



National Agromet Advisory Service Bulletin

Friday 18th October 2019

(For the period 18th to 22nd October 2019)



Issued by

India Meteorological Department

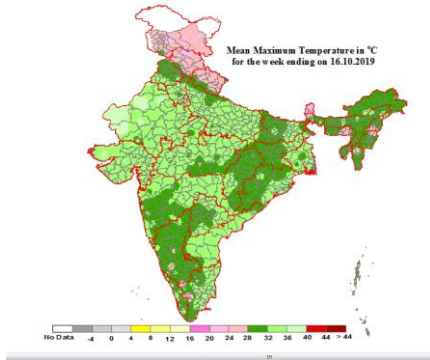
Weblink For

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

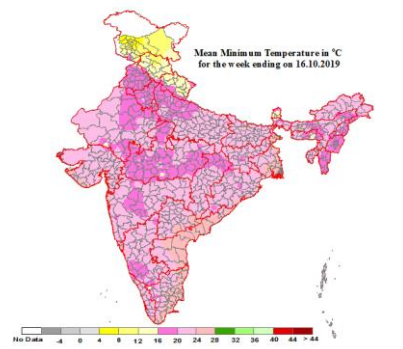
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 16.10.2019

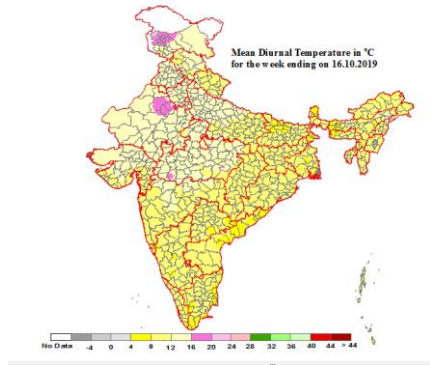
Mean Maximum Temperature (°C) for the week ending on 16.10.2019



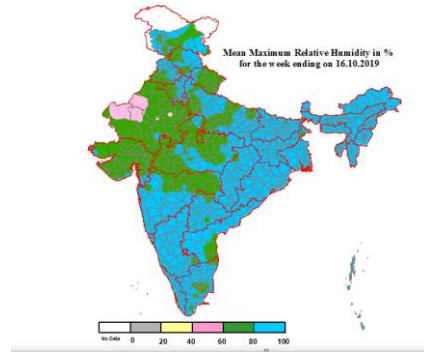
Mean Minimum Temperature (°C) for the week ending on 16.10.2019



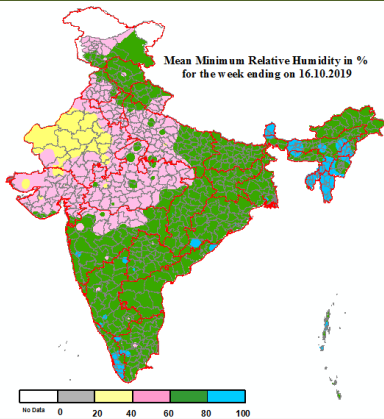
Mean Diurnal Temperature Variation (°C) for the week ending on 16.10.2019



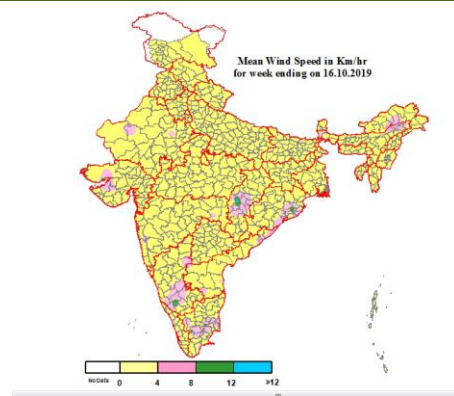
Mean Maximum Relative Humidity (%) for the week ending on 16.10.2019



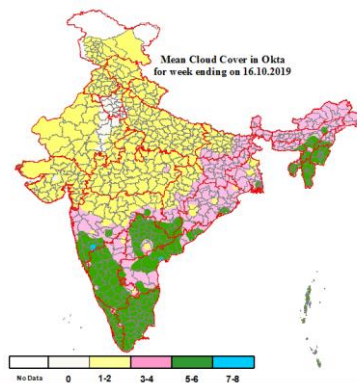
Mean Minimum Relative Humidity (%) for the week ending on 16.10.2019



Mean Wind Speed (km/hr) for the week ending on 16.10.2019

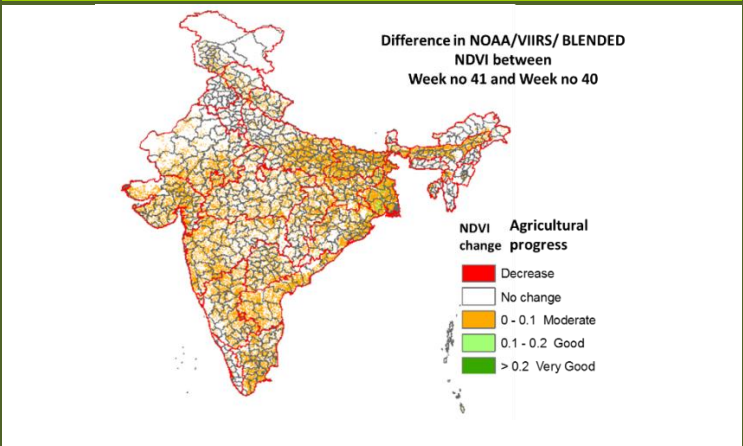
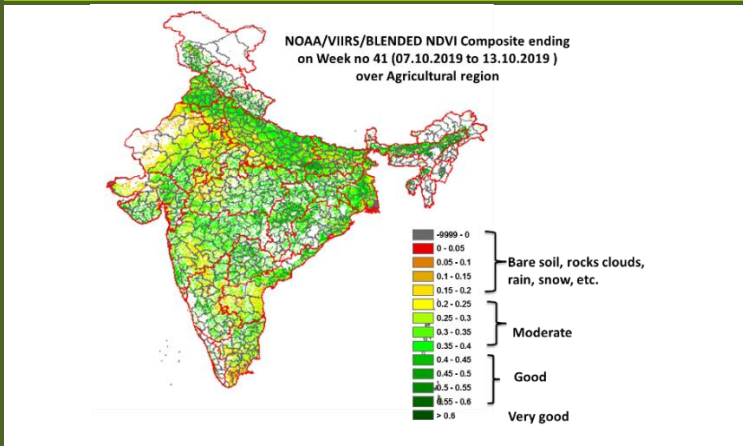


Mean Cloud Cover (okta) for the week ending on 16.10.2019



NOAA/VIIRS/BLENDED NDVI composite for the week number 40 (07.10.2019 to 13.10.2019) over Agricultural regions of India

