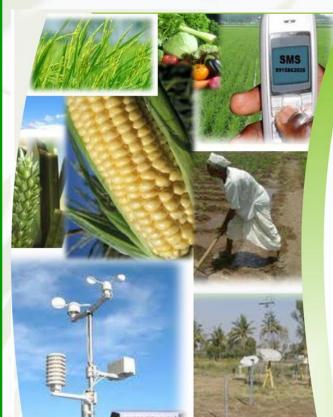
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National Agromet Advisory Service Bulletin



Friday 13th March 2020
(For the period 13th to 17th March 2020)

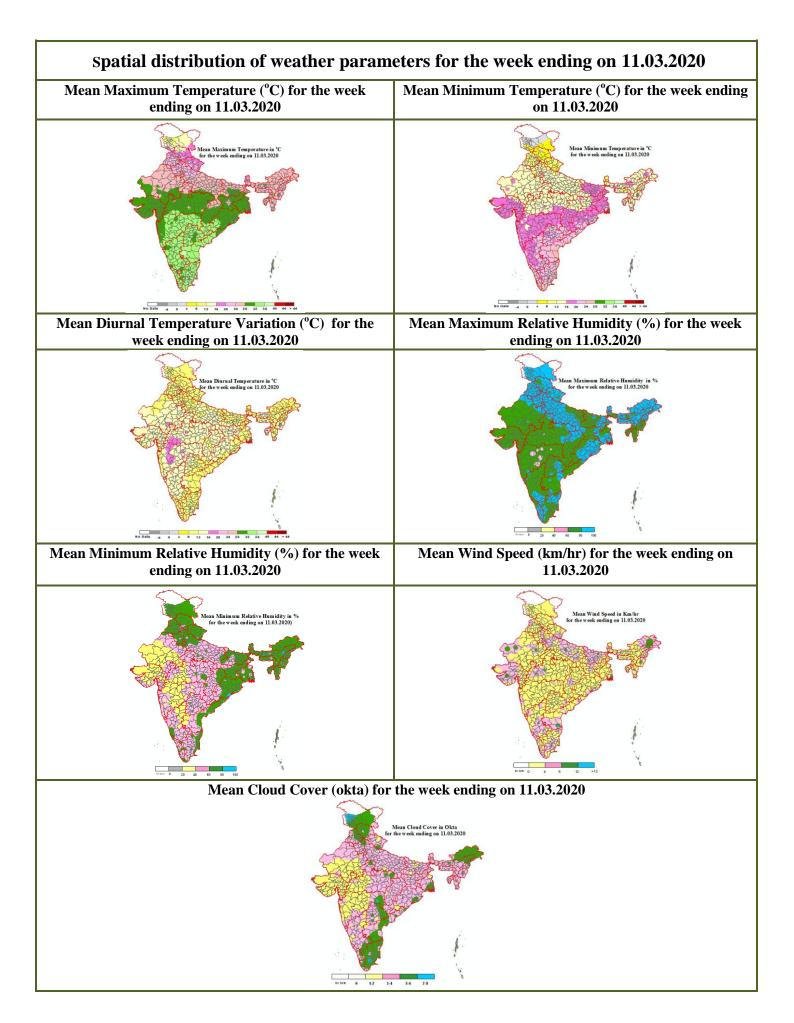


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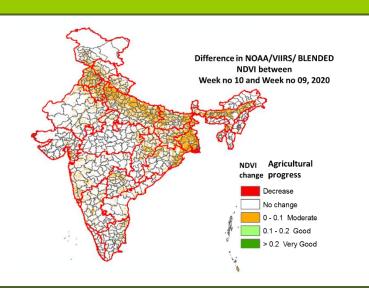




NOAA/VIIRS/BLENDED NDVI composite for the week number 10 (04.03.2020 to 10.03.2020) over Agricultural regions of India

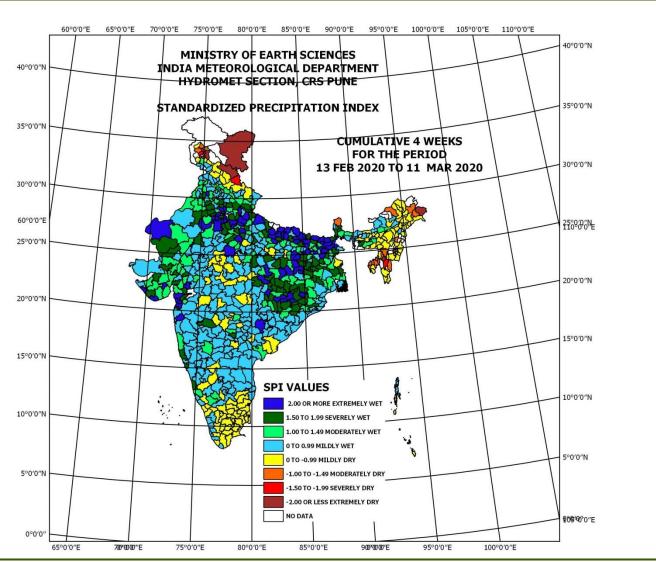
Agriculture vigour was good at many parts of Haryana, Punjab, Uttar Pradesh & West Madhya Pradesh; at few parts of Bihar, East Madhya Pradesh, Rajasthan, Coastal Andhra Pradesh, Kerala, and at isolated pockets of Uttarakhand, Himachal Pradesh, North Eastern states, Gujarat, Odisha, Telangana, Coastal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

Difference in NOAA/VIIRS/BLENDED NDVI between week number 10, 2020 and week number 09, 2020



Good difference in agricultural vigour has been observed at isolated palces of Punjab, Haryana,Uttar Pradesh, Bihar,Gangetic West Bengal,North Eastern states and Odisha. It was moderate over rest of the country.

