	0.0	-100	0.0	-100
Tiruvannamalai	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	0.0	-100	0.0	-100	0.0	-100
Toothukudi	3.5	-71	0.0	-100	0.0	-100
Trichy	0.8	-87	0.0	-100	0.0	-100
Vellore	0.0	-100	0.0	-100	0.0	-100
Villupuram	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	1.3	-92	0.0	-100	1.8	-89
<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	0.2	-96
Krishna	0.0	-100	0.0	-100	0.0	-100
Nellore	0.6	-29	0.0	-100	0.0	-100
Prakasam	0.0	-100	0.0	-100	0.0	-100
Sirkakulam	1.1	-71	0.0	-100	0.7	-90

Visakhapatnam	0.0	-100	0.9	-92	4.6	-66
Vizianagram	1.0	-80	0.0	-100	0.6	-93
West Godavari	0.0	-100	0.0	-100	0.0	-100
<b>Rayalaseema</b>						
Anantapur	0.0	-100	0.2	-96	0.0	-100
Chittoor	0.0	-100	0.0	-100	0.4	-96
Cuddapah	0.0	-100	0.0	-100	0.1	-98
Kurnool	0.0	-100	0.3	-93	0.0	-100
<b>Telangana</b>						
Adilabad	1.0	-57	1.6	-48	0.0	-100
Hyderabad	0.0	-100	6.6	42	0.0	-100
Karimnagar	0.0	-100	2.1	-51	6.5	81
Khammam	0.1	-98	0.0	-100	1.7	-74
Mehabubnagar	0.0	-100	0.0	-98	0.0	-100
Medak	0.0	-100	0.0	-100	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.1	-97	0.7	-79	0.5	-81
Rangareddy	0.0	-100	1.3	-70	2.1	-68
Warangal	0.0	-100	0.0	-100	0.0	-100

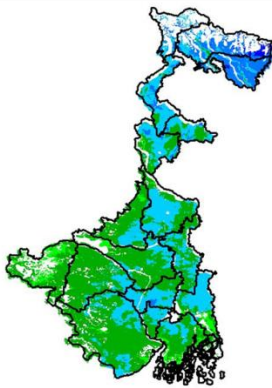
#### Legends

	(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

#### INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 27<sup>th</sup> April 2016 FOR DIFFERENT STATES

##### West Bengal



Agricultural vigour is good in West Bengal, whereas western region of the state shows moderate NDVI

##### Uttar Pradesh



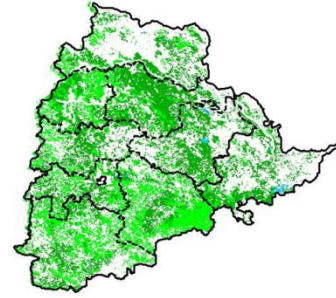
Agricultural vigour is moderate over entire state of Uttar Pradesh whereas, in the north western patch shows good NDVI.

### Uttarakhand



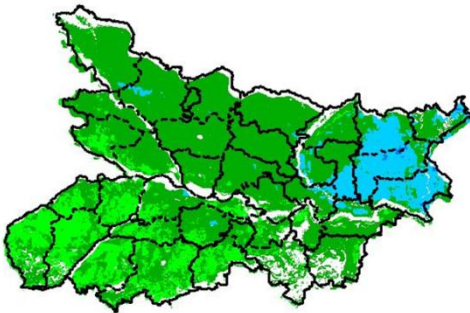
Agricultural vigour is moderate over entire state of Uttarakhand except few patches over west shows good values of NDVI.

### Telangana



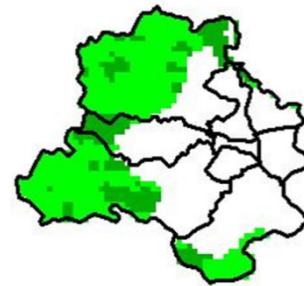
Agriculture vigour is moderate over entire state of Telangana. Few patches in eastern region shows good values of NDVI

### Bihar



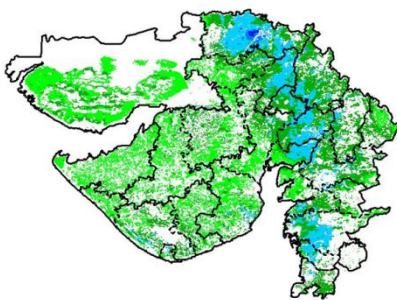
Agriculture vigour is moderate over major parts of Bihar whereas eastern part shows patches of good NDVI values.

