

National Agromet Advisory Bulletin

Thursday, 19th April, 2012
(For the period 19th to 23rd April, 2012)



Maximum temperatures were near normal over most parts of the country. Thundersqualls may occur at one or two places over Rajasthan, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Bengal & Sikkim and Orissa during next 48 hours. Farmers in these States are advised to undertake harvesting of matured wheat, *rabi* pulses and oilseed crops immediately and also arrange for mechanical support for vegetables and young plants in orchards.

Significant rainfall occurred over most of the districts in Arunachal Pradesh, Assam and few districts over Himachal Pradesh, Punjab, Haryana, Jammu & Kashmir, Uttarakhand, Orissa, West Rajasthan, Bihar, Jharkhand, Uttar Pradesh, West Bengal, Madhya Maharashtra, Karnataka and Kerala during last week. Realised rainfall in these districts is beneficial for the standing summer crops. Farmers in these districts are advised to postpone irrigation. 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 summer crops and undertake harvesting of matured *rabi* crops.

Due to favourable weather conditions, incidences of fruit and stem borer in brinjal and fruit borer in mango in Madhya Pradesh, aphids in cole crops, downey mildew in onion, aphids in vegetables in Himachal Pradesh, fruit rot in chillies and fruit borer in brinjal, powdery mildew, fruit rot and yellow patches on chilli in Tamil Nadu and fruit fly in mango in Karnataka 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. Sowing of the crops in different States of the country is mentioned below:

Assam: sowing of cowpea, planting of banana and transplanting of early *ahu* rice.

Manipur: sowing of cow pea, ginger, turmeric, French bean and bhindi, transplanting of chilli

Mizoram: sowing of turmeric and ginger.

West Bengal: sowing of jute and marigold.

Punjab and Haryana: sowing of summer moong, summer mash, okra.

Delhi: sowing of summer moong.

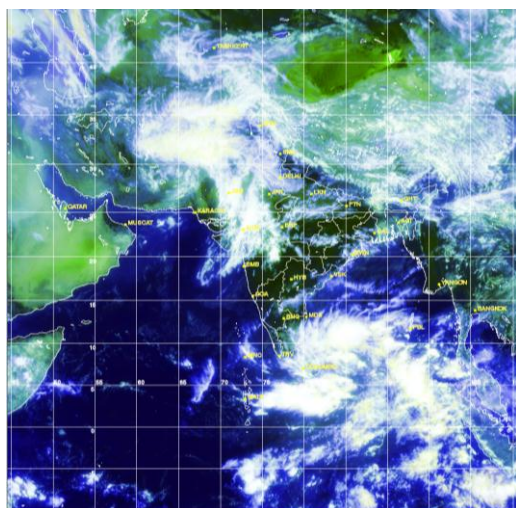
Rajasthan: sowing of cotton.

Himachal Pradesh: sowing of sunflower, bhindi and French bean.

Orissa: sowing of jute.

Bihar: sowing of elephant foot yam.

Maharashtra: sowing of cotton.



Satellite image 0530 UTC dated 20th April, 2012



Issued by

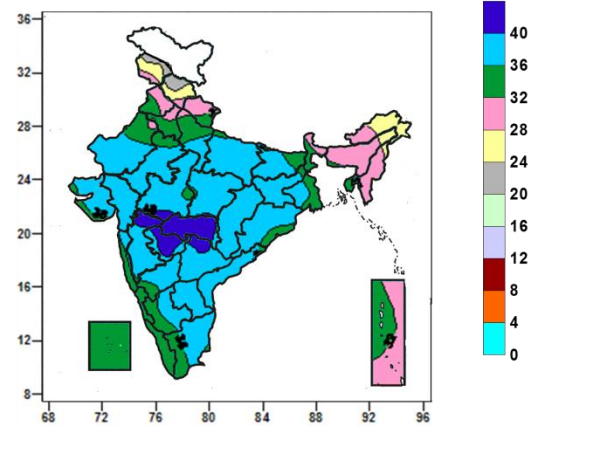
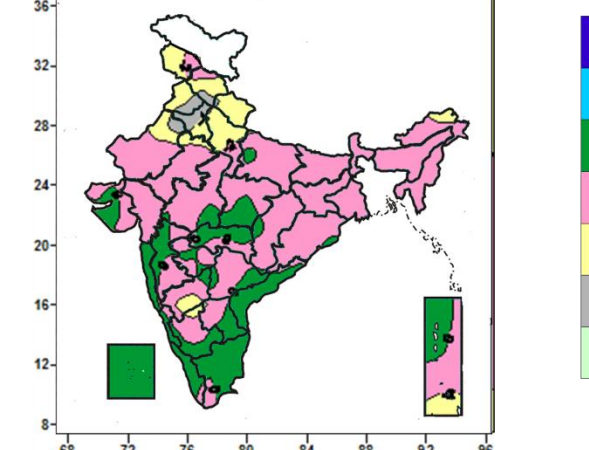
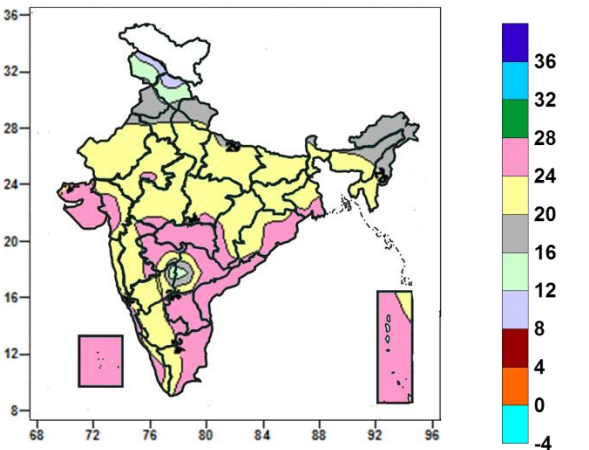
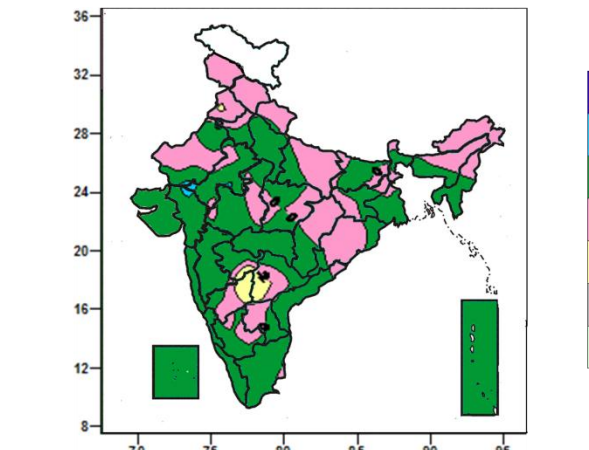
National Agrometeorological Advisory Service Centre

Agricultural Meteorology Division

India Meteorological Department, Shivajinagar, Pune.

