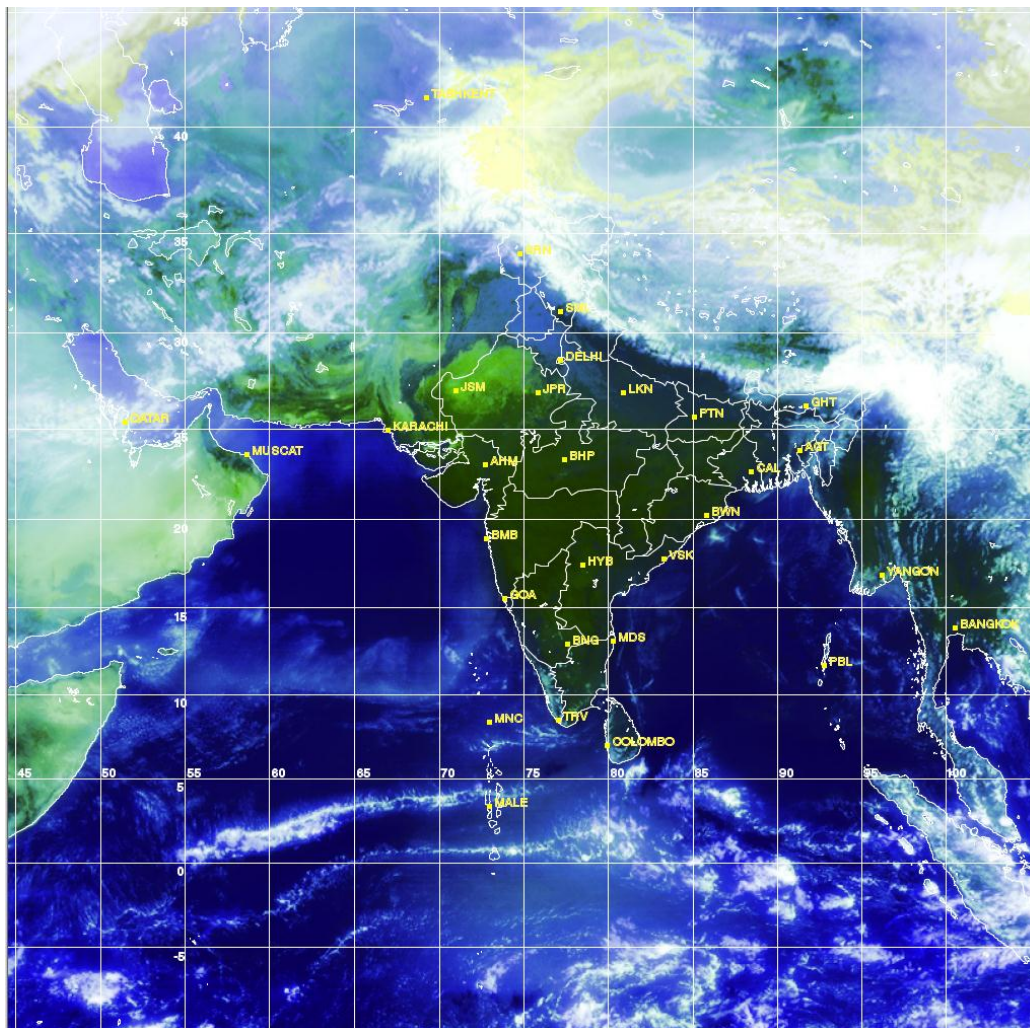




National Agromet Advisory Bulletin

Thursday, 22nd March, 2012

(For the period 22nd to 26th March, 2012)



Satellite image 0600 UTC dated 22nd March, 2012



Issued by

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

The bulletin is also displayed in the website (<http://www.imdagrimet.gov.in>) of the Division

Executive Summary

Maximum temperatures were 2-4⁰C above normal over parts of Jammu & Kashmir, Himachal Pradesh and West Rajasthan. Minimum temperatures were 4-6⁰C above normal over little parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan, Tamil Nadu, South Interior Karnataka, Telangana and coastal Andhra Pradesh. They were 2-4⁰C above normal over remaining parts of Jammu & Kashmir, Himachal Pradesh, Rajasthan, Tamil Nadu, Karnataka, Andhra Pradesh and also in West Madhya Pradesh, East Uttar Pradesh, Gujarat, Kerala and Haryana. The prevailing weather conditions are conducive for growth of wheat and other crops which are at advanced stages of growth. Farmers are advised to undertake harvesting of matured *rabi* crops. Strong surface winds speed reaching 20-30 kmph would prevail over Indo Gangetic Plains during next 24 hours; farmers are advised to apply light irrigation and postpone spraying of pesticides to the standing crops.

Significant rainfall occurred over East Siang, Upper Dibang Valley and Upper Siang district in Arunachal Pradesh, Alappuzha, Kottayam, and Pathanamthitta districts in Kerala and Toothukudi district in Tamil Nadu during last week. Realised rainfall in these districts is beneficial for the standing crops. Farmers in these districts are advised to postpone irrigation to the standing crops. As there was no significant rain over most of the remaining parts of the country and no significant rain is likely to occur, farmers are advised to provide irrigation to the standing crops. Taking the advantage of prevailing dry weather in most parts of the country, farmers are advised to undertake harvesting of matured *rabi* crops.

Due to favourable weather conditions, incidences of stem weevil in cotton and internode borer in sugarcane in Tamil Nadu, aphids in brinjal, tomato and chilli, early shoot borer in sugarcane, leaf miner and webber in summer pulses in Orissa and leaf folder and stem borer in rice and white fly in cowpea and bhindi in Chhattisgarh are noticed below economic threshold level (ETL). Farmers are advised to undertake appropriate plant protection measures to control the pests and diseases, if their population goes beyond ETL.

Due to favourable weather, farmers are advised to undertake sowing of summer crops with assured irrigation. The crops in different States of the country are mentioned below:

Assam: sowing of *ahu* rice, jute, black gram, green gram, summer vegetables and planting of sugarcane.

Arunachal Pradesh : sowing of bhindi, beans and maize.

Meghalaya: sowing of jute, summer vegetables like bottle gourd, ash gourd etc.

Tripura: sowing of cucurbits, sowing of *aus* rice.

Manipur: transplanting of cauliflower and cabbage.

Nagaland: transplanting of tomato, nursery preparation of rice, sowing of ginger and potato.

Mizoram: sowing of summer vegetables like okra, beans and cucurbits.

Orissa: sowing of summer vegetables, jute and sunflower.

Bihar: sowing of black gram and green gram.

Jharkhand: transplanting of onion, sowing of okra, summer maize and moong.

West Bengal: sowing of sesame, jute, summer vegetables and water melon and planting of Gladiolus.

Rajasthan: sowing of cow pea.

Jammu and Kashmir: sowing of turnip, nursery raising of cruciferous crops such as cabbage, cauliflower, knolkhol, broccoli and solanaceous crops such as brinjal, tomato, capsicum, chilli, paprika, onion and cucurbits.

Himachal Pradesh: sowing of chari, bajra and maize.

Uttarakhand: sowing of moong, urad, okra, chaitee dhan, foxtail millet, capsicum and tomato.

Uttar Pradesh: sowing of green gram, black gram and planting of sugarcane.

Madhya Pradesh: sowing of summer maize, green gram and groundnut.

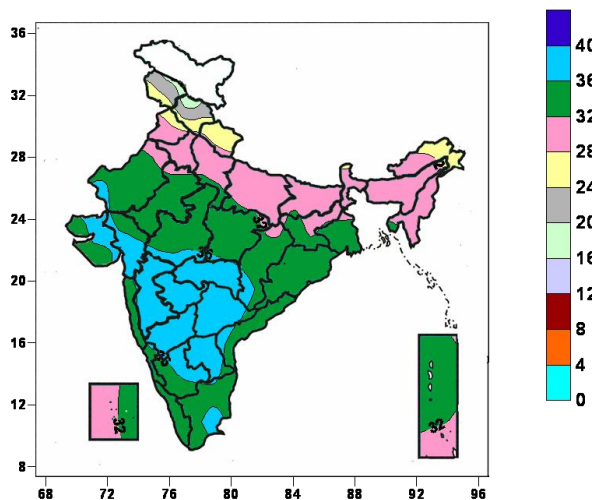
Maharashtra: sowing of okra, water melon and bajra.

Gujarat: sowing of summer bajra, green gram and groundnut.