### Delhi



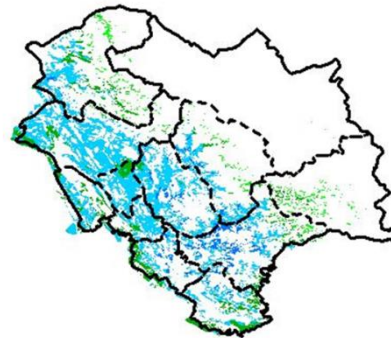
Agriculture vigour is moderate all over Delhi.

### Gujarat



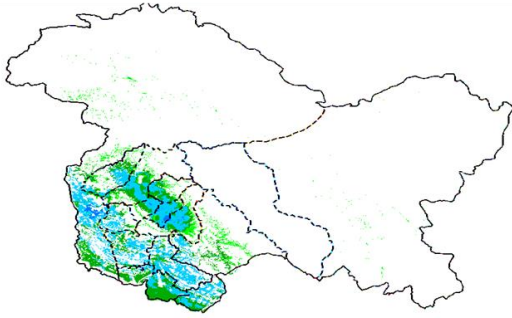
Agriculture vigour is moderate in Kutch and Saurashtra whereas, good agricultural vigour is observed over patches in Gujarat region.

### Himachal Pradesh



Agriculture vigour is good over entire state of Himachal Pradesh, except few patches over south shows moderate values of NDVI.

### Jammu & Kashmir



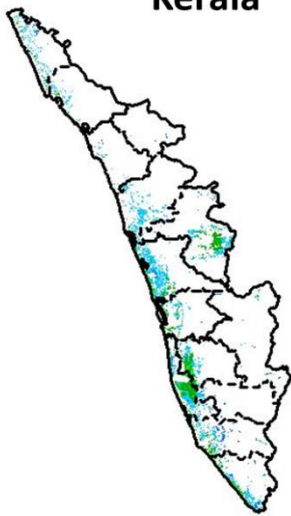
Agriculture vigour is good over central and northern part of Jammu & Kashmir, whereas the remaining region shows moderate NDVI.

### Jharkhand



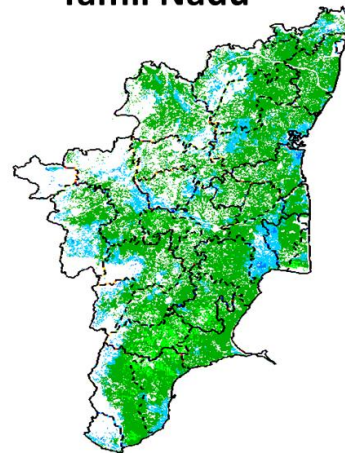
Agriculture vigour is moderate over entire state of Jharkhand.

### Kerala



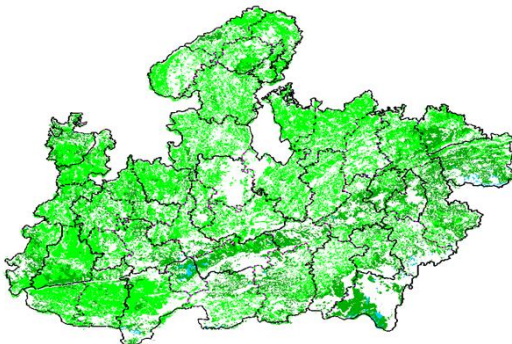
Agriculture vigour is good over entire state of Kerala.

### Tamil Nadu



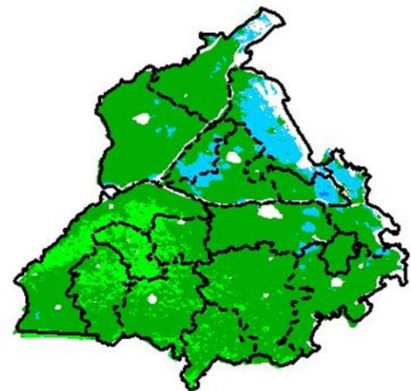
Agricultural vigour is good over major part of Tamil Nadu, except for southern part shows moderate NDVI.

