



# *National Agromet Advisory Service Bulletin*

*Friday 28<sup>th</sup> February 2020*

*(For the period 28<sup>th</sup> February to 3<sup>rd</sup> March 2020)*



*Issued by*

*India Meteorological Department*

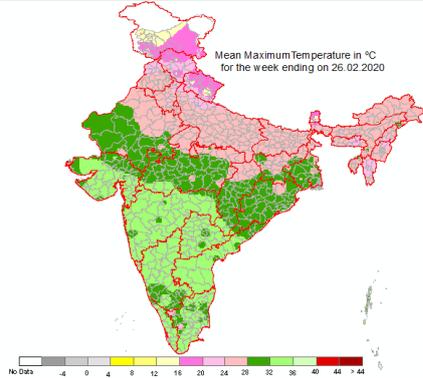
**Weblink For**

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

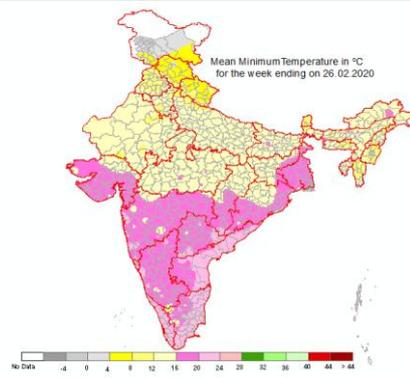
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

## Spatial distribution of weather parameters for the week ending on 26.02.2020

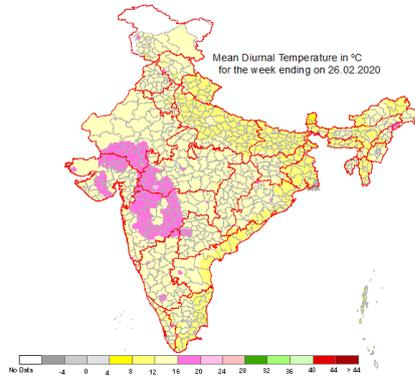
**Mean Maximum Temperature (°C) for the week ending on 26.02.2020**



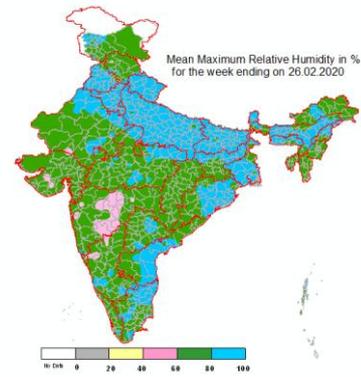
**Mean Minimum Temperature (°C) for the week ending on 26.02.2020**



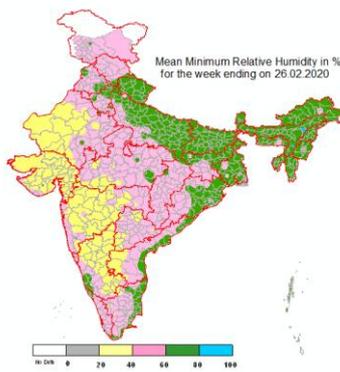
**Mean Diurnal Temperature Variation (°C) for the week ending on 26.02.2020**



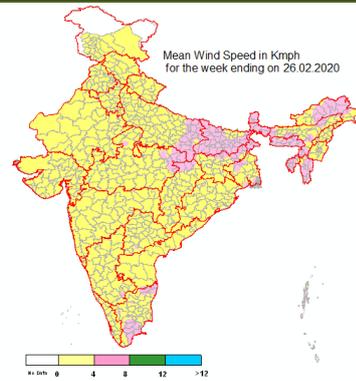
**Mean Maximum Relative Humidity (%) for the week ending on 26.02.2020**



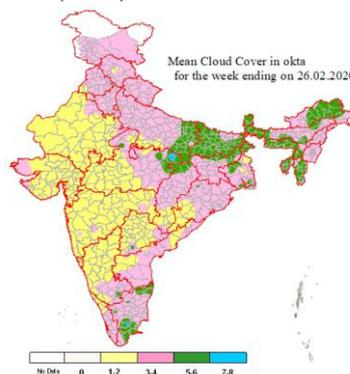
**Mean Minimum Relative Humidity (%) for the week ending on 26.02.2020**



**Mean Wind Speed (km/hr) for the week ending on 26.02.2020**

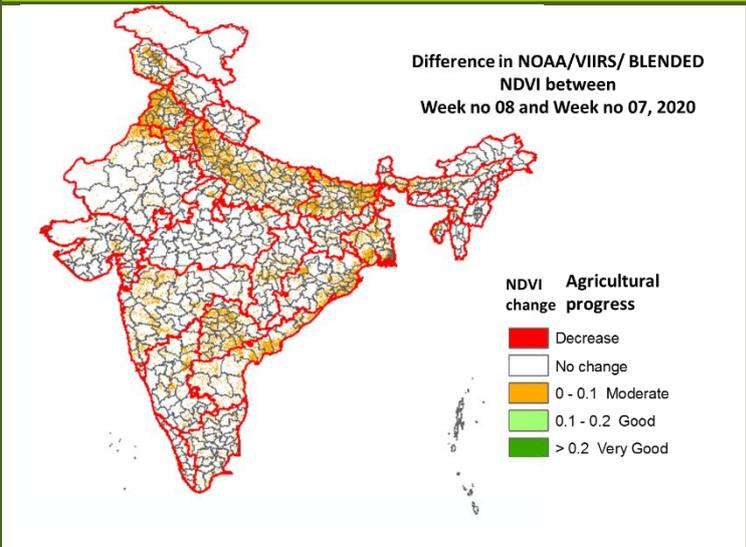
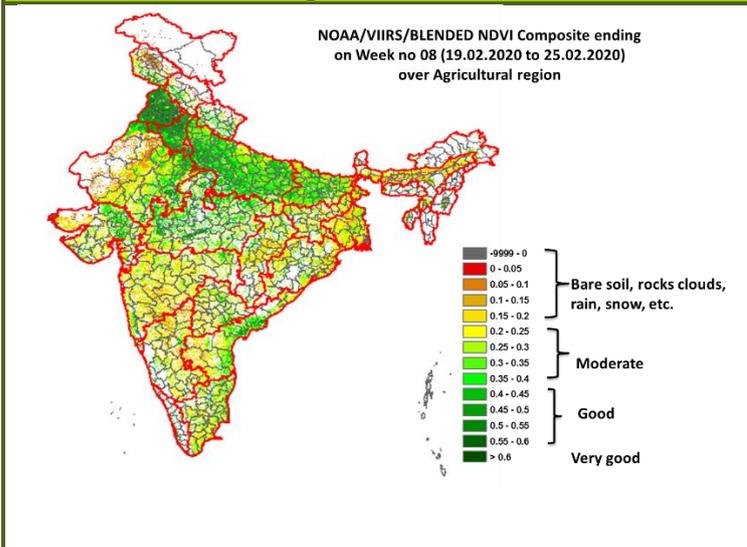