Standardised Precipitation Index Cumulative 4 weeks for the period 13th Feb to 11th March 2020



Extremely/Severely wet conditions exist in Araria, Aurangabad, Banka, Bhagalpur, East Champaran, West Champaran, Darbhanga, Gaya, Gopalgani, Jahanabad, Katihar, Khagaria, Kishangani, Lakhisarai, Madhepura, Madhubani, Muzaffarpur, Nalanda, Purnea, Rohtas, Saran, Sitamarhi, Sheohar, Siwan, Supaul, Vaishali districts of Bihar; Valsad, Surat, Gandhinagar, Anand, Narmada, Navsari, Patan, Tapi, Chhota Udepur, Mahisagar, Junagarh, Porbandar, Botad, Gir Somnath, Morbi districts of Gujarat; Gurgaon, Hisar, Karnal, Mahendragarh, Mewat, Bhiwani, Faridabad, Sonepat, Panipat, Rewari, Fatehabad, Jhajjar, Palwal districts of Haryana; Udupi district of Karnataka; Bhind, Morena, Shivpuri, Dindori, Mandla, Panna, Rewa, Shahdol, Anuppur, Singrauli districts of West Madhya Pradesh; Thane, Sindhudurg, Mumbai Suburban, Beed districts of Maharashtra; East Garo Hills district of Meghalava; Angul, Bolangir, Bargarh, Boudhgarh, Cuttack, Deogarh, Jharsuguda, Nawapara, Kandhamal, Sambalpur, Sonepur, Sundargarh districts of Orissa; Bhatinda, Barnala districts of Punjab; Barmer, Churu, Jaisalmer, Jalore, Ajmer, Alwar, Bharatpur, Sikar districts of Rajasthan; Diu district of Union Territory; Ambedkar Nagar, Bahraich, Barabanki, Basti, Deoria, Faizabad, Farrukhabad, Gonda, Gorakhpur, Kanpur City, Kheri, Maharajganj, Sant Kabir Nagar, Siddharth Nagar, Sultanpur, Sonbhadra, Aligarh, Baghpat, Bareilly, Bijnor, Badaun, Bulandshahar, Kanshiram Nagar, Etawah, Firozabad, Mahamaya Nagar, Mainpuri, Mathura, Moradabad, Muzaffarnagar, Pilibhit, Sambhal, Shamli districts of Uttar Pradesh; Darjeeling, Malda, North Dinajpur, Burdwan, Nadia districts of West Bengal; East Sikkim district of Sikkim; Bokaro, Chatra, Deoghar, Dhanbad, Giridih, Godda, Hazaribag, Lohardaga, Palamu, Ranchi, East Singbhum, Latehar, Seraikela-Khar, Ramgarh districts of Jharkhand; Nainital, Udham Singh Nagar

- districts of Uttarakhand; Bilaspur, Durg, Janjgir, Korba, Mahasamund, Raigarh, Raipur, Bijapur, Balrampur, Bemetara, Gariabund, Mungeli, Surajpur districts of Chhatisgarh; South Goa district of Goa; Medak district of Telangana.
- Moderately dry conditions exist in Lohit, Lower Dibang Valley, Upper Subansiri districts of Arunachal Pradesh; Cachar, Hailakandi districts of Assam; Baramula, Bandipore districts of Jammu; Imphal East district of Manipur; Champhai district of Mizoram; Kohima district of Nagaland; North Tripura, Dhalai, West Tripura districts of Tripura; North Sikkim district of Sikkim.
- Extremely/Severely dry conditions exist in Anjaw district of Arunachal Pradesh; Kinnaur, Lahaul & Spiti districts of Himachal Pradesh; Anantnag, Badgam, Pulwama, Srinagar, Kulgam districts of Jammu; Leh district of Union Territory Ladakh; Aizwal, Kolasib districts of Mizoram.
- 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 18th March, 2020

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- No significant change in minimum and maximum temperatures over the country during next during next 2-3 days.

5 Day Rainfall Forecast (MID-DAY) 13th March 2020

1. Andaman & Nicobar Islands 2. Arunachal Pradesh 3. Assam & Meghalaya 4. N. M. M. & T. 5. S.H. West Bengal & Sikkim 6. Gangetic West Bengal 7. Odisha 8. Jharkhand 9. Bihar 10. East Uttar Pradesh 11. West Uttar Pradesh 12. Uttarakhand 13. Haryana, Chd & Delhi 13. Haryana, Chd & Delhi 14. Punjab 15. Himachal Pradesh 15. Himachal Pradesh 15. Gangetic West Bengal 16. J & K and Ladakh 17. West Rajsthan 18. East Rajasthan 19. West Madhya Pradesh 20. East Madhya Pradesh 21. Gujarat Region 22. Saurashtra & Kutch 23. Konkan & Goa 24. Madhya Maharashtra 25. Marathawada 26. Vidharbha 27. Chastiaka Alexanda DRY 28. DRY 29. DRY 20. Rayalaseema 20. Rayalaseema 20. Rayalaseema 20. Ray DRY 20. DRY 20. DRY 21. DRY 20. DRY 20	Met-Sub-Division	13-Mar Today	14Mar Sat	15Mar Sun	16Mar Mon	17Mar Tue
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8. Jharkhand	6. Gangetic West Bengal	FWS	FWS	ISOL	DRY	DRY
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	34. South Interior Karnataka	DRY	DRY	DRY	DRY	DRY
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	36. Lakshadweep	DRY	DRY	DRY	DRY	DRY

% Station Reporting Rainfall

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

Weather Warning during next 5 days

13 March (Day 1):

- ♦ Thunderstorm accompanied with lightning, hail & squally wind (speed reaching 45-55 kmph) very likely at isolated places over Uttarakhand; with lightning & squally wind (speed reaching 45-55 kmph) at isolated places over Gangetic West Bengal; with lightning, hail & gusty wind (speed reaching 30-40 kmph) at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Bihar and Jharkhand; with lightning & gusty wind (speed reaching 30-40 kmph) at isolated places over Odisha and Sub- Himalayan West Bengal & Sikkim; with lightning at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan and Vidarbha.
- ♦ Heavy rainfall/snowfall very likely at isolated places over Uttarakhand; heavy rainfall at isolated places over north Chhattisgarh and Jharkhand.

