



**National Agromet Advisory Service Bulletin**  
**Based on**  
**Extended Range Weather Forecast (ERFS)**

**Validity: 30 November to 13 December 2018**

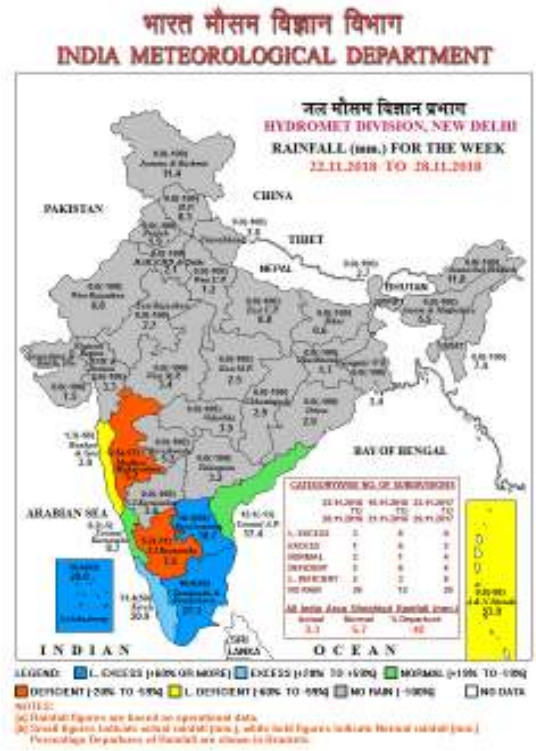
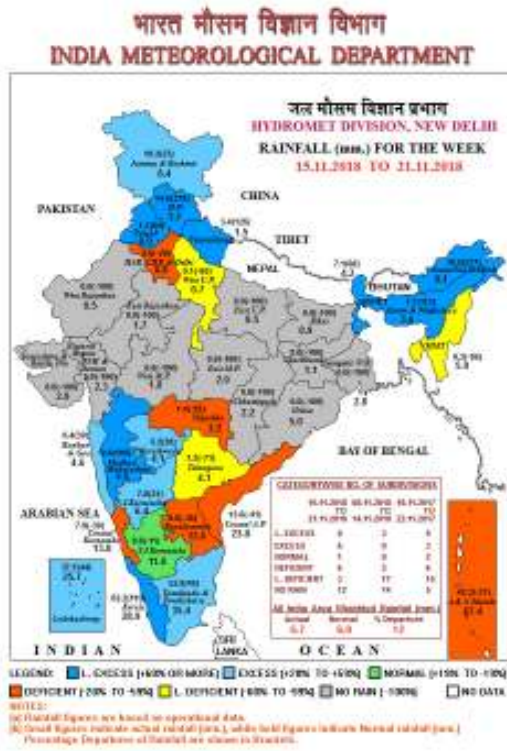
**Date of issue: 30 November 2018**

**Issued by**  
**Indian Council of Agricultural Research (ICAR)**  
**All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),**  
**Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad.**  
**&**  
**Earth System Science Organization**  
**India Meteorological Department**

## Realized Rainfall and Extended Range Forecast (Rainfall and Temperatures)

### Realized Rainfall

(15<sup>th</sup> to 28<sup>th</sup> November 2018)



- Normal or above normal rainfall occurred in both the weeks in Tamil Nadu, Kerala and Lakshadweep.
- Normal or above normal rainfall occurred in either of the last two weeks in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa, Madhya Maharashtra, Marathwada, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka and Andhra Pradesh.
- Below normal rainfall occurred in both the weeks in Andaman & Nicobar Islands.
- Below normal rainfall / no rain occurred in either of the two weeks in West Uttar Pradesh, Haryana, Chandigarh & Delhi, Vidarbha and Nagaland, Manipur, Mizoram & Tripura and Telangana.
- No rain occurred in both the weeks in Rajasthan, Gangetic West Bengal, Gujarat, East Uttar Pradesh, Bihar, Jharkhand, Odisha, Chhattisgarh and Madhya Pradesh.