**Mean Cloud Cover (okta) for the week ending on 26.02.2020**



**NOAA/VIIRS/BLENDED NDVI composite for the week number 08 (19.02.2020 to 25.02.2020) over Agricultural regions of India**

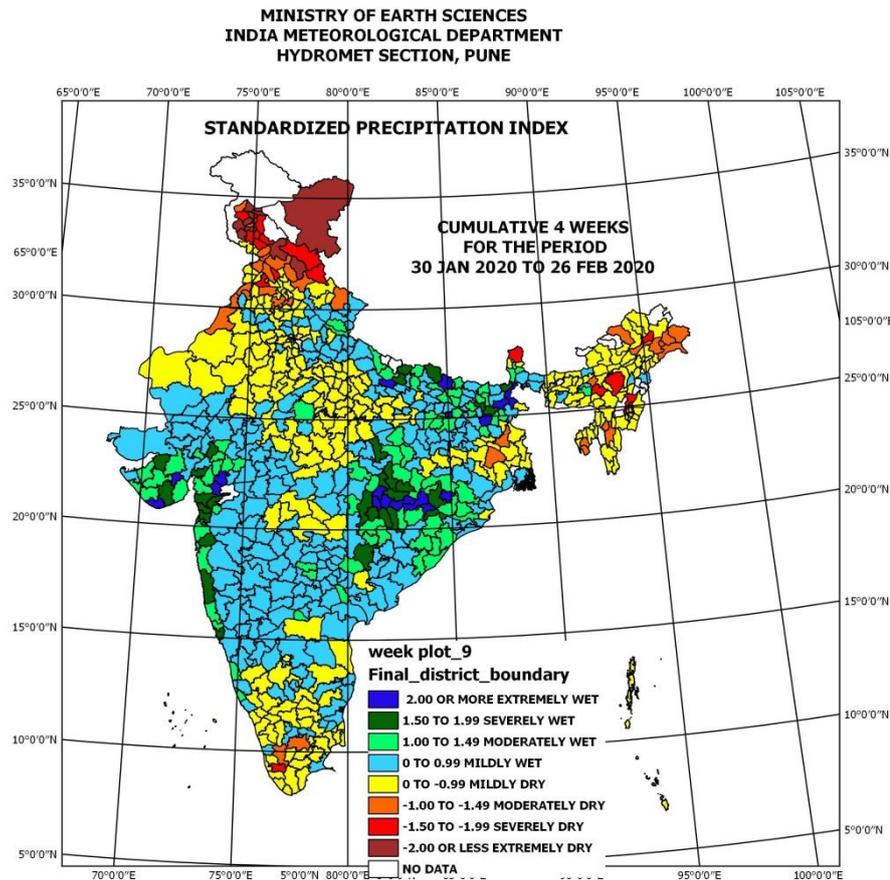
**Difference in NOAA/VIIRS/BLENDED NDVI between week number 08, 2020 and week number 07, 2020**



Agriculture vigour was good at many parts of Haryana, Punjab, West Uttar Pradesh & West Madhya Pradesh; at few parts of East Uttar Pradesh, Bihar, East Madhya Pradesh, Rajasthan, Coastal Andhra Pradesh, Kerala, and at isolated pockets of Uttarakhand, North Eastern states, Rajasthan, Gujarat, Northern part of Chattisgarh, Odisha, Telangana, Coastal Karnataka, Konkan and Tamilnadu. It was moderate over rest of the country.

Good difference in agricultural vigour has been observed at isolated palces of Punjab, Haryana, Odisha, Uttar Pradesh, Bihar, Coastal Andhra Pradesh and Telanagana. It was moderate over rest of the country.

## Standardised Precipitation Index Cumulative 4 weeks for the period 30<sup>th</sup> Jan to 26<sup>th</sup> Feb 2020



- Extremely/Severely wet conditions exist in Banka, Bhagalpur, East Champaran, W Champaran, Jahanabad, Katihar, Khagaria, Kishanganj districts of Bihar; Valsad, Surat, Anand, Narmada, Navsari, Tapi, Aravalli, Chhota Udepur, Amreli, Botad, Gir Somnath, Morbi districts of Gujarat; Shahdol districts of West Madhya Pradesh; Ratnagiri, Thane districts of Maharashtra; Bargarh, Boudhgarh, Deogarh, Sambalpur, Sonepur districts of Orissa; Diu district of Union Territory; Basti, Faizabad, Siddharth Nagar districts of Uttar Pradesh; North Dinajpur districts of West Bengal; Bilaspur, Dhamtari, Durg, Janjgir, Mahasamund, Raipur, Rajnandgaon, Bijapur, Balod, Baloda Bazaar, Bemetara, Gariabund, Mungeli districts of Chhatisgarh; South Goa district of Goa.
- Moderately dry conditions exist in Anjaw, Changlang, Lohit, Upper Subansiri districts of Arunachal Pradesh; Morigaon, Tinsukia, Dhemaji district of Assam; Ambala district of Haryana; Kangra, Mandi, Shimla districts of Himachal Pradesh; Kathua, Kupwara, Shopian districts of Jammu; Idukki district of Kerala; Imphal West district of Manipur; Aizwal, Kolasib districts of Mizoram; Ferozepur, Gurdaspur, Hoshiarpur, Ludhiana, Patiala, Faridkot districts of Punjab; Sri Ganganagar district of Rajasthan; Dindigul district of Tamilnadu; South Tripura district of Tripura; Chandigarh district of Union Territory; Bankura, Birbhum districts of West Bengal; Chamoli district of Uttarakhand; Central Delhi district of Delhi.
- Extremely/Severely dry conditions exist in East Siang district of Arunachal Pradesh; Karbi Anglong district of Assam; Chamba, Kinnaur, Kullu, Lahaul & Spiti, Una districts of Himachal Pradesh; Anantnag, Baramula, Doda, Poonch, Reasi, Udhampur, Badgam, Pulwama, Srinagar, Ramban, Bandipore, Kulgam, Ganderwal, Rajouri districts of Jammu; Leh district of Union Territory Ladakh, Pathanamthitta district of Kerala; Senapati district of Manipur; Jalandhar district of Punjab; North Sikkim district of Sikkim.
- Moderately wet to mildly dry conditions were experienced in remaining districts in the country.