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

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 18.04.2012

<p>Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 18.04.2012</p> 	<p>Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 18.04.2012</p> 
<p>Actual Mean Maximum temperature ranged between 40°C and above over Marathwada, Vidarbha, some parts of Madhya Maharashtra, Telangana, 32 to 36°C over most parts of Uttarakhand, Kerala, Coastal Karnataka, Konkan & Goa, Gangetic West Bengal, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, West Bengal, Tripura, South Interior Karnataka, Saurashtra & Kutch and between 36 to 40°C over remaining parts of the country</p>	<p>Actual Mean Maximum temperature anomaly ranged between -4 to -2°C and above over most parts of Jammu & Kashmir, Himachal Pradesh, some parts of Punjab, -2 to 0°C in West Rajasthan, West Bengal, Arunachal Pradesh, Assam & Meghalaya, some parts of Bihar, Jharkhand, Andaman & Nicobar Islands, between 0 to 2°C over rest of the country.</p>
<p>Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 18.04.2012</p> 	<p>Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 18.04.2012</p> 
<p>Actual Mean Minimum Temperature ranged between 24 to 28°C and above over many parts of Vidarbha, Andhra Pradesh, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Rajasthan, Gujarat, Saurashtra, West Madhya Pradesh, Coastal Orissa, North & South Interior Karnataka, Marathwada, 16 to 20°C over most parts of Jammu & Kashmir, Himachal Pradesh, Arunachal Pradesh and between 20 to 24°C over remaining parts of the country.</p>	<p>Minimum Temperature anomaly ranged between 0 to 2°C over some parts of Rajasthan, J & K., H.P. Arunachal Pradesh, Orissa, 2 to 4°C over many parts of Chhattisgarh, Orissa, North East India, Karnataka, Konkan & Goa, Madhya Maharashtra, some parts of Sikkim, Gangetic West Bengal, Andhra Pradesh, Tamil Nadu, Kerala.</p>

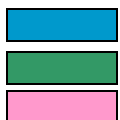
Distribution of rainfall of the country during week ending on 18.04.2012

State/Districts	Actual	18.04.12			
Arunachal Pradesh					
East Kameng	87.0	152			
East Siang	117.2	181			
Kurung Kumey	**	**			
Lohit	161.7	130			
Lower Subansiri	32.0	-4			
Papumpara	64.8	49			
Tawang	65.0	101			
Tirap	51.7	-29			
Upper Dibang Valley	204.0	281			
Upper Siang	402.0	513			
Upper Subansiri	18.6	-9			
West Kameng	21.2	-35			
West Siang	58.0	-20			
Assam					
Baksa	26.7	-25			
Barpeta	71.2	101			
Bongaigaon	112.6	208			
Cachar	134.8	153			
Chirang	71.1	94			
Darrang	**	**			
Dhemaji	5.0	-85			
Dhubri	34.2	0			
Dibrugarh	79.1	44			
East Garo Hills	0.0	-100			
East Khasi Hills	84.8	5			
Goalpara	0.0	-100			
Golghat	38.0	10			
Hailakandi	99.6	135			
Jaintia Hills	24.0	-63			
Jorhat	37.7	-18			
Kamrup(Metro)	32.9	-8			
Kamrup	68.8	92			
Karbi Analog	6.7	-67			
Karimganj	52.6	-22			
Kokrajhar	52.1	11			
Lakhimpur	73.2	119			
Morigaon	39.8	69			
N.C.Hills	6.2	-91			
Nowgong	22.2	-12			
Nalbari	49.2	56			
Ribhoi	8.0	-49			
Sonitpur	56.6	69			
Sibsagar	65.8	130			
South Garo Hills	**	**			
Tinsukia	59.9	25			
Udalgiri	43.6	-5			
West Garo Hills	12.8	-63			
West Khasi Hills	20.0	-42			
Himachal Pradesh					
Bilaspur	22.1	166			
Chamba	31.9	80			
Hamirpur	17.7	113			
Kangra	15.0	71			
Kinnaur	25.9	26			
Kullu	30.3	101			
Lahaul and Spiti	18.1	-39			
Mandi	26.6	133			
Shimla	17.9	35			
Sirmaur	16.7	150			
Solan	17.9	72			
Una	5.8	23			
Punjab					
Amritsar	12.4	84			
Barnala	5.2	-5			
Bhatinda	3.0	0			
Faridkot	0.0	-100			
Fatehgarh Saheb	5.5	31			
Ferozpur	0.0	-100			
Gurdaspur	9.6	17			
Hoshiarpur	4.4	2			
Jalandhar	4.3	-31			
Kapurthala	6.2	311			
Ludhiana	9.4	68			
Mansa	0.5	-85			
Moga	7.0	169			
Muktesar	0.0	-100			
Nawashahar	31.6	830			
Patiala	2.3	-55			
Ropar	13.7	180			
Sangrur	10.8	95			
Mohali	0.0	-100			
TarnTaran	7.9	18			
Haryana					
Ambala	8.9	368			
Bhiwani	6.3	110			
Chandigarh	26.0	300			
Faridabad	0.7	-52			
Fatehabad	13.5	309			
Gurgaon	2.0	-41			
Hissar	24.3	710			
Jhajar	0.0	-100			
Jind	4.2	145			
Katihah	2.0	-57			
Karnal	6.5	118			
Kurukshetra	4.8	-9			
Mahendragarh	0.1	-94			
Mewat	0.0	-100			
Palwal	13.8	882			
Panchkkula	9.3	101			
Panipat	5.6	33			
Rewari	0.0	-100			
Rohtak	9.5	350			
Sirsa	12.7	477			
Sonepat	3.5	6			
Yamunanagar	7.7	92			
New Delhi	1.6	-75			
Jammu & Kashmir					
Anantnag	32.8	6			
Badgam	15.6	-26			
Bandipore	**	**			
Baramula	23.6	-55			
Doda	20.3	-31			
Ganderwal	72.2	257			
Jammu	11.0	10			
Kargil	0.0	-100			
Kathua	12.8	78			
Kulgam	30.0	-3			
Kupwara	45.9	16			
Ladakh(Leh)	0.0	-100			
Poonch	15.0	-37			
Pulwama	19.9	-7			
Rajouri	5.6	-42			
Ramban	25.8	-13			
Reasi	28.4	70			
Samba	2.3	-77			
Shopian	**	**			
Srinagar	20.6	2			
Udhampur	3.4	-80			
Uttarakhand					
Almora	10.8	85			
Bageshwar	39.7	584			
Chamoli	16.1	52			
Champawat	9.0	-8			
Dehradun	30.1	419			
Garhwal Pauri	10.8	129			
Garhwal Tehri	19.1	101			
Haridwar	18.8	254			
Nainital	13.4	158			
Pithorgarh	29.3	123			
Rudraprayag	12.4	-6			
Udham Sing Nagar	2.1	-15			
Uttarkashi	31.6	134			
Bihar					
Araria	6.0	-39			
Arwal	6.0	1100			
Aurangabad	5.0	450			
Banka	0.0	-100			
Begusarai	0.0	-100			
Bhabua	0.0	-100			
Bhagalpur	2.4	-27			
Bhojpur	1.0	-55			
Buxar	0.0	-100			
Darbhanga	0.0	-100			
East Champaran	0.0	-100			
Gaya	19.4	1193			
Gopalganj	0.0	-100			
Jahanabad	11.0	746			
Kathihar	2.6	-63			
Khagadia	0.0	-100			
Kishanganj	28.6	149			
Madhepura	0.0	-100			
Madhubani	0.0	-100			
Monghyar	15.8	243			
Muzaffarpur	0.0	-100			
Nalanda	13.9	530			
Nawada	0.0	-100			
Patna	2.4	-11			
Purnea	5.5	8			
Rohtas	14.4	929			
Saharsha	0.0	-100			
Samstipur	0.3	-90			
Saran	0.0	-100			
Sheikpura	14.2	992			
Sheohar	0.0	-100			
Sitamarhi	0.0	-100			
Siwan	**	**			
Supaul	0.0	-100			
Vaishali	0.0	-100			
West Champaran	2.1	-64			