## Extended Range Forecast System

**Rainfall forecast maps for the next 2 weeks (IC – 28 November)**  
**(30<sup>th</sup> November to 13<sup>th</sup> December 2018)**



### Extended Range Rainfall Forecast

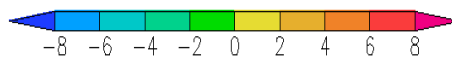
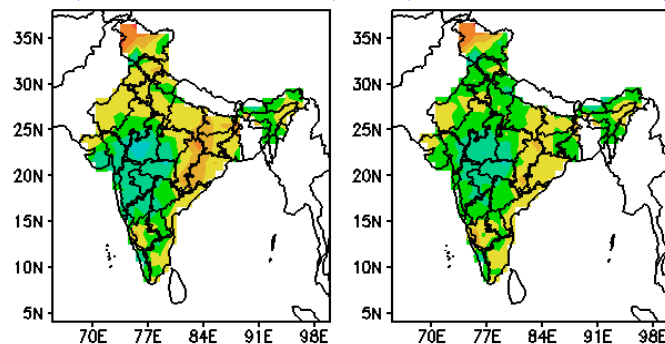
- **Week 1 (30.11.2018 to 06.12.2018) and Week 2 (07.12.2018 to 13.12.2018):** Below normal northeast monsoon rainfall over south peninsula met-subdivisions, although there is increase of rainfall over North East India, south peninsular India and Northwest India during week 2 compared to week 1.

**Maximum and Minimum temperature anomaly ( $^{\circ}\text{C}$ ) forecast  
for next 2 weeks (IC – 28 November)  
(30<sup>th</sup> November to 13<sup>th</sup> December 2018)**

**MME Bias Corrected Tmax Anomaly (Deg)**

(Week1: 30Nov–06Dec)

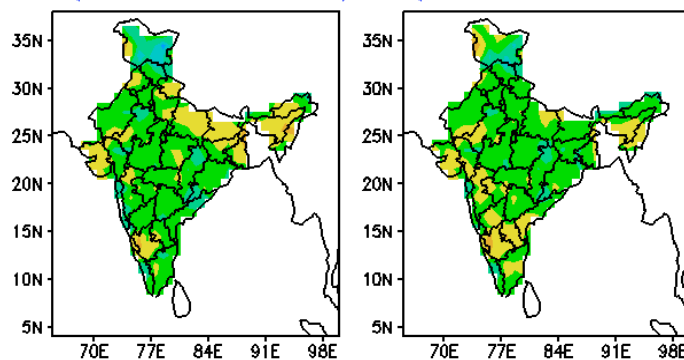
(Week2: 07Dec–13Dec)



**MME Bias Corrected Tmin Anomaly (Deg)**

(Week1: 30Nov–06Dec)

(Week2: 07Dec–13Dec)



**Maximum Temperature (Tmax)**

- **Week 1 (30.11.2018 to 06.12.2018):** Tmax over western part of India (Maharashtra and west Madhya Pradesh), adjoining parts of central India and North East India is expected to be slightly below normal, whereas over rest of India Tmax is expected to be above normal.
- **Week 2 (07.12.2018 to 13.12.2018):** Tmax over some isolated regions of northwest India and parts of eastern coastal region will be above normal, whereas it will be below normal over most of other regions.