14 March (Day 2):

- ♦ Thunderstorm accompanied with lightning & squally wind (speed reaching 45-55 kmph) very likely at isolated places over Gangetic West Bengal; with lightning, hail & gusty wind (speed reaching 30-40 kmph) at isolated places over Uttarakhand, Haryana, Chandigarh, Chhattisgarh, West Uttar Pradesh and Jharkhand; with lightning & gusty wind (speed reaching 30-40 kmph) at isolated places over East Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim and Odisha; with lightning at isolated places over Bihar, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ♦ **Heavy rainfall** very likely at isolated places over Jharkhand.

15 March (Day 3):

◆ Thunderstorm accompanied with lightning at isolated places likely over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

16 March (Day 4):

♦Thunderstorm accompanied with lightning at isolated places likely over Arunachal Pradesh and Tamilnadu, Puducherry & Karaikal.

17 March (Day 5):

♦ Thunderstorm accompanied with lightning at isolated places likely over East Madhya Pradesh, Vidarbha, Chhattisgarh and Tamilnadu, Puducherry & Karaikal.

Weather Outlook for subsequent 2 days from 18th to 20th March, 2020

- Isolated o scattered rainfall/snowfall likely over Western Himalayan region.
- Isolated to scattered rain/thundershowers likely over East Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura and north Coastal Andhra Pradesh.
- Weather is likely to be dry over rest of the country.

Salient advisories

Advisory for Desert Locust:

- 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, hail and squally wind (speed reaching 45-55 kmph)

very likely at isolated places over Uttarakhand on 13th and over Gangetic West Bengal on 14th, **lightning & squally wind** (speed reaching 45-55 kmph) at isolated places over Gangetic West Bengal on 13th, **lightning, hail & gusty wind** (speed reaching 30-40 kmph) at isolated places over Himachal Pradesh, Punjab, Uttar Pradesh, East Madhya Pradesh, Bihar on 13th, over Haryana, Chandigarh & Delhi, Chhattisgarh and Jharkhand on 13th & 14th and over Uttarakhand and West Uttar Pradesh on 14th, **lightning & gusty wind** (speed reaching 30-40 kmph) at isolated places over Odisha and Sub-Himalayan West Bengal & Sikkim on 13th & 14th and over East Uttar Pradesh on 14th; **lightning** at isolated places over Jammu & Kashmir, Ladakh and Gilgit-Baltistan on 13th over Vidarbha on 13th, over Bihar on 14th, over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 14th & 15th, over Arunachal Pradesh from 14th to 16th, over Tamilnadu, Puducherry & Karaikal on 16th & 17th and over East Madhya Pradesh and Chhattisgarh on 17th March, 2020, provide mechanical support to banana, young fruit plants and vegetables and carry out 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, Himachal Pradesh, Uttarakhand and East Uttar Pradesh on 13th and over Jharkhand on 13th & 14th and at many places over West Uttar Pradesh and Bihar on 13th, over West Bengal & Sikkim on 13th & 14th, over Himachal Pradesh and Uttarakhand on 14th and over Arunachal Pradesh on 15th along with **Heavy Rain/Snow** very likely at isolated places over Uttarakhand on 13th and **heavy rainfall** at isolated places over north Chhattisgarh on 13th and over Jharkhand on 13th & 14th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- Undertake sowing/ transplanting of following crops:
 - Undertake sowing of carrot, beans and peas in High Altitude Hilly Zone of Tamil Nadu.
 - Undertake sowing of sunflower and watermelon in North Interior Karnataka.
 - Undertake land preparation for sowing of maize and planting of ginger in Arunachal Pradesh.
 - Undertake main field preparation for sowing of direct seeded *Ahu* rice and nursery bed preparation for transplanted early *Ahu* rice in North Bank Plain Zone.
 - Undertake sowing/transplanting of brinjal seedlings and okra in Manipur.
 - Undertake land preparation and sowing of *moong* and *urd* in Bihar.
 - Carry out land preparation for sowing of summer pearl millet in Middle Gujarat; undertake sowing of green gram, groundnut, sesame, cowpea and pearl millet in North Gujarat.
 - Prepare field for the sowing of mung, urd and cucurbitaceous vegetables and continue transplanting of brinjal in Vindhya Plateau Zone of Madhya Pradesh.
 - Undertake planting of sugarcane after treating sugarcane sets with fungicide like Agallol in Northern Hill Zone of Chhattisgarh.
 - Undertake nursery sowing of summer vegetables like tomato, brinjal, chilli, capsicum and cucurbits (cucumber, bottle gourd and bitter gourd) etc. under protected structures (Poly house, Poly tunnel etc.) in Intermediate Zone of Jammu & Kashmir.
 - Undertake sowing of summer groundnut in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.
 - Undertake land preparation for nursery sowing of tomato, capsicum and red chilli in Mid Hills Sub Humid Zone of Himachal Pradesh.
 - Undertake transplanting of tomato crop and sowing of French beans and cluster beans in West Uttar Pradesh.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in Kollam, Pathanamthitta districts of Kerala and Kumaram Bheem, Medak, Ranjanna Sircilla, Warangal_Urban districts of Telangana. Weather remained dry/mainly dry over rest of the region.

Advisories:

As Thunderstorm accompanied with lightning very likely at isolated places over Tamilnadu, Puducherry & Karaikal on 16th & 17th, 2020, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Kerala

- ➤ In Problem Area Zone, weather is congenial for sucking pests in vegetables; spray Thiamethoxam 25%MG in 1 litre of water.
- ➤ In High Altitude Zone, undertake planting for pepper. Cultivate crops like ginger, turmeric, vegetables, etc. as an intercrop in irrigated coconut gardens.
- ➤ In Central Zone, undertake sowing of cucumber. Weather is congenial for whitefly attack on coconut leaves during dry spell; spray 2% neem oil emulsion on the leaves.
- ➤ In Southern Zone, go for sowing of vegetable cowpea in rice fallow.

