



# *National Agromet Advisory Service Bulletin*



***Friday 22<sup>nd</sup> March 2016***  
***(For the period 22<sup>nd</sup> to 25<sup>th</sup> March 2016)***



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

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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>  
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

## Realised Weather on 22<sup>nd</sup> March 2016

- **Significant weather observations:** Thunderstorm has observed at isolated places over SubHimalayan & Sikkim, north Assam and Tripura from 0830 hours IST Yesterday to 0830 hours IST of today.
- **Rainfall:** (From 0830 hours IST of yesterday to 0830 hours IST of today): Rain /thunderstorm has occurred at most places over Arunachal Pradesh; at many places over Nagaland, Manipur, Mizoram & Tripura; at a few places over Sub Himalayan WestBengal & Sikkim and Assam & Meghalaya and dry weather over rest of the country. The chief amount of rainfall (1 cm or more) recorded at 0830 hours IST of today are:Lengpui-5;Kailashahar-4; Pasighat and North Lakhimpur-3each; Aijal, Dibrugarh and Deomali-2 each and Cherrapunji-1.
- **MaximumTemperature:** Yesterday's maximum temperatures were appreciably above normal (3.1°C to 5.0°C) at most places over Rayalaseema, at many places over Konkan & Goa; at a few places over Odisha, Coastal Andhra Pradesh, Kerala and Tamilnadu; at isolated places over Madhya Pradesh; above normal (1.6°C to 3.0°C) at most laces over Uttarakhand,Bihar, Jharkhand, Odisha,Saurashtra & Kutch, Telangana and Interior Karnataka; at a few places over rest Madhya Pradesh, Madhya Maharashtra and Vidarbha; at isolated places over Gujarat and Assam & Meghalaya. They were Markedly below normal (5.1°C or less) at most places over Arunachal Pradesh; at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and near normal over rest of the country.The highest maximum temperature of 43.0°C was recorded at Nandigama ( CoastalAndhra Pradesh) over plains of the country.
- **Minimum Temperature:** Minimum temperatures are appreciably above normal (3.1°C to 5.0°C) at most places over Tamilnadu; at a few places over Rayalaseema and North Interior Karnataka and at isolated places over West Bengal; above normal (1.6°C to 3.0°C) at most places over South Interior Karnataka and Kerala; at many places over Gujarat; at a few places over East Rajasthan, rest West Bengal & Sikkim, Odisha, Madhya Maharashtra, Coastal Andhra Pradesh, rest Tamilnadu and at isolated places over Madhya Pradesh. They are appreciably below normal (3.1°C to 5.0°C) at a few places over Jammu & Kashmir and at isolated places over Konkan & Goa; below normal (1.6°C to 3.0°C) at a few places over Chhattisgarh and at isolated places over Himachal Pradesh, Haryana, Uttar Pradesh, Assam & Meghalaya and Odisha and near normal over rest of the country.

## Weather Forecast for next 5 days valid upto 0830 hours of 27<sup>th</sup> March 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No large change in temperature over plains of northwest and central India during next 2 days. Temperature likely to be above normal over Tamilnadu during next two days.

### 5 Day Rainfall Forecast (MID DAY) 22<sup>nd</sup> March 2016

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

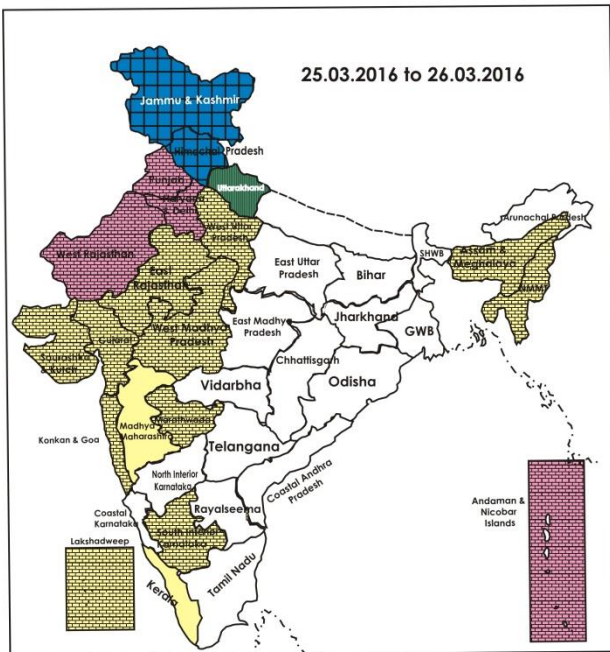
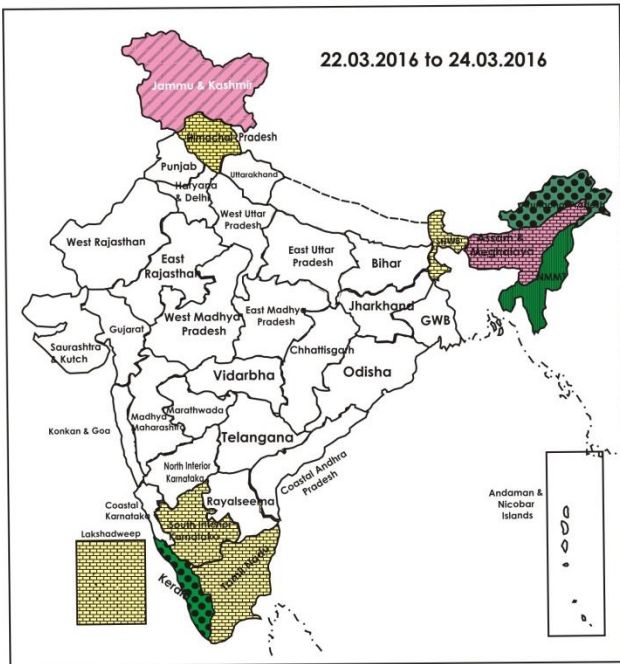
- **22 March (Day 1):** Heat wave conditions likely to prevail at isolated places over Coastal Andhra Pradesh.
- **23 March (Day 2):** Heat wave conditions likely to prevail at isolated places over Coastal Andhra Pradesh and Telangana.
- **24 March (Day 3):** Heavy rain likely at isolated places over Kerala. Thunderstorm accompanied with hail likely at isolated places over Jammu Division.

- **25 March (Day 4):** Heavy rain/snow likely at isolated places over Jammu & Kashmir. Thunderstorm accompanied with hail likely at isolated places over Jammu Division, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi and Rajasthan.
- **26 March (Day 5):** Heavy rain/snow likely at isolated places over Jammu & Kashmir and Himachal Pradesh. Thunderstorm accompanied with hail likely at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Rajasthan and north Madhya Maharashtra.

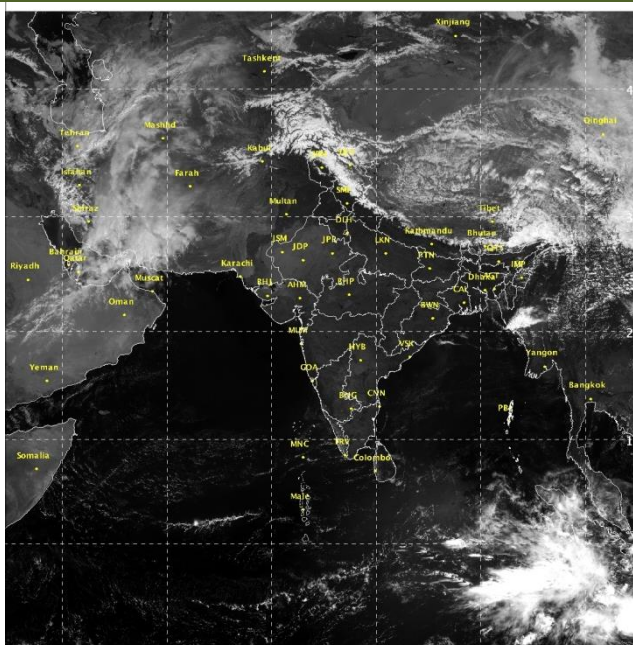
**Weather Outlook for subsequent 2 days from 27<sup>th</sup> to 29<sup>th</sup> March 2016**

- Fairly widespread rain/snow activity likely over Western Himalayan region.
- Scattered rain/thunderstorm activity over plains of northwest India, central and east India.
- Fairly widespread rain/thunderstorm activity over northeastern states.