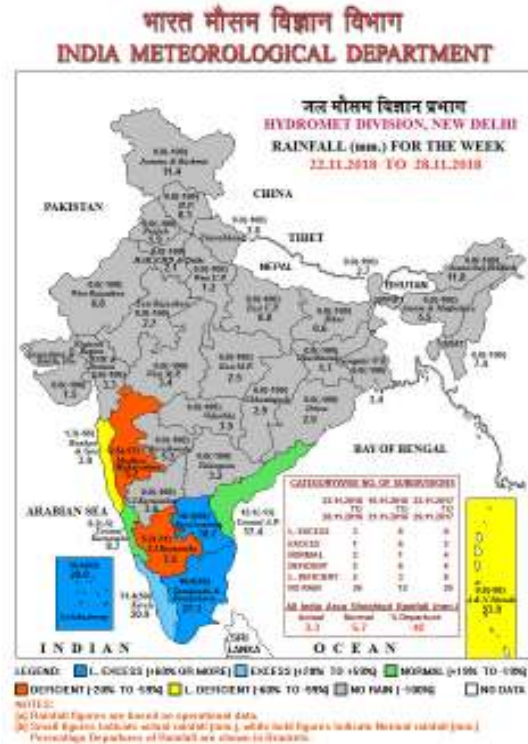
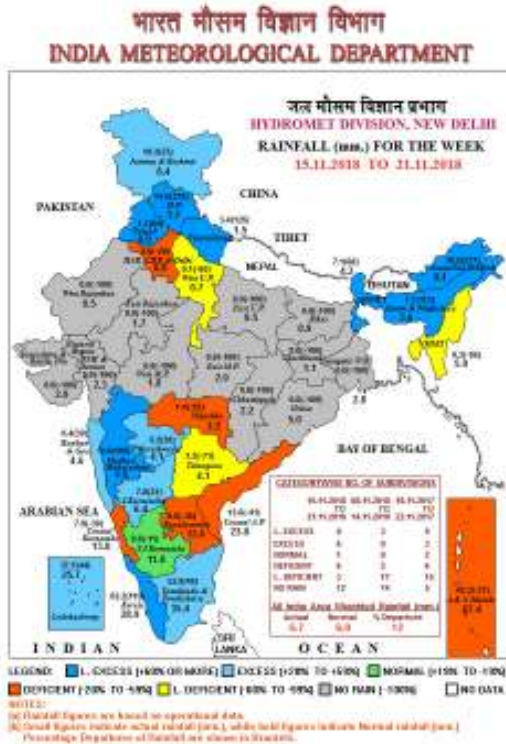
**Minimum Temperature (Tmin)**

- **Week 1 (30.11.2018 to 06.12.2018) and Week 2 (07.12.2018 to 13.12.2018):** Mostly below normal Tmin over the eastern coastal states of India, adjoining central India and parts of south peninsula and slightly above normal over Bihar, Uttar Pradesh and adjoining region in week 1.

## Realized Rainfall and Extended Range Forecast (Rainfall and Temperatures)

### Realized Rainfall

(15<sup>th</sup> to 28<sup>th</sup> November 2018)



- Normal or above normal rainfall occurred in both the weeks in Tamil Nadu, Kerala and Lakshadweep.
- Normal or above normal rainfall occurred in either of the last two weeks in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa, Madhya Maharashtra, Marathwada, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka and Andhra Pradesh.
- Below normal rainfall occurred in both the weeks in Andaman & Nicobar Islands.
- Below normal rainfall / no rain occurred in either of the two weeks in West Uttar Pradesh, Haryana, Chandigarh & Delhi, Vidarbha and Nagaland, Manipur, Mizoram & Tripura and Telangana.
- No rain occurred in both the weeks in Rajasthan, Gangetic West Bengal, Gujarat, East Uttar Pradesh, Bihar, Jharkhand, Odisha, Chhattisgarh and Madhya Pradesh.

# Extended Range Forecast System

Rainfall forecast maps for the next 2 weeks (IC – 28 November)  
(30<sup>th</sup> November to 13<sup>th</sup> December 2018)



## Extended Range Rainfall Forecast

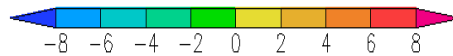
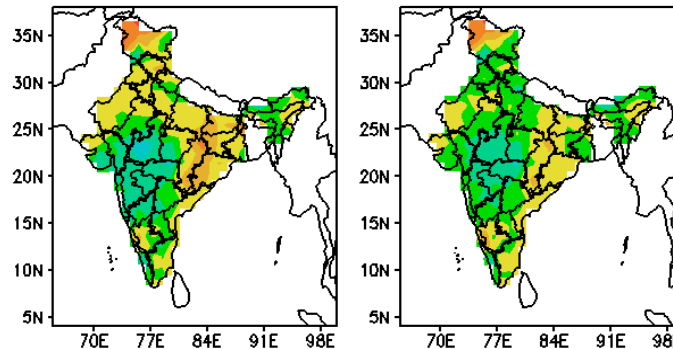
- **Week 1 (30.11.2018 to 06.12.2018) and Week 2 (07.12.2018 to 13.12.2018):** Below normal northeast monsoon rainfall over south peninsula met-subdivisions, although there is increase of rainfall over North East India, south peninsular India and Northwest India during week 2 compared to week 1.