Andhra Pradesh

- ➤ In Scarce Rainfall Zone, Zinc deficiency 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 fall army worm in maize, spray Emamectin Benzoate @ 0.4 g or Chlorantraniliprole @ 0.3 ml per litre of water. For Turcicum leaf blight in maize, spray Mancozeb @ 1g or Carbandizam @ 1.5g per litre of water.
- In Krishna Godavari Zone, in the present weather conditions avoid moisture stress conditions to the crops which are at flowering to fruiting stage.
- ➤ In Southern Zone, wild boar problem is frequent in groundnut in pod development stage; to contro, apply chemicals like Ecodon, apply fat of pigs and sulphur powder to wires surrounding the fields, burst the crackers during night time.

Telangana

- ➤ In Southern Telangana Zone, prevailing weather conditions are congenial for the incidence of leaf spot disease in Vegetables, spray Carbendazim @ 1.0 g or SAAF @ 2.0 ml per litre of water.
- ➤ In North Telangana Zone, prevailing weather conditions are favourable for blast in paddy, spray Tricyclozole @ 0.6 gr or Isoprothoilane @ 1.5 ml per litre of water.

Tamil Nadu

- ➤ In Cauvery Delta Zone, weather is congenial for powdery mildew disease in pulses. To control this, apply wettable Sulphur @ 600g/ acre.
- ➤ In Western Zone, since higher temperature along with low humidity is favourable for the early shoot borer incidence in sugarcane, farmers are requested to apply frequent irrigation.
- In High Altitude Hilly Zone, undertake sowing of carrot, beans and peas.
- ➤ In North Western Zone, farmers are advised to apply foliar spray of groundnut rich crop booster @ 2 kg / 200 litre of water during flowering stage of groundnut crop to achieve higher yield.

Karnataka

- ➤ In North Interior Karnataka, complete harvesting of wheat, safflower, sorghum, Bengal gram, red gram, niger and pigeon pea crops. Undertake sowing of sunflower and watermelon. Carry out hand weeding in summer groundnut crop. For effective control of hoppers in mango, spray Thiamethaxom @ 0.5 gm in one litre of water.
- In South Interior Karnataka, provide irrigation to mango orchard, as the fruits are in marble stage.

- Continue harvesting of matured rhizomes of ginger and turmeric. Use Yellow sticky traps to manage white flies & sucking pests in tomato crop.
- ➤ In Coastal Karnataka, apply irrigation in the areca nut, coconut and pepper gardens. Spray Chlorpyrifos @ 2 ml or Quinolphos @ 2 ml / litre of water.

Animal Husbandry:

- In Karnataka, maintain the ambient room temperature in the poultry house. Provide 4-6 inch thick thatch as a roofing material for shelter of dairy animals; water can be used for spraying the floor and roof of shelter.
- In North Eastern Zone of Tamil Nadu, check for any mineral or bacterial contamination is drinking water to prevent mortality in birds. Clean the cattle shed with luke warm saline solution to prevent infection.

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

Realised Rainfall: Significant rainfall occurred in Changlang and Upper Siang districts of Arunachal Pradesh; in Cachar, Karimganj and N.C.Hills districts of Assam and in East Garo Hills, Jaintia Hills, South Garo Hills and West Khasi Hills districts of Meghalaya. Weather was mainly dry in rest of the region.

Advisories:

- As Thunderstorm accompanied with lightning very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 14th & 15th and over Arunachal Pradesh from 14th to 16th, provide mechanical support to banana, young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at most places over Arunachal Pradesh on 15th, 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, undertake land preparation for sowing of maize and planting of ginger. Treat maize seeds with Carbendazim @ 1g per kg of seeds before sowing and ginger rhizome with Indofil M-45 @ 2.5 g/litre of water before planting.

Assam & Meghalaya

- In Hill Zone of Assam, continue land preparation for sowing of green gram and black gram. Spray 2 gram Bavistin /litre of water for control of blast disease in wheat crop at CRI and vegetative stage.
- In Lower Brahmaputra Valley Zone, continue sowing of *kharif* maize, summer green gram and black gram. To control blast disease in wheat, spray 2 gram Bavistin /litre of water on a clear day.
- In Central Brahmaputra Valley Zone, continue sowing of summer green gram and black gram. Undertake harvesting of rapeseed/ mustard and potato. Undertake land preparation/ sowing of Capsularis jute and summer vegetables like lady's finger, bottle guard, pumpkin, ridge guard, cucumber, etc. Present weather condition is congenial for incidence of aphids in wheat at ear head stage. To control, spray Dimethoate 30EC or Chlorpyriphos 20EC @1ml per litre of water during afternoon on a clear day. Apply Chloropyriphos 20EC @ 2ml of water followed by Dimethoate 30EC 2 ml/litre of water in 10 days intervals to control the pod borer in *rabi* pulses at flowering and pod formation stage.
- ➤ In North Bank Plain Zone, undertake main field preparation for sowing of direct seeded *Ahu* rice and nursery bed preparation for transplanted early *Ahu* rice. Continue sowing of green gram and black gram. Farmers of flood affected low lying areas are advised to collect suitable varieties of *bao* rice such as Maguri, Panikekua, Amona, Negheri etc. as March-April is the ideal time of sowing. Undertake land preparation/ sowing of Capsularis jute.
- ➤ In Upper Brahmaputra Valley Zone, continue land preparation for sowing of maize. Farmers having assured irrigation facilities can go for nursery sowing of *Ahu* rice seeds in the coming 5 days. Select seeds

of recommended semi-dwarf varieties like IR-36, Lachit, Chilarai, Dishang etc. for obtaining higher yield. Soak the selected healthy seeds in Carbendazim (1g/litre) or Mancozeb (2.5 g/litre) for 24 hrs prior to sowing.