**Weather Forecast Map (Valid upto 0830 hours of 27<sup>th</sup> March, 2016)**



### Satellite image dated 22.03.2016 0600 UTC



### Salient Advisories

- As Thunderstorm accompanied with hail likely at isolated places over **Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi** and **Rajasthan** on 25<sup>th</sup> & 26<sup>th</sup>, over **Jammu division** on 25<sup>th</sup> and over **Uttarakhand** on 26<sup>th</sup> March, farmers are advised to use hail nets/hail caps for orchard crops to protect from mechanical damage. 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.
- As rain/snow would occur at most/many places over **Jammu & Kashmir** and **Himachal Pradesh** on 25<sup>th</sup> & 26<sup>th</sup> and over **Uttarakhand** on 26<sup>th</sup> March along with heavy rain / snow likely at isolated places over Jammu & Kashmir 25<sup>th</sup> & 26<sup>th</sup> and over Himachal Pradesh on 26<sup>th</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of matured crop and keep already harvested produces at safer places. Provide adequate drainage in standing crop fields in Jammu & Kashmir and Himachal Pradesh to avoid water stagnation.
- As Thunderstorm accompanied with hail likely at isolated places over **north Madhya Maharashtra** on 26<sup>th</sup> March, grape growers are advised to use hail nets/hail caps in Grape gardens on 26<sup>th</sup> March to protect from mechanical damage. Cover banana bunch with skirting bags in Jalgaon, Nasik and Dhule districts. Farmers in north Madhya Maharashtra are also advised to provide mechanical support to banana, papaya plants, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake plucking of matured grapes, orange, sweet lime, banana, pomegranate, papaya and vegetables as early as possible during morning hours. Undertake propping up in sugarcane crop. Keep already harvested produce at safer place.
- As rain likely at isolated places over **Arunachal Pradesh** and **Nagaland, Manipur, Mizoram & Tripura** on 22<sup>nd</sup> March, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep the harvested produces at safer places.
- As heat wave conditions likely to prevail at isolated places over **Coastal Andhra Pradesh** on 22<sup>nd</sup> & 23<sup>rd</sup> and over **Telangana** on 23<sup>rd</sup> March, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Undertake mulching with straw/polythene to conserve soil moisture.
- Undertake land preparation/sowing of the following summer crops:

- In **Assam**, continue sowing of *capsularis* jute, early *ahu* rice and sowing of summer green gram & black gram.
  - In **West Bengal**, in Hill Zone, continue field preparation and sowing of maize, planting of ginger and turmeric and in New Alluvial Zone and Coastal Saline Zone ,continuesowing of sesame.
  - In **Odisha**, in North Eastern Ghat Zone, continue sowing summer sunflower and groundnut. In North Eastern Plateau Zone, complete sowing of green gram & black gram.
  - In **Uttar Pradesh**, continue planting of sugarcane, land preparation and sowing of cowpea, maize, urad, mung.
  - In South Saurashtra Zone of **Gujarat**, complete sowing of green gram, black gram, groundnut and sesame.
  - In **Bihar**,continue sowing of summer maize and in **Jharkhand**, continue sowing of green gram/black gram, maize and vegetables.
  - In Southern Zone of **Kerala**, continue sowing of cucurbits and in Northern Zone, undertake cultivation of vegetables as inter crops in coconut gardens.
  - Undertake cultivation of cotton under irrigated conditions in the North Western Zone of **Tamil Nadu**.
- As mainly dry weather would prevail, continue harvesting of matured mustard, gram, pea, lentil in **Uttar Pradesh**, wheat and gram in **Madhya Pradesh**, complete harvesting of mustard, cotton and castor in **North Gujarat** and undertake harvesting of matured rice immediately in Problem Area Zone of **Kerala**. In North East Transition Zone of **Karnataka**, complete harvesting of sorghum, wheat and safflower.

### Detailed Zonewise Agromet Advisories

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



**Banana**



**Groundnut**



**Sugarcane**



**Cotton**

#### • **Realised Weather:**

Yesterday's maximum temperatures were appreciably above normal (3.1°C to 5.0°C) at most places over Rayalaseema; at few places over Coastal Andhra Pradesh, Kerala and Tamilnadu; above normal (1.6°C to 3.0°C) at most places over Telangana and Interior Karnataka. They were markedly near normal over rest of the region. The highest maximum temperature of 43.0°C was recorded at Nandigama ( Coastal Andhra Pradesh) over plains of the country.

Minimum temperatures are appreciably above normal (3.1°C to 5.0°C) at most places over Tamilnadu; at a few places over Rayalaseema and North Interior Karnataka; above normal (1.6°C to 3.0°C) at most places over South Interior Karnataka and Kerala; at a few places over Coastal Andhra Pradesh, rest Tamilnadu and near normal over rest of the region.

#### • **Advisories:**

##### • **Advisories:**

As heat wave conditions likely to prevail at isolated places over Coastal Andhra Pradesh on 22<sup>nd</sup> & 23<sup>rd</sup> and over Telangana on 23<sup>rd</sup> March, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Undertake mulching with straw/polythene to conserve soil moisture.

##### ▪ **Tamil Nadu:**

➤ In the Cauvery Delta Zone, apply Gypsum @ 160 kg per acre to encourage pod formation and better pod filling 40 to 60 days after sowing depending on soil moisture on rainfed groundnut. In Tanjavur and Trichy districts in rice fallow blackgram, undertake foliar spray of Pulse Wonder @ 2 kg/ acre at flowering or 2% DAP solution once at flowering and 15 days thereafter.

➤ In the Western Zone, due to increase in maximum and minimum temperature and dry weather conditions, apply irrigation in sugarcane,vegetables,pulses, sesame and sorghum.

➤ In the North Western Zone, continue cultivation of cotton under irrigated conditions.

➤ In the High Altitude Hilly Zone, undertake planting of disease resistant varieties of potato (variety Kufri girdhari). Spray 0.5% Urea @ 5 g/litre of water or 1% Potassium nitrate @ 10 g /litre of water to induce flowering in mango

crop.

- In the High Rainfall Zone, provide irrigation to banana, cloves and coconut regularly to increase yield. Continue harvesting of pineapple.
- In the Cauvery Delta Zone, due to dew in the morning hours, powdery mildew disease is prevailing in rice fallow blackgram. For the managing the disease, spray Carbendazim @ 200g/ acre or wettable Sulphur @ 600g/ acre.
- In Karaikal, prevailing weather condition(dry and partly cloudy) is congenial for incidence of hairy caterpillar in groundnut. To control hairy caterpillar, spray Emamectin Benzoate 5 SG @ 220 g/ha
- In the South Zone, prevailing dry weather conditions(cloudy and humid) is congenial for incidence of thrips in chilli. Flowering and fruit bearing will be affected due to this pest incidence. Spray Dimethoate @ 500 ml/ ha to control this pest.
- In the North Western Zone, incidence of fruit fly was noticed in cucurbitaceous vegetables such as bitter gourd, ribbed gourd and snake gourd. To control, place “fruit fly trap” at the rate of 5/acre.
- Suitable varieties for sowing are given in Annexure I.