**Maximum and Minimum temperature anomaly ( $^{\circ}\text{C}$ ) forecast  
for next 2 weeks (IC – 28 November)  
(30<sup>th</sup> November to 13<sup>th</sup> December 2018)**

**MME Bias Corrected Tmax Anomaly (Deg)**

(Week1: 30Nov–06Dec)

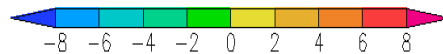
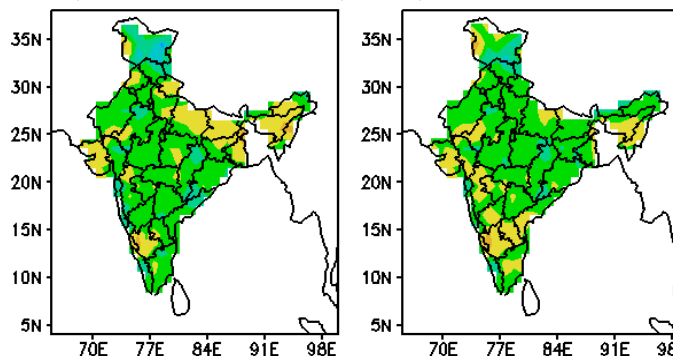
(Week2: 07Dec–13Dec)



**MME Bias Corrected Tmin Anomaly (Deg)**

(Week1: 30Nov–06Dec)

(Week2: 07Dec–13Dec)



**Maximum Temperature (Tmax)**

- **Week 1 (30.11.2018 to 06.12.2018):** Tmax over western part of India (Maharashtra and west Madhya Pradesh), adjoining parts of central India and North East India is expected to be slightly below normal, whereas over rest of India Tmax is expected to be above normal.
- **Week 2 (07.12.2018 to 13.12.2018):** Tmax over some isolated regions of northwest India and parts of eastern coastal region will be above normal, whereas it will be below normal over most of other regions.

**Minimum Temperature (Tmin)**

- **Week 1 (30.11.2018 to 06.12.2018) and Week 2 (07.12.2018 to 13.12.2018):** Mostly below normal Tmin over the eastern coastal states of India, adjoining central India and parts of south peninsula and slightly above normal over Bihar, Uttar Pradesh and adjoining region in week 1.

## Strategic Agricultural Planning based on rainfall during next two weeks till 13<sup>th</sup> November 2018

### Agromet Advisories

#### Kerala

Rainfall received during the period from 01 October to 29 November 2018 over Kerala is 433.5 mm, which is 1% deficit than normal. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for both the weeks.

- There is a chance of downy mildew attack in vegetables. Apply 2.5g curzate M-8 or one milli Equation pro per one litre of water under the leaves.
- Green ginger can be harvested. To control soft rot, drench the soil with 1% Bordeaux mixture, 0.3% mancozeb. Application of pseudomonas, split application of fertilizers and increased application of organic fertilizers are found to be effective in controlling the disease. Spray 0.1% malathion to control shoot borer.
- Destroy the affected leaves along with the Spodoptera in Banana. If Spodoptera attack is severe, spray quinalphos 2ml per one litre of water or chlorantraniliprole 3 ml per 10 litre of water.
- **Coconut:** Plough the inter spaces for controlling the weed growth and enhancing the infiltration of rain during NE monsoon. Keep vigilance against Red palm weevil attack.

#### Karnataka

Rainfall received during the period from 01 October to 29 November 2018 over different meteorological sub-divisions of Karnataka viz, North Interior Karnataka is 47.1 mm (66% deficit), South Interior Karnataka is 119.2 mm (39% deficit) and Coastal Karnataka is 172.4 mm (30% deficit). The extended range weather forecast provided for weeks (30 November to 06 December and 07 to 13 December) over North Interior Karnataka is below normal for week-1 and above normal for week-2, over South Interior and coastal Karnataka is below normal for both the weeks.

#### South Interior Karnataka

- Farmers can go for harvesting of groundnut and maize crop.
- If pod borer noticed in red gram, spray Indoxacarb 14.5 SC @ 0.5 ml/litre or Spynosad 45 SC @ 0.15 ml/litre or Chloropyrifos 20 EC @ 2ml/litre.
- If ragi blast disease noticed, spray Mancozeb @ 2 gram/litre (100 gram/acre) or Zainab @2.5 gram/litre(500 gram/acre).