- ➤ In Barak Valley Zone, chilli plant may be infested by anthracnose or fruit rot disease; to control the disease, spray Captan 50 WP 0.2% @ 2g per litre of water or Dofolatan 0.2% on a clear day.
- In Meghalaya, continue harvesting of matured pea pods in the morning as well as rapeseed/mustard. Continue nursery raising and transplanting of 1 month old seedlings of brinjal, chilli, tomato and capsicum; irrigate immediately after transplanting.

Manipur, Mizoram, Tripura and Nagaland

- ➤ In Manipur, complete transplanting of pre-kharif rice at the earliest, Undertake sowing/transplanting of brinjal seedlings and okra. Undertake harvesting of rapeseed when 75% of the siliquae mature & produce rattling sound on shaking; harvest during morning before drying of dew to avoid shattering of pods.
- 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 mustard. Carry out weeding in potato. To manage leaf blight disease in maize, spray Aproach (Methoxy-acrylates) @ 2 g/litre of water. Also spray Metalaxyl +Mancozeb (Ridomil MZ) and Ofurace (Orafce 50WP) @ 3 g/litre of water for effective control against late blight of potato.
- ➤ In Tripura, maintain 4-5 cm standing water in the *Boro* rice field. Continue land preparation for sowing of black gram and green gram. Continue land preparation for sowing of cowpea. Stock rot may occur in rabi maize. To manage the attack, spray Mancozeb @ 2ml per litre of water.
- In Nagaland, plan for maximizing plant diversity by inter cropping of maize with suitable pulse crops like pigeon pea/black gram /green gram/soybean. Plant Napier grass in the border rows to act as Fall Army Worm (FAW) trap crop. Undertake land preparation for planting of ginger.

Animal Husbandry

- ➤ In Assam, vaccinate poultry birds against Ranikhet disease during this period. Vaccinate cattle and buffalo against FMD and Black Quarter. De-worming according to body weight prior to vaccination gives better immune response.
- ➤ In Arunachal Pradesh, disinfecting the pig sheds with lime powder/ bleaching powder/ 4% NaOH at regular interval is advised. Avoid dampness and cover weak and sick animals with sack cloth. Make sure that beddings are always dry and sufficient.
- ➤ In Nagaland, keep the floor dry to avoid skin diseases in animal. To mange diseases, consult with a veterinary doctor.

Fishery

➤ In Hill Zone of Assam, if numerous black spots and cysts are found all over the body of the fish, drain out and dry the infected pond followed by application of lime at the rate of 250-300 kg per hectare to eradicate the parasite.

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

Realised Rainfall: Significant rainfall occurred in Araria, Darbhanga, Gopalganj, Madhepura, Madhubani, Muzaffarpur, Purnea and Supaul districts of Bihar; in Bokaro, Chatra, Dhanbad, East Singbhum, Giridih, Gumla, Hazaribagh, Jamtara, Khunti, Latehar, Lohardaga, Palamu, Ramgarh, Ranchi, Saraikela, Simdega and West Singbhum districts of Jharkhand; in all districts of Odisha except Balasore, Bhadrak, Gajapati, Khurda, Koraput, Malkangiri, Mayurbhanj, Nawarangpur and Puri; in Darjeeling, Malda and North Sikkim districts of Sub-Himalayan West Bengal & Sikkim and in all districts of Gangetic West Bengal except East Midnapore,

Murshidabad, Nadia and South 24 Paraganas. Weather remained dry/mainly dry over the rest of the region.

Advisories:

- As Thunderstorm accompanied with lightning, hail and squally wind (speed reaching 45-55 kmph) very likely at isolated places over Gangetic West Bengal on 14th, lightning & squally wind (speed reaching 45-55 kmph) at isolated places over Gangetic West Bengal on 13th, lightning, hail & gusty wind (speed reaching 30-40 kmph) at isolated places over Bihar on 13th and over Jharkhand on 13th & 14th, lightning & gusty wind (speed reaching 30-40 kmph) at isolated places over Odisha and Sub-Himalayan West Bengal & Sikkim on 13th & 14th; lightning at isolated places over Bihar on 14th, provide mechanical support to banana, young fruit plants and vegetables and carry out 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 Jharkhand on 13th & 14th and at many places over Bihar on 13th and over West Bengal & Sikkim on 13th & 14th, along with **heavy rainfall** at isolated places over over Jharkhand on 13th & 14th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Odisha

➤ Drain out excess water from the fields. In case of *Rabi* paddy, collect rainwater in the field by making proper bunds. Keep the harvested green gram, black gram and vegetables like onion, garlic and potato in safer place to avoid sprouting. Start the final land preparation for vegetables cowpea, cluster bean, pumpkin, cucumber, watermelon, etc. and rabi pulses and oilseed crops (green gram, black gram) and sesame. To control leaf blight in tomato, apply 2g Chloromethanol or 3g Copper Oxi-chloride in 1 litre of water on clear day.

Bihar

Carry out harvesting of *rabi* crops at 80% pod maturity on sunny days. Undertake land preparation and sowing of *moong* and *urd*. Continue 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. Carry out harvesting of potato tubers and store in a safe place. To control shoot and fruit borer in brinjal crop, spray Spinosad 48 EC @ 1 ml/ 4 litres of water on clear day.

Jharkhand

➤ Undertake sowing of okra. Carry out intercultural operations in summer maize to conserve moisture and control weeds. Continue sowing of summer *moong* bean. Decline in night temperatures and high humidity favours blast disease in summer paddy; to control, spray Carbedazim 50 WP or Tricyclazole (Beam) @2g/litre of water during clear weather.