## Weather Forecast for next 5 days valid upto 0830 hours of 4<sup>th</sup> March, 2020

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- ◆ Rise in minimum temperatures by 2-3°C over Northwest, West and Central India during next 48 hours and fall thereafter. ◆ No significant change in minimum temperatures over rest parts of the country during next 2-3 days

### 5 Day Rainfall Forecast (MID-DAY) 28<sup>th</sup> February 2020

Met-Sub-Division	28-Feb Today	29Feb Sat	01Mar Sun	02Mar Mon	03Mar Tue
1. Andaman & Nicobar Islands	DRY	DRY	DRY	DRY	DRY
2. Arunachal Pradesh	ISOL	DRY	ISOL	SCT	FWS
3. Assam & Meghalaya	DRY	DRY	ISOL	ISOL	FWS
4. N. M. M. & T.	DRY	DRY	DRY	ISOL	SCT
5. S.H. West Bengal & Sikkim	DRY	DRY	ISOL	ISOL	SCT
6. Gangetic West Bengal	DRY	DRY	DRY	ISOL	SCT
7. Odisha	DRY	DRY	DRY	ISOL	ISOL
8. Jharkhand	DRY	DRY	ISOL	ISOL	ISOL
9. Bihar	DRY	DRY	DRY	ISOL	ISOL
10. East Uttar Pradesh	DRY	ISOL	ISOL	DRY	DRY
11. West Uttar Pradesh	ISOL	SCT	ISOL	DRY	DRY
12. Uttarakhand	SCT	FWS	SCT	DRY	ISOL
13. Haryana, Chd & Delhi	SCT	FWS	ISOL	DRY	DRY
14. Punjab	SCT	FWS	ISOL	DRY	DRY
15. Himachal Pradesh	FWS	WS	SCT	DRY	ISOL
16. J & K and Ladakh	WS	FWS	ISOL	DRY	ISOL
17. West Rajsthan	ISOL	ISOL	DRY	DRY	DRY
18. East Rajasthan	ISOL	ISOL	ISOL	DRY	DRY
19. West Madhya Pradesh	ISOL	SCT	ISOL	DRY	DRY
20. East Madhya Pradesh	DRY	ISOL	SCT	ISOL	DRY
21. Gujarat Region	DRY	ISOL	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	DRY	ISOL	ISOL	DRY	DRY
25. Marathawada	DRY	ISOL	ISOL	DRY	DRY
26. Vidharbha	DRY	ISOL	ISOL	ISOL	DRY
27. Chhattisgarh	DRY	DRY	ISOL	ISOL	ISOL
28. Coastal A. P. & Yanam	ISOL	DRY	DRY	ISOL	ISOL
29. Telangana	DRY	DRY	ISOL	ISOL	DRY
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. T.N.,Puducherry & Karaikal	ISOL	ISOL	DRY	DRY	DRY
32. Coastal Karnataka	ISOL	ISOL	ISOL	DRY	DRY
33. North Interior Karnataka	DRY	DRY	DRY	DRY	DRY
34. South Interior Karnataka	ISOL	ISOL	ISOL	ISOL	DRY
35. Kerala & Mahe	ISOL	ISOL	ISOL	ISOL	ISOL
36. Lakshadweep	SCT	SCT	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

**28 February (Day 1):** ♦ **Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh, West Uttar Pradesh and Rajasthan and **with lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan and Kerala & Mahe.

♦ **Heavy Rainfall/snowfall** very likely at isolated places over Jammu & Kashmir, Ladakh and Gilgit-Baltistan.

♦ **Dense fog** very likely in isolated parts over Bihar and Odisha.

**29 February (Day 2):** ♦ **Thunderstorm accompanied with lightning & gusty wind** (speed reaching 30-40 kmph) very likely at a few places **with hailstorm** at isolated places over Punjab and Haryana & Chandigarh. **Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) at isolated places over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, north East Rajasthan, West Madhya Pradesh and west Vidarbha; **with lightning & gusty wind** (speed reaching 30- 40 kmph) at isolated places over East Uttar Pradesh and West Rajasthan and **with lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, East Madhya Pradesh, Marathawada, South Interior Karnataka and Kerala & Mahe.

♦ **Heavy Rainfall/snowfall** very likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan and Himachal Pradesh.

**01 March (Day 3):** ♦ **Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Uttarakhand, East Madhya Pradesh and east Vidarbha; with **gusty wind** (speed reaching 30-40 kmph) at isolated places over Uttar Pradesh and **with lightning** at isolated places over West Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Telangana and Chhattisgarh.

**02 March (Day 4):** ♦ **Thunderstorm accompanied with lightning** likely at isolated places over Bihar, Jharkhand, Chhattisgarh, West Bengal & Sikkim, Odisha, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura and north Coastal Andhra Pradesh & Yanam.

**03 March (Day 5):** ♦ **Thunderstorm accompanied with lightning** likely at isolated places over Bihar, Jharkhand, West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura.

## Weather Outlook for subsequent 2 days from 4<sup>th</sup> to 6<sup>th</sup> March, 2020

- Under the influence of the Western Disturbance influence, fairly widespread to widespread rainfall/snowfall is likely over Western Himalayan Region and scattered to fairly widespread rainfall over adjoining plains of Northwest India. Isolated to scattered rainfall over parts of East and Northeast India.
- Weather likely to be mainly dry over rest of the country.

## Salient advisories

### ➤ Advisory for Desert Locust:

- On arrival/attack of locusts in Sriganganagar and Hanumangarh districts of Rajasthan, inform immediately to locust control room, Suratgarh at 09969341927, 09588849282 or to Deputy Director (Extension), Sriganganagar at 0154 2422345, 09928116968.
- In Arid Western Plain Zone of Rajasthan, where there is attack of locusts in Bikaner and Jaisalmer

districts, apply Chloropyriphos (50%) 1 ml/litre or (20%) 2.5 ml/litre of water in standing crops.