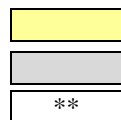
Orissa		
Angul	2.5	-72
Balasore	13.1	7
Bargarh	3.0	76
Bhadrak	17.9	24
Bolangir	0.0	-100
Boudh	11.0	67
Cuttack	21.4	304
Deogarh	3.5	28
Dhenkanal	28.0	250
Gajapati	18.4	67
Ganjam	21.9	126
Jagatsingpur	3.4	-52
Jajpur	1.5	-85
Jharsuguda	19.1	446
Kalahandi	0.2	-96
Kandhamal	34.5	423
Kendrapara	1.5	-73
Keonjhar	24.9	115
Khurda	15.4	176
Koraput	10.2	18
Malkangiri	5.0	-19
Mayurbhanj	9.3	-32
Nawapara	0.0	-100
Nawarangpur	0.0	-100
Nayagarh	40.3	961
Puri	11.6	347
Rayagada	18.2	15
Sambalpur	6.8	150
Sonepur	0.0	-100
Sundargarh	21.1	904
West Bengal		
GWB		
Bankura	17.3	151
Birbhum	4.8	-34
Burdwan	1.9	-74
East Midnapore	1.7	-74
Hooghly	5.3	-53
Howrah	0.6	-95
Kolkata	2.5	-78
Murshidabad	9.0	45
Nadia	1.8	-74
24 Pargana (N)	10.1	63
Purulia	23.0	215
24 Pargana (S)	2.7	-76
West Midnapore	1.2	-89
SHWB		
Cooch Behar	35.2	23
Darjeeling	26.8	-8
East Sikkim	77.1	146
Jalpaiguri	45.2	82
Malda	2.9	-67
North Dinajpur	**	**
North Sikkim	131.4	232
South Dinajpur	5.2	-35
South Sikkim	9.2	-71
Karnataka		

Coastal Karnataka		
Dakshin Kannada	3.3	-66
Udupi	0.2	-97
Uttar Kannada	11.6	137
North Interior Karnataka		
Bagalkote	6.3	-9
Belgaum	21.5	207
Bidar	10.2	104
Bijapur	15.9	165
Dharwad	7.7	-35
Gadag	15.4	65
Gulbarga	17.2	252
Haveri	22.6	182
Koppal	16.1	169
Raichur	6.9	72
Yadgir	4.3	27
South Interior Karnataka		
Bangalore Rural	30.6	240
Bangalore Urban	5.2	-53
Bellary	14.7	122
Chamarajnarag	20.0	7
Chichballapur	4.7	-35
Chickmagalur	6.5	-46
Chitradurga	19.8	266
Davangere	18.5	120
Hassan	8.7	-25
Kodagu	2.0	-90
Kolar	0.0	-100
Mandya	9.2	-20
Mysore	26.3	75
Ramnagara	7.3	-37
Shimoga	14.9	88
Tumkur	13.2	46
Kerala		
Alappuzha	35.0	32
Kannur	4.7	-74
Ernakulam	44.5	59
Idukki	55.3	58
Kasaragod	0.0	-100
Kollam	48.0	24
Kottayam	47.3	39
Kozhikode	0.3	-99
Malappuram	5.2	-76
Palakkad	3.4	-86
Pathanamthitta	65.9	54
Thiruvananthapuram	25.1	-4
Thrissur	5.2	-72
Wyanad	12.7	-36
Tamil Nadu		
Ariyalur	0.0	-100
Chennai	0.0	-100
Coimbatore	5.5	-58
Cuddalore	0.2	-95
Dharmapuri	6.0	-50
Dindigul	2.7	-83
Erode	0.0	-100
Kanchipuram	0.0	-100

Kanyakumari	20.6	-22
Karikal	0.0	-100
Karur	0.0	-100
Krishnagiri	0.0	-100
Madurai	0.2	-99
Nagapattinam	0.0	-100
Namakkal	0.0	-100
Nilgiris	5.8	-68
Perambalur	0.0	-100
Puducherry	0.0	-100
Pudukottai	0.0	-100
Ramanathapuram	2.9	-79
Salem	3.9	-75
Sivaganga	1.0	-92
Thanjavur	1.7	-78
Theni	1.1	-93
Tirunelveli	4.1	-77
Tirupur	0.0	-100
Tiruvallur	0.0	-100
Tiruvannamalai	0.0	-100
Tiruvarur	0.0	-100
Toothukudi	2.4	-81
Trichy	1.8	-83
Vellore	0.0	-100
Villupuram	0.0	-100
Virudhunagar	2.6	-84
Andhra Pradesh		
Coastal Andhra Pradesh		
East Godavari	0.0	-100
Guntur	0.0	-100
Krishna	0.0	-100
Nellore	0.0	-100
Prakasam	0.0	-100
Sirkakulam	10.9	54
Visakhapatnam	7.8	-24
Vizianagram	4.6	-41
West Godavari	0.0	-100
Telangana		
Adilabad	0.3	-90
Hyderabad	9.8	171
Karimnagar	2.4	-35
Khammam	7.9	39
Mehabubnagar	9.0	210
Medak	1.5	-62
Nalgonda	2.2	-40
Nizamabad	1.2	-64
Rangareddy	16.0	233
Warangal	4.4	-2
Rayalaseema		
Anantapur	11.0	156
Chittoor	0.0	-100
Cuddapah	4.6	53
Kurnool	12.1	201

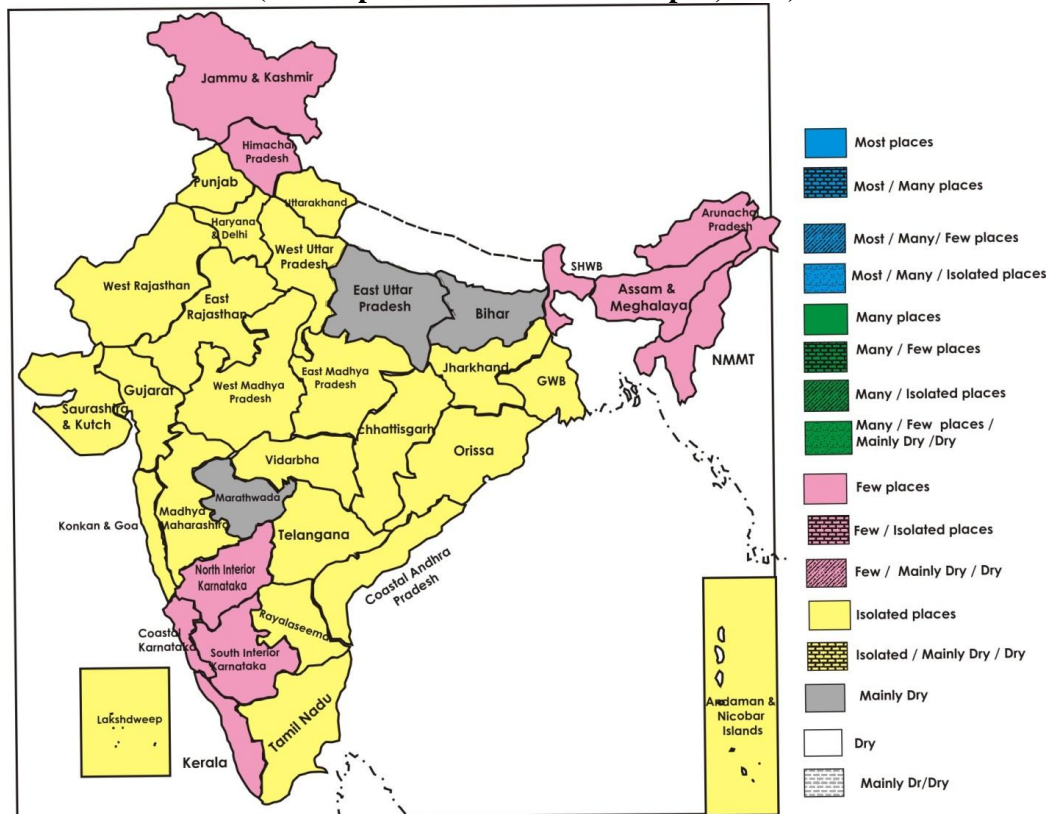


(20% or more) excess rainfall
(-19 to +19%) normal rainfall
(-20 to -59%) deficient rainfall



(-60 to -99%) scanty rainfall
(-100%) no rainfall
** Data not available

Weather Forecast (Valid upto 0830 hours of 22nd April, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 22nd April, 2012

- Rain/thundershowers would occur at a few places over northeastern states and Sub-Himalayan West Bengal & Sikkim and at one or two places over Gangetic West Bengal, Orissa and central India.
- Rain/thundershowers would occur at a few places over Jammu & Kashmir and Himachal Pradesh and at one or two places over Uttarakhand.
- Dust storms/thunder storms would occur at one or two places over Punjab, Haryana, Rajasthan and west Uttar Pradesh.
- Rain/thundershowers would occur at a few places over Kerala and Karnataka and at one or two places over Konkan & Goa, Madhya Maharashtra, Andhra Pradesh, Tamilnadu, Lakshadweep, Andaman & Nicobar Islands and south Gujarat.
- Weather would be mainly dry over remaining parts of the country.
- Strong northwesterly winds speed reaching 30-40 kmph would occur over Indo-Gangetic Plains from tomorrow onwards.