West Bengal

- ➤ In Sub-Himalayan West Bengal, complete sowing of maize crop. Irrigate cardamom and mustard as per the requirement. Continue harvesting of matured pods of garden pea. Undertake digging of matured potato tubers. Carry out weeding in *Boro* rice field. Carefully monitor lentil crop; if yellowing is seen, spray Carbendazim 50% wp @ 2g/litres of water on clear day.
- ➤ In Gangetic West Bengal, complete sowing of green gram. Carry out harvesting and threshing of lathyrus. Keep irrigation channels clear in brinjal and tomato fields. Carry out weeding and puddling by hand in *Boro* rice field. For fungal blast in *Boro* rice, apply Trycyclozole@5g/10 litres of water on clear day.

Andaman & Nicobar Islands

Harvest the matured pods of green gram by weekly picking before over matured. Make basin around ridge gourd plantss and apply 20 kg FYM per pit and mix thoroughly. Mulch around the areca nut

palms with crop residue to reduce summer month moisture stress. Monitor for aphids and pod borers in sem/field bean and, depending on soil moisture, provide light irrigation after 8-12 days.

Animal Husbandry

➤ Provide mineral mixture to @ 50-60 g to adults and @ 30-40 g to young dairy animals. Feed the backyard poultry with broken rice/ wheat @ 20-40 g/day/birds and to avoid heat stress provide shed and drinking water.

Fishery

➤ In West Bengal, undertake pond preparation through cultivation of Dhaincha @ 1-1.5 kg/bigha for 30-45 days for seasonal and new pond.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

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

Advisories:

Maharashtra

- As Thunderstorm accompanied with lightning very likely at isolated places over Vidarbha on 13th & 17th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- ➤ In Konkan, maintain 10 cm water level in rice fields. Apply irrigation to groundnut and water melon to protect the fruits from cracking. To improve production and quality of mango fruits (pea, marble and egg sized fruits), spray 1% Potassium Nitrate. Cover the fruits with straw and grass to protect from scorching sun. To control stem borer in rice, apply Quinalphos 5% granules @ 15 kg/ha or Carbofuron 3 % granules @ 16.5 kg/ha when there is sufficient moisture in the field and to contorl blast in rice, spray Tricyclazole @ 10 g or Isoprothiolion @ 10 ml per 10 litres of water.
- In Madhya Maharashtra, continue harvesting of matured gram and wheat. Apply irrigation and undertake gap filling in groundnut. To control aphida in chilli, spray Imidacloprid 17.8 SL @ 5 ml in 10 litres of water. To control leaf eating caterpillar in groundnut, spray Chlorpyrifos @ 20 ml in 10 liters of water. To control powdery mildew in mango, spray Imidacloprid 17.8 % @ 3 ml + Sulfur 80 WP @ 25 g per 10 litres of water. To control thrips in pomegranate, spray Spinosad 2.5 SC @ 10 ml in 10 litres of water.
- ➤ In Marathawada, continue harvesting matured safflower, gram and wheat and apply mulch in sugarcane fields.
- ➤ In Vidarbha, undertake harvesting of matured gram and wheat as early as possible and keep the harvested produce in safer place. Undertake intercultural operation like weeding in groundnut, sesame and one month old rice. Apply irrigation to green gram, vegetables and orchards. To control blast in sesame, spray Copper Oxychloride @ 25 g along with Streptocycline @ 6 g in 10 litres of water.

Gujarat:

- ➤ In Middle Gujarat, continue harvesting of the matured potato tubers from the field and store at proper place. Ensure proper moisture level in field crops. Carry out harvesting and threshing of wheat crop. Carry out land preparation for sowing of summer pearl millet.
- ➤ In North Gujarat, complete harvesting matured wheat, gram, castor, mustard, cumin, amarannth and potato crops. Continue land preparation/sowing of green gram, groundnut, sesame, cowpea and pearl millet and undertake sowing of these crops. Undertake sowing of okra, cluster bean and cowpea for summer season vegetables. Transplant brinjal seedling during evening hours. Carryout sowing of summer fodder crops viz., sorghum and maize.
- ➤ In Saurashtra and Kutch, continue sowing of summer groundnut, sesame, green gram and black gram.

Continue transplanting of brinjal, sowing of lady finger, ridge gourd, bottle gourd, sponge gourd, bitter gourd, cluster bean and water melon. Under present weather conditions, very heavy attack of thrips can be observed in onion, garlic, summer groundnut and sesame crops; if infestation is above ETL, spray Profenfos @ 20 ml or Spinosad @ 4 ml or Spinetorum @ 4 ml in 10 litres of water.

➤ In South Gujarat, undertake nursery preparation for summer rice, brinjal, chilli and planting of sugarcane.

Animal Husbandry:

In Gujarat, for prevention of New castle disease/Ranikhet disease, do vaccination in poultry. The beaks of birds in the poultry under age of 15 Week should be cut.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Significant rainfall occurred in Anuppur, Dindori, Morena and Shadol districts of Madhya Pradesh and in Balrampur, Bijapur, Bilaspur, Janjgir, Jashpurnagar, Mahasamund, Raigarh and Surajpur districts of Chhattisgarh. Weather remained dry/mainly dry over the rest of the region.

Advisories:

- As Thunderstorm accompanied with lightning, hail & gusty wind (speed reaching 30-40 kmph) at isolated places over East Madhya Pradesh on 13th, over Chhattisgarh on 13th & 14th, lightning at isolated places over East Madhya Pradesh and Chhattisgarh on 17th March, 2020, provide mechanical support to banana, young fruit plants and vegetables and carry out 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 scattered places over East Madhya Pradesh on 13th and over Chhattisgarh on 13th & 14th along with **heavy rainfall** at isolated places over north Chhattisgarh on 13th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Madhya Pradesh