### Madhya Pradesh



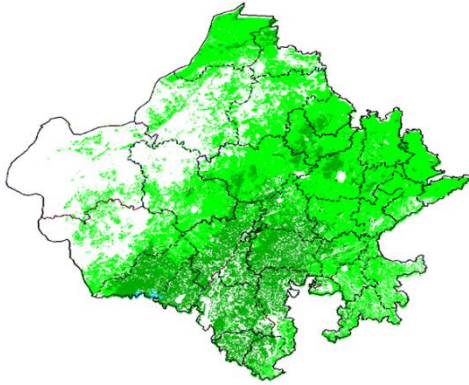
Agriculture vigour shows moderate values of NDVI over entire state of Madhya Pradesh.

### Punjab



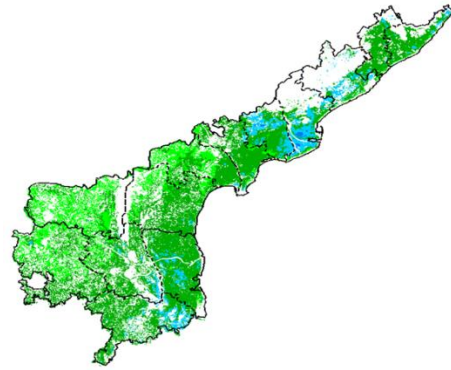
Agricultural vigour is good over northern and eastern parts of Punjab whereas, the remaining region shows moderate NDVI.

### Rajasthan



Agriculture vigour is moderate over the entire state of Rajasthan.

### Andhra Pradesh



Agriculture vigour is very good over coastal part of Andhra Pradesh whereas other region shows moderate values.

### Odisha



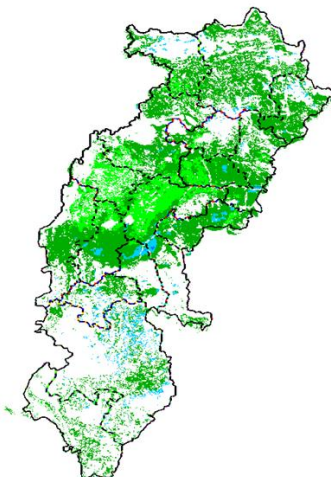
Agricultural vigour is good in patches of coastal and western parts of Odisha where rest of region shows moderate NDVI.

### Haryana



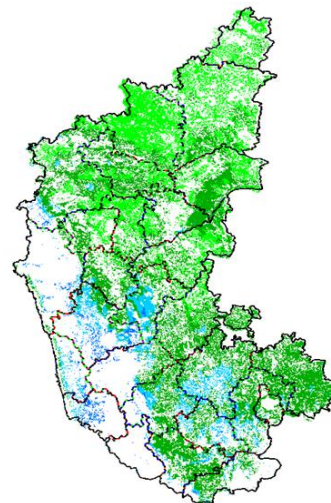
Agriculture vigour is moderate over entire state of Haryana.