- As **Thunderstorm accompanied with lightning & gusty wind** (speed reaching 30-40 kmph) likely at a few places **with hailstorm** likely at isolated places over Punjab and Haryana & Chandigarh on 29<sup>th</sup> February, **thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Punjab, Haryana, Chandigarh and Rajasthan on 28<sup>th</sup> February, over Himachal Pradesh and West Uttar Pradesh on 28<sup>th</sup> & 29<sup>th</sup> February, over Uttarakhand from 28<sup>th</sup> February to 1<sup>st</sup> March, over North East Rajasthan, West Madhya Pradesh and West Vidarbha on 29<sup>th</sup> February and over East Madhya Pradesh and East Vidarbha on 1<sup>st</sup> March, with **lightning & gusty wind** (speed reaching 30- 40 kmph) at isolated places over East Uttar Pradesh and West Rajasthan on 29<sup>th</sup> February, with **gusty wind** (speed reaching 30-40 kmph) at isolated places over Uttar Pradesh on 1<sup>st</sup> March, with **lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan and Kerala & Mahe on 28<sup>th</sup> & 29<sup>th</sup> February, over East Madhya Pradesh, Marathwada, South Interior Karnataka on 29<sup>th</sup> February, over West Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Telangana on 1<sup>st</sup> March, over Chhattisgarh from 1<sup>st</sup> to 3<sup>rd</sup> March, over Odisha and north Coastal Andhra Pradesh & Yanam on 2<sup>nd</sup> March and over Bihar, Jharkhand, West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura on 2<sup>nd</sup> & 3<sup>rd</sup> March, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at most places over Jammu & Kashmir on 28<sup>th</sup> February, over Himachal Pradesh on 29<sup>th</sup> February and at many places over Himachal Pradesh on 28<sup>th</sup> , over Jammu & Kashmir, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi on 29<sup>th</sup> February and over Arunachal Pradesh, Assam & Meghalaya on 3<sup>rd</sup> March along with **heavy rainfall/snowfall** very likely at isolated places over Jammu & Kashmir, Ladakh and Gilgit-Baltistan on 28<sup>th</sup> & 29<sup>th</sup> February and over Himachal Pradesh on 29<sup>th</sup> February, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- As **Dense fog** very likely in isolated parts over Bihar and Odisha on 28<sup>th</sup> February, monitor tomato and potato crops for blight disease and take plant protection measures as per the requirement.
- Undertake sowing/ transplanting of following crops:
  - Undertake planting of pepper in High Altitude Zone of Kerala.
  - Continue transplanting of rice seedlings in South Interior Karnataka.
  - Undertake sowing of cucurbitaceous crops; sowing of leafy vegetables and land preparation for summer vegetables in the Chhattisgarh Plain Zone.
  - Undertake land preparation for sowing groundnut, sesame and pearl millet in North Gujarat.
  - Undertake sowing of sunflower, green gram and black gram and planting of onion bulbs in Sub Montane and Low Hills Sub Tropical Zone of Himachal Pradesh.
  - Undertake transplanting of *Haenz saag* and other cold tolerant vegetables as a second crop under poly houses in Cold Arid Zone of Jammu & Kashmir.
  - Undertake sowing of fruit crops like apple, plum, pear, walnut etc. in Bhabar and Tarai Zone of Uttarakhand.
  - Undertake land preparation for sowing of green gram and black gram in Hill Zone of Assam.
  - Undertake transplanting of seedlings of summer vegetables in Tripura. Continue land preparation for sowing of kharif maize in Nagaland. Continue nursery sowing of brinjal, tomato, capsicum in Meghalaya. Undertake transplanting of rice and sowing of maize and okra in Manipur.
  - Undertake sowing of summer *moong* bean and *urd* bean in Jharkhand; .
  - Underatke final land preparation for sowing of vegetables, pulses and oilseed crops and continue transplanting onion seedlings In Odisha.
  - Undertake nursery preparation for chilli, tomato and brinjal, sowing of okra (*bhindi*) and planting of spring season sugarcane in East Uttar Pradesh. Continue sowing of maize and black gram in West Uttar Pradesh.

## Detailed Agromet Advisories

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

**Realised Rainfall :** Weather remained dry/mainly dry over the region.

#### Advisories:

- **As Thunderstorm accompanied with lightning** likely at isolated places over Kerala & Mahe on 28<sup>th</sup> & 29<sup>th</sup> February, over South Interior Karnataka on 29<sup>th</sup> February, over Telangana on 1<sup>st</sup> March, over North Coastal Andhra Pradesh & Yanam on 2<sup>nd</sup> March, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

#### Kerala

- In Problem Area Zone, high temperature may induce pollen sterility in late sown paddy; to avoid this, keep standing water in the field.
- In High Altitude Zone, crops like ginger turmeric vegetables etc can be cultivated as an intercrop in irrigated coconut gardens. Undertake planting for pepper.
- In Central Zone, weather is congenial for attack of mites in chilly; apply Spiromesifen 8 ml/10 litres of water.
- In Northern Zone, there is a chance of incidence of leaf spot in banana; spray Hexaconazole 5 EC 1ml per litre of water.

#### Andhra Pradesh

- In Scarce Rainfall Zone, Zinc deficiency in rice crop is observed in some parts of the Anantapur district; spray Zinc sulphate @ 2 grams/litre of water twice at weekly interval.
- In High Altitude Tribal Zone, weather is congenial for mango hopper in mango; spray Monocrotophos @ 1.6 ml or Imidacloprid 0.25ml per litre of water.
- In Krishna Godavari Zone, weather is congenial for white smut in sugarcane; spray Propiconazole @ 1.05ml/litre of water immediately after ratooning and 30 days after spray in ratoon crop.
- In Southern Zone, weather conditions are favourable for spodoptera in groundnut, spray Thiodicarb @ 1.5-2 g per litre of water at evening hours.

#### Telangana

- In Southern Telangana Zone, weather is favourable for incidence of thrips and mites in chilly crop; to control, spray Diafenthiuron @ 1.5 g or Chlorfenapyr @ 2 ml per litre of water.
- In North Telangana Zone, weather conditions are favourable for blast in paddy; spray Tricyclazole @ 0.6 gr or Isoprothiolane @ 1.5 ml per litre of water.