#### Tamil Nadu

Rainfall received during the period of 01 October to 29 November 2018 over Tamil Nadu is 302.2 mm, which is 12% deficit as compared to the normal. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for both the weeks.

- Possibility of root rot disease incidence on cotton crop, to control spot drench with 0.1% Carbendazim or 0.05% Benomyl.
- Chance of occurrence of Yellow mosaic virus disease in pulses. To control, foliar spray of neem formulation 3 ml/litre or spray Dimethoate 30 EC 500 ml/ha and repeat after 15 days, if necessary.
- Possibility of web worm and corn worm infestation in maize. To control, spray Carbaryl 25 kg/ha (or) Phosalone 25 kg/ha



### **Maharashtra**

Rainfall received during 01 October to 29 November 2018 over different meteorological sub divisions of the state viz., Konkan: 65.2 mm (54% deficit), Madhya Maharashtra: 38.4 mm (62% deficit), Vidarbha: 1.8mm (97% deficit) and Marathwada: 16.0 mm (83% deficit). The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) over all the subdivisions of Maharashtra is below normal for week-1 and below normal over Konkan & Goa, normal over Madhya Maharashtra and above normal over Marathwada and Vidarbha for week-2.

### **Marathwada**

- To control tur pod borer in pigeonpea crop spray Chlorantraniliprole 18.5 % @ 60 ml or Chlorantraniliprole 0.3 % + Lambda cyhalotrin 4.6 % @ 80 ml per acre. Protective irrigation should be applied with an interval of 15 days.
- To control fall army worms in maize crop spray Thiamethoxam 12.6 % + Lambda cyhalotrin 9.5 % @ 50 ml per acre.
- To control leaf spot disease in turmeric crop spray Mancozeb 25 gm or Carbendazim 10 gm per 10 liter of water along with sticker.
- Irrigation management should be done with the help of sprinkler irrigation system in Rabi groundnut as per availability and requirement.

### **Madhya Maharashtra**

- For control of powdery mildew disease in the late pruned ber, spray 80 WP wettable sulphur 20gm and karathane 5 ml per 10 Liter water in alteration at 10 – 12 days interval.
- Third hoeing operation should be carried out in rabi sorghum.
- For pod borer in chick pea install Helilure traps @ 5 no./ ha If the incidence is more spray Chlorpyrifos/ Quinolphos @ 15-20 + 10 litre of water.

### **Chhattisgarh**

Rainfall received over Chhattisgarh during 01 October to 29 November 2018 is 4.1 mm, which is 94% deficit than normal. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for week-1 and above normal for week-2.

- If moisture is present in the fields, then zero till seed drill should be used and rabi crops like gram etc. should be sown.
- Farmers can go for sowing of sunflower, linseed and groundnut.
- Before sowing the seed of vegetables. seed should be treated with Metalexyl @ 1 gram per kilogram of seed.
- Perennial forage crops should be harvested and additional forage should be kept for feeding animals.

### **Bihar**

Rainfall received over Bihar during 01 October to 29 November 2018 is 17.5 mm, which is 75% deficit. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for week-1 and above normal for week-2.

- Finish the timely sown wheat crop till the 5th December for realizing greater growth and productivity.

PBW-343, PBW-443, K-9107, HD-2733, HD-2824, HD-2967, HUW-206, HUW-468, K-307, CBW-38, DBW-39 varieties of wheat are recommended for timely sowing under irrigated condition. Application of 15-20 ton FYM, 60 kg nitrogen, 60 kg phosphorus and 40 kg potash per hectare is advised during land preparation.

- Farmers are advised to remove weeds from onion nursery at the regular interval of 7-10 days. Give light irrigation after weeding. Protect the nursery seedlings from insect-pest and disease infestation.
- Farmers are advised to complete the sowing of gram up to 10<sup>th</sup> December. Pusa-256, KPG-59 (Udai), KWR-108, pant G-186 and Pusa-372 varieties of gram are recommended for sowing in north Bihar region.
- Weeding is advised in garlic. Give light irrigation in garlic crop as per soil moisture

### **Uttar Pradesh**

Amount of rainfall received over East Uttar Pradesh region is 0.4 mm (99% deficit) and West Uttar Pradesh is 7.3 mm (84% deficit) during 01 October to 29 November 2018. The extended range weather forecast provided for two weeks (30 November to 06 December and 07 to 13 December) for West and East Uttar Pradesh is no rain for week-1 and normal over West Uttar Pradesh and above normal over East Uttar Pradesh for week-2.