### Chhattisgarh

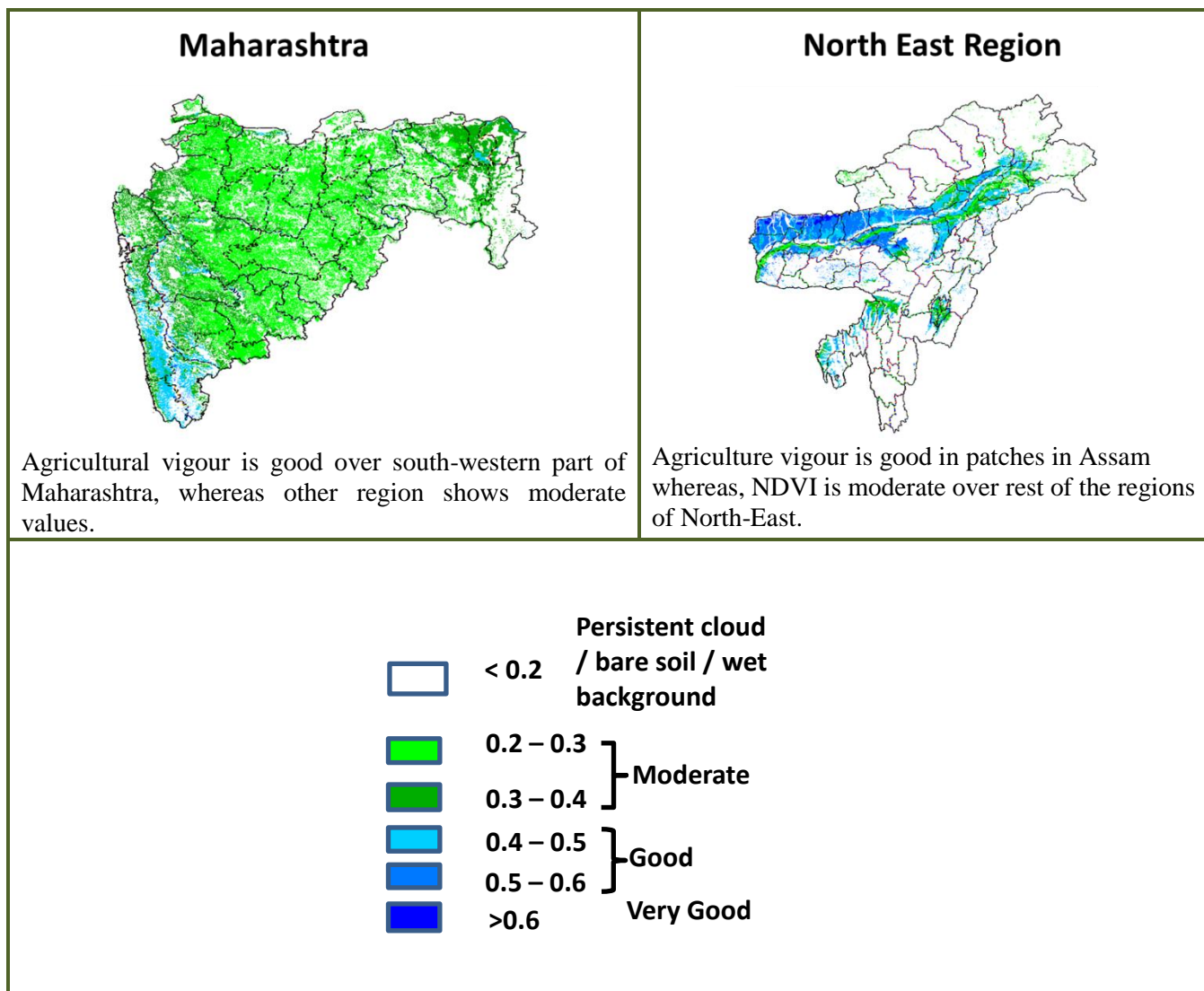


Agriculture vigour is moderate in the state of Chhattisgarh with few patches of good NDVI in central region.

### Karnataka



Agriculture vigour is good over patches in central and Southern part of Karnataka state. Rest of the state shows moderate values of NDVI.



### Annexure III

- Assam**  
**Early *ahu* rice:** semi dwarf *ahu* rice varieties like Luit, Kopilee, Cauvery, Culture -1, Rasi, Banglami, Puthichapali, Nilajee, Hasakumra.  
**Early *ahu* rice (for low lying area):** IR-50, Pusa 2-21, Rasi, Culture -1, Luit, Kopilee (Semi-dwarf varieties); Rongadoria, Dubaichenga, Nilajee (Tall varieties).  
**Transplanted normal *ahu* rice:** Gobind, IR-36, IR-50.  
**Bao rice:** Maguri, Kekua Bao, Negheri Bao, Tara Bao.  
**Kharif maize:** Hybrid variety like Ganga 5, Hi starch and Composite variety like NLD, Dhawal, Naviot, Diara.  
**Capsularis jute:** JRC 321 and UPC 94.  
**Green gram:**Pratap, T-44, Kopergaon, AAU-39, K-851 and ML-55.  
**Black gram:**T-9, Pant-U-19, UG-157.  
**Sugarcane:** Kolong, Luhit, Dhansiri, Co 1148, CO-Jor- 1, CO-Jor- 2.  
**Okra:**Pusa Sawani, Arka Anamika, Parbhdani Kranti.  
**Ridge gourd:** Pusa Nashdar or other local varieties like AAU-1, AAU-2, AAU-3 etc.  
**Sponge gourd:** Pusa Chikni or other local varieties.  
**Tapioca:** H-43, H-97, H-165, S-865, H-2304.  
**Maize:** Ganga 5, Navjot.  
**Banana:** Dwarf Cavendish (Dwarf Cultivar), Cheni Champa, Malbhog (Medium Tall cultivars).  
**Okra:**Parvani Kranti, Arka Anamica.  
**Ginger:** Nadia, Karkai, Maran, Jorhat, chaina etc.  
**Turmeric:** Shillong type, CL-24, PTS-38, PCT-13, VK-145.