#### Tamil Nadu

- In Cauvery Delta Zone, weather is congenial for the infestation of sucking pests including hoppers, thrips and white flies in rice fallow black gram; spray Azadirachtin 0.03% EC @ 3ml or Triazophos 2.5 ml per litre of water.
- In Western Zone, due to rising temperature (both maximum and minimum), sucking pest may appear in transplanted *Navarai* season rice, spray Phosphamidon 40SL @ 600 ml / ha.
- In High Altitude Hilly Zone, undertake sowing of green manure crops like lupin and buck wheat.
- In High Rainfall Zone, considering the prevailing dry weather conditions, apply irrigation to all agricultural and horticultural crops.
- **Animal Husbandry:** In North Western Zone of Tamilnadu, *desi* birds may experience immune-suppression leading to the outbreak of Ranikhet disease; vaccinate chicks above 2 months against

Ranikhet disease.

### **Karnataka**

- In North Interior Karnataka, provide protective irrigation to wheat and sorghum crops. Carry out harvesting of early sown wheat and sorghum. Harvest chick pea crop at morning/evening hours. Spray Thiodicarb 75WP @ 1 g per litre of water for fruit borers in tomato.
- In South Interior Karnataka, continue transplanting of paddy seedlings. Undertake harvesting of mature rhizomes of ginger and turmeric.
- In Coastal Karnataka, spray Quinolphos @ 2 ml or Indoxacarb @ 0.5ml per litre of water against leaf roller in rice.

### **Animal Husbandry:**

- In Karnataka, give the animals essential salts/mineral mixture mixed with feed in appropriate quantities.

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

**Realised Rainfall:** Significant rainfall occurred in Tirap district of Arunachal Pradesh and Ribhoi district of Meghalaya. Weather remained mainly dry over rest of the region.

### **Advisories:**

- **As Thunderstorm accompanied with lightning** at isolated places over Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura on 2<sup>nd</sup> & 3<sup>rd</sup> March, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As rain/thundershowers likely at most places over Arunachal Pradesh, Assam & Meghalaya on 3<sup>rd</sup> March, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

### **Arunachal Pradesh**

- In Arunachal Pradesh, continue harvesting of matured pods of pea. Apply irrigation to mustard in flowering and siliqua formation stages. Cover the mustard crop base with maize/rice straw mulch to conserve soil moisture. In case of infestation of pod borer in pea, apply Azadirachtin 0.03 % WSP 2500-5000 g/ha during clear weather.

### **Assam & Meghalaya**

- In Hill Zone of Assam, undertake water management in crops like wheat, field pea, gram, lentil, linseed, safflower and sunflower. Undertake land preparation for sowing of green gram and black gram. Apply irrigation to onion crop at an interval of 6-8 days. Undertake sowing of early *Ahu* rice (direct seeded). Increasing temperature may favour thrips in seedling stage of Boro rice; spray Chloropyriphos @ 2ml/litre of water if population of thrips is above ETL.
- In Upper Brahmaputra Valley Zone, undertake land preparation for sowing of maize. Continue harvesting of potato. Continue land preparation for sowing of black gram and green gram.
- In Lower Brahmaputra Valley Zone, maintain standing water in the *Boro* rice field at 5±2 cm depth after 2-3 days of transplanting and continue gap filling within 7-10 days after sowing. Continue sowing of *kharif* maize, summer green gram and black gram. Apply irrigation to wheat field.
- In Central Brahmaputra Valley Zone, maintain 5±2 cm of standing water in the *Boro* rice field. Postpone harvesting of mustard. Postpone application of pesticides in wheat. Postpone sowing of summer green gram and black gram. Postpone application of insecticides and pesticides to *rabi* pulses.
- In Barak Valley Zone, chilli plants may be infested by anthracnose or fruit rot disease. To control the disease, spray Captan 50 WP 0.2% @ 2g/ litre of water or Dofolatan 0.2%.
- In North Bank Plain Zone, carry out weeding in *Boro* rice 20 days after transplanting. Plough the main

field of transplanted *Ahu* rice to conserve moisture. Continue sowing of green gram and black gram.

- In Meghalaya, apply irrigation to pea in pod filling stage. Continue nursery sowing of brinjal, tomato, capsicum. Apply irrigation to mustard at pod filling stage. Continue harvesting of ginger and turmeric.

#### **Manipur, Mizoram, Tripura and Nagaland**

- In Manipur, apply mulch in the standing crop fields using straw/ dried leaves which is not infected by insect-pest, to preserve soil moisture for the crop. Undertake transplanting of rice. Undertake sowing of maize and okra. Spray *Neem* oil to control aphids in mustard.
- In Mizoram, continue harvesting of field pea crop; harvest when the pod is wet during early morning or night to prevent seed shatter. Continue harvesting of soybean. Carry out intercultural operations near the base of the potato plants; apply irrigation at 2-3 days interval; use straw mulch for better soil moisture conservation. To control leaf blight disease in maize, spray Methoxy-acrylate @ 2 g/litre of water.
- In Tripura, carry out weeding in Boro rice field 10 to 15 days after transplanting; maintain 2-3 cm standing water in the field. Maintain optimum moisture in the maize field through irrigation and apply mulching to hold moisture in the field. Transplant young seedlings of summer vegetables in the main field.
- In Nagaland, continue land preparation for sowing of *kharif* maize. Apply irrigation to vegetable pea at flowering stage.

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

**Realised Rainfall:** Significant rainfall occurred in Aurangabad, Banka, Bhagalpur, East Champaran, Gaya, Gopalganj, Jahanabad, Katihar, Khagaria, Kishanganj, Muzaffarpur, Nalanda, Rohtas, Saran, Sheohar, Supaul and West Champaran districts of Bihar; in Deoghar, Godda, Lohardaga, Palamu and Sahebganj districts of Jharkhand; in Angul, Bargarh, Bolangir, Boudh, Cuttack, Deogarh, Dhenkanal, Jagatsingpur, Kandhamal, Keonjhar, Khurda, Nayagarh, Sambalpur, Sonapur and Sundargarh districts of Odisha and in Darjeeling, East Sikkim, Jalpaiguri, North Dinajpur, North Sikkim and South Sikkim districts of Sub-Himalayan West Bengal & Sikkim. Weather remained dry/mainly dry over the region.

#### **Advisories:**

- **As Thunderstorm accompanied with lightning** at isolated places over Sub-Himalayan West Bengal & Sikkim on 1<sup>st</sup> March, over Odisha on 2<sup>nd</sup> March and over Bihar, Jharkhand and West Bengal & Sikkim, on 2<sup>nd</sup> & 3<sup>rd</sup> March, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- **As Dense fog** very likely in isolated parts over Bihar and Odisha on 28<sup>th</sup> February, monitor tomato and potato crops for blight disease and take plant protection measures as per the requirement.