#### ▪ **Andhra Pradesh:**

- In the 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. Spray Diafenphouuron @ 1.6g /litre of water on chilli to prevent upward and down ward leaf curling.
- In the Southern Zone, due to the present dry weather conditions, give frequent irrigations in mango orchards to get synchronized flowering.
- In the Scarce Rainfall Zone, continue harvesting of rabi groundnut in Anantapur district.
- In the Southern Zone, prevailing dry weather conditions are congenial for attack of pod borer in vegetables(bhendi and brinjal). To control, spray Chloripyriphos @ 2 ml/litre of water.
- In the North Coastal Zone, prevailing dry weather conditions are congenial for incidence of cob borer in maize. To control, spray Flubendamide @ 0.2 g/litre of water.
- In the Scarce Rainfall Zone, prevailing weather conditions are congenial for incidence of mango hoppers in mangoes. For control, spray Monochrotophos @1.6-2ml/litre of water or Dimethoate @ 2ml/litre of water at the time of flowering and Phosphomidaon @1ml/litre of water or Methyl Dematon 1 ml/litre of water from peanut size to marble size fruit formation.
- In the High Altitude Tribal Zone, hispa incidence was noticed in rabi rice(active tillering stage). To control, spray Profenophos @ 2.0 ml or chlorpyriphos @ 2.5 ml or monocrotophos @1.6 ml/litre of water.

#### ▪ **Telangana:**

- In the Northern Telangana Zone, continue harvesting of bhendi and tomato. Due to the prevailing dry weather conditions, give frequent irrigations in mango orchards to get synchronized flowering.
- 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 weather conditions are congenial for the incidence of hoppers and anthracnose in mango. To control, spray Lambda Cyhalothrin @ 1.0 ml + Carbendazim @ 1 g/ litre of water.

#### ▪ **Karnataka:**

- In Southern Dry Zone, undertake planting of banana,select banana suckers from disease and pest free gardens.
- In North East Dry Zone, as dry weather is prevailing, provide irrigation to mango (marble size), ratoon sugarcane, complete harvesting of wheat, sorghum, groundnut and safflower. Undertake summer deep ploughing to expose the pupae and eggs of insect pests and weed seeds.
- In Hill Zone irrigate the arecanut, coconut and black pepper gardens either in furrows or by drip irrigation. Each coconut tree requires 60-70 litres of water per day.
- In North East Transition Zone, dip the lemon fruit size watermelon in to 20 ppm (20 mg in 1 litre of water) Gibberellic acid to increase size and quality of the fruit.
- The infestation of root grub in arecanut was observed in Hill Zone; pour 3 litres of Chloropyriphos solution (3 ml per litres of water) to base of arecanut.
- In Southern Dry Zone,mulberry crop is affected by mealy bug to manage the pest; remove epical shoot and then spray of Nuvan @ 2 ml/litre of water.
- In North East Transition Zone,attack of fruit borer is observed in brinjal; for control, spray Malathion 50 EC @ 2 ml per litre of water once in 15 day.
- Attack of hoppers was noticed in mango crop in North East Dry Zone and North East Transition Zone; for effective control, take up spraying of Carbaryl 50WP @ 4 g or Malathion 50EC @ 2 ml or Monocrotophos 36SL @ 1.5 ml in one litre of water.

#### ▪ **Kerala:**

- As rain/thundershowers likely at many places over Kerala on 24th March along with heavy rain likely at isolated

places, farmers are advised to postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and keep the harvested produces at safe places.

- In the Problem Area Zone, undertake harvesting of matured rice immediately.
- In the Northern Zone, continue cultivation of vegetables as intercrops in coconut gardens and harvest matured black pepper and cashew immediately. Keep the harvested produces at safe places.
- In the Southern Zone, increased in humidity may accelerate the incidence of fungal diseases in cucurbitaceous vegetables. If fungal disease is noticed, apply Indofil M 45 @ 4g/ litre of water after current spells of rain.
- 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 after current spells of rain.
- In the Central Zone and Southern Zone, increase in temperature is congenial for attack of Sigatoka disease in banana. To control, spray 10-15 gms of Pseudomonas in 1 litre of water in the initial stage. In severe attack, apply 2 gm of SAAF in 1 litre of water after current spells of rain.
- In the Northern Zone, prevailing humid weather condition is congenial for incidence of gundhi bug attack in late sown rice crop. Apply Azadiractin @3000ppm stock after diluting in water @ 3ml/litre of water immediately after sunset. To have better control, add and stir one to two ml. of Malathion @ 50EC per litre of the diluted Azadiractin solution before applying after current spells of rain.

#### ▪ **Animal Husbandry**

- In Coastal Andhra Pradesh and Telangana, due to heat wave forecast, grazing /feeding of cattle/goats may be done during morning/ evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Also provide balanced feed & adopt vaccination schedule. Make arrangement of curtains and proper ventilation in poultry house.
- In the Western Zone of Tamil Nadu, milch animals and buffaloes may be sprayed with water on their bodies. Enough clean and cool drinking water may be given for their voluntary drinking. To reduce the impact of hot and dry weather, poultry's sheds may be surrounded with moist gunny bags.
- In the North Western Zone of Tamil Nadu, expected day and night temperature of around 38.0°C and 26.0°C will induce heat stress and associated heat stroke in poultry. Reduced wind speed is likely to aggravate the situation. Hence, check drinking water availability and its temperature to ensure continuous supply of cool drinking water throughout the day to control heat stroke and to sustain egg weight.
- In Southern Transition Zone of Karnataka, vaccinate the animals (cow, buffalow and bullock) before onset of monsoon against foot and mouth disease (FMD vaccination), BC vaccination against Black Quarter and also vaccinate against Haemorrhagic Septicaemia. Vaccinate (ET vaccine) sheep and goats against Enterotoxemia before onset of monsoon.
- In Southern Dry Zone of Karnataka, 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 to reduce the heat load on animals. Proper ventilation should be maintained for free circulation of air in the animal sheds. Provide clean drinking water to animals and clean the water troughs regularly. In North East Dry Zone, conserve fodder (hay, silage and in large heaps) to meet the requirement during lean period.

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



*Mustard*



*Rice*



*Okra*



*Cabbage*

- **Realised Weather:** Rain /thunderstorm has occurred at most places over Arunachal Pradesh; at many places over Nagaland, Manipur, Mizoram & Tripura; at a few places over Assam & Meghalaya and dry weather over rest of the country. Yesterday's maximum temperatures were appreciably above normal (1.6°C to 3.0°C) isolated places over Assam & Meghalaya. They were markedly below normal (5.1°C or less) at most places over Arunachal Pradesh; at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and near normal over rest of the region. Minimum temperatures are below normal (1.6°C to 3.0) at isolated places over Assam & Meghalaya and near normal over rest of the region.
- **Advisories:**
  - As rain likely at isolated places over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on 22<sup>nd</sup> March, farmers are advised to postpone irrigation, intercultural operations and application of plant protection



measures and fertilizers to the standing crops. Keep the harvested produces at safer places.