Weather Warning

- Thundersqualls may occur at one or two places over Rajasthan, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Bengal & Sikkim and Orissa during next 48 hours.

Weather Outlook up to 0830 hours IST of 24th April, 2012

- Rain/thundershowers would occur at many places over northeastern states and at a few places over West Bengal & Sikkim.
- Rain/thundershowers would occur at a few places over western Himalayan region and at one or two places over plains of northwest & peninsular India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of Assam and Arunachal Pradesh.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places over the States of the region.
- **Warning:** Thunder squalls would occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during next 48 hours.
- **Advisories:**
 - As thunder squalls would occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during next 48 hours, Farmers in these States are advised to undertake harvesting of matured crops immediately and also arrange for mechanical support for vegetables and young plants in orchards.
 - As significant rainfall occurred in most of the districts of the States of the region and rain / thundershowers would occur at many places over the region during next three days, farmers are advised to postpone irrigation to the standing crops in the region.
 - Farmers in the Hill Zone of Assam are advised to prepare land for transplanting of *ahu* rice and continue sowing of okra and cucurbitaceous crops. Continue land preparation and sowing of black gram and green gram.
 - Farmers in Central Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *Capsularis* jute, summer vegetables, summer pulses and planting of sugarcane. Harvest matured wheat crop.
 - Farmers of Lower Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice and cow pea and planting of banana.
 - Farmers in the Upper Brahmaputra Valley Zone of Assam are advised to undertake sowing of summer green gram, black gram, jute and summer vegetables and farmers are also advised land preparation and planting of banana, sugarcane, ginger and turmeric.
 - Farmers of Barak Valley Zone of Assam are advised to continue sowing of black gram, green gram, ladies finger, ridge gourd, sponge gourd and jute.
 - Farmers in North Bank Plain Zone of Assam are advised to complete sowing of direct seeded *ahu* rice. Farmers are advised to go for transplanting of banana, sugarcane, ginger and turmeric.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to undertake sowing of *Jhum* rice. Farmers are also advised to continue land preparation and sowing of maize and summer vegetables.
 - Farmers in Mild Tropical Plain Zone of Tripura are advised to continue land preparation and sowing of *aus* rice, maize, sesame summer vegetables like ridged gourd, cucumber, ash gourd etc.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue sowing of maize, jute and vegetables like ladies finger, pumpkin, French bean, bottle gourd, ash gourd etc. Prepare nursery for brinjal. Undertake harvesting of matured cauliflower, cabbage, 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 continue land preparation and sowing of cow pea, ginger, turmeric, French bean and bhindi. Farmers are also advised transplanting of chilli and harvesting of onion.
 - In Mild Tropical Hill Zone of Mizoram, farmers are advised to continue land preparation and sowing of ginger, turmeric, urad and moong. Undertake harvesting of banana and matured maize crop.
 - In Mild Tropical Hill Zone of Nagaland, farmers are advised to continue land preparation and planting of turmeric and ginger. Continue nursery preparation for rice. Provide mechanical support with bamboo to banana to prevent the breaking of heavy bunches. Farmers are also advised harvesting of pea.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Blast disease is observed at nursery stage of rice in Mild Tropical Hill Zone of Nagaland; farmers are advised to spray Zineb 75 WP @ 1.25 kg / ha.
 - Weather is congenial for infestation of aphids in *khasi* mandarin in Mild Tropical Hill Zone of Mizoram; farmers are advised to monitor *khasi* mandarin crop for taking appropriate plant protection measures.
 - 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.
- Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to deworm and vaccinate cattle for FMD. Deworm pig and apply preventive measures to goat against diarrhea and provide dry bedding.
- 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 pig and goat against swine fever and Haemorrhagic Septicaemia (H.S.).
- Farmers in Mild Tropical Plain Zone of Tripura are advised to deworm calves with consultation with veterinary practitioner. Farmers are also advised to vaccinate poultry against Ranikhet disease with R2B 0.50 ml through eye drop route.
- **Pishiculture**
 - The farmers in Nagaland are advised to raise ducks in fish ponds so that much of their manure will go into the water. This will help the fish to grow. At the same time, the ducks will feed on the unwanted plants that grow in the ponds and help to keep the ponds free of plants, weeds and snails. Chickens or pigs can be raised near the ponds. Build the chicken houses and pig pens on the banks or over the ponds, to sweep the manure in to the ponds.

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

- **Realised Rainfall:** Significant rainfall occurred in the districts of Kishanganj in Bihar, Dhenkanal, Ganjam, Kandhamal, Cuttuck and Nayagarh districts in Orissa, Purulia in Gangetic West Bengal and in most districts of Sub Himalayan West Bengal.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over Sub Himalayan West Bengal & Sikkim and at one or two places over Jharkhand, Gangetic West Bengal and Orissa. Weather would be mainly dry over remaining parts of the region.
- **Warning:** Thundersqualls may occur at one or two places over West Bengal & Sikkim and Orissa during next 48 hours.
- **Advisories:**
 - As significant rainfall occurred in Kishanganj in Bihar, Dhenkanal, Ganjam, Kandhamal, Cuttuck and Nayagarh districts in Orissa, Purulia in Gangetic West Bengal and in most districts of Sub Himalayan West Bengal, farmers are advised to postpone irrigation to the standing crops in these districts. As there was no significant rain in remaining districts of the region, apply irrigation to the crops. Thundersqualls may occur at one or two places over West Bengal & Sikkim and Orissa during next 48 hours. Farmers in these States are advised to undertake harvesting of matured wheat, *rabi* pulses and oilseed crops immediately and also arrange for mechanical support for vegetables and young plants in orchards.
 - Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to undertake sowing of jute.
 - Farmers in North Central Plateau Zone of Orissa are advised to maintain 3-5 cm depth of water 15 days before and after flowering in summer rice fields.
 - Farmers in North Western Plateau Zone of Orissa are advised that the weather is conducive for the planting of Ginger and provide irrigation to sunflower.
 - In South Bihar Alluvial Zone, undertake harvesting, threshing and drying of wheat, gram and oilseeds and keep it in safe place and in North Bihar Alluvial Zone, continue the sowing of elephant foot yam.
 - Farmers in Western, Central and North Eastern Plateau Zone of Jharkhand are advised to undertake sowing of vegetables like round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon.
 - Farmers in New Alluvial Zone of West Bengal are advised to continue sowing of jute.
 - Farmers in Old Alluvial Zone of West Bengal are advised to undertake land preparation for sowing of jute. Also undertake harvesting of wheat and keep in protected place.
 - Farmers in Terai Zone of West Bengal are advised to undertake sowing of jute. It is the optimum time for sowing of marigold for the summer and rainy season flowering. Farmers are advised to sow the seeds immediately.
 - Farmers in Hill Zone of West Bengal are advised to undertake land preparation and planting of gladiolus. Farmers are also advised to complete the sowing of okra by this week.