- Recommended wheat varieties at irrigated condition such as PBW-343, K-9107, U.P.-2382, K-307, DBW-17, PBW-443, HD-2824, DBW-39, CBW-38 and HUW-510 with 100 kg/ha of seed and 120:60:60 kg/ha fertilizer should be used.
- During this week, light to scattered clouds to be appeared therefore, watch full for aphid in toria crop. If seen, spray Azadirectin (Neem oil) 0.15% EC @ 2.5lt/ha with 400-500lt of water solution.
- Weeding and thinning should be taken up in mustard late sown crop and light irrigation should be given after 30-35 days after sowing.

### **West Bengal**

Rainfall received over Gangetic West Bengal during 01 October to 29 November 2018 is 70.8 mm, which is 53% deficit. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for week-1 and above normal for week-2.

- Start nursery bed preparation of Boro rice. Also start collecting seeds of improved varieties.
- Due to no rainfall since couples of week, the soil moisture status going down in potato. Those who have planted potato should give light (jhapta) irrigation frequently up to emergence of the crop. Those who are about to plant, provide one light pre-sowing irrigation.
- Provide irrigation in vegetables like tomato, brinjal etc.
- Start sowing recommended varieties of mustard like Sita, Vagirathi etc.

### **Odisha**

Rainfall received over Gangetic West Bengal during 01 October to 29 November 2018 is 121.2 mm, which is 13% deficit. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for week-1 and above normal for week-2.

- The early sown groundnut crop is at 3 week stage. Go for weeding and hoeing. Apply 100 kg Gypsum by broadcasting or side dress 50 Kg of Gypsum. Irrigate the crop if required.
- Complete sowing of rabi pulses by the end of November. Go for sowing of lentil, field pea and

chickpea @ 20 kg/acre up to November end.

- The rainfed mustard is at 15 to 20 days stage . Go for hoeing and weeding. Thin out the plants and maintain optimum plant population. It is found to be affected by *Crociodollema* and aphids. Spray 400 ml Dimethoiate per acre for controlling aphids and 200 ml Ethofenprox or Deltamethrin in 200 litre water per acre.

### **Jharkhand**

Rainfall received over Jharkhand during 01 October to 29 November 2018 is 24.3 mm, which is 71% deficit. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for week-1 and above normal for week-2.

- Culture operation is essential for conserving soil moisture as well as to control weeds in wheat crop. After interculture operation irrigate the field and broadcast urea @ 22 kg per acre, next day of irrigation.
- In one month old crops of potato, apply urea @ 40 kg per acre after earthing up and irrigate the crop at an interval of 10-15 days. Attack of Blight disease (in which, small shining brown spots appear on leaves) in crop is expected. Spray immediately the fungicide Saaf (2 gm per litre of water) or Redomil (1.5 gm per litre of water) to control the disease as and when symptoms appear.

### **Rajasthan**

Amount of rainfall received over East Rajasthan region is 1.4 mm (94% deficit) and West Rajasthan is 0.5 mm (94% deficit) during 01 October to 29 November 2018. The extended range weather forecast provided for two weeks (30 November to 06 December and 07 to 13 December) for West and East Rajasthan is below normal for both the weeks.

- This is right time for normal sowing of wheat as the mean temperature around 20° C is suitable for sowing of wheat in southern Rajasthan for getting higher yield. The improved varieties are Raj-4037, Raj-3077, Raj- 3765, HD-2864, GW-322, Raj-1555, HI-8498, HI-1544 and Lok-1.
- Intercultural operations should be done in vegetables. Give the remaining doses of fertilizer in 15-25 days old crop.
- Sowing of Carrot, Radish & Beetroot should be done in this forenoon. Improved varieties are for **Carrot** : Nantes, Pusayamadami, **Radish** : Japanese White and Pusa Himani, **Beetroot**: Crimson Globe etc.
- In mustard, hoeing and thinning should be done where crop is at 20 to 25 days and keep plant to plant distance 10-20 cm. Top dressing of 30 kg nitrogen along with irrigation where the crop attain 30-35 days.
- Hoeing & weeding should be done in cumin.