- Meghalava**  
**Brinjal :**Local Umroi, Muta Kesh, Narrow.  
**Bottle gourd:** Pusa Summer, Prolific Long, Prolific Round, Pusa Meghdoot, Pusa Hybrid 2.

### Manipur

**Pre-kharif rice:** RC Maniphou 4, 5 and 12.

### Tripura

**Jhumrice :** Garo Malati, Binnietc.

### Odisha

**Sugarcane:** Nilamadhaha, Sabitri, Co 7508, Co 7704, Co 62175, Co 740, Co 7219, CoJ 8201, Co 975, Co 7706, Co 8402, Co 62175.

**Groundnut:** Smruti, AK 12-24 TAG

### Jharkhand

**Lentil:** P.L.-406, P.L.-639, K.L.S -218, K-75

**Barley:** Jyoti, Ratna, D.L.-36, B.R.-32

**Linseed:** Sweta, Shubhra, T-397

**Onion:** N-53, Pusa red, Arka nicketan, Arka kalia

### Jammu & Kashmir

**Cabbage:** Golden Acre, Pride of India and Pusa Mukta.

**Cauliflower:** Giant Snow Ball, Pant Gobh 2 & 3 and Pusa Synthetic.

### Uttarakhand

**Sugarcane:** Pant 84211, Co-238, Co-241, Co Pant 3220, COS-8436, COS-88230 etc. and medium to late sown varieties like Co Pant 90223, Co Pant-96219, COS-97222, COS-767, COS-1148, COS-96268 etc.

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

**Brinjal:** (brinjal-4, ARU-1 etc ) and potato (Kufri Jyoti, Kufri Ashok & Kufri Anand etc.

**Tomato:** Tomato-3, Pant T-3, Him Sona, Him Shikhar etc variety in nursery).

### Himachal Pradesh

**Cauliflower:** snowball and Giant snowball.

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

**Turnip:** PTWG-1

**Carrot:** Pusakesar

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

**Peas :** Mater ageta-6 (early variety).

**Cabbage:** Pride of India, golden achor and hybrid

### East Uttar Pradesh

**Sugarcane:** coj-64, cos-96268, cos-98231, cos-767, cos-84, cos-32, copant-84212, Ko.Sha.-88230, 95255, Ko.Sha.-95436, 01235.

**Tomato:** pusa early, pusa ruby, HS 101, Pant Ta-2, Azad Ta-2, Narendra Tamatar-1,2,4,5,6

**Cauliflower:** pusaDipali.

**Okra:** PusaSawani, VarsaUphar, Azad kranti.

**Brinjal:** Pant Samrat, Pant Rituraj, Pusa hybrid-6.

**Cabbage:** Japani, PusaDieepali, PusaKartiki

**cowpea:** Lobia-263 & Pusa phaguni

**Chilli:** Pant C-1, Jwala and Sadabahar etc.

**Grapes:** parlet, beauty seedless, pusa seedless.

**Maize:** nawjyoti, kanchan, gaurav, surya, navin, shweta, Azad uttam, prakash, dikalb-7074, payridikalp-8144, dakkan-115, mmh-135, pro-4212, ganga-11, pusa, makka-2, J.H.-3459,

**Urad:** TA-9, narendra urad-1, Azad urad-1, Uttara, azad urad-2, shekhar-2, pant. u. 19, pant u. 30, pant u. 35, P.D.U.-1

**Mung:** k-851 and JM-721, Narendra mung-1, Malviya jagruti, Janpriya, Meha, H.U.M.-16, Malviya Jyoti, T.M.V.-37, Samrat, P.D.M.-139, H.U.M.-12, pusa vaishakhi, T.A.-44, Pant mung 12, pusa vishal, pusa-9531, P.D.M.-11, S.M.L.668

**Onion:** Agrifound light red, Nashik selection-1

**Radish:** pusa chetaki, pusa himani, pusa saris, pusa reshmi, japanis white radish.

### West Uttar Pradesh

**Ladies finger:** VRO-6, VRO-5.

**Sugarcane:** ko.sha 88230, ko.sha 8436, ko 0238, ko.sha 07250 or U.P. 0512.

**Barseem:** V.L.1, V.L.10, maskavi, jai, K-8027, K-9565, Mandakini.

**Onion:** pusa red, pusa white.

**Sugarcane:** The mid and late maturing varieties of sugarcane: CO Pant 211, Co Sa 687 and Co Sa 8436.

The varieties recommended in areas with poor water drainage: B.O.54 and B.O.91.