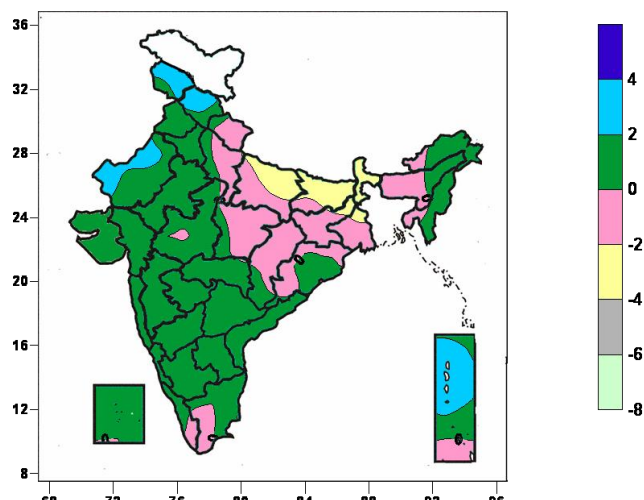
Karnataka: transplanting of sweet gourd, ridge gourd etc.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 21.03.2012

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 21.03.2012



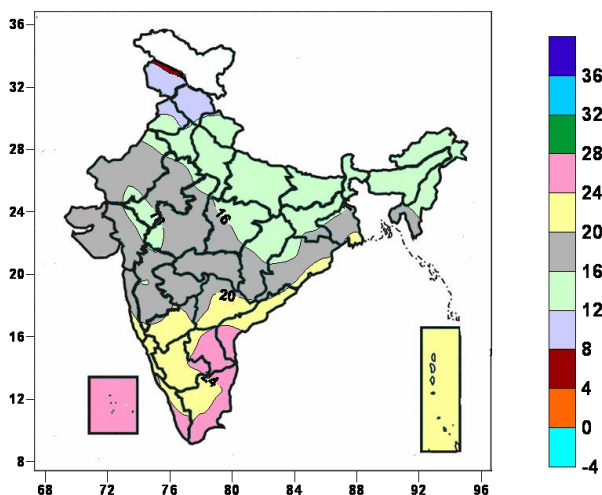
Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 21.03.2012



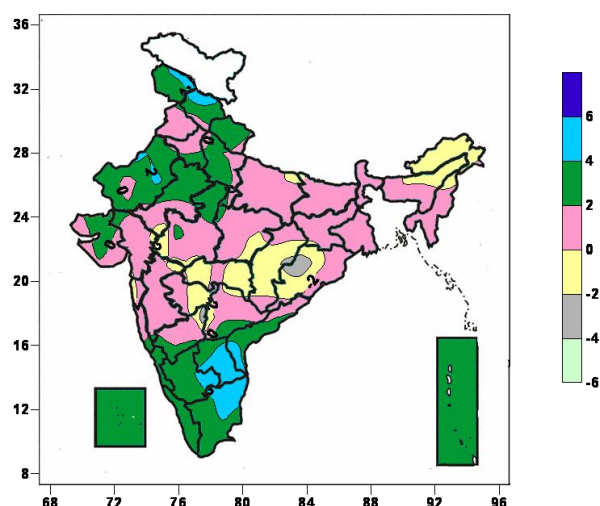
Actual Mean Maximum temperature ranged between 36°C and above over many parts of Maharashtra (except Konkan & Goa), Gujarat, Saurashtra & Kutch, Interior Karnataka, Telengana, Rayalaseema, 16 to 20°C over some parts of Jammu & Kashmir, Himachal Pradesh and between 20 to 36°C over remaining parts of the country

Actual Mean Maximum temperature anomaly ranged between 2°C and above over most parts of Jammu & Kashmir, Himachal Pradesh, Andaman & Nicobar Islands, some parts of West Rajasthan, -4 to -2°C over most parts of East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Sikkim, some parts of Jharkhand, Gangetic West Bengal and between -2 to 2°C over rest of the country.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 21.03.2012



Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 21.03.2012



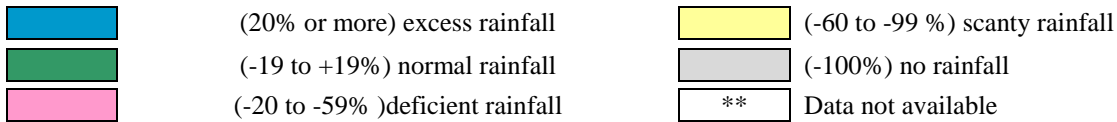
Actual Mean Minimum Temperature ranged between 24°C and above over many parts of Lakshadweep, Tamil Nadu, Rayalaseema, South Coastal Andhra Pradesh, South Kerala, 8 to 12°C over most parts of Jammu & Kashmir, Himachal Pradesh and between 12 to 24°C over remaining parts of the country.

Minimum Temperature anomaly ranged between 4°C and above over many parts of Rayalaseema, North Tamil Nadu, some parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan, South Interior Karnataka, Coastal Andhra Pradesh, below 0°C over many parts of Arunachal Pradesh, Assam, Chhattisgarh, Vidarbha, Orissa, Marathwada and between 0 to 4°C over remaining parts of the country.

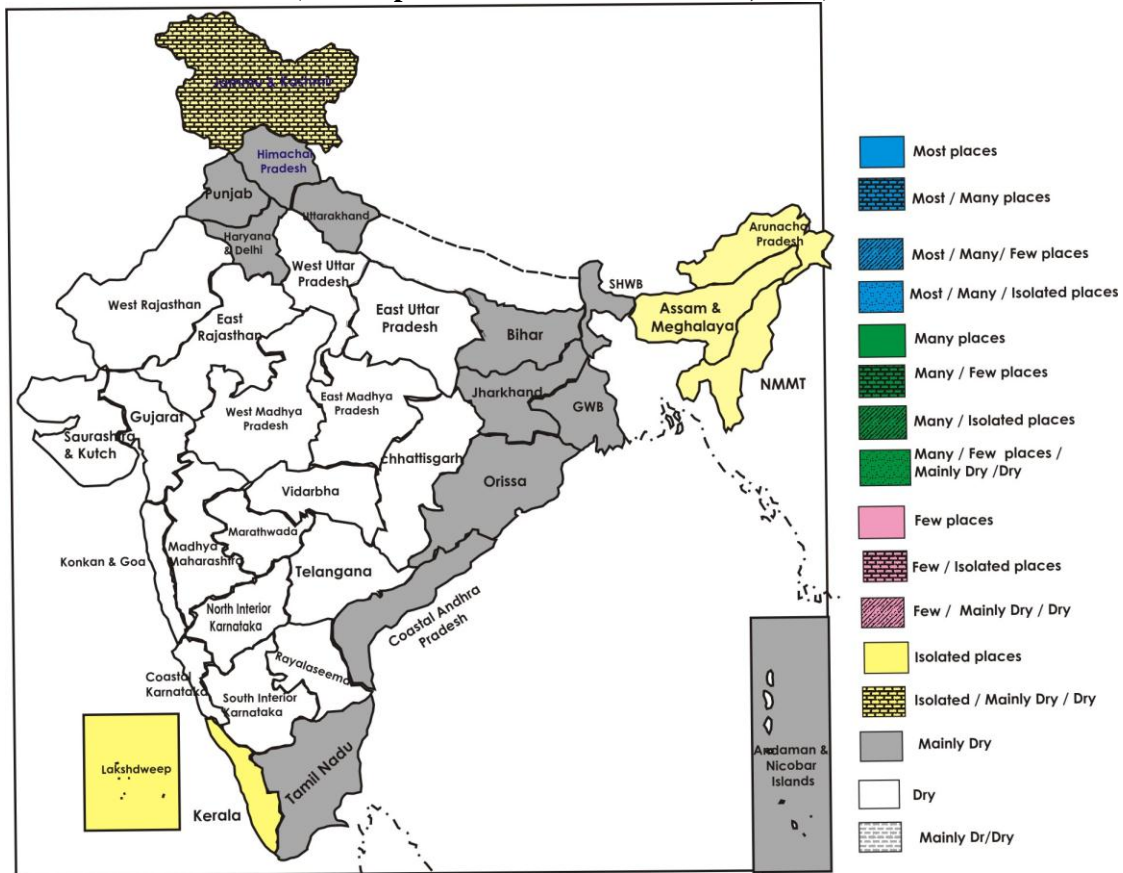
Distribution of rainfall of the country during week ending on 21.03.2012

State/Districts	Actual (mm)	% Dep.
Arunachal Pradesh		
Anjaw	**	**
Changlang	**	**
East Kameng	0.0	-100
East Siang	25.4	-8
Kurung Kumey	**	**
Lohit	12.0	-75
Lower Dibang Valley	15.0	-76
Lower Subansiri	5.0	-81
Papumpara	1.2	-97
Tawang	6.0	-55
Tirap	0.0	-100
Upper Dibang Valley	72.0	14
Upper Siang	36.4	-58
Upper Subansiri	**	**

West Kameng	0.7	-95
West Siang	8.0	-45
Kerala		
Alappuzha	39.9	348
Kannur	0.0	-100
Ernakulam	1.2	-84
Idukki	7.3	-8
Kasaragod	0.0	-100
Kollam	12.5	-4
Kottayam	35.4	365
Kozhikode	0.4	-89
Malappuram	0.0	-100
Palakkad	0.0	-100
Pathanamthitta	26.8	87
Thiruvananthapuram	0.8	-90
Thrissur	0.1	-98
Wyanad	6.2	76



Weather Forecast (Valid upto 1430 hours of 25th March, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 25th March, 2012

- Strong surface winds speed reaching 20-30 kmph would prevail over Indo Gangetic Plains during next 24 hours.
- Prevailing dust/haze over Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Gujarat and Madhya Pradesh is likely to clear during next 24 hours.
- Maximum temperatures would rise gradually over northwest and adjoining central India.
- Minimum temperatures would rise gradually over northwest and adjoining central India.
- Rain/thundershowers would occur at one or two places over Sikkim, northeastern states, Kerala and Lakshadweep.
- Rain/thundershowers would occur at one or two places over Jammu & Kashmir from tomorrow onwards.
- Weather would be mainly dry over remaining parts of the country.

Weather Warning

- No weather warning.