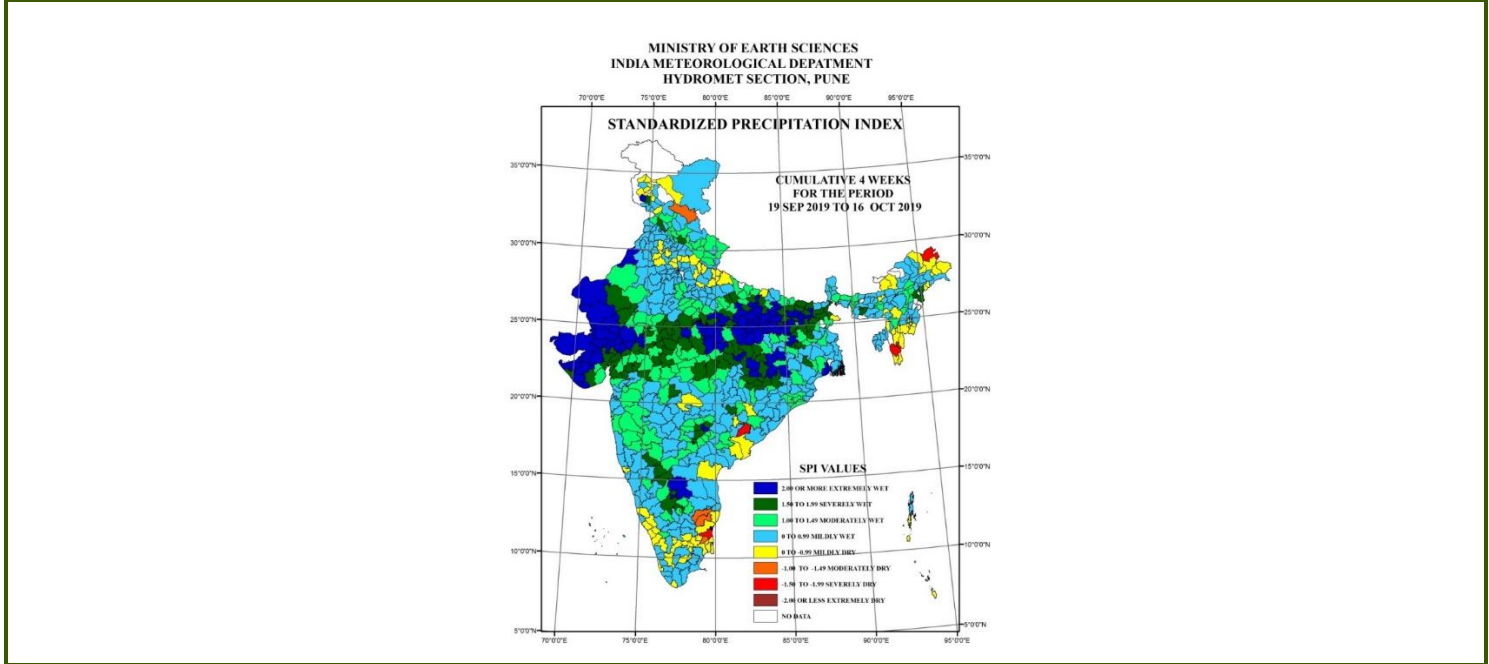
Difference in NOAA/VIIRS/BLENDED NDVI between week number 41 and week number 40



Agriculture vigour was good at most parts of Assam; many parts of Himachal Pradesh, Punjab, Uttarakhand, North Chhattisgarh, Southern part of Bihar adjoining Uttar Pradesh; at a few places over Jammu & Kashmir, Haryana, Uttar Pradesh, Sub Himalayan West Bengal, North Coastal Andhra Pradesh, Vidarbha in Maharashtra, Madhya Pradesh and Telangana. It was isolated over rest of the country.

Good Agricultural vigour has been observed at many places over West Bengal and at a few places over Bihar, Jharkhand, Eastern Uttar Pradesh and at isolated places over Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Madhya Pradesh, Odisha, North Chhattisgarh, Coastal Andhra Pradesh and North Eastern states.

**Standardised Precipitation Index
Cumulative 4 weeks for the period 19th September to 16th October 2019**



- Extremely/Severely wet conditions exist in Anantapur district of Andhra Pradesh; Aurangabad, Banka, Begusarai, Bhabua, Bhagalpur, Bhojpur, Buxar, Darbhanga, Gaya, Gopalganj, Jahanabad, Jamui, Katihar, Khagaria, Lakhisarai, Madhepura, Madhubani, Monghyr, Muzaffarpur, Nalanda, Nawada, Patna, Purnea, Rohtas, Saharsa, Samastipur, Saran, Siwan, Supaul, Vaishali, Arwal districts of Bihar; Ahmedabad, Banaskantha, Broach, Kheda, Mehsana, Sabarkantha, Gandhinagar, Anand, Narmada, Patan, Aravalli, Chhota Udepur, Mahisagar, Amreli, Jamnagar, Junagarh, Kutch, Rajkot, Surendranagar, Porbandar, Devbhumi Dwarka, Gir districts of Gujrat; Sirmaur district of Himachal Pradesh; Reasi, Rajouri districts of Jammu; Bagalkote, Koppal, Bangalore Rural, Bellary, Tumkur districts of Karnataka; Barwani, Dewas,

Guna, Indore, Neemuch, Rajgarh, Ratlam, Shajapur, Shivpuri, Vidisha, Ashoknagar, Alirajpur, Agar, Chhatrapur, Chindwara, Damoh, Dindori, Katni, Mandla, Panna, Rewa, Sagar, Seoni, Shahdol, Sidhi, Tikamgarh, Umaria, Anuppur, Singrauli districts of West Madhya Pradesh; Akola district of Maharashtra; East Garo Hills district of Meghalaya; Mokokchung, Tuensang, Mon districts of Nagaland; Bargarh, Jharsuguda, Sambalpur, Sundargarh districts of Orissa; Hoshiarpur district of Punjab; Barmer, Sri Ganganagar, Jaisalmer, Jalore, Jodhpur, Pali, Banswara, Dungarpur, Jhalawar, Kota, Sirohi, Udaipur, Baran, Pratapgarh districts of Rajasthan; Allahabad, Ambedkar Nagar, Azamgarh, Ballia, Banda, Barabanki, Basti, Chandauli, Fatehpur, Ghazipur, Gorakhpur, Jaunpur, Kaushambi, Lucknow, Mau, Mirzapur, Pratapgarh, Sant Kabir Nagar, Sultanpur, Sonbhadra, Varanasi, Sahuji Maharaj Nagar, Sant Ravidas Nagar, Amethi, Hamirpur, Jhansi, Mahoba districts of Uttar Pradesh; North Dinajpur, East Midnapore districts of West Bengal; Bokaro, Deoghar, Gumla, Hazaribag, Koderma, East Singhbhum, Ramgarh districts of Jharkhand; Bilaspur, Janjgir, Jashpur, Korba, Koriya, Mahasamund, Raigarh, Surguja, Narayanpur, Baloda Bazaar, Surajpur districts of Chhattisgarh; Hyderabad, Karimnagar, Malkajgiri districts of Telangana.