- **Assam, Meghalaya & Arunachal Pradesh:**

- In Hill Zone of Assam, continue sowing of recommended high yielding varieties of bhindi, bottle guard, bitter guard. Continue nursery sowing of normal ahu rice and main land preparation for transplanting of early ahu rice utilising the expected rainfall. Undertake land preparation for planting of ginger, summer sesame and spring sugarcane.
- In Lower Bramhapurtra Valley Zone of Assam, continue sowing of early ahu rice (direct seeded) and nursery raising for transplanted early ahu rice. Undertake sowing of maize, summer pulses like green gram, black gram and planting of spring sugarcane.
- In Upper Bramhaputra Valley Zone of Assam, continue nursery raising of transplanted ahu rice and prepare land for cultivation of bao rice. Maintain standing water at 6 cm depth in boro rice field after 2-3 days of transplanting. Undertake planting of spring sugarcane and prepare land for planting of banana suckers. Irrigate mango and litchi at flowering stage to avoid flower drop.
- In Barak Valley Zone of Assam, maintain 6 cm standing water in the boro rice fields at tillering stage. Continue transplanting of summer vegetables, tomato and brinjal.
- In Central Bramhaputra Valley Zone of Assam, continue land preparation and sowing of green gram/black gram, summer vegetables and Capsularis jute. Undertake nursery bed preparation for transplanted early ahu. Continue harvesting of matured rabi pulses. Undertake land preparation and planting of ginger, turmeric and spring sugarcane.
- In North Bank Plain Zone of Assam, farmers are advised to complete sowing of direct seeded ahu rice till end of the March and main land preparation for transplanting of early ahu crop may be started. Prepare land for sowing of green gram/black gram. Farmers in flood affected low lying areas are advised to prepare land and undertake sowing of bao rice as March-April is the ideal time of sowing. Farmers are advised to plant the high yielding varieties of ginger & turmeric up to end of April. As Ginger is a shade loving plant, it is advised to cultivate crop under tall crops like Pigeonpea.
- In Meghalaya, continue land preparation for sowing of maize in high and mid altitude region. Start land preparation and sowing of summer potato in high altitude region. Undertake nursery bed preparation for brinjal and tomato. Undertake sowing of bottle guard and ash guard.
- In Arunachal Pradesh, continue sowing of summer vegetables like cucumber, sponge gourd, bottle gourd, ladies finger and early maize and cowpea utilising the realised rainfall. Complete harvesting of matured mustard, toria, rabi maize, cabbage, cauliflower & potato on bright sunny days and keep harvested produce in safer places.
- In Barak Valley Zone of Assam, there may be stem borer attack in the boro rice field; to control the pest apply Chloropyrifos @ 1 ml/litre of water on a non rainy day.
- In Upper Bramhaputra Valley Zone and North Bank Plain Zone, soil and air temperatures are becoming favourable for the attack of stem borer in boro rice. If eggs of the pests are noticed, apply 'Darsban' or 'Monocrotophos' @ 2 ml per litre of water in the fields on a non rainy day.
- In Arunachal Pradesh, in prevailing weather condition, there is chance of incidence of powdery mildew in pea, spray Carbendazim 50WP @ 1g/litre of water or Difenoconazole 5EC @ 0.5 ml/litre of water current spell of rain.
- In Meghalaya, there may be attack of blast in Boro rice during panicle initiation to flowering stage. To control blast spray Triclozole @ 0.5g/ litre of water on a non rainy day.

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

- In Nagaland, continue land preparation and sowing of okra, cowpea and cucurbits.
- In Manipur, continue land preparation for sowing of French bean and undertake harvesting of turmeric in clear weather.
- In Mizoram, continue transplanting of brinjal and chilli in the main fields. Undertake sowing of French bean and cow pea.
- In Tripura, undertake transplanting of summer brinjal and tomato in the main field. Maintain 4 -5cm standing water in the boro rice fields.
- In Manipur, due to humid weather condition there is chance of attack of aphids and powdery mildew in lentil/pea. Spray Cypermethrin @ 2ml/litre of water or Nuvan @ 0.5ml/litre of water against aphids. Spray Bayleton (Triademofon 25% WP) @ 7.5 g/pump (15litre capacity) or Dinocap (Karathane 46% EC) @ 7.5ml/pump against powdery mildew after current spells of rain.
- In Tripura, there is chance of attack of yellow stem borer on boro rice apply Fipronil @ 2g per litre of water to manage the attack. At flowering stage there may be attack of hopper in mango plants, spray Malathion @ 2ml/litre in water after current spells of rain.
- Suitable varieties for sowing are given in Annexure I.

- **Animal Husbandry:**

- In Barak Valley Zone of Assam, increase of temperature may cause stress in animals. Under these conditions, farmers are advised to feed their animals at night time and feed as much as green grass with small pieces. In Meghalaya farmers are advised to vaccinate all newly born piglets against swine fever of age 3 months followed

by annual booster dose. In epidemic areas vaccinate 6 months pigs with FMD vaccine once in a year. Vaccinate 6-9 months calves with brucella abortus cotton strain-19 @ 5ml subcutaneous on the neck

- In Manipur give vaccination against PPR to sheeps and goats. Give vaccination to cattles against black quarter, haemorrhagic septicaemia and foot and mouth disease.

- **Pissiculture:**

- In Barak Valley Zone of Assam, as the temperature is rising, farmers can start feeding their fishes with available fish feed or they can feed their fishes with a mixture Rice bran and MOC in 1:1 ratio @3% of body weight of the total biomass in their ponds. To avoid bacterial disease liming should be done @10kg/kani.

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



*Gram*



*Sugarcane*



*Groundnut*



*Wheat*

- **Realised Weather:** Yesterday's maximum temperatures were appreciably above normal (3.1°C to 5.0°C) at many places over Konkan & Goa; above normal (1.6°C to 3.0°C) at most places over Saurashtra & Kutch; at a few places over Madhya Maharashtra and Vidarbha; at isolated places over Gujarat. They were near normal over rest of the region.

Minimum temperatures are above normal (1.6°C to 3.0°C) at many places over Gujarat; at a few places over Madhya Maharashtra. They are appreciably below normal (3.1°C to 5.0) at isolated places over Konkan & Goa and near normal over rest of the region.

- **Advisories:**

- **Maharashtra:**

- As Thunderstorm accompanied with hail likely at isolated places over north Madhya Maharashtra on 26th March, grape growers are advised to use hail nets/hail caps in Grape gardens on 26th March to protect from mechanical damage. Cover banana bunch with skirting bags in Jalgaon, Nasik and Dhule districts. Farmers in north Madhya Maharashtra are also advised to provide mechanical support to banana, papaya plants, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake plucking of matured grapes, orange, sweet lime, banana, pomegranate, papaya and vegetables as early as possible during morning hours. Undertake propping up in sugarcane crop. Keep already harvested produce at safer place.
- In Konkan, maintain water level of 10 cm at panicle initiation stage in rabi rice in Sindhudurg. Continue sowing of seasonal fodder crops like cowpea, maize (African Tall), multicut sorghum and rice bean. Undertake intercultural operations and fertilizer application in vegetables. Apply irrigation to groundnut, orchards, vegetable crops and pulses. Harvest the matured pods of cowpea, kulthi and wal during morning hours. Undertake harvesting of matured cashewnuts. As mango is at fruit formation stage (pea/marble size) and considering the crop canopy, apply 80-100 litres of water per tree at fortnightly interval to avoid fruit dropping and increase the size of fruits.
- In Madhya Maharashtra, continue cultivation of summer vegetable crops like bitter gourd, cucumber, ridge gourd, bottle gourd, water melon, musk melon. Complete sowing of summer mung in Western Ghat Region. Apply Single Super Phosphate @ 100 kg or Gypsum 200 kg in summer groundnut at the time of flowering & complete earthing up for better pod development. Undertake mulching with trash in seasonal and ratoon sugarcane crop by using 5-6 ton of trash per hectare and Considering water stress condition, apply irrigation in alternate furrow.
- In Marathwada, in custard apple, spray Potassium Nitrate 1 to 1.5% or Kaolin 8% after 15 days interval to prevent loss of water. Prepare shade to protect newly planted mango trees from sunlight. Cover banana bunch with leaves to protect from bright sunshine and high temperature. Apply irrigation to summer groundnut by sprinkler. To protect cauliflower from sunlight, covered heads with leaves.
- In Vidarbha, Harvest the matured fruits and vegetables in clear weather and keep at safer place. Maintain water level of 5-8 cm in summer rice field in East Vidarbha. Continue sowing of summer green gram under irrigation facilities. Undertake harvesting of timely sown matured wheat crop during morning hours. Apply gypsum @ 200 kg/acre in groundnut when the crop is at initial flowering /pegging (45 days.)
- Rise in temperature is favourable for attack of whitefly in vegetables in Madhya Maharashtra, spray Thyamethoxam @ 4 g or Carbosulphan @ 10 ml per 10 lit of water.