Weather Outlook up to 0830 hours IST of 27th March, 2012

- Rain/thundershowers would occur at a few places over western Himalayan region.
- Maximum and minimum temperature would rise by 2-3°C over northwest India.
- Weather would be mainly dry over rest parts of the country.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred over East Siang, Upper Dibang Valley and Upper Siang district in Arunachal Pradesh. There was no significant rainfall in the remaining states of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at isolated places over Arunachal Pradesh, Assam & Meghalaya during next three days. Isolated rainfall likely during next 24 hours over Nagaland, Manipur, Mizoram & Tripura and mainly dry weather thereafter.
- **Advisories**
 - As significant rainfall occurred over East Siang, Upper Dibang Valley and Upper Siang district in Arunachal Pradesh, postpone irrigation to standing crops. As there was no significant rain in the remaining States during last week and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to the standing crops in the region.
 - Farmers in the Hill Zone of Assam are advised to raise nursery of transplanted *ahu* rice, prepare land for transplanting of *ahu* rice and continue sowing of okra and cucurbitaceous crops.
 - Farmers in Central Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *Capsularis* jute, summer vegetables, summer pulses and early *ahu* rice.
 - Farmers of Lower Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice, musk melon, water melon, *kharif* maize and jute, summer pulses like black and green gram, summer vegetable like pointed gourd, pumpkin etc. and planting of sugarcane.
 - Farmers of Barak Valley Zone of Assam are advised to raise nurseries for the transplanted early *ahu* rice. Farmers are also advised to provide mechanical support to the tomato plants at flowering stage to avoid fruit damage due to direct contact with soil.
 - Farmers in North Bank Plain Zone of Assam are advised to complete sowing of direct seeded *ahu* rice. Continue land preparation and sowing of summer vegetable, summer green gram and black gram and planting of sugarcane.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to continue land preparation for maize crop and summer vegetable.
 - As dry weather prevailed during last few weeks, farmers in Mild Tropical Plain Zone of Tripura are advised to apply irrigation to maintain 5-7 cm water level in *boro* rice at tillering / flowering stage. Undertake land preparation for sowing of upland *aus* paddy and continue land preparation and sowing of summer vegetables and cucurbits.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue sowing of *kharif* maize, jute and vegetables like ladies finger, pumpkin, French beans, bottle gourd, ash gourd etc. Prepare nursery for brinjal. Undertake harvesting of matured spring potato, cauliflower, cabbage (varieties Golde Acre, Pride of India), lady's finger, pumpkin, French bean, apricot, early sown turnip, Bengal gram and matured mustard. Also undertake new sowing of cauliflower, cabbage of recommended varieties.
 - Farmers of Sub tropical Plain Zone of Manipur are advised to undertake harvesting of matured mustard-rapeseed crop and continue land preparation and planting of ginger and turmeric and sowing of French bean and bhindi.
 - In Mild Tropical Hill Zone of Mizoram, farmers are advised to undertake land preparation and sowing of summer vegetables like okra, beans, cucurbits etc.
 - In Mild Tropical Hill Zone of Nagaland, farmers are advised to harvest mustard in the morning hours to avoid shattering loss. Continue land preparation and planting of turmeric and ginger and sowing of rajma.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Infestation of stem borer is observed at tillering stage of *boro* rice in the Central Brahmaputra Valley Zone of Assam. Farmers are advised to spray Chloropyrifos (20%) @ 2 ml / litre of water to control the attack.
 - There are chances of infestation of stem borer in *boro* rice in Mild Tropical Plain Zone of Tripura; farmers are advised to spray Imidacloprid @ 1 ml per liter of water to control the attack.
 - Stages of major crops are mentioned in Annexure I.

- **Animal Husbandry**

- Farmers in Lower Brahmaputra Valley Zone of Assam are advised to vaccinate cattle, goat and pigs against the Foot and mouth disease.
- Poultry farmers in Upper Brahmaputra Valley Zone of Assam are advised to vaccinate poultry against the Ranikhet disease.
- The farmers in Nagaland are advised to vaccinate poultry against bird flu and pigs / piglets against swine flu.
- The farmers in Manipur are advised to vaccinate poultry against Ranikhet, IBD / Gumboro disease and also deworm and vaccinate pigs / piglets. Vaccinate and deworm cattle and buffalo against B.Q. & H.S. Vaccinate and deworm goat against Haemorrhagic Septicaemia.
- Farmers in Mild Tropical Plain Zone of Tripura are advised to vaccinate cattle against BQ and goat kids above 6 months against Haemorrhagic Septicemia disease. Farmers are also advised to vaccinate poultry against Ranikhet disease and vaccinate the piglets against swine fever.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]

- **Realised Rainfall:** Mainly dry weather prevailed over the States of the region except in the district of North Sikkim in SHWB during last week.
- **Rainfall Forecast:** Rain/thundershowers are likely to occur at one or two places over sub-Himalayan West Bengal & Sikkim and mainly dry / dry weather is likely to prevail over the rest of the region.
- **Advisories:**
 - As there was no significant rain during last week over the States of the region except in North Sikkim district in Sub Himalayan West Bengal and no significant rainfall is likely during next three days, farmers are advised to apply irrigation to the standing crops.
 - In view of prevailing dry weather, farmers in North Eastern Plateau Zone of Orissa are advised to apply irrigation to sunflower.
 - Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to undertake harvesting of sugarcane and sowing of summer sunflower.
 - It is optimum weather for sowing of sesame; farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to complete sowing of sesame.
 - Farmers in North Central Plateau Zone of Orissa are advised to apply irrigation to wheat, wherever the crops are at grain formation stage. Taking the advantage of dry weather, farmers are also advised to undertake intercultural operation in groundnut and sunflower and undertake sowing of summer vegetables. Also complete sowing of summer maize.
 - Due to increase in temperatures, the evaporation rates have increased and thereby the water requirement of crops has also increased. Therefore, the farmers of North Eastern Plateau Zone of Orissa are advised to reduce the interval between two irrigations. Maintain the water level in transplanted rice field and use / broadcast Blue Green Algae @ 4 kg per acre.
 - The farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to carry out sowing of summer vegetables by end of March and also now the weather is optimum for sowing of jute.
 - The farmers of North Central Plateau Zone are advised to complete sowing of sunflower as the temperature is favourable.
 - As temperature condition is now congenial for sowing of summer vegetables and summer maize in North West Plain Zone of Bihar, farmers are advised to undertake these operations.
 - As dry weather is prevailing, farmers in the districts of North Bihar are advised to apply irrigation to wheat, maize, vegetable crops and harvest matured tobacco crop. Undertake sowing of summer moong and urad crops and ensure moisture in the field at the time of sowing for better germination and crop stand. Farmers are also advised to dig out the tubers from the fields. Undertake top dressing of nitrogen in summer maize.
 - Apply irrigation to wheat and undertake intercultural operation in maize, carrot, radish and turnip crops in South Bihar Alluvial Zone. Undertake land preparation and sowing of moong.
 - Farmers in Western, Central and North Eastern Plateau Zone of Jharkhand are advised to irrigate the wheat crop and prepare the field for sowing of vegetables like long gourd, round gourd, bitter gourd,

sponge gourd, cucumber, water melon and musk melon. Moisture deficiency may cause heavy reduction in yield. Hence, irrigate the field of wheat as per the requirement.

- Farmers in New Alluvial Zone of West Bengal are advised to complete sowing of sesame and different summer vegetables such as lady's finger, spinach, various leafy vegetables etc. Apply irrigation as there is no forecast of rainfall.
- Farmers in Coastal Saline Zone of West Bengal are advised to prepare the field for sowing of Water melon. As no rainfall is likely during next few days, farmers are advised to apply irrigation to sunflower.
- Farmers in Old Alluvial Zone of West Bengal are advised to undertake sowing of summer vegetables like pointed gourd, lady's finger, brinjal, chilli etc.
- Farmers in Laterite and Red Soil zone are advised to apply last irrigation to wheat, wherever the crops are at grain formation stage and stop irrigation if the crops are at maturity stage.
- Taking the advantage of dry weather, Farmers in Terai Zone of West Bengal are advised to undertake sowing of *Capsularis* and *Olitorious* jute.
- Farmers in hill zone of West Bengal are advised to undertake land preparation and sowing of maize and planting of *Gladiolus*.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- In North Eastern Coastal Plain Zone of Orissa due to dry weather, fruit drop is a common problem. Spray water by pedal sprayer during forenoon hours to prevent fruit drop.
- In East and South Eastern Coastal Plain Zone Orissa in Kendrapara district, current temperature favours thrips infestation in summer pulses. Spray 400 ml Dimethoate or Endosulphan or 50 ml Imidachloprid in 200 litre water per acre. Infestation of leaf minor, leaf webber has occurred. Spray 2 ml Endosulphan in 1 litre water.
- In East and South Eastern Coastal Plain Zone of Orissa in Nayagarh district, early stem borer infestation has been found. If it crosses the ETL level (5% dead heart), undertake hoeing, weeding and apply 4 kg phorate or 12 kg Carbofuran or 10 kg Cartap followed by earthing up or spray 400 ml Monocrotophos / Tryozophos / Profenophos.
- In Coastal Saline Zone of West Bengal, betel vine may be attacked by chital disease. Spray Blitox @ 50 g / litre of water or Kalaxin @ 3 g / litre of water. Seedlings of *boro* rice are attacked by stem borer in the main field. Spray Cartap @ 1 g / litre of water or Endosulfun @ 1.5 ml / litre of water. Coconut Plants may be attacked by black headed caterpillar. Spray neem oil @ 2.5 ml / litre of water at 7 days interval. Spray methomyl @ 1-1.5 g / litre of water at the head.
- In Terai Zone of West Bengal, brinjal, tomato and chilli may be attacked by aphids. To protect, spray Imidacloprid @ 3 ml / 15 litres of water. As there is possibility of increase in the maximum temperature, there is possibility of infestation of whitefly. To protect from whitefly, spray Imidacloprid @ 3 ml / 15 litres of water. In this weather condition, mite attack may be a problem in wheat and summer vegetables. If the leafs are curling due to mite attack, spray Dicofol @ 3 ml / litres of water.
- Aphids may infest wheat and mustard in Old Alluvial Zone and Hill Zone of West Bengal. For the management of aphids, spraying the crops, either with Imidacloprid @ 1 ml / litre of water or Acetamiprid @ 1 g / litre of water is recommended.
- Due to increase in temperature in New Alluvial Zone of west Bengal, there is chance of attack of mites in mango. To control the pest, apply 1-2 g wettable Sulphur per litre of water.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - As the temperature is increasing, the farmers of North Eastern Plateau Zone of Orissa are advised to give sufficient water and rice water to the animals before leaving them to grazing. Foot & Mouth Disease may occur; vaccinate the animals.
 - In North Central Plateau Zone of Orissa, foot and mouth disease are noticed in cows. Apply potassium permanganate on lesions in the mouth and sulphur treatment is recommended for foot lesions.
- **Pisciculture**
 - Now the temperature is rising continuously which is favourable for growth of fish. Hence, farmers of North Eastern & Central Plateau Zone of Orissa and Western Plateau of Jharkhand are advised to add cow dung and lime in the ponds as a natural foods for them and alternative feeds may also be used like rice bran and mustard cake (each of 5 kg per day per acre area of pond).