- Farmers in Coastal Zone of West Bengal are advised to complete the harvesting of heads of sunflower.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- White ant and white grub attack has been found on groundnut in East and South Eastern Coastal plain zone of Orissa. Thorough soil drenching with Chloropyrifos solution @ 2 ml / litre water may be done. Bud necrosis also has been found in groundnut; spray 2 ml Endosulphan / litre.
- Due to prevailing weather condition in Laterite and Red soil zone of West Bengal, there are chances of attack of blight disease in *boro* rice. To protect the crop use ketazen 1.5 ml or Zyrum 80% 3 ml. Gundhi bug may attack the crop during the grain filling stage, apply Carbaril or Fenvalarate to protect the crop.
- Aphid and mite may be infested in Mustard and chilli in Hill Zone of West Bengal. For the management of aphids spraying the crop either with Imidacloprid @ 1ml /litre of water or Acetamiprid @ 1g /litre of water is advised. For the management of mite spray with Monocrotophos @ 1.5 ml/litre of water.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - 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.
 - Farmers of North Eastern Plateau Zone Orissa are advised to give sufficient water and rice water to the animals before leaving them to grazing as the temperature is increasing.
- **Pisciculture**
 - 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 750 g. The warm weather depletes oxygen so stirring the fish ponds in the morning time is advised for better oxygen availability.

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

- **Realised Rainfall:** Significant rainfall occurred in Chamba and Kullu districts of Himachal Pradesh, Nawashahar district in Punjab, Anantnag, Ganderwal, Kupwara districts of Jammu & Kashmir, Dehradun and Uttarakasi district in Uttarakhand. Mainly dry weather prevailed over the rest region.
- **Rainfall Forecast:** Scattered rainfall is likely in Jammu & Kashmir and Himachal Pradesh. Mainly dry weather is likely over East Uttar Pradesh. Isolated rainfall is likely in the remaining States of the region.
- **Warning:** Thundersqualls may occur at one or two places over Rajasthan during next 48 hours.
- **Advisory:**
 - As significant rainfall occurred in Chamba and Kullu districts of Himachal Pradesh, Nawashahar district in Punjab, Anantnag, Ganderwal, Kupwara districts of Jammu & Kashmir, Dehradun and Uttarakasi district in Uttarakhand, farmers are advised to postpone irrigation to the crops. 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. Thundersqualls may occur at one or two places over Rajasthan during next 48 hours. Farmers are advised to undertake harvesting of matured wheat, rabi pulses and oilseed crops immediately and also arrange for mechanical support for vegetables and young plants in orchards.
 - Farmers in Delhi are advised to sow summer green gram, green manure crop where harvesting of rabi crops are over. Farmers are also advised to sow guar, maize, bajra, cluster beans as fodder crops and radish.
 - In Rajasthan, due to rise in temperature farmers are advised to irrigate summer vegetables, young fruit plants and other standing crops as per need. Undertake harvesting of matured wheat, barley, gram, mustard, cumin, fenugreek, coriander followed by deep hot summer ploughing. Continue land preparation and sowing of cotton (Desi kapas, B.T. kapas and Narma kapas), jowar / bajra mixed with guar for green fodder.
 - Farmers in Punjab and Haryana are advised to undertake sowing of summer moong and mash. Field preparation for cotton and transplanting of chilli, brinjal and okra may be undertaken. Sow the nursery of kharif onion to produce bulbs. Undertake last cutting of berseem. Apply preventive measures to save fruit trees from drought, windstorm and sun injury. Whitewash the trunk, provide shelter to young trees and give frequent irrigation.

- In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to complete transplanting of tomato, onion, brinjal, chilli crop and sowing of bhindi, beans and cucurbits without any further delay. Also undertake sowing of dhaincha crop in fallow field for green manuring in order to maintain the soil fertility. Suspend the cutting of berseem crop in order to take quality production of berseem seeds.
- In Valley Temperate zone of Jammu & Kashmir, farmers are advised to undertake field preparation for rice and maize and continue harvesting of oats.
- In Intermediate Zone of Jammu & Kashmir, farmers are advised to prepare field for sowing of maize (un-irrigated), rice (irrigated), Dhaincha and berseem.
- In Cold Arid Zone of Jammu Kashmir, farmers are advised to uproot the winter crop of garlic.
- Farmers in Mid Hills Sub-Humid Zone of Himachal Pradesh farmers are advised to complete planting of apple and stone fruits plants. In high hills planting can be done after melting of snow. In lower plain areas complete sowing of sunflower. Start sowing of *zaid* moong and mash in irrigated areas and ageti bhindi, French bean. Also undertake sowing of nursery of khira, summer squash, bitter gourd, tori and transplanting and nursery sowing of brinjal, Shimla mirch, pepper and tomato in polyhouses.
- Farmers in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh are advised to raise healthy nursery and planting material of tomato, brinjal, chilli in nursery beds, direct planting of cucumber, pumpkin, bitter gourd and other cucurbitaceous vegetables, French bean (bush type var.). Harvest peas and cauliflowers.
- In high hills on apple plants use anti hail nets to protect from hail.
- Farmers in High Hill Temperate Dry Zone of Himachal Pradesh, are advised to go for the sowing of peas in Pattan valley. Prepare land for sowing of wheat/barley. After fumigation of polyhouse go for sowing of capsicum, tomato, Himsona Cabbage, cauliflower, yellow capsicum, Cucumber, Summer squash, sarson and palak or methi for green vegetables.
- In Bhabar and Tarai Zone & Hill zone of Uttarakhand, farmers are advised to undertake harvesting of matured crops viz. wheat, barley, gram, pea etc. during this week. Undertake sowing of okra, urd, moong, (potato in high hill areas height more than 7000 – 8000 ft.) and start sowing of maize and lobia as green fodder crops where irrigation facilities are available, sowing of maize for green cob purpose. Farmers are advised to continue for sowing of Chaitee Dhan in nursery and also crops like sunhemp and cowpea for green manuring.
- In Uttar Pradesh, farmers are advised to continue sowing of summer sugarcane, urad, moong, maize, arhar and sunflower in vacated field. Farmers are also advised to start sowing of lady's finger, cucurbits and also maize, lobia for green fodder purpose. Transplant tomato and chilli.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, aphids are appearing in the seed crop of Cole crops, for control, farmers are advised to spray rogar 1ml per litre of water. Downey mildew is also seen in the fields of seed crop of onion, for control spray Redomil M-Z@ 25g per 10litres of water. The seed crops namely raddish, turnip cauliflower are attacked by aphids and caterpillars, for control spray rogar 2ml per litres of water.
- 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.
 - In Transitional Plain Zone of Inland Drainage (Fatehpur), cow, sheep & goats are likely to be affected by blood parasites specially protozoa attack. This disease is spread by external parasites like ticks. Treat affected animals immediately by approaching veterinary doctor.
 - In Uttarakhand, keep all types of animals in shed or under trees during the day time and give them fresh & cold water three times a day for drinking. Go for deworming for birds of 6 to 8 weeks age and then after 2-3 months interval.
- **Floriculture :**
 - In Mid Hills Sub-Humid Zone of Himachal Pradesh, Advised to start plantation of Gladiolus and liliium.
 - In plain and highland areas the flowers affected with aphids, spray malathion @0.01% for the control.
 - It is optimum time for raising nursery of summer flowers viz. China aster, glardia, rudevekia, Kochia, African marigold, French marigold, partulaca, Tithinia, Torinia and cleome etc.
- **Apiculture**
 - In Intermediate Zone (Pahalgam/Rajouri), April is the most ideal for beekeeping. Weather and floral conditions are most conducive for beekeeping activity. Pollen and nectar is available in abundant to

bees. For beginners this is the right time to start beekeeping as pollen and nectar are in plenty and bee activity is at its peak with least problems.

- Artificial feeding of the bee colonies with sugar: water solution 1:1 ratio may be done. Provide ample space for newly mated queen for egg laying is advised in sub tropical zone (Chatha / Jammu) of Jammu & Kashmir.

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

- **Realised Rainfall:** Alapuzha, Ernakulam, Idukki, Kollam, Kottayam, Pathanamthitta and Thiruvananthapuram districts in Kerala, Kanyakumari in Tamil Nadu, Belgaum, Haveri in North Interior Karnataka, Bangalore Rural, Chamarajnar and Mysore in South Interior Karnataka received sufficient rainfall last week. No significant rainfall occurred over remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over Kerala, coastal Karnataka, Interior Karnataka and at one or two places over Andhra Pradesh, Tamil Nadu.