- Moderately wet /moderately dry conditions exist in remaining districts in the country.

Weather Forecast for next 5 days valid upto 0830 hours of 23rd October 2019

- ◆ Meteorological sub-division wise detailed 5 days rainfall forecast is given in Table-below.
- ◆ No significant change in minimum temperatures likely over northwest India during next 3 days and fall by 2-3°C thereafter.

5 Day Rainfall Forecast (MID-DAY)

18th October 2019

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

% 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

18 October (Day 1):

- ◆ **Heavy to very heavy rainfall** very likely at isolated places over Coastal Karnataka and **Heavy Rainfall** at isolated places over Konkan & Goa, Tamilnadu, Puducherry & Karaikal, Kerala & Mahe, Lakshadweep, Coastal Andhra Pradesh & Yanam and Interior Karnataka.
- ◆ **Thunderstorm accompanied with hail & lightning** very likely at isolated places over Jammu & Kashmir and Himachal Pradesh. **Thunderstorm accompanied with lightning** at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, East Uttar Pradesh, East Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Gangetic West Bengal, Odisha, Madhya Maharashtra, Marathwada, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Telangana, Kerala & Mahe and Interior Karnataka.
- ◆ **Squally weather**, with wind speed 45-55 kmph, very likely over southeast Arabian Sea & adjoining Goa-Karnataka-Kerala coasts. Fishermen are advised not to venture into these areas.

19 October (Day 2):

- ◆ **Heavy to very heavy rainfall** very likely at isolated places over Konkan & Goa and **Heavy Rainfall** at isolated places over Madhya Maharashtra, Tamilnadu, Puducherry & Karaikal, Kerala & Mahe, Lakshadweep and Karnataka.
- ◆ **Thunderstorm accompanied with lightning** very likely at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Gangetic West Bengal, Odisha, Gujarat region, Madhya Maharashtra, Marathwada, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Telangana, Interior Karnataka and Kerala & Mahe.
- ◆ **Squally weather**, with wind speed 45-55 kmph, very likely over Eastcentral Arabian Sea & adjoining Maharashtra- Karnataka-Kerala coasts. Fishermen are advised not to venture into these areas.

20 October (Day 3):

- ◆ **Heavy rainfall** likely at isolated places over Madhya Maharashtra, Marathawada, Konkan & Goa, Karnataka, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.
- ◆ **Thunderstorm accompanied with lightning** likely at isolated places over East Madhya Pradesh, Chhattisgarh, Gujarat region, Madhya Maharashtra, Marathawada and Konkan & Goa.
- ◆ **Squally weather**, with wind speed 45-55 kmph, very likely over Eastcentral Arabian Sea & adjoining Gujarat-Maharashtra- Karnataka coasts. Fishermen are advised not to venture into these areas.

21 October (Day 4):

- ◆ **Heavy rainfall** likely at isolated places over Coastal Andhra Pradesh & Yanam, Kerala & Mahe, Tamilnadu, Puducherry & Karaikal and Coastal & South Interior Karnataka.
- ◆ **Thunderstorm accompanied with lightning** likely at isolated places over Madhya Maharashtra and Konkan & Goa.

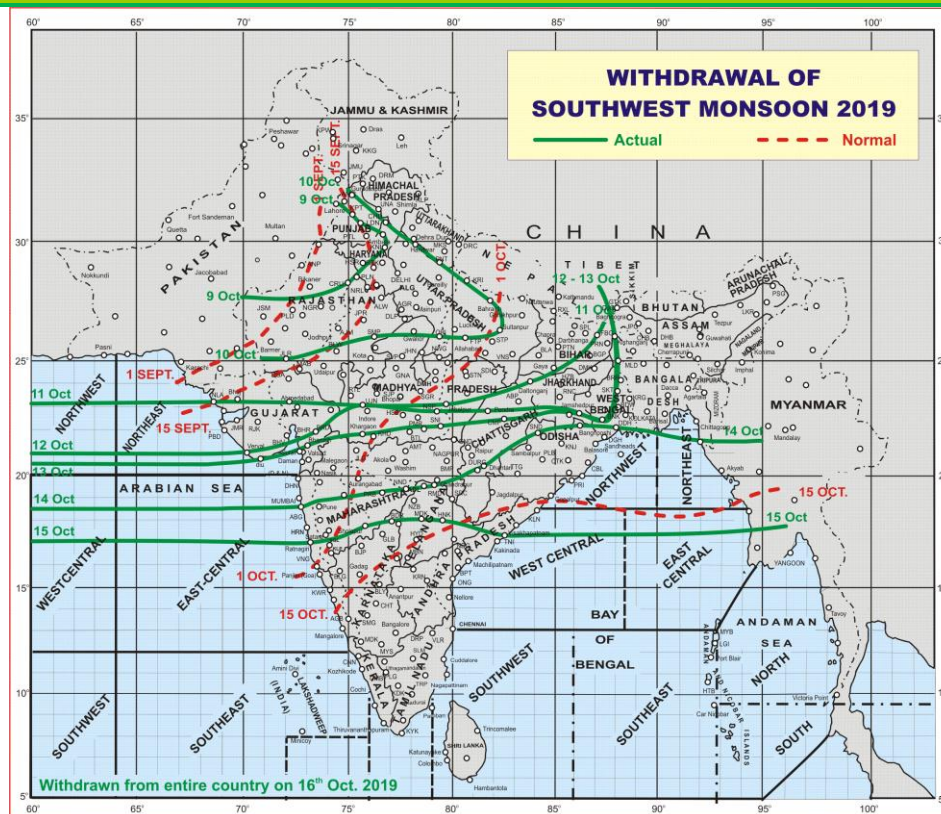
22 October (Day 5):

- ◆ **Heavy rainfall** likely at isolated places over Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe, Tamilnadu, Puducherry & Karaikal and Interior Karnataka

Weather Outlook for subsequent 2 days from 23rd to 25th October 2019

- ◆ Scattered to fairly widespread rainfall with isolated heavy falls likely over south India. Isolated rainfall also likely over western Himalayan region and east India.
- ◆ Mainly Dry weather is likely to prevail over rest of the country.