- The farmers of North Eastern Coastal Plane Zone of Orissa are advised to maintain average water depth at 5 ft level in the pond, feed fishes with oil cake: bran mixture at 2% of their body weight daily and start partial harvesting of fishes above ABW 750g.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the States in the region.
- **Rainfall Forecast:** Mainly dry weather is likely in the region except isolated rainfall after 48 hours in Jammu & Kashmir during next three days.
- **Advisory:**
 - As there was no significant rain over the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing *rabi* crops.
 - As temperature is rising farmers in Delhi are advised to give irrigation to wheat crop in milking stage in the evening when wind speed is low to avoid lodging of the crop. In present weather conditions planting of sugarcane sets should be done as early as possible. Temperature is suitable for sowing of maize, hybrid cluster bean, hybrid cultivar of baby corn, green gram and black gram. Direct sowing of french bean, amaranthus, vegetable lobia, lady's finger, bottle gourd, cucumber, ridge gourd and summer radish is advised as present temperature is suitable for germination of seeds. Harvesting of the matured mustard may be done as clear sky is forecasted for the next five days. In present weather conditions, transplanting of young seedlings of tomato, chilli and cucurbits crop may be done. Give light irrigation to onion crop.
 - In Rajasthan, due to rise in temperature farmers are advised to irrigate summer vegetables, young fruit plants and other standing crops as per need. Also undertake harvesting of matured wheat crop, mustard when 75% pods turn yellow and seed moisture content about 35% seed weight, sowing of sugarcane, summer groundnut, summer cucurbits like melon, bottlegourd, bittergourd, ridged gourd, round gourd, pumpkin and smoothgourd, etc., raising nursery of brinjal, summer chilli, okra, transplanting of seedlings of tomato, land preparation for summer guar, complete the sowing of summer green fodder, *zaid* pearl millet fodder, *zaid* sorghum fodder, *zaid* green gram with cow pea.
 - Farmers in Punjab and Haryana are advised to give light irrigation to the wheat crop because strong surface winds could lead to lodging of the crop. Sowing of summer moong and summer mash may be started from middle of March onward. Undertake nursery sowing of onion, sowing of okra and transplanting of chilli and brinjal.
 - In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to continue transplanting of tomato, onion, brinjal, chilli crop and sowing of bhindi, beans and cucurbits without any further delay. Start harvesting of matured mustard crop. Undertake field preparation for sowing of jowar under irrigated condition and also for sowing of summer pulses like mash, moong in vacated field after harvesting of early sown mustard and potato crop. They are also advised to go for plantation of new evergreen fruit plant as well as deciduous plant like mango, guava, logout, litchi, citrus, peach, plum, grapevine etc., harvesting of citrus and ber fruits.
 - In Valley Temperate zone of Jammu & Kashmir, wheat, brown sarson, pea, lentil, oat are in dormant stage, no agronomic activities in the field during this period is recommended. Farmers are advised to provide adequate drainage to avoid water stagnation after rain/snowfall. Sow seeds of tomato, brinjal, chillies, capsicum, knol, khol, kale in hot beds, poly tunnels and on raised beds in open condition may be done. Sow seeds of bottle gourd, cucumber, squash in poly bags under adequate protection. Plant potato, transplant seedlings of cauliflower, cabbage, knoll-khol. Prepare beds, irrigation channels for planting of gladiolus.
 - In Intermediate Zone of Jammu & Kashmir, farmers are advised carry out nursery sowing for tomato, brinjal, chillies and capsicum.
 - Farmers in Leh region of Jammu & Kashmir are advised to undertake sowing of turnip in the lower belts, nursery raising of cruciferous crops such as cabbage, cauliflower, knolkhol, kale, broccoli & solanaceous crops such as brinjal, tomato, capsicum, chilli and paprika and also onion should be done in green houses & trenches, cucurbits in polybags and polybags should be put in trenches or greenhouses for proper germination and growth.

- Farmers in Mid Hills Sub-Humid Zone of Himachal Pradesh farmers are advised apply half dose of nitrogen in Pear (1.4kg/basin), Peach, Plum, Apricots, Almond and Cherry (1.0kg/basin) trees of above 10 years age in low hills. Do not apply in apple now. Remove snow from the branches of the trees. Complete the training pruning work particularly in Peach and Almond 20 days before flowering. Start grafting work in Apple, Pear and Cherry. Continue planting of apple and stone fruits plants. In high hills planting can be done after melting of snow. Preparation of nursery beds for raising the nursery of tomato, capsicum, brinjal and chillimay also be carried out.
 - Farmers in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh are advised for sowing of potato after the tubers are treated with Dithane M-45 @ 0.5% for 20-25 minutes in mid hills and surgmukhi in lower plains area. Also prepare field for sowing of Chari, bajra and maize in low hills. In case seed crop of berseem and oats one cut can be taken. Earthing up can be done in the potato crop if sown earlier. Prepare the fields for sowing of Chari and bajra and maize in low hills.
 - Farmers in Uttar Pradesh are advised to give light irrigation in late sown wheat, *rabi* pulses, *rabi* oilseeds, potato, already transplanted vegetable crops. Complete planting of sugarcane, continue sowing of sunflower, guava seeds, vegetables viz. bitter gourd, bottle gourd, pumpkin, cucumber, taroi, lady's finger, tomato, brinjal, chilli, lobia, rajmah etc. and continue sowing of moong or urad in vacated field.
 - In Bhabar and Tarai Zone & Hill zone of Uttarakhand, temperature is expected to rise and weather will remain dry, hence under these expected weather conditions, farmers are advised to go for light irrigation in late sown wheat crop in the evening when wind speed is low. Other wise avoid irrigation so as to avoid lodging of crop and damage of wheat grain by rodents. Complete sowing of maize, moong, urad, okra, chiateeDhan, foxtail millets, fodder crops in vacated field.
 - In Hill zone of Uttarakhand, farmers are advised to start sowing of capsicum, tamoto in non-irrigated land and also give light irrigation in already transplanted vegetable crops.
 - In western Plain Zone of Uttar Pradesh, farmers are advised to start sowing of summer sugarcane in vacated field.
 - In western Plain Zone of Uttar Pradesh, farmers are advised to start sowing of urad, moong, maize and sunflower.
 - In Central plain zone of Uttar Pradesh complete sowing of moong and urd.
 - Due to expect increase in temperature during this week, there are more chances of pod borers in chickpea crop. There may be various stages of these insects and more population in field can reduce yield even by 50 %. Therefore, farmers are advised to spray 5 % Neem Oil extract two times at an interval of 10 days or spray 800 ml of Triphenophos dissolved in 250 ml water per acre crop area.
 - In Sub Tropical Zone of Jammu, due to increase relative humidity which is congenial for loose smut/flag smut in wheat and barley crop under such situation farmers are advised to rouge out the affected plants from wheat and barley crops immediately in order to avoid further dispersal. In gram crop field farmers are advised to install bird perch stand or collect the caterpillars of *Heliothis* and kill them manually.
 - In Semi Arid Eastern Plain Zone (Jaipur) of Rajasthan, virus disease is seen in cucurbits. Due to this disease flower & fruit deteriorate in shape & size. Uproot & burn the affected plants & spray Melathion 50EC @ 1.0 ml per litre water.
 - Present weather in Delhi is favourable for attack of aphid on vegetables, red pumpkin beetle in cucurbits crop, infestation of purple blotch on onion and attack of pod borer on gram crop. Farmers are advised to monitor the crop and take proper plant protection measures.
 - Due to favourable weather in Punjab and Haryana population of aphid may cross ETL level (5 aphids/earhead) farmers are advised to spray the crop with 40 ml Imidacloprid 200 SL or 20 g Thiamethoxam or 12 g Dantop 50 WDG or 150 ml of Rogor 30 EC or Metasystox 25 EC in 80-100 litres of water per acre.
 - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Farmers in Punjab and Haryana are advised to vaccinate all the animals against FMD, if still not, then get them vaccinated immediately, keep their record and repeat after six months.