### **Assam**

Rainfall received over Assam is 63.8 mm (65% deficit) during 01 October to 29 November 2018. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is normal for week-1 and below normal for week-2.

- Farmers are advised to use trap along with poison bait to control field rat infestation in matured rice crop. Use easily available material such as broken rice (960gram), mustard oil (20ml) along with Zinc phosphide (20gm) to prepare the poison bait.
- Attack of red ant and cut worm may be observed in the potato field . To control this pest, farmers are advised to apply phorate 10% granules @ 2kg/bigha or malathion 5% dust @ 5kg/bigha in the soil at the time of earthing up.

- Farmer are advised to top dress fertilizers with dry compost in ring method at 25 days interval in brinjal, carrot and tomato. Wipe out plants affected by Bacterial wilt and drench root zone of unaffected plants with mixture of 1 gram Hing +5 gm Turmeric in 10 litre water. Do not plant brinjal and tomato nearby.

### **Haryana**

Rainfall received over Haryana is 4.8 mm rainfall (79% deficit) during 01 October to 29 November 2018. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is no rain for week-1 and above normal for week-2.

- Due to dry weather conditions farmers are advised to complete the sowing of Barley with recommended varieties BH 393, BH 902, BH885 & BH 986. Before sowing, seeds should be treated with Bavistin or Vitavax 2.0 g per Kg of seed.
- Due to dry weather conditions farmers are advised to complete the sowing of gram crop with recommended variety for irrigated area are C 235, HC 5 and un-irrigated/rainfed variety HC 1. Farmers are advised to treat the gram seed with Bioderma 4 gram.
- Due to fall in night temperature keep the animals under shed. Provide 50 grams iodized salt and 50 to 100 grams mineral mixture daily with animal feed/fodder to keep them healthy.

### **Himachal Pradesh**

Himachal Pradesh has received 48.9 mm of rainfall during 01 October to 29 November 2018, which is 21% deficit. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is below normal for week-1 and above normal for week-2.

- Before sowing of rabi crops, add well decomposed FYM or compost to improve the physical, biological and water retention properties/ nutrient status of the soil.
- Weeding and hoeing in vegetables should be done for optimum growth.
- Advised planting of onion bulbs in 30X10 cm spacing.
- Apply manures and fertilizers in mango and other orchard gardens
- Temperature is falling and a cold wave is likely to grip the area, so protect the newly born calves and animals from cold.

### **Punjab**

Punjab has received 6.7 mm of rainfall during 01 October to 29 November 2018, which is 76% deficit. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) is no rain for week-1 and above normal for week-2.

- It is optimum time to sow wheat varieties like PBW 550, Unnat PBW 550.
- Farmers are advised to treat wheat seed with 13 ml Raxil Easy/Orius 6 FS by dissolving in 400 ml water or 120 g Vitavax Power 75 WS or 80 g Vitavax 75 WP or 40 g Seedex 2 DS/Exzole 2 DS per 40 kg seed, using seed treatment drum to control loose smut and flag smut of wheat. Do not treat seed a month before sowing as it hampers germination.
- Apply first irrigation to wheat crop sown in last week of October and start spraying of weedicides.

### **Jammu**

Rainfall received during 01 October to 29 November 2018 over Jammu is 99.6 mm, which is 42% excess. The extended range weather forecast provided for next two weeks (30 November to 06 December and 07 to 13 December) over Jammu is below normal for week-1 and normal for week-2.

- Complete the sowing of barley (var. Ratna, Jyoti and Sonu) with seed rate 100 kg/ha in rainfed areas.
- Farmers are advised to continue sowing of wheat varieties (WH-1021, PBW-590, PBW-373, Raj-3077, Raj-3765 DBW-16) under irrigated conditions.

***Disclaimer:** The predictability of weather depends on many factors which are dynamic in nature. The success of agromet advisories provided here depends on the accuracy of the forecasts. In no event will India Meteorological Department (IMD) and Indian Council of Agricultural Research (ICAR) be liable to the user or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of the information on this bulletin.*