Withdrawal of Southwest monsoon 2019



Salient advisories

- **The Low Pressure Area** lies over southeast Arabian Sea & adjoining areas of Lakshadweep and eastcentral Arabian Sea with the associated cyclonic circulation extends upto mid-tropospheric levels. Fairly widespread to widespread rainfall with isolated heavy rainfall is very likely to occur over south peninsular India during next 4-5 days. Heavy to very heavy rainfalls at isolated places is also likely over Coastal Karnataka during next 24 hours.
- As rain/thundershowers likely at most/many places over Kerala, Karnataka and Tamil nadu during the period, over Coastal Andhra Pradesh on 18th, 19th and 21st, over Telangana on 18th & 19th, over Rayalaseema on 18th, 21st & 22nd, over Konkan & Goa and Madhya Maharashtra from 18th to 21st, over Marathwada on 20th along with **Heavy Rainfall** at isolated places over Tamilnadu, Puducherry & Karaikal, Kerala, Lakshadweep and Karnataka during the period, over Coastal Andhra Pradesh on 21st & 22nd and over Rayalaseema on 22nd October, **Heavy to very heavy rainfall** very likely at isolated places over Konkan & Goa on 19th, **Heavy Rainfall** at isolated places over Madhya Maharashtra on 19th & 20th October, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places.
- **Thunderstorm accompanied with lightning** very likely at isolated places over Coastal Andhra Pradesh, Telangana, Interior Karnataka and Kerala on 18th & 19th, over Gangetic West Bengal and Odisha on 18th & 19th, over Jharkhand on 19th, over East Madhya Pradesh and Chhattisgarh on 19th & 20th, over Maharashtra on 19th, over Madhya Maharashtra, Marathawada and Konkan & Goa on 20th & 21st, over Gujarat region on

19th & 20th October, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane Odisha, Madhya Maharashtra and Marathawada. Keep harvested produce at safer places.

- Undertake sowing/ transplanting of following *rabi* crops:
 - Undertake sowing of rapeseed/mustard in **Assam**.
 - In Western Zone of **Tamil Nadu**, continue transplanting of *Samba* rice.
 - In Southern Telangana zone, continue sowing of rabi redgram, groundnut and castor.
 - In North Interior Karnataka, continue sowing of sunflower, sorghum, chickpea, niger and safflower
 - In North Gujarat, undertake sowing of *Rabi* crops viz. mustard, gram and fennel
 - In **Madhya Maharashtra**, continue land preparation for sowing of rabi jowar, safflower and rainfed gram in fallow lands. In **Vidarbha**, continue land preparation of *rabi* crops like safflower, jowar, linseed and gram in fallow lands.
 - In **West Uttar Pradesh**, undertake sowing of sarson/ rai, gram, lentil, peas, carrot, planting of potato.
 - In Sub Humid Southern Plain and Aravali Hill Zone of **Rajasthan**, undertake sowing of mustard, gram, pea and garlic.
 - Continue sowing of mustard in **Uttarakhand** and **Jammu & Kashmir**.
- Undertake harvesting of matured soybean in **Madhya Pradesh**. In **Arunachal Pradesh**, complete harvesting of *Jhum* rice and soybean. In **Nagaland**, continue harvesting of groundnut.
- In Nimar Valley Zone of **Madhya Pradesh**, in cotton crop, apply Imidachloprid 17.8 SL @ 3 ml/10 litres of water or Thiamethoxam 25 WG @ 2g/ 10 litres of water in areas where population of Jassid & White fly crosses ETL. Also install pheromone traps @ 5/ha for monitoring Pink bollworm.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in all the districts of Andhra Pradesh; B. Kothagudem Hyderabad, Jangaon, Khammam, M. Malkajgiri, Mahabubabad, Mahabubnagar, Ranjanna Sircilla, Rangareddy, Siddipet, Suryapet, Warangal_Rural, Warangal_Urban, Y. Bhuvangiri of Telangana; all districts of Coastal Karnataka; in all districts in North Interior Karnataka except Bidar and Yadgir and in Bangalore Urban, Chamarajanagara and Ramanagara districts of South Interior Karnataka; all the districts of Kerala except Kasargod; Coimbatore, Erode, Kanyakumari, Krishnagiri, Namakkal, Nilgiris, Puducherry, Ramanathapuram, Salem, Sivaganga, Tirunelveli, Tirupur, Tiruvallur, Toothukudi, Virudhunagar districts of Tamilnadu during the week. Weather remained mainly dry over rest of the region.

Advisories:

- As rain/thundershowers likely at most/many places over Kerala, Karnataka, Tamil nadu during the period, over Coastal Andhra Pradesh on 18th, 19th and 21st, over Telangana on 18th & 19th and over Rayalaseema on 18th, 21st & 22nd October along with **Heavy Rainfall** at isolated places over Tamilnadu, Puducherry & Karaikal, Kerala Lakshadweep and Karnataka during the period, over Coastal Andhra Pradesh on 21st & 22nd and over Rayalaseema on 22nd October, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places.
- **Thunderstorm accompanied with lightning** very likely at isolated places over Coastal Andhra Pradesh,

Telangana, Interior Karnataka and Kerala on 18th & 19th October, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane.

Kerala

- In Problem Area Zone and Central Zone, undertake transplanting of Mundakan paddy.
- In Central Zone, undertake land preparation for Mundakan paddy.
- In Northern Zone, weather is congenial for pollu beetle in black pepper, apply combination of Hexaconazole and Deltamethrin (@ Hexaconazole 1ml + Deltamethrin 0.5ml per litre of water).
- In Southern Zone, weather is congenial for Leaf eating caterpillar in banana, apply Quinalphos 25 EC (1.5ml/lit) at the leaf axils after current spells of rain.

Andhra Pradesh

- In North Coastal Andhra Pradesh ,continue harvesting of maize after current spells of rain. Present prevailing weather conditions are favourable for sheath blight and leaf blast diseases in rice. Spray Tricyclozole + Hexaconazole (Impression) @ 1 g per litre of water after current spells of rain.
- In Scarce rainfall Zone of Rayalaseema, continue sowing of Bengal gram in black soils and horsegram in red soils at optimum soil moisture conditions. Weather is congenial for helicoverpa and spodoptera in groundnut, spray Thiodicarb 200 g (or) Novaluron 200 ml (or) Rinoxypyr 50 ml (or) flubezemidazole 40 ml per litre of water after current spells of rain.
- In Southern Zone of Andhra Pradesh, continue harvesting of early groundnut in clear weather. Weather is congenial for falls army worm in maize, spray Emamectin benzoate @ 5 SB @ 0.4 ml./L of water (or) Chlorantrilipole @ 0.4 ml./L of water by spraying directed on whorls. For late instars apply bait in the whorls during evening time (Bait: Mix rice bran @ 10 kg + 2 g jaggery in 2 L of water keep it for fermentation for 24 hr. and mix Thiodicarb @ 100 g. Undertake plant protection measures after current spells of rain.