- Farmers in Bundelkhand zone and in western plain zone in Uttar Pradesh are advised to tie young cattle in closed shelter and feed them with big cardamom, ajwain and jaggery, keep cattle shelter clean and take special care of young ones to protect from cold in this season.
- In sub-humid sub tropic zones of Uttarakhand, vaccinate the animals for various diseases as they are more prone to diseases in this weather. For the control of cough use piperazine citrate @50-30 ml/animal.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- **Realised Rainfall:** Significant rainfall occurred over Alappuzha, Kottayam, and Pathanamthitta districts in Kerala and Toothukudi district in Tamil Nadu during last week. No significant rainfall occurred over most of the remaining states of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over Kerala. Weather would be mainly dry over remaining parts of the region.
- **Advisories:**
 - As significant rainfall occurred over Alappuzha, Kottayam, Allepey and Pathanamthitta districts in Kerala and Toothukudi district in Tamil Nadu during last week, farmers are advised to postpone irrigation to the standing crops and apply irrigation in remaining States as there was mainly dry weather is likely in the region and no significant rainfall is likely during next three days.
 - Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to provide irrigation to groundnut, *rabi* maize, rice fallow maize, rice fallow jowar, rice fallow pulses and chilli, since the crops suffer due to moisture stress due to present weather. They are also advised to provide irrigation to fruit crops and keep mulching on the basins for effective utilization of moisture and avoid the evaporation loss.
 - Farmers in the North East Transition Zone of Karnataka are advised to provide irrigation to summer groundnut and mango and undertake deep ploughing to expose the pupae and eggs of insect pests and weed seeds.
 - Farmers in the North Dry Zone of Karnataka are advised to complete harvesting wheat, take up transplanting of sweet gourd, ridge gourd under irrigated condition and rasin making in grapes.
 - Farmers in the Coastal Zone of Karnataka are advised to provide irrigation to arecanut, as and when irrigation facilities are available and sun dry harvested arecanut.
 - Farmers in the North Transition Zone of Karnataka are advised to undertake harvesting and threshing of chickpea, maize, sorghum, chilli, and wheat as early as possible, plough the land and keep it exposed to sun for destroying weeds and pest eggs in rainfed areas and undertake surface mulching with crop residues in order to reduce evaporation loss of water and weed growth.
 - Due to peaking of summer, high temperature may wilt the leaves of small tapioca plants. Farmers in the North Western Zone of Tamil Nadu are advised to use drip irrigation for a month to supply water to save tapioca plant from earlier mortality due to wilting, as the young crop is to be saved for atleast a month.
 - Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to monitor for pest and disease for the crops sown during the season, undertake land preparation and sowing for crops like carrot, potato, peas, radish, beetroot and turnip, select high yielding and disease resistant varieties, raise nursery for crops like cabbage, cauliflower, knolkol and exotic vegetables, undertake cultural measures like application of dolomite in extremely acidic fields and apply farm yard manures prior to transplanting.
 - Farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake summer ploughing, pot watering of planted seedlings and watering of nursery plants twice a day.
 - Farmers in the Southern Zone of Kerala are advised to complete harvesting of paddy and cool season crops and undertake earthing up of tapioca.
 - High incidences of shoot and fruit borer in brinjal was observed in the North East Transition Zone of Karnataka. Farmers are advised to spray carbaryl 4g per liter of water to control shoot and fruit borer.
 - Farmers in the Southern Transition Zone of Karnataka are advised to undertake plant protection measures to prevent attack of sucker in banana, wilt disease in pepper, hoppers and powdery mildew in mango and mealy bug infestation in papaya.

- Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to spray carbendazim 250 g/ha or wettable sulphur 2.5 kg/ha in rice fallow black gram for the management of powdery mildew disease, since powdery mildew disease is more pronounced due to dew in the morning.
- Due to favourable weather, there is incidence of stem weevil in cotton and internode borer in sugarcane in the South Zone of Tamil Nadu. Farmers are advised to do earthing up on 45th day after sowing and apply neem cake at 250 kg/ha as basal helps in reducing stem weevil and use egg parasitoid *Trichogramma chilonis* 2.5 cc/ha/release for 6 times at 15 days interval from 4th month to control internode borer .
- Mites severity over jasmine plantations in the Scarce Rainfall Zone of Andhra Pradesh are observed. Farmers are advised to apply sulphur dust @ 8-10 kg per acre to reduce the severity.
- **Animal Husbandry**
 - With increase in day and night temperatures in the North Western Zone of Tamil Nadu, stress will be high causing feed intake to dip which in turn will lead to size drop in eggs. Farmers are advised to give additional dose of vitamin C in feed and water along with electrolytes will save the birds from stress and stroke and adapt to the summer management very seriously and use fogger usage in order to reduce the stress.
 - Farmers in the North East Transition Zone of Karnataka are advised to give mineral supplements to animals, based on the deficiency in the region.
 - Farmers in the North East Dry Zone of Karnataka are advised to vaccinate all the animals approaching nearest veterinary health centers, since weather conditions are favorable for foot and mouth disease in animals.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over the States of the region during last week.
- **Rainfall Forecast:** Dry weather would prevail over the region during the period.
- **Advisories:**
 - As dry weather prevailed during last few weeks and dry weather is also likely to prevail during the period, farmers are advised to apply irrigation to the standing crops. Farmers are advised to complete harvesting of already matured wheat in morning hours.
 - As prevailing temperature in Maharashtra is above normal and will increase the rate of evaporation (upto 12 mm / day), farmers are advised to spray Kaolin or chalk powder solution over crop to minimize rate of evaporation. To preserve the moisture in the orchards and in sugarcane field, farmers are advised for mulching with the help of trash or wheat straw or hay. If the water stress increases, apply irrigation to sugarcane by alternate furrow method.
 - Farmers of South Konkan are advised to maintain 10 cm water level in the rice field during ear head emergence and flowering stage. In some places mango fruits are in marble/eggs stage; in view of prevailing dry weather, farmers are advised to apply 150- 200 litres of water per tree at 15 days interval in the canopy of mango trees. To avoid the recurrent flowering of Alphonso mango in Konkan region, spray 50 ppm GA. For better fruit setting in Alphonso mango, spray 1% potassium nitrate at pea / marble size fruit stage.
 - Taking the advantage of dry weather, farmers in Madhya Maharashtra and Marathwada are advised to apply 100 kg Nitrogen per hectare to *suru* sugarcane after 6 to 8 weeks of planting followed by light irrigation. Ratoon of the sugarcane harvested after 15th February may not be taken for next season crop.
 - Due to high temperature forecast, farmers in North Gujarat Zone are advised to apply regular irrigation to onion crop at 4–6 days interval. Carry out harvesting and threshing of the *rabi* crops and land preparation for sowing of summer crops. Stop irrigation at physiological maturity of wheat.
 - Farmers in Middle Gujarat Zone are advised to carry out sowing of summer pulses (green gram, urad bean, cow pea etc.). Apply 40 kg Phosphorus and 20 kg Sulphur / ha in summer pulses. For conservation of soil moisture, use wheat straw and banana straw as a mulch material (12.5 kg / plant) in banana orchards.
 - Farmers in Bhal and Coastal Zone are advised to carry out sowing of summer pulses. Apply fertilizers in fruit crops. Complete the sowing of summer pearl millet.

- Farmers in South Saurashtra Zone of Gujarat are advised to complete sowing of summer moong. Apply irrigation and apply second dose of top dressing fertilizer in the form of urea @ 15 kg Nitrogen / ha after 45 DAS in pearl millet. Carry out weeding in groundnut.
- Farmers in South Gujarat Heavy Rainfall Zone are advised to undertake land preparation and sowing of summer crops like groundnut, moong and pearl millet. Carry out picking of capsules in castor during early morning hours. Harvest the matured papaya fruits and sell after grading in North Gujarat Zone and South Gujarat Heavy Rainfall Zone. Stop irrigation of wheat at physiological maturity.
- Farmers in South Gujarat Zone are advised to bury the stem of cotton in the soil with help of rotavater after last picking of cotton. Apply irrigation to mango crops at an interval of 15 days. Plant protection measures should be taken in vegetable and fruit crops.
- Farmers in North Saurashtra Zone are advised to apply irrigation to wheat, groundnut, gram, onion and garlic.
- Suitable varieties of the crops for sowing are mentioned in Annexure II.
- Due to rise in temperature in South Konkan region of Maharashtra during the period, there may be chance of incidence of thrips on premature cashewnut; spray Acephate @ 1.5 g or Dimethoate @ 1 ml per litre of water.
- There may be incidence of leaf blight in summer paddy in East Vidarbha; spray Copper Oxychloride @ 25 g plus Streptocyclin @ 0.5 g in 10 litres of water 2-3 times at 10 days interval.
- Under prevailing weather conditions, there may be attack of sap sucking pests in summer groundnut in Marathwada; spray Dimethoate 10 ml or Methyl Demeton @ 8 ml in 10 litres of water. There is also possibility of incidence of tikka in summer groundnut in North Konkan; spray Mancozeb 25 g or Carbendazim 10 g or Benlet 10 g per 10 litres of water.
- Stages of major crops are mentioned in Annexure-I.
- **Animal Husbandry:**
 - Due to high temperature and humidity forecast in North Gujarat Zone, keep animals under shade during noon hours and avoid feeding between 11 to 15 hrs. Make arrangement of curtains for poultry house.
 - Make arrangement of shade with proper ventilation to protect cattle from direct sunlight and temperature in Middle Gujarat Zone.
 - Give Anthrax vaccination and tablet for controlling karamia in cattle in North Saurashtra Zone.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Clear sky with no rainfall over the region.
- **Rainfall Forecast:** Mainly clear sky with no rainfall over the region during the period.
- **Advisories:**
 - As dry weather prevailed during last week and dry weather is likely to continue, farmers in this region are advised to provide irrigation to the standing crops.
 - As there is forecast of clear and partial cloud with no rainfall, and constant temperature in the coming days, farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to irrigate wheat crop at critical stages as per requirement. Carry out intercultural operations in sugarcane sown in the month of November. The average temperature is now suitable for proper germination of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. Hence the sowing of these vegetables should be completed at the earliest. Irrigate chilli, brinjal, and tomato as required and pluck the matured fruits.
 - Farmers in Jhabua Hills region of Madhya Pradesh are advised to harvest matured wheat, gram and maize crops. They are also advised to irrigate summer vegetables like water melon, musk melon, okra, chilli, tomato, brinjal etc at proper interval. Harvest the garlic, onion crop and after proper drying store in proper store room. Sow maize, sorghum and lucerne for green fodder.
 - In Nimar Valley region of Madhya Pradesh farmers are advised to irrigate wheat and gram crops; also start planting of sugarcane and prepare nursery and sow seeds of chilli, brinjal, okra and tomato.
 - In view of dry weather conditions farmers in Central Narmada Zone of Madhya Pradesh are advised to harvest wheat, gram and lentil crop at maturity stage. They are also advised to irrigate maize crop at the time of grain filling. Farmers are also advised for the sowing of lobia, cowpea, jowar and maize for the summer green fodder.