- ➤ In Malwa Plateau Zone, carry out intercultural operations in vegetable crops to remove weeds. Carry out earthling-up in potato field if crop has attained a height of 15-22 cm; the practice may be repeated after 15 days. Due to high relative humidity, infection of blight may occur in potato and tomato; monitor the crops and spray Carbendazim @ 1 gm or Dithane-M-45 @ 2 gm per litre of water on clear days.
- In Vindhya Plateau Zone, prepare field for the sowing of *mung*, *urd* and cucurbitaceous vegetables. Continue transplanting of brinjal. Carry out harvesting of matured standing *rabi* crops.
- ➤ In Jhabua Hills Zone, apply sixth irrigation at dough stage (95-100 DAS); carry out roughing of wheat plants to maintain healthy and pure seed production; carry out harvesting of mature wheat crop. Harvest mature chick pea and mustard crops. Dig mature tubers of ginger and turmeric.
- ➤ In Nimar Valley Zone, carry out transplanting of young seedlings of tomato, chilli in flat beds and of cucurbits crops in Hill channel method during this week. Undertake sowing of green gram and black gram after seed treatment with crop specific Rhizobium culture as well as phosphorus solubilising bacteria (PSB). Spray 350 ml/acre Imezethapyr 10% SL in between 15-20 days after sowing green gram at sufficient soil moisture.
- ➤ In Central Narmada Valley Zone, give light irrigation to wheat crop at 20 days intervals. Continue preparing nursery of summer brinjal and chilli. Gram crop is at pod filling stage; keep watch over pod borers; spray Indoxacarb 14.5 % SC @ 12-15 ml/pump in the initial stage of infestation on a clear day.

Chhattisgarh

➤ In the Chhattisgarh Plain Zone, continue sowing of summer *moong*. Carry out harvesting of pulses and

- oilseed crops followed by threshing. Irrigate banana and papaya seedlings once a week. Spray Rynaxypyr (Fertera) @ 10 kg/ha or Kartap @ 20 kg/ha for control of stem borer attack in transplanted summer paddy on a clear day.
- ➤ In Northern Hill Zone, timely sown wheat crop is at heading stage; though this stage is very much sensitive to moisture stress; do not irrigate crop considering the forecasted rainfall; rough out wheat plants to maintain healthy and pure seed production. Undertake planting of sugarcane after treating sugarcane sets with fungicide like Agallol. Carry out intercultural operations and urea application in summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. Spray Rynaxypyr (Fertera) @ 10 kg/ha or Kartap @ 20 kg/ha for control of stem borer attack in transplanted summer paddy on a clear day.
- ➤ In Bastar Plateau Zone, continue sowing of summer/Zaid *moong*. Harvest and store pulses crops at 8-10% moisture content.

Animal Husbandry

➤ Provide green fodder, clean and fresh water to the cattle twice a day. In summer season, give 50-60 gram salt per animal per day. Make arrangements to keep mosquitoes away from animal shed.

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

Realised Rainfall: Significant rainfall occurred in Punjab except Muktsar, except Panchkula in Haryana and in all districts of Delhi, all districts of Himachal Pradesh except Kinnaur and Lahaul & Spiti; in all districts of Jammu & Kashmir except Anantnag, Badgam, Kargil, Leh (Ladakh), Pulwama and Srinagar and in all districts of Uttarakhand, Bahraich, Balrampur, Barabanki, Basti, Faizabad, Farrukhabad, Gonda, Gorakhpur, Kanpur City, Kheri, Lucknow, Maharajganj, Sant Kabirnagar, Shrawasti, Sidharthnagar, Sonbhadra and Sultanpur Districts of East Uttar Pradesh and in all districts of West Uttar Pradesh except Agra, Auraiya, Gautam Buddha Nagar, Ghaziabad, Hamirpur, Jalaun, Jhansi, Lalitpur, Mahoba and Shamli.

Advisories:

- As Thunderstorm accompanied with lightning, hail and squally wind (speed reaching 45-55 kmph) very likely at isolated places over Uttarakhand on 13th, lightning, hail & gusty wind (speed reaching 30-40 kmph) at isolated places over Himachal Pradesh, Punjab and Uttar Pradesh on 13th, over Haryana, Chandigarh & Delhi on 13th & 14th and over Uttarakhand and West Uttar Pradesh on 14th, lightning & gusty wind (speed reaching 30-40 kmph) at isolated places over East Uttar Pradesh on 14th; lightning at isolated places over Jammu & Kashmir, Ladakh and Gilgit-Baltistan on 13th, provide mechanical support to banana, young fruit plants and vegetables and carry out 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, Himachal Pradesh, Uttarakhand and East Uttar Pradesh on 13th; at many places over West Uttar Pradesh on 13th and over Himachal Pradesh and Uttarakhand on 14th along with **Heavy Rain/Snow** very likely at isolated places over Uttarakhand on 13th, 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 Valley Temperate Zone, in view of thunderstorm forecast, postpone all intercultural operations in wheat, oats, lentil, pea and chickpea till weather improves. Provide proper drainage in all vegetable crop fields to avoid water logging.
- ➤ In Sub-Tropical Zone, drain out excess rainwater from wheat, mustard, gram and vegetable fields. Install bird perch stands in gram fields or collect the caterpillars of heliothis and kill them manually.
- ➤ In Intermediate Zone, undertake nursery sowing of summer vegetables like tomato, brinjal, chilli, capsicum and cucurbits (cucumber, bottle gourd and bitter gourd) etc. under protected structures (Poly house, Poly tunnel etc.). Undertake staking in garden pea with dry wooden branches to trail vines over

them. Weather is congenial for the attack of white rust and/ or downy mildew in mustard crop. If observed, apply Mancozeb @ 0.2% or Copper Oxychloride 50% @ 0.3% during clear weather conditions. Weather is congenial for the infestation of yellow rust in wheat crop. If observed, apply Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/ litre of water) during clear weather conditions only.