- **Gujarat:**

- Undertake harvesting of chickpea, castor, coriander, amaranth and fennel at physiological maturity in North Gujarat Zone and cumin, casor in North West Zone. Complete sowing of pearl millet, green gram, cluster bean cowpea and vegetables, stop irrigation to wheat after hard dough stage in North Gujarat Zone and North West Zone of Gujarat.
- In North Gujarat Zone, as dry weather is prevailing, apply regular irrigation to onion crop at 4 – 6 days interval. Carryout weeding and intercultural operations in groundnut. Continue picking of matured fruits of papaya and sapota.
- In Middle Gujarat Zone, undertake sowing of pearl millet, complete sowing of green gram, vegetable cowpea and other vegetable crops. Select Meha variety of green gram to avoid yellow vein mosaic virus disease. Undertake harvesting of castor, cumin and wheat.
- In Bhal and Coastal Zone, complete sowing of green gram, pearl millet, cowpea, vegetable crops like ladies finger, bitter gourd, bottle gourd and small gourd. Apply irrigation in wheat at dough stage; stop irrigation after hard dough stage to maintain grain quality.
- In South Saurashtra Zone, apply irrigation to onion, garlic (bulb development stage), sesame, green gram, black gram and groundnut. Avoid irrigation to wheat crop at the time of maturity as due to excess irrigation the quality of seeds may deteriorate.
- In South Gujarat Heavy Rainfall Zone, maintain 5 cm water level in transplanted rice fields. Continue intercultural operations in rice, groundnut and green gram. Apply irrigation in sugarcane, green gram groundnut, sweet corn as per requirement and light irrigation in cluster bean, cowpea, okra, amaranth, pigeon pea and mango.
- In North Saurashtra Zone, apply irrigation in already sown crops and vegetables.
- In South Gujarat Zone, for the control of damping-off in vegetable crops in nursery, drenching with Ridomil M-Z @ 8 gm/ 20 litre of water or 0.6 % Bordeaux mixture or Soil solarization of nursery beds with 100 gauge LLDPE clear plastic film in hot summer(April-May) for 15 days is advised.
- In present weather conditions severe attack of thrips has been reported in chilli in North Saurashtra Zone; spray Spinosad @3 ml in 10 litres of water for control. Also thrips infestation is observed above ETL in black gram and groundnut; spray 500 ml of 5 % neem seed extract or neem seed oil 50 ml with Profenofos @20 ml or Imidacloprid 30.5 SC 3 ml /10 litres of water for control.
- Suitable varieties for sowing are given in Annexure I.

#### • Animal Husbandry

- Vaccinate cattle for Brucellosis in Middle Gujarat Zone and for FMD and other diseases in South Saurashtra Zone.

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



*Rice*



*Wheat*



*Maize*



*Mustard*

- **Realised Weather:** Rain /thunderstorm has occurred at a few places over Sub Himalayan WestBengal & Sikkim and dry weather over rest of the region. Yesterday's maximum temperatures were appreciably above normal (3.1°C to 5.0°C) at a few places over Odisha; above normal (1.6°C to 3.0°C) at most places over Bihar, Jharkhand, Odisha; They were near normal over rest of the region. Minimum temperatures are appreciably above normal (3.1°C to 5.0°C) at isolated places over West Bengal; above normal (1.6°C to 3.0°C) at a few places over rest West Bengal & Sikkim and Odisha. They are below normal (1.6°C to 3.0) at isolated places over Odisha and near normal over rest of the region.
- **Advisories:**
  - **West Bengal:**
    - In Hill Zone, continue land preparation for sowing of maize, bhindi and French bean and planting of ginger, turmeric and round chilli.
    - In New Alluvial Zone and Coastal Saline Zone, undertake sowing of sesame.
    - In Coastal Saline Zone, due to rise in temperature there may be attack of Brown Spot in *boro* rice at panicle

- initiation stage, spray Carbendazim 50WP@1g/litre of water for control.
- In Hill Zone, due to hot and mainly dry weather condition, powdery mildew disease may attack tomato at fruiting stage. Spray Wettable Sulphur @ 2g/litre of water to control powdery mildew disease.
- In Laterite and Red soil Zone, in the prevailing weather condition rice blast incidence and leaf folder attack may be in boro rice at booting stage. Spray Triclozole 75WP@500g/ha to control the rice blast disease and spray Chlorpyrifos 20 EC @ 1.25litre/ha to control the leaf folder attack.
- In New Alluvial Zone, in the prevailing weather condition, stem borer attack may be found in rice at tillering stage. To control stem borer, apply Cartap 4 G @ 25 kg/ha or Phorate 10 G @ 10 kg/ha.
- In Terai and Old Alluvial Zone, weather is congenial for attack of fruit and shoot borer in brinjal. Use 6-8 pheromone traps/bigha or apply Acephate + Fenvelarate mixture @ 1ml/litre water with 2g of detergent powder as sticker.
- In Terai Zone, in the prevailing weather condition Aphid attack may be found in mustard. Spray Thiamethoxam @ 1 g/3 litres of water or Imidacloprid 17.8 SL @ 1 ml/5litres of water.
- **Andaman and Nicobar Islands:**
  - In South, North and Middle Andaman, mulch the interspaces of vegetables fields of pumpkin or cucurbit to avoid high evaporation and conserve the soil moisture. Provide at least one irrigation to Arecanut and Coconut plantation as the dry condition is continuing.
  - In Nicobar, clean the coconut garden and destroy the larva of Rhinoceros beetle.
- **Odisha:**
  - In East and South Eastern Coastal Plain Zone, continue sowing of sunflower, groundnut and summer maize. Continue harvesting of matured mustard in clear weather.
  - In North Eastern Ghat Zone, continue sowing summer sunflower (PAC-36, MSFH-8 & SFH-17) and groundnut (Smurti, Phule Pragati, ICGS-44, TAG-24, TG-3, TMV-2 & TG-38).
  - In Mid Central Table Land Zone, continue sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc.
  - In Mid Central Table Land Zone, at present mango crop is at fruit setting stage, at this stage infestation of mango hopper are commonly observed. Keep the mango orchards clean and if necessary, spray Methyl Dematon @ 2 ml/litre water. To reduce the fruit dropping, spray Potassium Nitrate solution @ 1% (100g in 10 litre of water) or spray Fantac Plus @ 10-15ml/ 10 litres of water.
  - In East and South Eastern Coastal Plain Zone, increased temperature may favour the egg laying of stem borer in rice in the main field. To attract the butterflies, place 4 Pheromone Traps/acre, collect the adults and destroy them by burning them under soil or by burying. Apply Triazophos @ 2ml/litre of water when pest population reaches at ETL level. Increased difference between daily maximum and minimum temperature favours the infestation of blast in rice in main fields. Spray Beam @ 1 g /one litre of water.
  - In East and South Eastern Coastal Plain Zone, the prevailing partly cloudy weather may aggravate the infestation of aphids in pulses and powdery mildew in pulses and cole crops. Spray Imidachloprid @ 5 ml or Metacystox @ 20 ml per 10 litres of water to control aphids and spray Sulfex @ 50 g per 10 litre of water to control powdery mildew.
  - In South Eastern Ghat Zone, variation in day and night temperature may lead to buildup of stem borer in rice . Monitor the fields, when the insect incidence crosses the ETL level (ETL: 1 eggmass or 1-2 moths/m<sup>2</sup>), apply granular insecticide Carbofuran 3% @ 12 kg/acre or Cartap hydrochloride 4% @ 10 kg/acre.
  - In Eastern Ghat High Land Zone, to control leaf curl in sesame, remove infected plant and destroy it. Spray Dimethoate 30% EC @ 2 ml/litre of water for control of vector.
- **Bihar:**
  - In South Bihar Alluvial zone, continue harvesting of matured sweet potato. Complete planting of spring season Arvi crop. Undertake sowing of summer vegetables. Apply Nitrogenous fertilizer in spring season maize.
  - In North West Alluvial Plain Zone, continue sowing of summer maize, fodder crops, green gram and black gram and undertake planting of elephant foot yam. In view of dry weather forecast, undertake harvesting of matured mustard crop. Apply light irrigation in standing vegetable crops such as pea, tomato, brinjal, chilli, cabbage and onion and late wheat and rabi maize.
  - In North East Alluvial Zone, undertake land preparation for sowing of moong. Complete transplanting of Garma rice. Maintain minimum water (2-3 inch) in the fields of boro rice. Undertake harvesting of matured mustard.
  - In South Bihar and North East Alluvial Zone, there is chance of attack of pod borer in chickpea, apply profenofos in 1.5 lit water to protect the crop from pod borer.
  - In North Bihar Alluvial Zone, due to fluctuation in temperature, population of aphids will increase in brinjal crop. To control, spraying of Thiomethoxam 25WDG 1g /3L of water. To control fruit & shoot borer in Brinjal and Tomato, apply Indoxacarb 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 utilizing the realized rainfall. 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 Western Plateau Zone, harvest matured gram and lentil crops immediately, otherwise high wind speed & temperature may cause shattering of pods.
  - In South Eastern Plateau, Central and North Eastern Plateau Zone, prevailing high wind speed, humidity and cloudy sky, which favours the movement of loose smut spores hence, there is a chance of spread of disease (loose smut) in wheat in a more speedy way. If loose smut is seen on earhead, uproot the affected plants and bury it deep in the soil.
  - In South Eastern Plateau Zone, humid weather during morning hours and later on sunny weather favours infestation of white rust in late sown mustard (at flowering stage) crop and attack of aphids in timely sown crop at pod development stage. Monitor the crops frequently. In early stage, farmers are advised to remove and destroy the infected parts of the plants.
  - In South Eastern Plateau Zone, to control hoppers in Mango, Litchi and Jack fruit, spray Metasystox @ 1ml or Kung-fu or Karate or Matador (Lambda Cyhalothrin) @ 2 g along with 0.5 g Carbendazim per litre of water before or just after flowering in to minimize the attack.
  - Suitable varieties for sowing are given in Annexure I.
- **Animal Husbandry**
  - In South, North and Middle Andaman, provide cold drinking water treated with lime or bleaching powder and supplemented with vitamin C or electrolyte powder to prevent heat stress to all livestock and poultry.
  - In Coastal Saline Zone, vaccination should be done in poultry for ranikhet disease. Schedule: 1<sup>st</sup> Vaccine at 5-10 days old, 2<sup>nd</sup> vaccine at 30-35 days old and 3<sup>rd</sup> vaccine at 12 week age.