Telangana

- In Southern Telangana zone, continue sowing of Bengal gram, safflower, groundnut, mustard & castor.
- In Northern Telangana, undertake sowing of Bengal gram, safflower, groundnut, mustard & castor under assured irrigation. Also weather is congenial for stem fly and stem girdler in soybean, spray Dimethoate @ 2 ml or Chlorantrilipole @ 0.3 ml per litre of water after current spells of rain.

Tamil Nadu

- In Western Zone, in dry land if sowing is not done yet, sowing of pulses and other dry land crops can be taken up utilizing the realised and expected rainfall. If sowing is done already, gap filling may be done.
- In High Rainfall Zone, as rainfall is expected, proper drainage facilities should be given to young rubber, banana and fruit trees.
- In South Zone, weather is congenial for Fall army worm in maize, spray Azadirachtin 1% EC @ 20ml/10 lit. (or) Emamectin Benzoate 5 SG @4g/10litres of water after current spells of rain.
- In High Altitude Hilly Zone, boron deficiency in vegetable crops, apply 1 kg of borax per acre as soil application during the field preparation as basal dose.

Karnataka

- In North Interior Karnataka, continue sowing of sunflower, sorghum, chickpea, niger, safflower, etc. Take up sowing of wheat and planting of sugarcane.
- In North Interior Karnataka, to control fruit borer in vegetables crops, particularly the tomato and brinjal, spray Malathion 50EC dissolved in one litre of water after current spells of rain.
- In South Interior Karnataka, complete sowing of sunflower, ragi, sugarcane and soybean crops. Continue sowing of fodder sorghum, maize, bajra and cowpea crops. Continue plantation of fruit trees, teak, neem, tamarind, acacia or other trees on the bunds, uncultivated and marginal land.
- In Coastal Karnataka, provide drainage channels in pepper garden. Remove and burn the plants infected with quick wilt..

Animal Husbandry:

- In Kerala, animal should not be allowed to graze in open grazing lands to avoid lightning risk.
- In Tamilnadu, vaccinate livestock against FMD by taking their livestock to the nearby veterinary dispensary.
- In Karaikal and Pondicherry, during the onset of monsoon, animals may be vaccinated for Foot and Mouth Diseases and Haemorrhagic Septecemia. Openly grazed animals that are drinking pond water should be dewormed.

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

Realised Rainfall : Rainfall occurred in East Siang, Kurung Kumey, Lower Dibang Valley, Papumpare, Upper Siang, West Kameng and West Siang districts of Arunachal Pradesh; Cachar, Chirang, Dhemaji, Golghat, Hailakandi, Jorhat, Karimganj, Lakhimpur and Tinsukia districts of Assam; Jaintia Hills district of Meghalaya; Aizwal, Kolasib, Lunglei and Mamit districts of Mizoram; Bishnupur and Tamenglong districts of Manipur; all districts except Mokokchung and Paren districts of Nagaland and all districts of Tripura.

Advisories:

Advisories:

Arunachal Pradesh

- In Arunachal Pradesh, complete harvesting of *Jhum* rice and soybean at the earliest. Continue transplanting of cole crops.

Assam & Meghalaya

- In Lower Bramhaputra Valley Zone, continue land preparation and sowing of rapeseed/mustard, planting of potato and transplanting of cole crops. Apply Malathion 5% dust @ 3Kg per bigha against rice bug at milking to dough stage of Sali rice,
- In Central Bramhaputra Valley, continue sowing of *rabi* maize and cole crops. Continue land preparation for sowing of rapeseed-mustard and *rabi* pulses and oilseeds.
- In Upper Brahmaputra Valley Zone, undertake land preparation for sowing for toria and nursery sowing of tomato. Continue planting of potato. Prevailing weather is favourable for occurrence of blast and brown spot disease in rice. Spray Carbendazim or Thiophenate methyl @ 1g/litre of water and subsequently two more sprays of Ediphenphos @ 1 ml/litre of water, at an interval of about 15 days against blast disease. To control brown spot disease, spray Mancozeb @ 2.5 g/litre or Ediphenphos @ 1 ml/litre or Carbendazim @ 1g/litre of water.
- In Barak Valley Zone of Assam, continue land preparation for planting of potato and sowing of rapeseed and mustard and nursery sowing of brinjal, mid cauliflower and cabbage. To control stem borer in Sali rice, spray Chlorpyrifos 20EC @1ml/litre of water or Quinalphos 25EC@1ml/litre of water. Do not apply excess dose of nitrogenous fertilizer to avoid plant susceptibility to blast and sheath blight diseases. In case of appearance of these diseases above ETL, apply Carbendazim @ 1g/litre of water and subsequently two more sprays of Ediphenphos @ 1 ml/lit of water at an interval of about 15 days against blast disease and for sheath blight, spray Mancozeb (2.5g/litre) or hexaconazole 5EC (2 ml/litre).
- In North Bank Plain Zone of Assam, continue land preparation/ sowing of rapeseed-mustard and cole crops. There is chance of attack of leaf folder /stem borer disease attack in tillering/ panicle initiation stage of rice. Spray of Chlorpyrifos 20 EC @ 2.5 litre/ha or Quinalphos 25 EC @2.0 litre/ha on the rice crop during evening hours.
- In Hill Zone of Assam, continue sowing of black gram. Protect cucurbitaceous crops against fruit fly by use of bait trap (mixing jaggary 10 % with Malathion 0.1 %) and putting at different corners of the field. Undertake harvesting of Sali rice. Areas where paddy crop is about to mature, irrigation should be stopped two weeks before harvesting. After harvesting crop should be dried in the field for 2-3 days and thereafter threshing should be done. Grains should be properly dried to right moisture level before storing.
- In Meghalaya, continue nursery raising/ transplanting for cole crops (cabbage, cauliflower, broccoli).

Prepare uplands for early *rabi* crops. Maintain proper drainage in the field crops/vegetables/fruit crops. Spray Tricy-Biofungicide, *Pseudomonas fluorescens* @ 4g/10 litre against blast in rice. Maintain proper water level up to 5 cm in the rice fields.