- Farmers in Bundelkhand region of Madhya Pradesh are advised to harvest matured crops. Farmers are also advised for preparation of the fallow field for sowing of summer moong. Farmers are also advised to irrigate vegetable crops.
 - Farmers in Malwa Plateau region of Madhya Pradesh are advised that apply irrigation in wheat crop at milking and grain filling stages. Harvest wheat at physiological maturity. Sowing of summer crops such as moong, urad, groundnut and fodder crops should be done. Sowing of summer vegetable crops such as lady finger and cucurbits may be done.
 - Farmers in Vindhyan Plateau region of Madhya Pradesh are advised to irrigate sugarcane crop after 12-15 days interval. Also start sowing of summer moong.
 - In Chattisgarh Plain Zone harvest the matured rabi crops viz., gram, mustard, lentil, lathyrus, etc. followed by threshing and marketing/storage of the produce as early as possible and after harvesting of *rabi* crops farmers are advised for summer deep ploughing for soil solarization.
 - In Chattisgarh Plain Zone, interculture operations, fertilizer application, earthing up followed by irrigation is advised in sugarcane crop wherever the crop is at knee height stage.
 - The summer rice crop is at tillering stage in Chattisgarh Plain Zone, at this stage stem borer is commonly observed in summer rice, hence it is advised to keep watch over the crop and if the damage is above ETL apply granular insecticides Cartep or Fipronil @ 25 kg/ha in the fields. About 5 cm standing water should be maintained in the fields while applying the granular insecticides and do not allow the water to go out of the field at least for 24 hours. Top dressing of N is also advised at this stage.
 - At present mango crop is at flowering/ fruit setting stage in Chattisgarh Plain Zone, at this stage infestation of mango hopper are commonly observed. Therefore farmers are advised to keep the mango orchards clean and if necessary spray recommended insecticides like Methyl Dematon @ 2 ml/litre water. Maize crop is at knee height stage, at this stage infestation of stem borer is generally observed. Therefore, farmers are advised to apply granular insecticides like phorate or carbofuran @ 5-10 granules at the centre of the leaves during the morning hours.
 - Farmers in Bastar Plateau Zone of Chhattisgarh are advised to complete sugarcane planting at the earliest and earlier planted sugarcane should be irrigated. Summer crop seeds of moong, urad and maize crops of high yielding varieties should be selected and sowing should be done. Wheat crop should be irrigated and second dose of nitrogen should be applied. Arrange for irrigation in linseed and mustard crop at an interval of 15 days.
 - Stem borer and panicle borer insects are being observed in sugarcane crop in Bastar and Narayanpur districts of Chhattisgarh, spray Cartap Hydrachloride @ 2.0 grams per litre of water.
 - Leaf folder and stem borer attack is being observed in summer rice in Bastar and Narayanpur districts of Chhattisgarh, spray Chlorpyrifos @ 1.5 mls per litre water.
 - White fly attack is being observed in Dantewada and Bijapur districts of Chhattisgarh in cowpea and okra crops. For control of this insect, yellow sticky trap (yellow card with polythene and grease is spread all across the card) and this trap card should be used at a distance of 5 meters up to the height of crop. In cucurbitaceous crops, red pumpkin beetle is being observed and for its control, Carbaryl 50 WP should be applied @ 2 grams per litre or malathion @ 1 ml/ litre of water. In maize, stem borer attack is being observed in 30-40 days after sowing. For its control, granular Carbofuran 3g should be used @ 4-5 grains / whorl.
 - Farmers in Central Narmada region of Madhya Pradesh are advised that there is possibility of leaf curl disease in tomato and chilly crops, if found, spray Methyl dematon 25 E.C. @ 2.0 ml.or Emidachloprid @ 0.5 ml.per litre of water for their control.
- **Animal Husbandry & Poultry**
 - Farmers in Kymore Plateau and Satpura Hills region, Central Narmada region and Satpura Plateau of Madhya Pradesh are advised to keep cattle in dry and clean place to protect from mosquitoes and other deleterious insects. Burn neem leaves to create smoke in the night to protect from mosquitoes and bees. Presently temperatures are higher in day time hence; provide cold water twice to cattle.
 - Farmers in Vindhya Plateau Zone of Madhya Pradesh are advised to vaccinate cattle.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised that present weather is suitable for the sheep wool cutting, hence do wool cutting to avoid heating during the day time.

Annexure I

Major Crops

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

- Sugarcane (new) (planting), *boro* rice (tillering / panicle initiation), *ahu* rice (sowing / seedling / transplanting), wheat (grain formation), tomato, brinjal (flowering / fruiting / harvesting), pumpkin, bottle gourd (vegetative / flowering / fruiting), okra, pointed gourd, musk melon, water melon, ridge gourd, sponge gourd (sowing), black gram, green gram (sowing), summer maize (sowing / vegetative), summer pulses, *Capsularis* jute, summer vegetables (sowing) in Assam.
- Cabbage, cauliflower, knolkhol (head maturity / harvesting), maize (cob formation / maturity / harvesting), mustard (maturity / harvesting), potato (tuber maturity / harvesting), pea (pod maturity / harvesting), okra, beans (sowing) in Arunachal Pradesh.
- Summer rice (tillering / panicle initiation), *kharif* rice (sowing), cucurbits (sowing / transplanting / vegetative), rapeseed and mustard (maturity / harvesting), tomato, brinjal, chilli (transplanting / vegetative / flowering), potato (tuber maturity / harvesting), cauliflower and cabbage (head maturity / harvesting), cauliflower and cabbage (new) (transplanting), onion (bulb formation), okra, French bean, ginger, turmeric (sowing) in Manipur.
- *Boro* rice (flowering / grain formation), wheat (grain formation), mustard, rapeseed (maturity / harvesting), spring potato (tuber formation), potato (tuber maturity / harvesting), cabbage and knol-khol (head maturity / harvesting), okra (sowing / vegetative / flowering), pumpkin, French bean (vegetative / flowering / fruiting/ maturity), *kharif* maize, jute, bottle gourd, ash gourd (sowing) in Meghalaya.
- *Khasi* mandarin (vegetative / flowering), banana (vegetative / fruiting / maturity / harvesting), cole crops (head maturity / harvesting), tomato (fruiting / harvesting), maize (maturity), bean, okra, cucurbits (sowing) in Mizoram.
- Cabbage (maturity / harvesting), pea (pod maturity / harvesting), rapeseed, mustard (harvesting), potato (tuber maturity / harvesting), brinjal (flowering / fruiting / maturity), maize (cob formation), tomato (flowering / fruiting / harvesting), ginger, turmeric (planting), rajma (sowing / germination) in Nagaland.
- *Boro* rice (tillering / panicle initiation), cole crop (maturity / harvesting) and tomato (flowering / fruiting / maturity / harvesting), summer vegetables (sowing), maize (cob formation / maturity), cucurbits (sowing) in Tripura.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL &SIKKIM]

- Sugarcane (vegetative), lobia for green fodder (vegetative), mishrikand (vegetative), cauliflower, cabbage (head maturity / harvesting), fruit trees (transplanting), wheat (grain formation), vegetables (flowering / fruiting / harvesting), maize (silking & tasseling), sugarcane, onion (planting), *boro* rice (tillering), moong, summer maize (sowing) in Bihar.
- Turmeric and ginger (rhizome formation), elephant foot yam (tuber elongation), green pea (pod maturity / harvesting), cauliflower, cabbage (head maturity / harvesting), chilli, tomato (flowering / fruiting / harvesting), wheat (grain filling / dough stage), papaya (transplanting), summer moong (sowing), summer vegetables (transplanting), okra, summer maize (sowing), onion (transplanting) in Jharkhand.
- Summer rice (tillering / panicle initiation), summer groundnut (vegetative), sunflower (sowing), sugarcane (maturity / harvesting), sugarcane (new) (planting), wheat (grain formation), banana (vegetative), tomato (flowering / fruiting / maturity), cauliflower, cabbage, knol-khol (maturity / harvesting) in Orissa.
- *Boro* rice (tillering), winter vegetables (flowering / fruiting / harvesting), wheat (grain formation), groundnut (early vegetative / vegetative), sesame (sowing), chilli (flowering / fruiting) Mango (flowering) in West Bengal.
- *Rabi* vegetables (harvesting), orange (harvesting), Large cardamom (vegetative), wheat (milk / dough), mustard (seed maturity / harvesting), *rabi* potato (tuber formation / maturity), vegetables (sowing / nursery sowing) in Sikkim.