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



*Cauliflower*



*Gram*



*Okra*



*Wheat*

- **Realised Weather:** Yesterday's maximum temperatures were appreciably above normal (3.1°C to 5.0°C) at isolated places over Madhya Pradesh; at a few places over rest Madhya Pradesh; They were near normal over rest of the region. Minimum temperatures are above normal (1.6°C to 3.0°C) at isolated places over **Madhya Pradesh**. They are below normal (1.6°C to 3.0) at a few places over **Chhattisgarh** and near normal over rest of the region.
- **Advisories:**
  - **Madhya Pradesh:**
  - In Malwa Plateau Zone, continue nursery sowing of tomato, brinjal and chilli. Arrange the seed and inputs for sowing of summer cucurbits and bhindi. Continue harvesting of matured gram, potato, cauliflower and cabbage in clear weather. Continue land preparation for sowing of summer cucurbits and okra.
  - In Kymore Plateau and Satpura Hill Zone, continue harvesting of early sown wheat, matured lentil, field pea, linseed and sunflower in clear weather.
  - In Central Narmada Valley Zone, continue harvesting of matured wheat, continue digging of matured potato.
  - In Nimar Valley Zone, continue sowing of seeds of okra and treat seeds with Tricoderma @ 5g/kg of seed.
  - In Jhabua Hill Zone, continue harvesting of early sown mustard, gram and matured wheat in clear weather. Continue transplanting of summer vegetables. Irrigate in tomato, chilli, brinjal, okra, onion crops. Undertake land preparation and sowing of summer moong, okra and cucurbits.
  - In Bundelkhand Zone, continue sowing of vegetables like pumpkin, bitter gourd, okra etc. Continue harvesting of matured lentil, linseed and mustard crops.
  - In Vindya Plateau Zone, continue nursery preparation of summer vegetables and sowing of cucurbits, okra, cowpea and cluster bean. Continue harvesting of matured gram.
  - In Satpura Plateau Zone, continue sowing of okra, groundnut, maize and cucurbits. Continue harvesting of matured potato and undertake harvesting of early sown wheat and matured mustard in clear weather. Keep harvested produce at safer places.
  - Due to rise in temperature and increase of morning humidity, there may be attack of hopper and powdery mildew disease in mango. Monitor the mango orchards and consult nearest KVK for control measures.
  - In Kymore Plateau and Satpura Hill Zone, due to increase in temperature and humidity, there may be increased attack of fruit borer and white flies in tomato, egg plant, and okra. For control of white flies, apply Malathion @ 2

ml/litre water and for borer, apply Triazophos @ 750 ml per 500-600 litres of water.

▪ **Chhattisgarh:**

- In North Hill Zone, complete sowing of green gram. Continue harvesting of matured mustard, gram, wheat, pea and lentil.
- In Bastar Plateau Zone, continue sowing of summer moong and urad. Continue harvesting of matured pea.
- In Chhattisgarh Plain Zone, continue sowing of green gram and harvesting of lathyrus, mustard and toria.
- Presently mango crop is at flowering/fruit setting stage in North Hill Zone, at this stage powdery mildew is commonly observed in mango, which causes poor fruit setting and later on fruit dropping. Hence, it is advised to keep watch over the crop and whenever the symptom appears, spray Carbendazim (Bavistin) @1.5g or Sulphex @3g per litre of water.
- In North Hill Zone, in the present weather condition, there is chance of stem borer in summer rice. Farmers are advised for monitoring of stem borer in rice fields.
- In Bastar Plateau Zone, present weather condition is favourable for incidence of powdery mildew disease in bottle gourd, snake gourd, pumpkin and ridge gourd, for control spray Karathan @ 1gm/liter of water.

▪ **Animal Husbandry**

- In Madhya Pradesh and Chhattisgarh, vaccinate animals to prevent Hemorrhagic Septicaemia (H.S.), Black quarter (B.Q.) and Anthrax diseases.