Manipur, Mizoram, Tripura and Nagaland

- In Nagaland, continue harvesting of groundnut and land preparation for sowing of rabi crops and nursery preparation for vegetables like cabbage, cauliflower, knolkhol, broccoli, radish, tomato. Undertake land preparation for sowing of toria.
- In Manipur, continue planting of potato, nursery sowing of cole crops and sowing of Broad bean/pea/French bean. For the fields where rice had failed due to uneven distribution of rainfall during the growing season, cultivation of black gram/ lentil/ green gram / Lathyrus (kachari) may be done as contingency crop by the mid of November. Spray Tricyclazole 75WP @ 9 g/ 15 litre water or Hexaconazole @ 2ml/ litre water against blast disease in rice. Spray 0.3% Phosphamidon around the base of the plant against rhizome weevil & Carbendazim 50% WP @ 2g/L of water as prophylactic measure against Anthracnose in banana.
- In Mizoram, undertake harvesting of mature panicles of *Jhum* rice. Continue nursery raising of brinjal, chilli and early crucifer crops. Continue sowing of soybean along with standing maize crop during clear/dry days. There is chance of rhizome rot in ginger and turmeric. To manage the disease, provide adequate drainage and apply *Trichoderma harzianum* @ 50 g/bed along with FYM/ neem cake or apply Ridomil @ 2 g/litre of water.
- In Tripura, continue transplanting of cole crops. Undertake land preparation for planting of potato and sowing of sesame. Drain out water from the fields of Aman rice as the crop is at physiological maturity stage and don't allow water till harvesting of crop.

Animal Husbandry

- In Arunachal Pradesh, vaccination against poultry against Ranikhet and infectious bronchitis.
- In Barak Valley Zone of Assam, provide clean drinking water to cattle and keep their sheds clean.
- In Tripura, undertake de-worming of cattle under supervision of authorized veterinary practitioner to protect from round worm, flukes and tapeworms.

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

Realised Rainfall: Rainfall occurred in North & Middle Andaman and Nicobar districts of Andaman & Nicobar Islands; in Jamtara district of Jharkhand; in Cuttack, Gajapati, Ganjam., Jagatsingpur, Kendrapada, Keonjhar, Khurda, Koraput, Mayurbhanj and Rayagada districts of Odisha; in East Midnapore, Kolkata and South 24 Paraganas districts of Gangetic West Bengal and in East Sikkim, Jalpaigudi and South Sikkim districts of Sub-Himalayan West Bengal & Sikkim. Weather remained dry/mainly dry over the rest of the region.

Advisories:

- **Thunderstorm accompanied with lightning** very likely at isolated places over Gangetic West Bengal and Odisha on 18th & 19th, over Jharkhand on 19th October, provide mechanical support to young fruit plants, banana and staking of vegetables, to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane in Odisha. Keep harvested produce at safer places.

Odisha

- Take up harvesting of paddy in the uplands, sundry the harvested crop for 2-4 days and store in a dry place. Undertake sowing of linseed and gram as paira crops after harvesting paddy if soil moisture is sufficient. Continue harvesting of early sown matured kharif groundnut crop. Continue sowing sesame, green pea and nursery raising of tomato, cabbage and cauliflower. Continue sowing Rabi groundnut, maize and toria.
- For *Epilachna* beetle in okra, brinjal and cucurbitaceous crops, spray Sevin WP @ 4 gm/litre of water.

To control the Sucking pests like aphids & white fly, spray Imidacloprid @ 2ml/10 litres of water.

Bihar

- Maintain 5 cm water level in paddy field. Carry out harvesting of mature paddy and maize crops. Continue transplanting of tomato seedlings. Carry out land preparation for timely sowing of Rabi crops. Take up sowing of toria, mustard (yellow sarson), rai, lentil, garlic, coriander and sunflower.
- Apply Quinalphos 1.5 % or Methyl Parathion 2% or Folidol dust @ 25 kg per hectare to protect paddy crop at milking stage from gundhi bug.

Jharkhand

- Direct seeded paddy crop in uplands is at maturity stage. Harvest the crop and keep harvested produce at safe place to avoid losses. In low and medium lands, maintain 3-5 cm of water level at milking/soft dough stage of paddy. It is optimum time for nursery raising of onion. For one acre of planting area, take 4 kg seeds and sow them on 200 x 200 meter nursery bed after seed treatment with Thiram.
- If attack of gundhi bug is seen in rice field, spray Methyl Parathion 2 % or Chlorpyrifos 4 % or Imidachlorpid dust @ 8-10 kg per acre in the morning or evening (before sunset). In case of false smut in paddy, spray Propiconazole or Tilt @ 1 ml per liter or Tabuconazole or Trifloxystrobin or Chlorothalonil @ 1g per 2 litre of water on a non rainy day.

West Bengal

- In Sub-Himalayan West Bengal, prepare raised bed for sowing crucifers. Apply Trichoderma mixed with organic manure @ 5g/kg of manure in seed bed 7 days prior to sowing and treat the seeds with Carbendazim @ 2g/kg of seeds before sowing.
- For management of blast disease in paddy at booting stage, carry out alternative wetting and drying without cracking of the soil. Spray Tricyclazole 75% WP @ 0.5 gm/litre of water (If not sprayed earlier) as a preventive measure.
- In Gangetic West Bengal, keep the early transplanted Aman paddy field weed-free. Prepare nursery beds for the sowing of cauliflower and cabbage seeds.
- For leaf roller attack in Aman paddy, spray Chlorpyrifos@1.5ml/litre of water. Spray Spinosad @1.5ml/litre of water or FEM @ 4ml/10 litres for pod borer in black gram.

Andaman & Nicobar Islands

- In Andaman & Nicobar Islands, close the bunds in rice field to prevent water stress and consequently avoid incidence of brown spot. Make basin around drumstick tree and apply compost @ 10-15 kg/tree. Do weeding and earthing up in okra and apply compost @ 2-3 kg per plant. Carry out soil application of Trichoderma enriched FYM along with neem cake (1:100:10) @ 25 kg/tree to manage soil borne pathogens in coconut plantation.

Animal Husbandry

- In Jharkhand, de-worm domestic animals under the care of veterinarian. Vaccinate poultry birds against Ranikhet disease.
- In Odisha, keep animal shed clean and de-worm domestic animals.
- In West Bengal, keep the shed clean and dry. For Foot and Mouth disease, wash the wound with potassium permanganate solution.
- In Andaman & Nicobar Islands, feed azolla as a vital nutrient source to poultry birds @ 20-30g/day.

Fishery

- In Odisha, apply lime @ 250-500 Kg/Ha according to pH. Agitate water for better growth of fish. Administer feeding on sunny days. Provide false netting for better growth of fish.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Rainfall occurred in Raigad, Ratnagiri, South Goa and Thane in Konkan & Goa; Ahmednagar, Kolhapur, Pune, Sangli, Satara, Solapur in Madhya Maharashtra; Latur, Nanded, Osmanabad in Marathwada. Weather remained dry/mainly dry over the rest of the region.