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

- Wheat (grain filling), mustard (pod maturity/harvesting), sugarcane (planting), *rabi* onion (vegetative), cauliflower, cabbage, broccoli, knolkhol (vegetative / fruiting/harvesting), carrot, turnip, early sown tomato radish, spinach and coriander (vegetative/fruiting/harvesting), pea, gram (flowering / pod formation/pod maturity), Chilli, tomato, brinjal, cucurbits (nursery preparation in polyhouse / transplanting), ladies finger(sowing), *Rabi* onion (transplanting / vegetative), french bean, cluster bean, summer radish (early sowing) in Delhi.
- Wheat (grain formation), vegetables (bhindi, cucurbits), potato (sowing/germination), mirch, brinjal (nursery sowing in polyhouses), cucurbits viz. cucumber, summer squash, bitter gourd, bottle gourd (nursery sowing in polutubes inside polyhouse), bush type French bean (Contender), bhindi, surajmukhi (field preparation / nursery sowing), tur, brinjal, Shimla mirch, and tomato (transplanting/seedling), Apple and other temperate fruits (dormant stage in High Hill Temperate Dry Zone), arbi, amaranthus, turmeric, rice, maize, barley, radish, onion, pea, garlic, coriander, cabbage, knolkhol, parsley, lettuce, fennel, cauliflower, broccoli (sowing / planting), in Himachal Pradesh.
- Early sown wheat (ear head formation / dough), Normal sown wheat (flag leaf / milking), late sown wheat (ear head formation), Early sown barley (dough), normal sown barley (milk), very late sown barley (ear head formation), onion (transplanting), cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative/flowering), *rabi* oilseeds i.e. gobisarson (pod formation), normal sown mustard (maturity stage), late sown mustard (reproduction/most seed green stage), brown sarson (rosette stage), jowar, summer moong, mash (land preparation / sowing), *rabi* pulses i.e. lentil, gram, (pod formation / reproductive)], pea (pod formation), fodder crops like oats (vegetative (2nd cut)), berseem (vegetative), turnip, cruciferous crop (viz. cabbage, cauliflower, knolkhol, kale, broccoli, solanaceous crops (tomato, brinjal and chilli, capsicum), paprika, onion, cucurbits in polybags (Leh region) (nursery sowing/transplanting), Horticultural crops (various stages) viz. [peach, plum & mango (flowering), ber, orange & guava (fruiting), citrus fruits, (harvesting)] in Jammu & Kashmir. Wheat, Brown Sarson, pea, lentil and Oat are in dormant stage in Srinagar.
- Chilli, capsicum, cauliflower, broccoli (seedling/germination), sugarcane (planting), litchi, loquat, peach, citrus (flowering / fruiting), mango (early varieties) (flowering), foxtail millet, okra, bottle gourd, bitter gourd, ginger, turmeric (germination / vegetative), mustard (Siliqua formation), papaya (planting), sorghum, pigeon pea, chick pea (vegetative/pod formation/pod maturity), urd and pearl millets (early vegetative/vegetative), barley, sarson (germination/ vegetative), onion, garlic (transplanting/germination), wheat (grain formation/maturity), lentil, brinjal, potato (sowing/germination), sunflower (Sowing) in Uttarakhand.
- Wheat (grain formation), winter sugarcane (vegetative growth), sunflower, summer moong, urad (sowing/germination), early cucurbits like bottle gourd, bitter gourd, cucumber, etc. and other early planted vegetables like lady's finger, tomato, brinjal, chilli, lobia, rajmah etc. (vegetative / flowering / fruiting/harvesting), new planting of vegetables [tomato, brinjal, lady's finger, cucurbits like bottle gourd, bitter gourd, cucumber] (sowing/germination), coriander (vegetative/ flowering), onion (transplanting / vegetative growth), mustard/ sarson (siliqua formation/ grain formation), barley (vegetative / tillering), arhar, jai, gram, alsin, maize, masoor, pea, pigeon pea, chick pea (flower initiation / pod formation / grain formation), berseem (vegetative growth), fodder maize, lobia, jowar (sowing), sugarcane (planting) in Uttar Pradesh.
- Spring sugarcane (sprouting/tillering), berseem (vegetative), gram, lentil (flowering), mustard, rape seed (pod formation/maturity), barley (heading) radish, carrot, turnip, onion, cauliflower (transplanting/vegetative), wheat (grain filling), tomato, cucurbits, okra, sunflower (sowing) in Punjab.
- Sugarcane (spring season) (early vegetative), barseem (vegetative), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), barley (heading/pre heading), mustard, sarson, raya (vegetative/flowering), radish, turnip (sowing), wheat (grain filling) in Haryana
- Wheat (grain formation / maturity), very late sown wheat (tillering), sweet potato, chilli and cluster bean (vegetative/pod formation), mustard (pod maturity/harvesting), gram (pod formation / maturity/ harvesting), barley, oats, lentil, lucerne, taramira, linseed, opium poppy, vegetables (potato, fenugreek, brinjal, radish, chilli, carrot, palak, berseem, cumin, isabgol, ajwain, garlic (vegetative

growth/flowering), summer tomato (germination/vegetative), cauliflower, cabbage, rabi onion (transplanting/germination), summer cucurbits, summer green fodder (sowing/germination), okra, *zaid* pearl millet fodder, *said* sorghum fodder, *zaid* green gram (sowing), sugarcane (new planting) in Rajasthan.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- Sugarcane (vegetative), summer groundnut (flowering), jowar (harvest), safflower (harvest), maize (harvesting), sunflower (harvesting), bengal gram (harvest), late planted paddy (harvest), wheat (harvest), black gram / green gram (harvest), mango (fruiting), cotton (picking), vegetables (fruiting) and horticultural crops (fruit development) in Karnataka
- *Rabi* groundnut (pod development/maturity/harvesting), *rabi* paddy (grand growth), *rabi* maize (flowering), rice fallow maize (milking/grain filling), rice fallow jowar (milking/grain filling), rice fallow pulses (pod formation), sunflower (heading), sugarcane (planting/tillering/ ratooning), jowar (panicle formation / grain setting), Bengal gram (pod development / maturity), vegetables (flowering/fruiting), chilli (fruiting), green gram & black gram (pod development/maturity), tomato (fruiting) and bhendi (various stages), mango (flowering), fruit crops (flowering to fruit initiation), water-melon (sowing), and sesasum (sowing) in Andhra Pradesh.
- Pepper & ginger (land preparation / preparation of planting materials), rubber (tapping), irrigated banana (vegetative), cardamom (nursery), nutmeg (maturity), sugarcane (harvesting/ planting), vegetables (flowering/harvest), *puncha* paddy (land preparation), *virippu* paddy (nursery sowing), coconut (seed nut collection) in Kerala.
- Rice - *Samba* (harvest), *Thaladi* (harvest), rice fallow pulses (pod formation), sugarcane (various stages), gingelly (vegetative/flowering), tomato (flowering/maturity), {irrigated chilli, cotton, sunflower, pearl millet, pulses (vegetative)}, pulses (vegetative/flowering/harvesting), cotton (vegetative/flowering), vegetables (harvest), maize (various stages), sunflower (harvesting), pearl millet (grain filling), sunflower & sorghum (harvest), irrigated groundnut (maturity/harvest), chilli (fruiting), ginger and turmeric (pod development / harvest) in Tamil Nadu.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane (new *adsali*) (early vegetative / vegetative), sugarcane (new pre-seasonal) (early tillering / tillering), sugarcane (new *suru*) (sprouting in Madhya Maharashtra and Marathwada / early tillering), irrigated wheat (maturity / harvesting), summer rice (flowering / grain formation in South Konkan & tillering / ear head emergence North Konkan and East Vidarbha), summer groundnut (pegging / pod development in South Konkan and flowering / pegging in Madhya Maharashtra, Marathwada and West Vidarbha), bajra (vegetative / flag leaf initiation in Pune and Nashik division) in Maharashtra.
- Summer groundnut (germination / vegetative), summer rice (early tillering / tillering), summer bajra (sowing), summer moong, urd, cow pea (sowing), wheat (milk / dough/ early maturity), *rabi* maize (maturity), sugarcane (early vegetative), castor (harvesting), vegetables (vegetative / flowering / fruiting / harvesting), cluster bean (sowing) and cauliflower, cabbage (maturity / harvesting) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Sugarcane (knee height stage), vegetables (fruiting), mustard (pod formation/ pod maturity), wheat (maturity), maize (harvesting), onion, garlic (harvesting) tomato, brinjal, chilli (sowing/transplanting), gram (harvesting) in Madhya Pradesh.
- Sugarcane (planting), groundnut, arhar, green gram and sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative) cauliflower, pigeon pea (pod filling), potato (planting), linseed (flowering stage) tomato, brinjal, chilli, niger, horsegram, ramtil, toria, cauliflower, cabbage, niger, kulthi (sowing), wheat (crown root initiation / tillering), onion (planting), summer rice (tillering), summer vegetables (land preparation), moong, urad and maize (sowing) in Chhattisgarh.

Annexure II List of Varieties

Assam

Ridge gourd: Pusa Nasdar, AAUJ-1, AAUJ-2, AAUC-3.

Sponge gourd: Pusa Chikni.

Musk melon: PusaSharbati, Hara Madhu, Punjab Sunehri, Durgapur Madhu, Arka Rajhans and Arka Jeet.

Water melon: Asahi, Pusa Bedana, Sugar Baby, Faizabadi.

Sugarcane: Kolong, Luhit, Dhansiri, Doris, Co 1148.

Ahu rice: Luit, Kopilee, Rasi, Cauvery, Culture-1, Chilarai, Gopinath, Krishne, Kushal, Puthichapali, Nilajee, Hasakumra, Gobind, IR-36, IR 50.

Tall varieties: Banglami, Dubaichenga, Rangadaria (115-120 days), Ahujoha (110-120 days).

Short duration variety: Dogaranga (85-95days).

Okra: Pusa Sawani, Arka Anamika, Parbhani Kranti, Panchasira.

Black gram: T 9, Pant U 19, UG 157 and JU 78.