**Baby corn:** M.H.-4

### Punjab

**Sugarcane:** CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89, CO118, COJ85, COJ64.

**Rice:** Pusa-44, T.R-112 and T.R-113.

**Onion:** Punjab Naroya, Punjab White and PRO 6.

**Radish:** Punjab Pasand and Japanese white.



**Turnip:** L-1.

**Carrot:** Punjab Black Beauty, Punjab Carrot Red and PC-34.

**Tomato:** TH-1, Punjab Ratta, Punjab NR 7, Punjab Chuhara, Punjab Upma, Castle Rock.

### Delhi

**Oat :** J.H.O-822, O.L.-9, Pusa oat-5.

**Barseem:** Vardan, Buland Barseem-1, Masakavi, J.B-3;

**Radish:** Japani White, Hill queen, French Radish;

**Spinach:** PusaBharti.

**Amaranths:** PusalalChaulai, PusaKiran.

**Ladyfinger:** Pusa A-4.

**Radish:** Japani White, Hill queen, French Radish.

**Spinach:** All Green, PusaBharti;

**Fenugreek:** PusaKasuri;

**Coriander:** PantHaritama, Hybrids.

**Turnip:** Pusa Swati, Local Red variety.

### West Rajasthan

**Isabgol:** RI 89 & GI-2.

**Fenugreek:** RMt 1 & RMt 305.

**Barley:** RD 2052, RD 2035 (suitable for saline and alkali soils) and RD 2715 (dual purpose), RD2058, 2503, 103, NDB1173.

**cumin:** GC 4, RZ -19, RZ 223, RZ19, 209, 223 and GC4b.

**Cowpea:** RC-19, RC-101, RCP-27.

**Oat:** OS 6, OS 9.

**Berseem:** BL 10, BL 22.

**Cauliflower:** Pusa snow ball K-1, Hisar-1, Dania and Selection-7.

**Radish:** PusaRashmi.

**Carrot:** PusaKeshar.

**Zaid moong:** K-851, PDM-11, SML-668 Pusa Baisakhi, RMG-62, RMG-268 etc.

**Tinda:** Bikaneri green, dilpasand

**Cucurbit:** Lakhnau ageti and Arkasital,

**Muskmelon:** Durgapura madhu, Punjab sunehri, Punjab hybrid and pusa madhuras

**Watermelon:** sugar baby, Durgapura mitha, Durgapura lal and khira

**Sugarcane:** CO-6617, 7717; COS- 95255, 767

Desi cotton: RG-8, 18, HD-123, hyb Raj- DH 9

### East Rajasthan

**Muskmelon:** Durgapura madhu, Punjab sunehri, Punjab hybrid, arkajeet, hara madhu, pusa madhuras.

**Water melon:** Sugar baby, Durgapura meetha, durgapura kesar, arka jyoti(hybrid), madhu (hybrid).

**Tinda:** Beekaneri green, Dil pasand, arka tinda.

**Kakri:** Lucknow ageti and arka sheetal.

**Zaid Pearl millet (fodder):** raj bajra chari, rajko Zaint, L-72, L-74.

**Zaid sorghum (fodder):** Raj chari-3, Raj chari-1, Raj chari-2 for single cutting and SSG59-3, M.P. chari for many cutting.

**Okra:** Pusa Savani, Arka anamika, Arka Abhya, Aajad kranti, Prabhni kranti, Pusa-A-4, Pusa Makhmali.

**Cowpea:** Short durC-152, RS-9, FS-68, RC-19 and RC-101, C-152, RS-9.

**Onion:** Punjab safed goal, Udaipur 102, nasik red.

**Lucerne :** Anand-2, LLC-3, RL-88 & Type-9.

**Berseem:** Muskavivardan and PusaJiant.

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

### Madhya Pradesh

**Okra:** Pusa Makhmali, Pusa Sawani, A-4, Parbhani Kranti.

**Moong:** HUM -1, PDM -139, TJM-3, SML-668.

### Tamil Nadu

**Cotton:** Surabhi and SVPR-2