Advisories:

- As Alapuzha, Ernakulam, Idukki, Kollam, Kottayam, Pathanamthitta and Thiruvananthapuram districts in Kerala, Kanyakumari in Tamil Nadu, Belgaum, Haveri in North Interior Karnataka, Bangalore Rural, Chamarajnar and Mysore in South Interior Karnataka received sufficient rainfall last week, postpone irrigation to the crops. Apply irrigation to the standing crops in the remaining parts of the region, since there no significant rainfall occurred during last week and no significant rainfall is likely to occur during next 3 days.
- Farmers in the Eastern Dry Zone of Karnataka are advised to plough the land across the slope in the areas where rainfall has been received, test soil mineral content in crop lands and prepare required dosage of fertilizers for next sowing season, since there is possibility of light showers after two days.
- Farmers in the North East Transition Zone of Karnataka are advised to provide irrigation to mango, as the fruits are in maturity stage and dry land farmers may take up ploughing of land across the slope, as it improves infiltration and helps to conserve the rain water and avoid soil erosion, if sufficient rains have been received.
- Farmers in the North Dry Zone of Karnataka are advised to undertake summer pruning in fruit crops. Light to moderate amount of rain has been received at many places in the district during the previous week and as per the forecast there is possibility of thunder showers at many places during the coming five days. Taking advantage of the rainfall, farmers are advised to plough the land and incorporate the crop residue in the soil.
- Farmers in the Coastal Zone of Karnataka are advised to provide irrigation to arecanut and undertake summer ploughing to expose the soil for solarisation and to expose the hibernating insect pests and pathogens to kill them.
- Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to provide irrigation to sugarcane, banana and rice fallow cotton and harvest pulses, since dry weather condition will prevail for the next five days.
- Farmers in the North Eastern Zone of Tamil Nadu are advised to undertake field preparation for planting of horticultural crops in the irrigated land and harvesting of groundnut and paddy.
- Farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake field preparation for sowing of ginger.
- Farmers in the Southern Zone of Kerala are advised to start harvesting of early sown rice, irrigate coconut palms @ 400-700 litres/ palm, irrigate banana plants and provide mulching in banana basins. Prepare field for upland cultivation, start sowing in coconut nursery, prepare field for rainfed cultivation of banana and initiate new planting of vegetables. They are also advised to start tapping of rubber, only after few good showers of rain.
- Incidences of fruit rot in chillies and fruit borer in brinjal is seen after the summer rain in the Southern Zone of Tamil Nadu. Farmers are advised to spray Mancozeb 2 g/lit or Copper oxychloride 2.5 g/lit at 15 days intervals (2 times) to control fruit rot and Quinalphos (1.5 D) @ 25kg/ha depending upon the wind conditions especially during morning to control fruit borer.
- Sucking pest incidence in summer irrigated cotton, powdery mildew, fruit rot and yellow patches on chilli plant leaf is observed in the Southern Zone of Tamil Nadu due to the prevailing weather condition. Farmers are advised to spray monocrotophos 1 l/ ha to control the sucking pest, carbendazim 1 g/ l to control powdery mildew and yellow patches and mancozeb 2 g/ l to control fruit rot.

- Mango trees have been affected with fruit flies in the Coastal Zone of Karnataka ; Farmers are advised to set up pheromone traps (10 Nos/hectares) for one ml. of Methyl Uginol and 4 grams of Cabaryl in one litre of water to control flies.
- **Animal Husbandry**
- Farmers in the Eastern Dry Zone of Karnataka are advised to take up silkworm and poultry rearing houses to maintain optimum room temperature and take care against the rapid increase in air temperature and decrease in relative humidity.
- Farmers in the North East Transition Zone of Karnataka are advised to give mineral supplements to animals, based on the deficiency in the region, make cool water should be made available to the birds because of peak hot temperature, add electrolytes (KCl, NaCl and Na₂CO₃) in the feed as well as in water and spray water on the floor and roof of shelter periodically during peak hot hours to lower the temperature and consequently reduce the heat load on animals.
- Farmers in the Southern Dry Zone of Karnataka are advised not to graze the animal between 12 p.m to 5 p.m, supply adequate quantity of drinking water, sprinkle the water on the animals before milking, keep floor cool and clean and deworm calves during summer months to increase the appetite of the animals due to high day temperature.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Mainly dry weather prevailed over Maharashtra and Gujarat State during last week.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over Konkan & Goa, Madhya Maharashtra and Gujarat and mainly dry weather would prevail in Marathwada.
- **Advisories:**
- As mainly dry weather prevailed during last few weeks in most parts of the State and mainly dry weather is likely to prevail during next 2-3 days, farmers are advised to apply irrigation to standing crops.
- Farmers in Konkan and East Vidarbha regions are advised to maintain proper water level in rice field.
- Farmers in Marathwada region are advised to apply drip irrigation in banana orchard and cover banana bunch with banana leaves to protect from bright sunshine.
- Due to increase in temperature and decrease in relative humidity, fruit dropping in mango trees is observed in some parts of Konkan region, apply irrigation @ 150-200 litres of water per tree having mango fruits of arecanut size. Do not apply water to the trees bearing mature fruits. Farmers of Sindhudurg district are advised to start harvesting of already matured summer rice in the morning hours.
- Farmers of Central Vidarbha Zone are advised to spray 20 ppm NAA to avoid mango fruit dropping. Spray 50 PPM NAA on orange at pea stage.
- Prevailing minimum temperature (18 to 20⁰C) in North Madhya Maharashtra is favourable for sowing of irrigated cotton in the region; farmers are advised to undertake sowing in the first fortnight of this month. They are also advised to undertake sowing of BT cotton whenever day temperature will be less than 35⁰C i.e. during last week of May.
- Farmers of Madhya Maharashtra are advised to complete preparatory tillage and field may be kept ready for planting of turmeric and ginger during last week of April.
- Farmers of Sindhudurga district are advised to continue harvesting of already matured summer rice and start harvesting of matured summer groundnut in the morning hours.
- Mango fruits are in marble stage, arecanut size stage and mature size stage in Konkan, farmers are advised to harvest the mature fruits before 10 hours in the morning and after 16 hours in the evening with the help of *nutan* mango harvester at 80 to 85 % maturity. Keep the harvested fruits in shade and cover them to prevent spongy tissue disease and from heat. Apply treatment with fungicide and ethylene for ripening.
- Farmers of East Vidarbha are advised to undertake sowing of *jowar* for fodder.
- Farmers in Middle Gujarat Zone are advised to apply 25 kg N/ha as Ammonium Sulphate in paddy during evening hours. Keep mulching in mango orchard to conserve moisture. Apply irrigation to summer crops at regular intervals as per requirement.
- Farmers in Bhal and Coastal Zone of Gujarat are advised to irrigate summer groundnut at 10 days interval. Avoid irrigation in the afternoon hours mainly in onion crop.
- Farmers in South Saurashtra Zone of Gujarat are advised to apply irrigation in sugarcane, summer pearl millet and peanut at regular intervals. Apply dose of chemical fertilizer in the form of urea @ 32 kg/ha in sugarcane.