Green gram: T 44, Kopergaon, K 851, ML 56, PIMS 1, AAU 34, AAU 39, Pratap (SG-1), ML-55.

Capsularis jute: JRC 321 (Sonali), UPC 94 (Reshma), JRC212, JRC 7447.

Olitorius Jute: JRO 524 (Navin), JRO 785 (Basudev), JRO 632 (Baisakhtissa), Set-2 (Bahagi).

Meghlaya

Kharif maize: Vijay, RCM-76, Local white and yellow, DA-61-A and QPM.

Okra: Arka Anamika, Pusa Sawani, Parbhani Kranti.

Brinjal : Umroi, Mutakesh, Narrow.

Bottle gourd: Pusa Summer, Prolific Long, Prolific Round, Pusa Meghdoot.

Capsularis jute: JRE-21, JRC-321, D-154, JRC-7447.

Olitorious jute: JRO-632, JRO-514, JRO-7835, JRO-878.

Mizoram

Okra: Pusa Sawani, Pusa Makhmali, Punjab Padmini, Arka Anamika, Arka Abhay.

Orissa

Sesame: Uma, Kalika, Nirmala, Prachi, Usha, Kanak, Amrit.

Summer maize: Dhabal, Navjot, and Hybrids like Decca, Ganga, Deccan 105, Kargil 900-M, PRO 345, Kargil 633.

Papaya: Honey Dew, Kurg Honey Dew, Coombatore-1, Coombatore-2, Pusa Delicious, Pusa Majestic, Pusa Dwarf and Pusa Giant.

Green gram: PDM -11, SML-668, PDM-54, Pusa Baisakhi, HUM 2, Durga and Samrat.

Black gram: Sarala, T-9, B-3-8-8, Pant-U-19, Pant-U-30.

Okra: Utkal Gourav, Arka Anamika, Varsha Uphar, Parvani Kranti an all available hybrid varieties

Bitter gourd: Pusa Domousumi, Coimbatore Long Green, and Arka Harit,

Ridge gourd: Pusa Najdar, Jaypur Long, and any local variety

Cluster bean: Pusa Naubahar,

Cow pea: Arka Garima, Utkal Manika, Selection-2-6-3 and Pusa Kamal.

Jute: JRO-524 (Naveen).

Sunflower: Modern.

Bihar

Summer maize: Suwan, Deoki, Ganga 11, Shaktiman 1 and 2.

Moong: Pusa Baishakhi, T-9.

West Bengal

Green gram: TM-99-50, PDM-11, TARM-12, Sonali (B-1), Panna (B- 105), Pusa Baishakhi.

Ladies fingers: Parbani Kranti, Kalyani Prava, Punjabi Padmini.

Banana: Gaint Governor, Robusta, Kabuli.

Water melon: Sugar Baby, Ashi Yeamoto.

Jharkhand

Summer maize: Birsa Makka-1, Birsa Makka-2, Suwan-1 (Hybrid), HQPM (Hybrid).

Summer moong: Pusa Vishal, Pant Mung-2, Samrat, S.M.L.-668.

Okra: Pusa A - 4, Prabhani Kranti, Arka Anamika, Versha Uphar and Hybrid varieties –Sonal and Sarika.

Himachal Pradesh

Lettuce: Iceberg,

Brinjal: ArkaNidhi, PPC

Agetibhindi: P-8, Prabhnikranti, Arkaanamika,

Frenchbean: Contender

Pepper :Surjmukhi,

Broccoli:PalamSamridhi,

Rajmash: Triloki,Jwala,baspaKailash

Raddish: japani white and early mino white,

Turnip: PTWG-1.

Cabbage: Snow ball K-1 Palamuphar, golden acre.

Knolkhol : WhiteBina,

Cauliflower: Pride of India.

Jammu & Kashmir

Vegetable crop like **radish** (var. Pusachetki, Japanese white &Pusareshmi), **carrot** (var.Pusakesar), **turnip** (var PTWG), **garlic** (var. local, large segmented), **spinach** (prickly seeded) and **methi**(P.E.B.K methi), **Cauliflower** (var. PusaDipali), **knoll khol** (White Vienna), **Broccoli** (Early green),

Jowar :Ujjain, Swarna-413, M.P.chari&PoinerJowar ,**Summer mash:** Mash Pant, U-19, T-9) and **moong:** PDM-54, PS-16, PS-17, ML-131

Punjab

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), CoJ-88, CoS-8436 for mid season and CoJ-89 and Co-1148 (late maturing variety).

Summer moong: SML-668, SML 832

Summer mash:Sathi mash, Mash 1008 , Mash-414 ,Mash-218.

Onion: Agri Found Dark Red, N 53

Okra: PusaSawani ,PunjabPadmini ,Punjab 7 or 8.

Haryana

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), CoJ-88, CoS-8436 for mid season and CoJ-89 and Co-1148 (late maturing variety).

Summer moong: SML-668, SML 832

Summer mash:Sathi mash, Mash 1008 , Mash-414 ,Mash-218.

Onion: Agri Found Dark Red, N 53

Okra: PusaSawani ,PunjabPadmini ,Punjab 7 or 8.

Delhi

Green gram: Pusa-9531, PusaVisal, PusaVaisakhi, PDM-11, SML-32

Black gram :Pant Urd 19, Pant Urd 30, Pant Urd 35, PDU1.

Maize: African Tall

Cluster bean:PusaKomal, PusaSukomal.

Baby corn : HM-4

Sugarcane: Karan-1, Karan-2, Co-64, and Co-1496.

Uttarakhand

Sunflower: KBSH-44, PAC-36, PAC-1091, PAC-3776, PAC-6457, DRSH-1.

Okra:PusaSavani, Punjab Padmini, Selection -1, HissarUnnat, Vaishali, Madhu, ParbhaniKranti etc.

Brinjal:PusaSavani, Punjab Padmini, Selection -1, HissarUnnat, Vaishali, Madhu, ParbhaniKranti etc.

Potato:KufriJyoti, Kufri Ashok &KufriAnand etc.

Sugarcane :Co Pant 84211, Co-238, Co-241, Co Pant 3220, COS-8436, COS-88230 etc. and medium to late sown varieties like Co Pant 90223, Co Pant-96219, COS-97222, COS-767, COS-1148 etc.

Urd : PU-19, PU-30, Pant Urd-31, Pant Urd-35, Pant Urd-40, Narendra Urd-1 etc.

Cucurbits: Pant Kheera-1 of cucumber, Pant Kakari-1 of Long melon, Pant Karela-1 of Bitter Gourd, Pant Summer Lokee-1,2 of Bottle Gourd and of Water Melon and Musk Melo

ChiateeDhan : VL-Dhan-207, VL-Dhan 208 & VL - Dhan 209

ChiateeDhan.

Tomato :with improved variety like VL-Tomato – 3

French bean :with improved varieties like VL **Boni Bean**-1, VL Bean-2, Kantender, Pant Anupama etc.

Pea : VL Ageti Matar-7 or Vivek Matar-10

Uttar Pradesh

Sugarcane : KS-8436, KS-88230, KS-95255

Sunflower : K.P.S.H. 1, Divyamukhi, Jwalamukhi

Moong : Type-44, Pant Moong-1,2, Narendra Moong-1, PDM-11, MUM-2, MalviyaJagruti, Samrat, PusaVaishakhi K. , K-851, JM-721 etc.

Urad : Azad Urd-1,2, Bhokhar-1,2, Type-9, Uttara etc. JT-9, pant u-19, Narendra ;, pant U-35

Vegetables : Bitter gourd: KalyanSona, Arka, Harit, Bottle gourd: KalyanpuriHari, Lambi Azad, Nootan, Pusa, Navin, Narendra, NarendraDharidar, NarendraBhankar, Lowki-4, Pumpkin: PusaVishwas, Coimbatore-1,2, Kalyanpur Pumpkin-1, NarendraAgrim, NarendraAmrut, Cucumber: Fine set, China, Japanese, Langreen, Taroi: Pusachikani, PusaNasdar, Satputiya, Punjab, Sadabahar, Lady's Finger: Azad Bhindi-1,2, ParmaniKranti, P-7, Varsha, Uphar, Hissar, Unnat, P-Kanti.

Rajasthan

Summer Groundnut : improved varieties : TAG-24, SB-11, DH-86 and GG-2

Zaid green gram : improved varieties K-851 (60-70 days), PDM-11 (60-65 DAYS), PusaBaisakhi (60-80 days), RMG-268 (65-70 days)

Sugarcane : C.O. 6617, C.O. 7717, C.O.S. 95255, C.O.S. 767

Cucurbits : **Bottle guard** :Pusa Naveen, ArkaBahar, **Pumpkin** :PusaVishwas, ArkaChandan, PusaAlankar, ArkaSuryamukhi, **Bitter guard** :ArkaHaritPusaVishesh, Priya, **Round gourd** :Arkatinda, Bikaneri green, Punjab-48.

Gujarat

Summer bajra: GHB-526 , GHB-558, MH-169, GHB-538.

Green gram: Gujarat Mung-3, 4, K-851, Pusa Baisakhi.

Cow pea: Pusa Falguni, Gujarat cow pea-2.

Urad: T-9.

Cluster bean: Gujarat Guar-2.

Madhya Pradesh

Garlic-G-283, G-1, G-41 or G-323

Linseed-PKDL-21, JL-1, JL-3, Mallika, JLS-1, IPL-81

Lentil-JLS-03

Sugarcane- CoJN 86032, CoJN 86582

Ladies Finger- PusaMakhamali, PusaSawani, A-4 or Parbhanikranti

Chattisgarh

Sugarcane- Co 86032, Co 86141

Annexure III
Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on
21.03.2012