Advisories:

- Thunderstorm **accompanied** with **lightning** very likely at isolated places over Maharashtra on 19th, over Madhya Maharashtra, Marathwada and Konkan & Goa on 20th & 21st, over Gujarat region on 19th & 20th October, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane.
- As rain/thundershowers likely at most/many places over Konkan & Goa and Madhya Maharashtra from 18th to 21st, over Marathwada on 20th October along with **Heavy to very heavy rainfall** very likely at isolated places over Konkan & Goa on 19th, **Heavy Rainfall** at isolated places over Madhya Maharashtra on 19th & 20th October, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places.

Maharashtra

- In Konkan, continue land preparation for sowing of horse gram and cowpea in fallow lands. Undertake preparatory tillage operations for cultivation of water melon. To control tikka disease in groundnut, spray Carbendazim @ 10 g or Dithane M-45 @ 20 g per 10 litres of water after current spell of rain. To control thrips in cashewnut, spray Monocrotophos 36% SL @ 15 ml or Lambda cyhalothrin 5% EC @ 6 ml per 10 liters of water after current spell of rain.
- In Madhya Maharashtra, continue harvesting of matured soybean, groundnut and early varieties of rice after current spells of rain. Keep harvested produce in safer place. Continue land preparation for *rabi* crops like *rabi* jowar, wheat, gram and safflower in fallow lands. To control pod borer (*Helicoverpa armigera*) in tur, spray 5% NSKE after current spell of rain. To control sucking pest/ white fly in cotton, spray 5% neem ark or Imidacloprid 17.8 sl @ 2 ml per 10 litres of water after current spells of rain.
- In Marathwada, continue harvesting of matured soybean. Keep harvested produce in safer place. Undertake sowing of *rabi* jowar, safflower and gram in fallow lands. To control stem borer in sugarcane, spray Chlorpyrifos 20 % @ 30 ml per 10 liter of water on a non rainy day.
- In Vidharbha, maintain 5-7 cm water level in rice fields. Undertake harvesting of matured early varieties of rice. Continue harvesting of soybean. Keep the harvested produce in safer place. Continue sowing of *rabi* crops like safflower, jowar, linseed and gram in fallow lands. To control aphids, jassids, thrips, white fly above ETL (10 aphids, 2-3 jassid, 10 thrips, 10 white fly per leaf), undertake spray of Azadirachtin 1500 ppm @ 25 ml or Azadirachtin 0.03% (300 ppm) @ 50 ml or Imidacloprid 17.8% SL 2.5 ml or Buprofezin 25% SC @ 20 ml per 10 liters water on a non rainy day. To control leaf spot in turmeric, spray Mancozeb @ 25 g per 10 liters of water alongwith sticker on a non rainy day.

Gujarat

- In North Gujarat, continue land preparation and sowing of *Rabi* crops viz. mustard, gram, fennel and carrot. Complete harvesting of groundnut, sesame, bajra, maize, green gram and cowpea crops.
- In Saurashtra & Kutch, complete harvesting of sesame, soybean, groundnut, pearl millet and pulses crops. Sundry crops after threshing and grading.
- In South Gujarat, continue harvesting of pulse crops. Remove water from paddy field if grains reach maturity stage.
- In Middle Gujarat, spray Chlorantraniliprole 3 ml/10 litres of water to control of fall army worm in maize
- In Saurashtra & Kutch, spray 25 EC Methyl-o-dematone 10 ml in 10 litre water to manage thrips and red mites in tomato and chilli.

Animal Husbandry

- In Gujarat, spray Deltamethrin or Amitraz 2 ml/litre of water for the control of tick. Carry out vaccination for prevention of foot & mouth disease in animals.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in Bastar, Bijapur and Kondagaon districts of Chhattisgarh. Mainly dry weather prevailed in rest of the region.

Advisories:

- **Thunderstorm accompanied with lightning** very likely at isolated places over East Madhya Pradesh and Chhattisgarh on 19th & 20th October, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places.

Madhya Pradesh

- In Madhya Pradesh, farmers are advised to harvest the soybean crop (immediately after change in pod colour) in order to minimize the yield losses due to shattering as well as quality deterioration. Collect the harvested soybean crop and store in safe place after proper drying (turning 2-3 times a day) and thereafter threshing. Undertake preparation of nursery bed for Rabi vegetable crops. Treated seeds to be sown in line i.e. Tomato, Brinjal, Chilli, Cabbage and cauliflower etc.
- In Gird Zone, continue harvesting of matured bajra, urad and moong. Undertake land preparation for sowing of mustard.
- In Nimar Valley Zone, in areas where Jassid & White fly crosses ETL in Cotton crop, apply Imidachloprid 17.8 SL @ 3 ml/10 litre or Thiamethoxam 25 WG @ 2g/ 10 litre or Acetamiprid 20 SP @ 3g/10 litres of water. Install pheromone traps @ 5/ha for monitoring Pink bollworm.

Chhattisgarh

- In Batar Plateau Zone, maintain 5-7cm water level in rice fields. Apply last dose of Nitrogen (Urea) in rice crop where Flowering is not noticed. In the rice crop, for monitoring of yellow stem borer, install pheromone traps 10 nos. per acre. Undertake sowing of pea.
- In Northern Hill Zone, most of the timely sown crops like mung, urd, maize, rice, groundnut, finger millet etc. are at maturity stage. Hence, farmers are advised to plough the land immediately after harvesting of different crops and sow immediate rabi crops like toria, mustard, green pea and potato and arrange seed & fertilizer for cultivation of rainfed wheat, if having assured irrigation facility. Undertake land preparation for sowing of chickpea in time to prevent wilt disease. Start transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal.
- Under present hot and humid weather condition blast in rice may occur. Hence farmers are advised to keep watch over the crop and if the incidence is more spraying of Tricyclazole @ 6 g/10 litre of water or Saaf @ 1 ml/litre of water.

Animal Husbandry

- In Madhya Pradesh, cattle sheds should be kept dry. Vaccinate the cow and buffaloes for FMD disease and vaccinate goats with ETV vaccine. Vaccinate the chicks at 7 days (F1) and at 6 weeks with R2B.

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

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

Advisories:

- **Thunderstorm accompanied with hail & lightning** very likely at isolated places over Jammu & Kashmir and Himachal Pradesh on 18th, **Thunderstorm accompanied with lightning** at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, East Uttar Pradesh on 18th October, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Use hail net for orchard crops to protect from mechanical damage in Jammu & Kashmir and Himachal Pradesh. Keep harvested produce at safer places.