- Farmers in North Gujarat Zone are advised to irrigate summer pearl millet, green gram, groundnut and vegetable crops. Under the prevailing weather conditions complete harvesting of *rabi* crops followed by threshing. Cut fully matured spikes of castor regularly and dry under sun. Carry out harvesting of matured onion and keep at well aerated place. Undertake picking of okra.
- As there is increase in temperature, farmers in South Gujarat Zone are advised to apply irrigation to vegetables at an interval of 3 to 4 days.
- Due to high temperature in South Gujarat Heavy Rainfall Zone, farmers are advised to irrigate vegetable crops during morning hours. Carry out land preparation and sowing of summer crops like groundnut, moong and pearl millet.
- Due to prevailing weather conditions, farmers in North Saurashtra Zone are advised to apply irrigation to groundnut and sesame at 8-10 days interval and keep the fields free of weeds.
- Farmers in North West Zone are advised to harvest *rabi* crops and then deep plough the field. Also carry out sowing of vegetables.
- Suitable varieties of the crops for sowing are mentioned in Annexure II.
- As maximum temperature may increase in the current week, mango fruits may become scalded, black and dropping may occur in Konkan. To avoid this and if the sunstroke belt is observed in the mango orchard, then apply water (150 to 200 litres per tree) to mango trees if available. They are also advised to Spray water on mango tree and Mulch with grass near basin of tree to avoid loss of water by evaporation.
- Due to change in weather conditions, there may be incidence of anthracnose on immature mango fruits, spray Carbendazim @10 g or Thiophanate methyl 10 g or Propineb@ 20 g per 10 litres of water. Due to change in weather conditions there may be infestation of mango fruit fly on mango in Sindhudurga district, install *Rakshak* traps @ 4 traps per ha in mango orchard. There may also be incidence of mealy bugs and fruit borer in mango, spray Dimethoate @10 ml and Quinolphos@ 10 ml respectively per 10 litres of water. Do not spray insecticides 20-25 days before maturity of fruits.
- Due to rise in temperature there is chance of attack of thrips and mites in summer chilli in Western Maharashtra Scarcity Zone, spray Methyl Demeton 25 EC @15 ml or Dimethoate 30EC @16 ml + Sulphur 80% @ 20 g in 10 litres of water.
- Due to rise in temperature infestation of leaf mosaic (which occur due to white fly) may increase in okra in Pune division, spray Imidachloprid @4 ml or Thimethoxam @4 g in 10 litres 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 a.m to 3 p.m. Make arrangement of curtains for poultry house.
 - Put curtains on north-east direction in poultry to protect against hot winds in Middle Gujarat Zone.
 - In South Gujarat Heavy Rainfall Zone, give shower with cold water two to three times in a day to cattle, provide fresh and cold water for drinking and increase the green fodder quantity for feeding.
 - Give Anthrax vaccination and tablet for controlling karamia in cattle in North Saurashtra Zone.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Mainly dry weather prevailed in the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over Madhya Pradesh and Chhattisgarh.
- **Advisories:**
 - As mainly dry weather prevailed during last week in Chhattisgarh and Madhya Pradesh and no significant rainfall is likely, farmers in these regions are advised to provide irrigation to the standing crops.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to provide frequent irrigation to summer crops like moong, urad, sunflower, cucurbitaceous crops, lady's finger, cowpea and other vegetable crops as per requirement. Weeding, intercultural operations and top dressing of urea should be carried out in summer vegetables. Undertake sowing of maize, sorghum, cowpea etc. as summer fodder crops.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to give irrigation in mango.
 - Farmers of Gird Zone of Madhya Pradesh are advised to sow bajra, jowar, maize and lobia for green fodder purpose and give irrigation to okra, chilli, tomato, melon and mango.

- Farmers in Bundelkhand region of Madhya Pradesh are advised to harvest matured *rabi* crops as favourable weather conditions prevail.
 - Farmers in Vindhyan Plateau region of Madhya Pradesh are advised to irrigate sugarcane crop at 12-15 days interval.
 - Farmers in Central Narmada Zone of Madhya Pradesh are advised to irrigate maize crop and harvest matured wheat crop. Farmers in Nimar valley Zone of Madhya Pradesh are advised to undertake planting of sugarcane.
 - In Chhattisgarh Plain Zone, groundnut and sunflower are at flowering/pod formation/ grain filling stage. This stage is crucial for moisture; hence it is advised to irrigate the crops frequently.
 - In North Hill Zone of Chhattisgarh, farmers are advised to undertake planting summer sugarcane and complete sowing of maize and groundnut.
 - Weather conditions are suitable for proper germination of summer green gram in Chhattisgarh Plain Zone, hence farmers are advised to prepare the fields after harvesting of wheat/gram and complete sowing of green gram at the earliest.
 - Attack of fruit borer in mango is observed in Kymore Plateau and Satpura Hills region of Madhya Pradesh, farmers are advised to undertake spraying Dimethoate or Trizophose 2 gm/litre of water.
 - In Bundelkhand region of Madhya Pradesh, brinjal crop is being affected by fruit and stem borer, therefore farmers are advised to monitor the crop. Spray of Trizophas 40 E.C. @ 2.0 ml per liter of water for their control. Farmers are also advised to spray Imidachloprid @ 0.5 ml. per litre of water for control of attack of yellow mosaic in ladyfinger and leaf curl in tomato and chilly crop.
- **Animal Husbandry & Poultry**
 - Farmers in Kymore Plateau and Satpura Hills region and Central Narmada Zone and Gird zone of Madhya Pradesh are advised to provide cold water to cattle three times daily and keep them in airy and shady place as temperature is high during day time. Arrange for vaccination for Foot and Mouth disease in cattle.
 - Farmers in Vindhya Plateau Zone of Madhya Pradesh are advised to vaccinate cattle against FMD.

Annexure I Major Crops

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

- Sugarcane (new) (planting), *Boro* rice (flowering / grain formation), *ahu* rice (direct seeded) (tillering), *ahu* rice (transplanted) (transplanting), wheat (maturity / harvesting), tomato, pumpkin, bottle gourd (vegetative / flowering / fruiting), okra, pointed gourd, musk melon, water melon, ridge gourd, sponge gourd (sowing), black gram, green gram (sowing / seedling / vegetative), maize (sowing / vegetative), summer pulses, *Capsularis* / *Olorius* jute, summer vegetables (sowing / seedling / vegetative), cow pea (sowing / seedling), cucurbits (sowing / vegetative), ginger / turmeric (planting) in Assam.
- *Jhum* and WRC rice (sowing), maize, black gram, green gram, sesame (early vegetative / vegetative), okra, beans, cucurbitaceous vegetables (early vegetative / vegetative) in Arunachal Pradesh.
- Summer rice (panicle initiation / flowering), cucurbits (sowing / transplanting / vegetative), tomato, brinjal, chilli (transplanting / vegetative / flowering), cauliflower and cabbage (new) (transplanting), onion (bulb formation / harvesting), okra, French bean, ginger, turmeric (sowing) in Manipur.
- *Boro* rice (flowering / grain formation), wheat (grain formation), mustard, rapeseed (maturity / harvesting), cabbage and knol-khol (head maturity / harvesting), okra (sowing / vegetative / flowering), pumpkin, French bean (vegetative / flowering / fruiting/ maturity), maize, jute, bottle gourd, ash gourd (sowing) in Meghalaya.
- *Khasi* mandarin (vegetative / flowering), banana (vegetative / fruiting / maturity / harvesting), tomato (fruiting / harvesting), maize (maturity / harvesting), bean, okra, cucurbits (early vegetative / vegetative), ginger / turmeric (sowing) and urad, moong (sowing) in Mizoram.
- Rice (nursery preparation), pea (pod maturity / harvesting), maize (cob formation), tomato (vegetative), ginger, turmeric (planting), rajma (sowing / germination), banana (vegetative) in Nagaland.
- *Aus* rice (sowing), *boro* rice (panicle initiation / flowering), summer vegetables (sowing), cucurbits (sowing) in Tripura.

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

- Sugarcane (vegetative), lobia for green fodder (vegetative), mishrikand (vegetative), fruit trees (transplanting / early vegetative), wheat (maturity / harvesting), vegetables (flowering / fruiting / harvesting), maize (silking and tasseling), sugarcane, onion (planting), *boro* rice (panicle initiation / flowering), moong, summer maize (vegetative) in Bihar.
- Turmeric and ginger (rhizome formation), elephant foot yam (tuber elongation), wheat (maturity / harvesting), papaya (transplanting), summer moong (vegetative), summer vegetables (transplanting / vegetative / flowering / fruiting), okra, summer maize (vegetative), onion (transplanting) in Jharkhand.
- Summer rice (flowering / grain filling), summer groundnut (flowering / pegging), sunflower (flowering / head formation), sugarcane (new) (tillering), wheat (maturity / harvesting), banana (vegetative), tomato (flowering / fruiting / maturity), jute (sowing) in Orissa.
- *Boro* rice (panicle initiation / grain filling stage), wheat (maturity / harvesting), groundnut (flowering / pegging), chilli (flowering / fruiting), mango (flowering), green gram (flowering), jute (sowing) in West Bengal.
- *Rabi* vegetables (harvesting), orange (harvesting), large cardamom (vegetative), wheat (maturity / harvesting), mustard (seed maturity / harvesting), vegetables (sowing / nursery sowing) in Sikkim.