Himachal Pradesh

- ➤ In Sub Montane and Low Hills Sub Tropical Zone, undertake sowing of green gram and black gram. Continue sowing of sunflower. Carry out mulching in ginger and turmeric crops. Carry out weeding in potato. To control shoot and fruit borer in brinjal and tomato crops, infested fruits and shoots should be collected and buried inside the soil. Also, install pheromone traps @ 25 per hectare. If pest population is high, spray Spinosad 48 EC @ 1 ml /4 litres of water when sky is clear. Infection of blight may occur in potato and tomato. Monitor the crops constantly. If symptoms appear, then spray Carbendazim @ 1.0 gm / litre of water or Dithane-M-45 @ 2.0 gm / litre of water.
- In High Hill Temperate Dry Zone, apply Chaubatia paste to large wounds after pruning of apple trees.
- ➤ In Mid Hills Sub Humid Zone, undertake land preparation for nursery sowing of tomato, capsicum and red chilli. Apply irrigation to pea. Carry out weeding in fenugreek and coriander.

Punjab, Haryana, Delhi

- ➤ In Western Zone of Punjab, withhold irrigation and spraying of chemicals to the crops and take special care of vegetables and newly planted orchard plants.
- ➤ In Western Plain of Punjab, withhold the last irrigation to the rapeseed and mustard crops and remove the standing rain water from field. As weather is favourable for incidence of army worm in wheat crop, spray 400 ml of Ekalux 25 EC using 80-100 litres of water. Monitor wheat crop for appearance of yellow rust; if noticed, spray Caviet @ 200g or Opera or Tilt or Shine @ 200 ml in 200 litres of water per acre on a clear day. Monitor mustard crop as prevailing weather is favourable for spread and development of white rust; spray Ridomil Gold @ 250g in 100 litres of water per acre on a clear day.
- ➤ In Undulating Plain Zone of Punjab, continue sowing/transplanting of summer vegetables like okra, brinjal, cucurbits when weather become clear. Remove excess water from the fields. Monitor potato crop regularly; if symptoms of late blight are observed, spray Indofil M-45/Mass M45/Markzeb/Kavach @ 500-750g using 250-350 litres of water per acre at 7 days interval on a clear day.
- ➤ In Central Plain Zone of Punjab, weather is favourable for planting of all evergreen fruit plants. Regularly monitor wheat crop for yellow rust to detect the initial foci of infection; carry out spot application surrounding the infected area with 0.1% Caviet/Opera/Tilt/Shine/Bhumper/Markzole/Stilt/Compass.
- ➤ In 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 on a clear day.
- ➤ In Western Zone of Haryana, considering the possibility of variable weather and rainfall, withhold application of irrigation and fertilizer doses in mustard, wheat and barley crops. In the view of anticipated weather, monitor for sucking pest in mustard crop. Carry out intercultural operations in Bengal gram/chickpea for conserving soil moisture.
- ➤ In Eastern Zone of Haryana, carry out proper management in all standing crops. Monitor wheat crop against brown and black rust; spray Dithane M- 45 @ 2.5 g or Carbendazim 1.0 g or Propiconazole 1.0 g per litre of water when sky is clear. Install pheromone traps @ 2-3 traps per acre in tomato field for monitoring the tomato fruit borer. Monitor timely sown onion crop against attack of thrips; spray Imidacloprid @ 0.5 ml per litre of water with sticky material (Tipol 1.0 gram /litre) when sky is clear.
- ➤ In Delhi, undertake proper management in all standing crops. Undertake transplanting of late varieties of cabbage, cauliflower and knolkhol as well as sowing of lady finger, green gram and black gram. 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 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, considering the forecasted rainfall, avoid irrigation in wheat crop. Provide proper drainage in tomato and brinjal fields. Undertake sowing of black gram (*urd*). Harvest mature mustard crop and dry it during clear sky. Harvest matured Bengal gram and chick pea crops and keep in safe place. Undertake digging of mature potato crop. To control loose smut disease in wheat crop (in which all the ears take the form of black powder and do not form grains), destroy ear-heads by burning them or burying them in a pit.
- ➤ In West Uttar Pradesh, considering the forecasted rainfall, avoid irrigation in wheat crop. Undertake transplanting of tomato crop and sowing of French beans and cluster beans. Continue sowing of maize and black gram. Continue harvesting of mustard crop in clear weather when 70% of siliqua turn golden yellow in colour. Continue digging of mature potato crop. There is a possibility of outbreak of thrips in onion crop; make a solution of Methyl-O-Demeton 25% EC @ 1.5 liters / ha in 500-600 litres of water and spray it when the sky is clear.

Uttarakhand

- ➤ In Bhabar and Tarai Zone, postpone harvesting of mustard crop in view of rainfall forecast and keep the harvested crop in safe place. Postpone irrigation in wheat and onion crop. Continue sowing of capsicum.
- ➤ In Sub Humid Sub Tropic Zone, drain out excess water from wheat, sugarcane and mustard fields.
- ➤ In Hill Zone, drain out excess water from the wheat fields. Postpone transplanting of tomato due to strong surface winds. Avoid water logging in onion crops. Give mechanical support to young apple saplings in view of strong surface winds forecast.

Rajasthan

- ➤ In Sub Humid Southern Plain and Aravali Hill Zone, harvest mustard at physiological maturity to avoid shattering losses. Undertake sowing of summer groundnut.
- ➤ In Arid Western Plain Zone, harvest isabgol, mustard and barley at physiological maturity stage.
- ➤ In Semi-Arid Eastern Plain Zone, undertake sowing of Zaid crops, viz., green gram, okra, sorghum (fodder), pearl millet (fodder) & summer cucurbits like bottle gourd, round guard, bitter guard, water melon and musk melon.
- ➤ In Flood Prone Eastern Plain Zone, weather is congenial for loose smut in wheat; affected ears emerge prior to normal ears which are black in colour; destroy the loose smut affected ears to prevent its spread; spray 2% Mencozeb solution to manage loose smut disease. Spray 0.2% solution of Propiconazone to manage karnal bunt disease in wheat crop.

Animal Husbandry

➤ In Uttar Pradesh, keep animals in dry place; use paddy straw or ash as litter in animal houses. Add supplements, vitamins, and energy food items as well as calcium content to the chicken feed.

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