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



*Wheat*



*Sugarcane*



*Cauliflower*



*Mustard*

- **Realised Weather:** Yesterday's maximum temperatures were appreciably above normal (1.6°C to 3.0°C) at most places over Uttarakhand; They were markedly near normal over rest of the region. Minimum temperatures are appreciably below normal (3.1°C to 5.0) at a few places over Jammu & Kashmir and below normal (1.6°C to 3.0) at isolated places over Himachal Pradesh, Haryana, Uttar Pradesh and near normal over rest of the region.
- **Advisories:**
  - As Thunderstorm accompanied with hail likely at isolated places over, **Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi** and **Rajasthan** on 25<sup>th</sup> & 26<sup>th</sup>, over **Jammu division on 25<sup>th</sup>** and over **Uttarakhand** on 26<sup>th</sup> March, farmers are advised to use hail nets/hail caps for orchard crops to protect from mechanical damage. 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.
  - As rain/snow would occur at most/many places over **Jammu & Kashmir** and **Himachal Pradesh** on 25<sup>th</sup> & 26<sup>th</sup> and over **Uttarakhand** on 26<sup>th</sup> March along with heavy rain / snow likely at isolated places over Jammu & Kashmir 25<sup>th</sup> & 26<sup>th</sup> and over Himachal Pradesh on 26<sup>th</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of matured crop and keep already harvested produces at safer places. Provide adequate drainage in standing crop fields in Jammu & Kashmir and Himachal Pradesh to avoid water stagnation.
- **Jammu & Kashmir:**
  - In Valley Temperate Zone, maintain drainage channels in garlic/onion to avoid water logging. Continue nursery sowing of tomato, brinjal, chilli, capsicum, knol khol, kale in hot beds as well as in raised beds under open conditions and continue sowing of cucurbits in polybags after current spells of heavy rain. Continue transplanting of cauliflower, cabbage and knol khol after current spells of heavy rain.
  - In Intermediate Zone, continue nursery sowing of cucurbits (Cucumber, Bottle gourd and Bitter gourd) and transplanting tomato, brinjal and chilli after current spells of heavy rain.
  - In cold Arid Zone\_Leh, undertake harvesting of cabbage, broccoli, Chinese cabbage, lettuce, beet leaf, spinach, coriander and Mint at 10-15 days intervals in the greenhouses. Undertake sowing of cereals in lower/hotter belts like in Nubra valley and Khaltsi, turnip in the lower belts of the district. Undertake nursery raising of cruciferous

crops such as cabbage, cauliflower, knolkhol, kale, broccoli & solanaceous crops such as brinjal, tomato, capsicum, chilli and paprika and onion in green houses & trenches.

- In Intermediate Zone, keep strict vigil on yellow rust infestation in the wheat crop. If observed, spray Propiconazole (Tilt) 25 E.C. @ 1ml per litre of water after current spells of rain, repeat the spray after 10-15 days interval if the disease persists. Also if alternaria blight is observed in the mustard crops. Apply Mancozeb @ 2.5 g/litre of water and Redomil MZ @ 2.5 g/litre of water alternately as a curative measure after current spells of rain.
- In Intermediate Zone, present weather is congenial for attack of aphid in mustard crop, for control spray Rogor (Dimethoate) 30 E.C. @ 1 ml per litre of water on clear sunny day at 15 days of interval, if more than 8–10 aphid population is observed per plant after current spells of rain.
- In Sub Tropical Zone, present weather is congenial for attack of yellow rust, leaf spot and aphid in wheat crop, for control of yellow rust, leaf spot spray Propiconazole (Tilt) @ 0.1% spray 2-3 times and at 15 days interval, for control of aphid spray Rogor 30 EC @ 750 ml in 750 litres of water after current spells of rain.
- In Sub Tropical Zone, present weather is congenial for attack of wilt and blight in rabi gram crop, for control spray Bavistin/Carbendazim @ 3gm. per litre of water after current spells of rain.
- In Sub Tropical Zone, present weather is congenial for attack of leaf miner, citrus psyllid and lemon butterfly in citrus plants, for control spray Dimethoate @ 1mg per litre of water after current spells of rain.
- In Sub Tropical Zone, present weather is congenial for attack of red pumpkin beetle in Cucumber & other Cucurbits, for control spray Chlorpyrifos @ 2ml per litre of water after current spells of rain.
- In Sub Tropical Zone, present weather is congenial for attack of aphid and fruit borer in tomato and brinjal, for control aphid spray Imidacloprid @ 0.5 ml. per litre of water and to control of fruit borer spray Cypermethrin 10 EC @ 1ml. per litre of water after current spells of rain.

#### ▪ **Uttarakhand:**

- In Bhabar and Tarai Zone, continue planting of potato with varieties like Kufri Jyoti, Kufri Ashok & Kufri Anand etc, sugarcane and nursery sowing of brinjal and tomato utilizing the realized rainfall.
- In Sub Humid Sub Tropic zone, apply irrigation in wheat at flowering stage considering wind velocity.
- In Hill Zone, continue field preparation for sowing of vegetable pea, okra, French bean, lady finger and also for planting of potato in mid hill region.
- In Hill Zone, in the present weather, there may be incidence of thrips in garlic and onion, spray Imidacloprid @ 6 -8 ml in 10 litres of water in garlic and onion after current spells of rain.
- In Hill Zone, keep strict vigil in the wheat crop on yellow rust infestation. If observed, spray Propiconazole @ 10ml in 20 litre of water after current spells of rain, repeat the spray after 10-15 days interval if the disease persists.

#### ▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, continue sowing of fodder crops such as chari and bajra, cucurbits such as cucumber, bitter gourd, bottle gourd and summer squash, ageti okra, French bean and radish. Undertake sowing of zaid moong and mash in irrigated areas. Complete nursery sowing of tomato, brinjal, chilli and capsicum after current spells of heavy rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, under prevailing weather conditions, there may be chances of attack of yellow rust in wheat and attack of caterpillars in gram. For control of yellow rust, spray Tilt @ 1ml per litre of water and spray Carbaryl-50WP @ 2 g per litre of water for caterpillars after current spells of rain.
- In Mid Hills sub-Humid Zone, weather is conducive for attack of pod borer in pea crop, apply Carbaryl @ 2gms/litre of water after current spell of rain.

#### ▪ **Rajasthan:**

- In East Rajasthan, continue field preparation for zaid moong in Southern Humid Plain Zone. In Flood Prone Eastern Plain Zone, undertake raising of nursery summer chilli, summer marigold, sowing of okra and leafy vegetables like spinach and amaranthus and also transplanting of tomato.
- Undertake sowing of Zaid green gram, groundnut, Pearl millet (fodder), okra, tinda, early summer cucurbits like bottle gourd, round gourd, bitter gourd, water melon and musk melon in Semi-Arid Eastern Plain Zone.
- In Sub Humid Southern Plain and Aravali Hill Zone, continue sowing of summer okra, complete harvesting of matured normal sown wheat crop in clear weather and keep harvested produce at safer places. Apply irrigation in late sown wheat, continue field preparation for transplanting of brinjal.
- In West Rajasthan, in Arid Western Zone, apply irrigation wheat in timely sown wheat at dough stages and in late sown wheat, apply irrigation at milk stage. Continue sowing of green fodder viz. sorghum and pearl millet. Continue harvesting of matured rabi crops, apply irrigation in garlic and onion in Barmer, Churu, Jalore, Jodhpur and Pali districts.
- In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur and Pali districts, in the prevailing weather conditions, there is a chance of attack of red pumpkin beetle in brinjal, apply Dimethoate 30 EC @ @ 1.0 ml per

litre water for control.

- In Semi-Arid Eastern Plain Zone, there is a chance of attack of citrus cilla in citrus plants, spray Malathion 50 EC @ 1.0 ml per litre water.
- In Irrigated North Western Plain Zone, in the prevailing temperature, there is a chance of infestation of yellow rust in wheat; attack of termite in barley and gram, spray Imidacloprid @ 33ml/100 litres of water for yellow rust and apply Chloropyriphos 20 EC @ 4litre per ha with irrigation water for termite.