#### **Odisha**

- Start the final land preparation for sowing vegetables, pulses and oilseed crops. Continue transplanting onion seedlings. Cloudy weather can aggravate aphid infestation in rapeseed and mustard, sunflower, groundnut, green gram and black gram; to control, apply 50ml Imidacloprid or 50g Acetamiprid in 200 litres of water.

#### **Bihar**

- Take up land preparation for sowing of summer vegetables such as okra, pumpkin, cucumber, sponge gourd, ridge gourd and bitter gourd; apply 15-20 tonnes of FYM during land preparation; apply Chlorpyrifos 20EC @ 2 litres/acre during land ploughing to protect vegetable crops from cutworm attack. Continue harvesting potato tubers. Monitoring wheat crop for rust disease; if symptoms of black, brown or yellow rust appear, spray crops with Dithane M- 45 @ 2.5 grams per litre of water.

## Jharkhand

- Continue transplanting of 21-25 days old summer paddy seedlings. Continue sowing of summer maize. Undertake sowing of summer *moong* bean and *urd* bean. Prepare field for vegetable like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon. To control thrips in onion leaves(white spot), spray Imidachloprid 1ml/3 litres of water

## West Bengal

- In Sub-Himalayan West Bengal, complete sowing of maize crop. Continue preparing main field and transplanting 25-30 days old *Boro* rice seedlings. Provide irrigation to mustard and potato crops as per requirement; avoid water logging in the field. Carry out harvesting of matured pods of green pea. For fruit and shoot borer attack in brinjal crop, spray Cartap Hydrochloride 50% SP @ 1g/litre of water.
- In Gangetic West Bengal, prepare land for sowing *mung*; apply basal fertilizer dose of urea@4kg/*bigha* and SSP@35-40kg/*bigha*; if harvested potato field is selected for sowing *mung*, do not apply fertilizers. Carry out harvesting of matured mustard crop without delay. Provide irrigation to okra crop.

## Andaman & Nicobar Islands

- Mulch the interspaces of vegetables with paddy straw to conserve soil moisture. Apply 5 ton/ha of vermin-compost for vegetable crops and carry out earthing up after clearing of weeds. Take trial run of drip irrigation system to provide lifesaving irrigation in arecanut field during peak dry season. Clean the crowns of coconut plantations to reduce the pest infestation.

## Animal Husbandry

- Vaccinate cattle and farm animals against FMD, HS, BQ and PPR diseases. Provide sufficient clean drinking water to animals. Keep the animal shed clean and dry. Provide ventilation to the house where the poultry birds are kept at night with access to clean drinking water.

## Fishery

- Harvest the well grown fishes to reduce fish population in the pond as water level is going down due to dry period.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

**Realised Rainfall:** Weather remained dry/mainly dry over the region.

### Advisories:

#### Maharashtra

- **As Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over West Vidarbha on 29<sup>th</sup> February and over East Vidarbha on 1<sup>st</sup> March, with **lightning** at isolated places over Marathwada on 29<sup>th</sup> February, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- In Konkan, to decrease mango fruit dropping, cover the fruits with paper bags. To control hoppers in mango, spray Deltamethrin 2.8% EC @ 9 ml per 10 liters of water and to control aphids in okra, spray Dimethoate 30% EC @ 10 ml per 10 liters of water.
- In Madhya Maharashtra, farmers are advised to continue harvesting of matured gram and wheat. To control leaf miner in water melon/ musk melon, spray Profenophos @ 20 ml per 10 litres of water. Continue harvesting of matured gram and wheat. To control sucking pest in onion, spray Lambda cyhalothrin 5 SC @ 6ml per 10 liters of water with knapsack sprayer. To control fruit rot in chilli, spray Tebuconazol @ 10 ml in 10 liters of water. To control mealy bug in grapes, spray Verticillium lecanii @ 50 g + milk @ 50 ml per 10 litres of water.
- In Marathawada, farmers are advised to continue harvesting of matured gram and safflower. Keep the harvested produce in safer place. Apply irrigation to orchards and vegetables. To control rust in late sown wheat, spray Propiconazole 25 % EC @ 10 ml per 10 liter of water.
- In East Vidarbha, in view of thunderstorm accompanied with lightning, hail on 1<sup>st</sup> March, undertake harvesting of matured linseed, mustard and gram at the earliest. Undertake weeding and apply 2<sup>nd</sup> dose of Nitrogen @ 25 kg/ha (Urea @ 54 Kg per ha) to rice crop (one month old transplanted rice). In

West Vidarbha, in view of thunderstorm accompanied with lightning, hail on 29<sup>th</sup> February, undertake harvesting of matured wheat, gram, safflower and fruits,vegetables at the earliest.

#### **Gujarat:**

- In Middle Gujarat, stop irrigation to potato crop two weeks prior to harvesting of matured tubers. Irrigate wheat crop at milking stage (75 days after sowing) and at dough stage (85 to 95 days after sowing). Spray banana crop at flowering stage with Zinc Sulphate 0.5% or Ferrous Sulphate 0.2% for improving quality and yield.
- In Saurashtra & Kutch, undertake sowing of summer groundnut when temperature rises to 22-25°C; sesame when minimum and maximum temperature rises up to 19°C and 30°C and vegetable crops. Under present weather conditions, heavy attack of thrips and aphids in cumin can be seen; spray Acetamiprid @ 5 gm or Imidacloprid 17.8 % @ 5 ml/10 litres of water.
- In North Gujarat, carry out sowing of okra, cluster bean and cowpea and transplanting of brinjal seedlings. Prepare land for sowing groundnut, sesame and pearl millet. Harvest matured castor, mustard and potato crops. Take plant protection measures against blight disease in fennel and cumin crops.
- In South Gujarat, do intercropping in sugarcane field with onion, garlic, mustard, cabbage, cauliflower, green gram and black gram. Keep land ready for transplanting summer paddy by the end of February. Harvest elephant foot yam and greater yam crops.

#### **Animal Husbandry:**

- In Gujarat, spray phenyl in the animal shed to prevent flies and mosquitoes. Give stored fodder with mineral mixture.

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

**Realised Rainfall:** Significant rainfall occurred in Annupur, Mandla, Shahdol and Singrauli districts of Madhya Pradesh and in Baloda Bazar, Bemetara, Bilaspur, Durg, Janjgir, Kabirdham, Korba, Mahasamund, Mungeli, Raipur, Surajpur and Surguja districts of Chhattisgarh. Weather remained dry/mainly dry over the region.