Jammu & Kashmir

- In Sub Tropical Zone, continue harvesting of early maturing rice varieties. The present weather condition

is favourable for sheath blight and glume discolouration in late transplanted basmati rice crop. If observed, apply Carbendazim @ 0.1% and Mancozeb @ 0.25 %, respectively. If leaf folder is observed, use light trap @ 4/acre or spray cypermethrin 10 EL @ 1ml/litre of water. Carry out hoeing operation in 15-20 days old toria crop. Undertake sowing of mustard. Plough and plank the fields vacated after harvesting of maize crop to conserve soil moisture and keep them ready for succeeding rabi crops. Undertake earthing up, weeding and hoeing in turmeric.

- In Intermediate Zone, stop irrigation in rice crop which is near to maturity. Continue harvesting of maize. Undertake hoeing and weeding operations in root crops like carrot and radish.

Himachal Pradesh

- In Mid Hills Sub Humid Zone, undertake sowing of onion and garlic. Remove bushes and undesirable vegetation from all temperate fruit orchards like lichi, kiwi, apricot and apple. Collect all fallen and rotten fruits from the orchards. Carry out pruning in guava orchards. To protect tomato plants from late blight disease; spray Redomil Gold and Saimokjnal Mancozeb (Carzate M-8) @37.5gram in 15 litres of water at an interval of 7-10 days.
- In High Hill Temperate Dry Zone, carry out weeding operations in oats and apply irrigation. Continue harvesting of potato. Carry out ploughing operation in harvested cabbage / cauliflower fields. To prevent premature leaf falling in apple plants, spray Tebuconazole 50%+Trifloxystrobin 25% WG Propineb or Zineb 80grams/200 litres of water.
- In Mild Hills Sub Humid Zone, spray of Blitox @500 g per 200 litre of water along with 2 kg urea post-harvest on pear, to prevent the damaged and diseased plant parts from further infection. Spray Thiamethoxam @ 200 g/ 200 litres of water to protect the apple trees against woolly aphids

Punjab, Haryana and New Delhi

- In Punjab, undertake sowing of carrot, broccoli, Chinese cabbage, radish, spinach and transplanting of mid-season cauliflower. Harvest matured maize crop. Complete planting of ever green fruit plants like mango, sweet orange, mandarin, lime, lemon, litchi, guava, aonla, loquat and papaya
- In Undulating Plain Zone, due to high humid conditions, attack of brown spot may be noticed in direct seeded rice. Apply recommended fungicides for control. Harvest the mature paddy crop.
- In Haryana, continue sowing of pulses i.e. green gram, lobia, moth. Undertake sowing of mustard and gram crop. Continue harvesting of matured bajra and mung, arrange to cover the harvested bajra and mung crop. Undertake seed bed preparation and sowing of seasonal vegetable crops. Complete picking in cotton crop at the earliest and undertake harvesting.
- In Western Zone of Haryana, due to dry weather, irrigation may be provided specially to vegetable and fruit crops, picking of timely sown cotton can be done during the period. Picking of timely sown cotton should be done in dry and sunny weather only.
- In Delhi, undertake sowing of mustard, transplanting of onion seedling in the prepared fields and planting of early potato. Undertake transplanting of mature seedlings of cauliflower, cabbage, broccoli and tomato. In present weather conditions, rouging of viral infested crop should be done in chilli and tomato. Infected plants should be uprooted and buried in the soil. If infection is more than spray of Imidacloprid @ 0.3 ml per litre of water is advised for control the vector.

Uttar Pradesh

- **In East Uttar Pradesh**, continue harvesting of matured rice. Undertake sowing of sarson/ Rai and Berseem crop, peas, carrot, potato. Undertake transplanting of brinjal, chilli, tomato. For control of stem borer, brown plant hopper, gall midge, leaf folder and jassids in paddy, apply Profenophos 50EC @2 ml/litre of water. Apply 50-60 g urea and 100-125g muriate of potash per plant of Banana and then mix them in the soil.
- **In West Uttar Pradesh**, undertake sowing of sarson/ rai, Berseem, gram, lentil, peas, carrot, potato. Undertake harvesting of mature crop of paddy, maize, urad and moong and dry the seeds thoroughly before storing them. Undertake weeding and rumping of toria and rapeseed crop. Continue

transplanting of medium duration variety of capsicum, tomato, cabbage, Tomato, Brinjal and Chilli. Continue planting of horticultural crops viz, papaya, mango, guava etc. Undertake sowing of radish, garlic, coriander, spinach, fenugreek etc.

Uttarakhand

- In Bhabar and Tarai Zone, undertake sowing of wheat. To control the panicle blight disease in rice, spray 15 g streptomycin + 500 g copper oxychloride /ha. On the occurrence of brown plant hopper on rice, spray 1 litre Buprofezin 25 SC or 150 ml of Imidacloprid 17.8 SL in 500 litres of water per ha. Undertake transplanting of mustard. Undertake transplanting of cabbage and cauliflower seedlings. Mulching should be done to conserve the moisture after hoeing in pea, radish, cabbage and cauliflower crops. To control early blight on tomato, spray solution of mancozeb @ 2.5 g/litres of water.
- In Sub-Humid Sub-Tropic Zone, undertake transplanting of cabbage, cauliflower, tomato and brinjal. Undertake field preparation for sowing of potato.
- In Hill Zone, undertake harvesting of matured vegetable pea. Undertake field sanitization before sowing of onion nursery. Use light trap during night to protect cucurbits from pests. Undertake sowing of mustard, radish, carrot, fenugreek, coriander and garlic. In red gram, spray Indoxacarb 15.8EC @ 0.5 ml/litre of water to control fruit borer insect. Undertake sowing of wheat.

Rajasthan

- In Sub Humid Southern Plain and Aravali Hill Zone, undertake sowing of mustard, gram, pea and garlic with residual soil moisture. Also undertake transplanting of mature seedlings of cauliflower, cabbage, broccoli and tomato may in raised bed.
- In Semi-Arid Eastern Plain Zone, undertake sowing of mustard, gram, spinach and pea.
- In Transitional Plain Zone of Inland Drainage, undertake sowing of mustard, Lucerne, Taramira.
- In Arid Western Plain Zone, this is the optimum time of sowing for gram and mustard.
- In Flood Prone Eastern Plain Zone, prepare field by ploughing and planking for potato, spray Malathion 50 EC @ 1.0 ml/litre water to manage fruit fly in guava.

Animal Husbandry

- In East Uttar Pradesh, Balanced diet should be given for milk animal with 50% green fodder. Vaccination should be done to prevent the animals from foot mouth diseases. Vaccinate the goat to control PPR disease.
- In west Uttar Pradesh, cattle sheds should be kept dry as far as possible. Farmers are advised to provide dry fodder with green fodder in (50:50) ratio & 20-30 g mineral mixture and salt for the dairy animal's every day. Vaccinate the goat to control PPR disease.

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