#### ▪ **Punjab, Haryana and Delhi:**

- In Western Plain Zone of Punjab, continue sowing of okra, spring maize and planting of sugarcane. Undertake transplanting of chilli and cucurbits on the ridges.
- In Central and Undulating Plain Zone of Punjab, continue planting of sugarcane.
- In Central, Western and Undulating Plain Zone of Punjab, continue planting of peach, plum, pear, pomegranate and ber plants.
- In Western Zone of Punjab, prepare the field for transplanting summer vegetables of chilli, tomato, bell pepper and planting of evergreen fruit plants of kinnow, lemon, guava ber and Amla.
- In Western Zone of Haryana, continue sowing of green gram and black gram. Undertake harvesting and threshing of early sown matured mustard crop. In Eastern Zone, complete the planting of sugarcane.
- In Western Semi-Arid Zone of Delhi, continue sowing of green gram, black gram and transplanting of marigold
- In Western Semi-Arid Zone of Delhi, monitor the wheat crop against brown and black rust. If symptoms appears, spray Dithane M- 45 @ 2.5 grams or Carbendazim @ 2 gm or Propiconazole @1 gm per litre of water.
- In Central and Undulating Plain Zone of Punjab, there is chance for occurrence of yellow rust in wheat fields in the present weather condition. Monitor the crop and if symptoms are noticed, spray with Tilt/Shine/Bumper/Compass/Markzole @ 200 ml in 200 litres of water/acre.
- In Central, Western, Sub-Montane Plain Zone of Punjab, there may be chances of aphids in mustard crop; to control spray 40g Actara 25 WG or 400 ml Rogor 30EC in 80-125 litre of water per acre. In Undulating Plain Zone of Punjab, there may be chances of alternaria blight in mustard, spray Indofil M 45 @ 25 gm/acre in 100 litres of water.
- Due to favourable weather condition, there may be attack of pod borer in gram in Western Zone of Haryana, spray Carbaril 50 W.P. @ 400 gram or Monocrotophas 36 SL @ 200 ml per 100 liter water per acre and there may be attack of stalk rot in mustard crop, spray of Carbendzin 0.1% solution. Due to increase in temperature there may be attack of aphids/jassids in wheat, spray Malathion 50 E.C. @ 400 ml. in 250 liter water per acre.

#### ▪ **Uttar Pradesh:**

- As dry weather is prevailing, apply irrigation in wheat at flowering/milk stage and all vegetables as per requirement in Uttar Pradesh.
- In Central Pain Zone, continue sowing of summer fodder crops and sowing of urad, mung, lobia, bhindi as inter crop in sugarcane, land preparation and sowing of cowpea, maize, transplanting of onion, tomato, chili. Complete sowing of bhindi, tinda, cucurbits, water melon and bottle guard.
- In Eastern Plain Zone, continue sowing of bhindi, tinda, torai, cucurbits, and bottle guard, continue sowing of lobia, maize, urad, mung and cucurbits and transplanting of onion.
- In Western Plain Zone, continue transplanting of tomato, chilli and sowing of bhindi, cucurbits, planting of autumn sugarcane and sowing of sunflower, urad, mung, maize.
- In Bundelkhand Zone, continue harvesting of matured mustard, gram, pea, lentil. Undertake sowing of bhindi, torai and continue sowing of cucurbits, transplanting of cabbage, cauliflower, tomato, brinjal and chilli and land preparation for sowing of groundnut.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of pod borer/semi looper in gram, for control, spray Fenvalerate 0.4% D.P. @ 20 to 25 gm. or Quinalphos 25% EC @ 2 litres or Malathion 50 EC @ 2 litres in 500 to 600 litres of water per hectare.
- In North Eastern Plain Zone, due to prevailing weather condition, there may be chances of attack of aphids in gram, for control, spray 0.2 % Mencozeb @ 400 gm. or 0.2% Carbendezim @ 400 gm. in 200 litres of water per acre.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of thrips in onion, for control, spray Mencozeb 0.2 % or Dimethoate @ 1 ml per litre of water.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of leafhopper in sunflower, for control spray Phosphomidon @ 250ml per hectare.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of steam borer in brinjal, for control spray Nimgiri @ 4 % at 10 days of intervals.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of fruit borer/leaf sheath in vegetables, for control, spray Neem oil @ 1.5 ml to 2 ml per litre of water, 3 to 4 times at 8 to 10 days of intervals.
- In Bundelkhand Zone, due to prevailing temperature conditions, there may be chances of attack of pod borer in gram, for control spray Dimethoate or Cypermethrin @ 1 litre in 600 litres of water per hectare in clear weather.



- **Animal Husbandry**
  - In High Hill Temperate Dry Zone of Himachal Pradesh, give daily 40-50g Minerals mixture per cow and protect newly born calves to protect from cold.
  - In Mid Hills sub-Humid Zone of Himachal Pradesh, spray Cypermethrin (2-2.5ml/litre of water) on the body of animals to protect them from attack of parasites.
  - 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.
- **Horticulture:**
  - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of maggot in mango, for control, spray 17.8 % Emidacloprid S.L. @ 1 ml in 3 litres of water or 25 % Quinalphos EC @ 2 ml 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 Central Plain Zone of Uttar Pradesh, undertake transplanting of papaya plants in new orchard.
  - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit drop in mango, for control spray Naphthalene acetic acid @ 20 gm per litre of water.
  - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit cracking in citrus plants, for control, spray Gibberellic Acid @ 100 mg. in 10 litres of water.
  - In Eastern Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit drop in mango, for control spray Naphthalene acetic acid or Plenofix ( 20 P.P.M.) @ 2 ml. per 4.5 litres of water.
- **Floriculture**
  - In Sub Montane and Low Hills Sub Humid Zone of Himachal Pradesh, as there is a chance of attack of aphids in winter flower plants, spray Malathion @ 0.05% for the control after current spells of rain.

## Annexure I

### Assam

**Early ahu rice** :semi dwarf ahu rice varieties like Luit, Kopilee, Cauvery, Culture -1, Rasi, Banglami, Puthichapali, Nilajee, Hasakumra.Lachit, Chilaray, Gopinath, Gobind, IR-50, Culture-1 etc fortransplanted ahu rice.

**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)

**Capsularisjute :** 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 :**CO-Jor- 1, CO-Jor- 2, Co 1148.

**Okra:**PusaSawani, ArkaAnamika, ParbhdaniKranti.

**Ridge gourd :**PusaNashdar or other local varieties like AAU-1, AAU-2, AAU-3 etc.

**Sponge gourd:**PusaChikni,Pusa Nasdar, selected local varieties, viz. AAUJ-1, AAUJ-2, AAUC-3 or other local varieties.

**Papaya:**Washington, Haflong, Rasi, KorgHoney Dew, Co-1, Co-2, Pusa Delicious, Pusa Majesty etc.

**Ginger & Turmeric:**HYV of ginger (Nadia, Karkai, Maran, Jorhat, chaina etc.) & turmeric (Shillong type, CL-24, PTS-38, PCT-13, VK-145, etc.) up to April.

### Meghalaya

**Maize ( High and Mid altitude region):**61A, RCM 75, 76, Vivek Hybrid 25, Vivek QPM-1, etc and

### 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 nikan, 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

**Mung:** k-851 and JM-721.

### **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.

### **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, RZ19,209,223and 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

### East Rajasthan

**Muskmelon:** Durgapura madhu, Punjab sunheri, 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.

### Gujarat

**Summer Groundnut:** GG2, GG 4 and GG20.  
**Summer Sesame:** G.Til-1, G.Til-2, G.Til-3.  
**Brinjal:** Junagadh oblong, Junagadh long, Guj. Bringle-2.  
**Lady's finger:** Guj. Hy.-1 & 2.  
**Ridge gourd:** Pusa nasdar, Jaipuri.  
**Bottle gourd:** Junagadh tender long, Pusa summer prolific long.  
**Sponge gouard:** Pusa chikni.  
**Bitter gouard:** Priya, Pusa domosmi.  
**Cluster bean:** Pusa sadabahar, Pusa navbahar, IC-11388.  
**Water melon:** Sugar baby, Arka jyoti.  
**Pearl millet:** GHB-526 and GHB-558.  
**Green gram:**GM-2, 3, GM- 4.  
**Black gram:** Guj-1, T-9.

### Madhya Pradesh

**Okra:** Pusa Makhamali, Pusa Sawani, A-4, Parbhani Kranti.  
**Moong:** HUM -1, PDM -139,TJM-3, SML-668.

### Tamil Nadu

**Cotton:** Surabhi and SVPR-2