#### **Advisories:**

- **As Thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over West Madhya Pradesh on 29<sup>th</sup> February and over East Madhya Pradesh on 1<sup>st</sup> March, with **lightning** at isolated places over East Madhya Pradesh on 29<sup>th</sup> February, over West Madhya Pradesh on 1<sup>st</sup> March, over Chhattisgarh from 1<sup>st</sup> to 3<sup>rd</sup> March, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

#### **Madhya Pradesh**

- In Malwa Plateau Zone, monitor for symptoms of termite in wheat crop; apply a mixture of 20 kg sand with Chlorpyrifos 20 EC @ 2.0 litre/acre in evening hours if noticed. Monitor gram crop for pod borer; install pheromone traps @ 3-4 traps per acre if flowering has reached 10-15%; install. “T” shaped bird perches in and around crop field for controlling insect population. Monitor early stage mustard crop for aphids; cut and destroy the infested part of the plant.
- In Vindhya Plateau Zone, postpone irrigation to wheat crop at milking stage in case of realized rainfall. Carry out gap filling in new orchards. Undertake transplanting of brinjal. Carry out earthing up in potato for better tuberation. Monitor chick pea crop for incidence of pod borer; if larvae exceed two larvae per meter row length, apply Profenophos 50 EC @ 2 litres per hectare using 500 litres of water.
- In Jhabua Hills Zone, apply fifth irrigation to wheat crop at milking stage (80-85 DAS) and sixth irrigation at dough stage (95-100 DAS). Harvest mature early sown chick pea and mustard crops.

- In Nimar Valley Zone, irrigate wheat crop at jointing and ear emergence stages. Spray neem oil @ 50 ml/pump to control sucking pest in vegetable crops.
- In Central Narmada Valley Zone, give light irrigation to wheat crop at 20 days intervals and avoid waterlogged condition. Present weather conditions are suitable for the infestation of aphids in mustard; monitor the crop and if the infestation is above ETL, spray Diafenthiuron 50 WP 500 g/ha.

### Chhattisgarh

- In the Chhattisgarh Plain Zone, go for sowing of cucurbitaceous crops in bags; take up sowing of leafy vegetables; carry out land preparation for the summer vegetables. For the control of purple blotch of onion, spray SAAF fungicide @ 2 g per liter of water. There is chance of aphid attack in oilseeds, pulses and vegetable crops due to cloudy weather; monitor regularly and spray neem based pesticides when initial outbreak is observed.
- In Northern Hill Zone, timely sown wheat crop is at heading stage; though this stage is very much sensitive to moisture stress, irrigate crop considering the rainfall that took place during past few days. Harvest mustard crop when siliqua turns bright yellow in colour; dry the harvested crop in the sun for 2-3 days before threshing. Early to medium duration variety potato crop is at maturity stage; remove the upper leaves/parts (Dehauling) of the crop 7- 10 days prior to digging. Continue planting sugarcane sets after treatment with a fungicide.
- In Bastar Plateau Zone, pulses and oil seed crops are at branching and flowering stages; apply irrigation to maintain soil moisture. Undertake digging of turmeric and tuber crops and store them in safer places. Use pheromone and light traps around summer paddy field to control stem borer.

### Animal Husbandry

- For maximum milk production, provide mineral mixture @ 25-30 g and salt @ 50 g to milch cattle. Vaccinate 5-7 days old chicks against Ranikhet disease.

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

**Realised Rainfall** : Significant Rainfall occurred in Sonipat district of Haryana, in Sirmour and Solan districts of Himachal Pradesh and in all districts of Uttarakhand except Chamoli and Uttarkashi. Weather was mainly dry over rest of the region.

### Advisories:

- **As Thunderstorm accompanied with lightning & gusty wind** (speed reaching 30-40 kmph) likely at a few places **with hailstorm** likely at isolated places over Punjab and Haryana & Chandigarh on 29<sup>th</sup> February, **thunderstorm accompanied with lightning, hail & gusty wind** (speed reaching 30-40 kmph) very likely at isolated places over Punjab, Haryana, Chandigarh and Rajasthan on 28<sup>th</sup> February, over Himachal Pradesh and West Uttar Pradesh on 28<sup>th</sup> & 29<sup>th</sup> February, over Uttarakhand from 28<sup>th</sup> February to 1<sup>st</sup> March and over North East Rajasthan on 29<sup>th</sup> February with **lightning & gusty wind** (speed reaching 30- 40 kmph) at isolated places over East Uttar Pradesh and West Rajasthan on 29<sup>th</sup> February, with **gusty wind** (speed reaching 30-40 kmph) at isolated places over Uttar Pradesh on 1<sup>st</sup> March, with **lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan on 28<sup>th</sup> & 29<sup>th</sup> February, provide mechanical support to banana, young fruit plants and vegetables, propping up in sugarcane to prevent the crops from lodging due to strong winds. Provide hailnet for orchard crops to protect from mechanical damage. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at most places over Jammu & Kashmir on 28<sup>th</sup> February, over Himachal Pradesh on 29<sup>th</sup> February and at many places over Himachal Pradesh on 28<sup>th</sup>, over Jammu & Kashmir, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi on 29<sup>th</sup> February along with **heavy rainfall/snowfall** very likely at isolated places over Jammu & Kashmir, Ladakh and Gilgit-Baltistan on 28<sup>th</sup> & 29<sup>th</sup> February and over Himachal Pradesh on 29<sup>th</sup> February, avoid irrigation, intercultural

operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

### **Jammu & Kashmir**

- In Sub-Tropical Zone, to control outbreak of aphids in wheat, spray Rogar 30 EC @ 750 ml in 750 litres of water during clear weather. In case of attack of alternaria blight in mustard, spray Mancozeb @ 2.5 gm /litre of water during clear weather. To control collar rot and root rot in gram, rogue out the severely infected plants and drench affected areas with Thiram @ 0.2% or Carbendazim @ 0.1%.
- In Cold Arid Zone, plough the fields to retain more moisture during the winter months. It will also help in uprooting of the weeds and decomposition of crop residues. Undertake transplanting of Haenz Saag and other cold tolerant vegetables as a second crop under poly houses. Continue harvesting of Chinese cabbage, palak, pakchoi, kale, spinach and lettuce in protected structures at weekly interval to avoid loss due to frost. Apply second dose of nitrogenous fertilizer in cabbage, cauliflower and broccoli in green houses.
- In Intermediate Zone, weather is congenial for the infestation of yellow rust infestation in wheat crop. Keep strict vigil on appearance of disease. If observed, apply Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/litre of water) during clear weather conditions. Provide staking to pea crop with dry wooden branches.

### **Himachal Pradesh**

- In Sub Montane and Low Hills Sub Tropical Zone, undertake sowing of green gram and black gram. Undertake sowing of sunflower. Undertake planting of onion bulbs. Apply mulch in ginger and turmeric crops. To control shoot and fruit borer in brinjal and tomato crops, infested fruits and shoots should be collected and buried inside the soil. Install pheromone trap @25 per hectare. If the pest population is high, spray spinosad 48 EC @ 1 ml /4 litres of water when sky is clear.
- In High Hill Temperate Dry Zone, remove and destroy disease-stricken apple branches. While making apples beds, add cow's compost, superphosphate and muriate of potash.
- In Mild Hills Sub Humid Zone, cover the small pomegranate plants with grass to avoid cold paralysis. Destroy infected plant parts. To protect the plants from direct sun shine which may cause canker disease, white wash the stem up to first branch and also on branches of sunny side, with the solution of 15 kg white wash + 5 kg copper sulphate +2 litres of linseed oil in 50 litres of water.

### **Punjab, Haryana, Delhi**

- In Punjab, in view of mainly dry weather, irrigate the standing crops; take special care of vegetable crops and newly planted orchard plants. Undertake transplanting of tomato, brinjal, chilli. Raise plug tray/polythene nursery of cucurbits.
- In Western Plain Zone of Punjab, withhold irrigation to crops. Undertake planting of spring sugarcane. Present weather is conducive for severe attack of mustard aphid; monitor the crop regularly.
- In Undulating Zone of Punjab, regularly monitor the potato crop; if symptoms of late blight are observed, spray Indofil M-45/Mass M45/Markzeb/Kavach @ 500-750g using 250-350 liters of water per acre at 7 days interval.
- In Western Plain Zone and Central Plain Zone of Punjab, prevailing weather is favourable for spread and development of white rust in rapeseed and oil seeds; spray Ridomil Gold @ 250g in 100 litres of water per acre. If needed, repeat the spray after 20 days interval.
- In Western Zone of Haryana, considering the possibility of variable weather and rainfall, withhold irrigation and avoid spraying in the rabi crops, vegetable crops and young fruit plants. In the view of anticipated weather, monitor the sucking pest over the mustard. Carry out intercultural operations in Bengal gram/chickpea for conserving the moisture.
- In Eastern Zone of Haryana, in view of variable weather, farmers are advised to withhold irrigation. Due to high humidity, there are chances of appearance of yellow rust disease in wheat and barley; monitor the crops; if

symptoms appear, spray 200 ml Propiconazole 25% EC in 200 litres of water per acre.

- In Delhi, undertake transplanting of late varieties of cabbage, cauliflower and knolkhol and sowing of lady finger, green gram and black gram. Considering the increase in temperature, apply light irrigation in standing crops and vegetables as per requirement. Monitor vegetable and mustard crops for attack of aphids. Monitor timely sown onion crop for attack of thrips and infection of purple blotch; spray Confidor @ 0.5 ml per 3 litres of water with sticky material (Tipol 1.0 gram /litre for thrips and Dithane-M -45 @ 3 grams per litre of water with sticky material (Tipol 1.0 g/litre) for purple blotch disease. Monitor constantly wheat crop against rust disease; if symptoms of black, brown or yellow rust appear, spray Dithane M-45 @ 2.5 grams per litre of water on a clear day.

### **Uttar Pradesh**

- In East Uttar Pradesh, continue planting of spring season sugarcane crop. As intercropping in sugarcane field, two lines of *urd/moong* or one line of okra can be sown. Prepare nursery for chilli, tomato and brinjal crops and start sowing of okra (*bhindi*). Carry out intercultural operations in onion, pumpkin and bottle gourd field and irrigate crops as per requirement. To protect early maturity wheat from mildew, remove the infested tillers from the field and burn them. As a preventive measure against aphids in late sown mustard crop, spray Imidacloprid 17.8% @ 0.25 ml or Thiamethoxam 25 WG @0.2g or Dimethoate 30EC @ 1 ml per litre of water during evening hours.
- In West Uttar Pradesh, continue sowing of maize and black gram. Keeping in view the weather conditions, apply light irrigation to wheat crop at 80-85 days after sowing (flowering stage) and fifth irrigation at 100-105 days of sowing (milking stage) when the sky is clear. Carry out harvesting of mustard crop when 70% of siliqua turn golden yellow in colour. Carry out digging of mature potato on a clear day. Spray Quinalphos 25 EC@ 2 litres per hectare in 500 to 600 liters of water in clear sky for control of pod borers in Bengal gram, chick pea and field pea.

### **Uttarakhand**

- In Bhabar and Tarai Zone, undertake sowing of fruit crops like apple, plum, pear, walnut etc. Undertake harvesting of yellow mustard. To control the yellow rust disease in wheat crop, spray Propiconazole @ 1g/litre of water per hectare. To control the late blight disease in potato as well as late sown tomato crops, spray Mancozeb @ 3g/litre of water per hectare.
- In Sub Humid Sub Tropic Zone, undertake harvesting of potato. Avoid irrigation to wheat and mustard. Also avoid spraying of fertilizers and pesticides / insecticides. Postpone planting of spring sugarcane.
- In Hill Zone, continue transplanting of cauliflower seedlings. Continue field preparation for cultivation of rain-fed potatoes in high altitude areas.

### **Rajasthan**

- In Arid Western Plain Zone, weather is congenial for downy mildew attack in lucerne or mustard apply ridomill (Metalaxyl + Mancozeb) 2 gm/litre water.
- In Semi-Arid Eastern Plain Zone, undertake sowing of Zaid green gram, Zaid groundnut, okra, Zaid sorghum (fodder), Zaid pearl millet (fodder) & early summer cucurbits like bottle gourd, round gourd, bitter melon, water melon and musk melon.
- In Sub Humid Southern Plain and Aravali Hill Zone, incidence of powdery mildew in fenugreek, spray Dinocap 1ml/litre.
- In Flood Prone Eastern Plain Zone, regularly monitor mustard crop and destroy aphid infested branches of plant; spray Dimethoate 30 EC @ 1litre/ ha dissolved in 800 litres water when at least 10% plants are infested with 25-26 aphids per plant.

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