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

- Wheat (harvesting), 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), bushtype French bean (Contender), bhindi, surajmukhi (sowing/germination), tur, brinjal, Shimla mirch, and tomato (transplanting/seedling), apple and other

temperate fruits (vegetative), arbi, amaranthus, turmeric, rice, maize, barley, radish, onion, pea, garlic, coriander, cabbage, knolkhol, parsley, lettuce, fennel, cauliflower, broccoli (sowing / planting/germination), in Himachal Pradesh.

- Early sown wheat (harvesting), Normal sown wheat, late sown wheat (maturity), Early sown barley (harvesting), normal sown barley (maturity), very late sown barley (dough), onion (transplanting), cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative/flowering), bhindi, radish, turmeric (sowing), jowar, summer moong, mash, dhaincha, maize, berseem (land preparation / sowing), fodder crops like oats (vegetative (2nd cut)), berseem (reproductive), 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)] in Jammu & Kashmir.
- Chilli, capsicum, cauliflower, broccolli (germination/vegetative), sugarcane (planting), litchi, loquat, peach, citrus (flowering / fruiting/maturity), mango (early varieties) (flowering/fruiting), foxtail millet, okra, bottle gourd, bitter gourd, ginger, turmeric (germination / vegetative/flowering), mustard (pod formation/pod maturity), papaya (planting), sorghum, pigeon pea, chick pea (pod maturity/harvesting), urd and pearl millets (early vegetative/vegetative), onion, garlic (transplanting/germination), wheat (harvesting), brinjal, potato (germination/vegetative), sunflower(germination), chaitee dhan, maize, lobia, sunhemp, cowpea (sowing) in Uttarakhand.
- Wheat (harvesting), winter sugarcane (vegetative growth), sunflower, summer moong, urad (germination/vegetative), vegetables [tomato, brinjal, lady's finger, cucurbits like bottle gourd, bitter gourd, cucumber] (sowing /germination/vegetative/flowering/fruiting), coriander (vegetative/flowering/maturity), onion (transplanting / vegetative growth), mustard/ sarson (siliqua formation/ grain formation), barley (vegetative / tillering), arhar, jai, gram, alsi, maize, masoor, pea, pigeon pea, berseem (vegetative growth), fodder maize, lobia, jowar (sowing), sugarcane (planting/ initial growth(tillering)), mango (flowering / fruiting) in Uttar Pradesh.
- Spring sugarcane (sprouting/tillering), berseem (vegetative / harvesting), gram, lentil (pod formation), mustard, rape seed (pod formation/maturity), barley (heading) radish, carrot, turnip, onion, cauliflower (transplanting/vegetative), wheat (grain filling / maturity), tomato, cucurbits, sunflower(sowing), okra, chilli, brinjal (sowing / transplanting) in Punjab.
- Sugarcane (spring season) (early vegetative), barseem (vegetative / last cut), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), barley (heading/pre heading), mustard, sarson, raya (vegetative/flowering), radish, turnip (sowing), wheat (maturity / harvesting) in Haryana.
- Wheat (maturity / harvesting), sweet potato, chilli and cluster bean (vegetative/pod formation), mustard (harvesting), barley (maturity / harvesting), fenugreek, coriander, cumin (harvesting), oats, lentil, lucerne, taramira, linseed, opium poppy, vegetables (potato, brinjal, radish, chilli, carrot, palak, berseem, 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, zaid sorghum fodder, zaid green gram, groundnut, sweet corn (sowing), sugarcane (new planting), cotton (Desi kapas, B.T. kapas), Narma kapas (land preparation), jowar and bajra mixed with guar (land preparation / sowing) in Rajasthan.

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

- Sugarcane (vegetative), summer groundnut (pegging), jowar (harvest), safflower (harvest), maize (harvesting), sunflower (harvesting), late planted paddy (harvesting), wheat (harvesting), black gram /green gram (harvest), mango (fruiting), cotton (picking), vegetables (fruiting) and horticultural crops (fruit development) in Karnataka
- Rabi groundnut (pod-filling/harvesting), rabi paddy (grain filling), rabi maize (maturity/harvesting), rice fallow maize (grain filling), rice fallow jowar (grain filling), rice fallow pulses (pod formation), sunflower (heading), sugarcane (planting/ tillering/ ratooning), jowar (grain setting/grain maturity), vegetables (fruiting), chilli (fruiting), green gram & black gram (maturity), tomato (fruiting) and bhindi (various stages), mango (fruiting), fruit crops (flowering to fruit initiation), water melon (sowing) and sesasum (sowing) in Andhra Pradesh.
- Pepper & ginger (planting), rubber (tapping), irrigated banana (bunching), cardamom (nursery), nutmeg (maturity), sugarcane (grand growth/elongation), vegetables (harvest), summer vegetables

(fruit bearing), pancha paddy (tillering), virippu paddy (nursery sowing), coconut (seed nut collection) in Kerala.

- Rice - Samba (harvest), Thaladi (harvest), rice fallow black gram (maturity), sugarcane (vegetative/maturity), gingelly (vegetative/flowering), tomato (fruiting), summer irrigated cotton (flowering/boll formation), pulses (vegetative/flowering), cotton (vegetative), vegetables (harvest), maize (tasseling), pearl millet (vegetative), sorghum (harvesting), irrigated groundnut (harvesting), chilli (fruiting), ginger, sunflower (vegetative) and turmeric (harvesting) in Tamil Nadu.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane - new *adsali* (active tillering), sugarcane - new pre-seasonal (early tillering / tillering), sugarcane - new *suru* (early vegetative) in Madhya Maharashtra and Marathwada, summer rice (grain formation/grain maturity in south Konkan & ear head emergence/flowering in North Konkan and East Vidarbha), summer groundnut (pod maturity in South Konkan and pod formation in Madhya Maharashtra, Marathwada and West Vidarbha), bajra (flowering/grain formation in Pune and Nashik divisions) in Maharashtra.
- Summer groundnut (flowering / pegging), sesame (flowering / capsule formation), summer rice (early tillering / tillering), summer bajra (tillering), summer moong, urad, cowpea (seedling / early vegetative), wheat (maturity / harvesting), *rabi* maize (cob formation/ maturity), sugarcane (early vegetative), castor (maturity / harvesting), vegetables (flowering / fruiting / harvesting), cluster bean (sowing / seedling) and cauliflower, cabbage (maturity / harvesting) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Sugarcane (knee height stage), vegetables (fruiting), mustard (maturity / harvesting), moong (early vegetative), maize (harvesting), onion, garlic (harvesting), tomato, brinjal (transplanting /seedling), fodder crops (sowing) in Madhya Pradesh.
- Sugarcane (planting), groundnut, sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), cauliflower, pigeon pea (pod filling), linseed (pod maturity stage), tomato, brinjal, chilli, niger, horse gram, ramtil, toria, niger, kulthi (maturity), wheat (/harvesting), onion (planting), summer rice (tillering), summer vegetables (land preparation/sowing), 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: Pusa Sharbati, 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 (85-95 days).

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

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

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

Bao Paddy: Maguri, Kekua Bao, Negheri Bao, Tara Bao.

Cow pea : Pusa Barsati.

Ginger : Nadia, Karkai, Maran, Jorhat, chaina

Turmeric : Shillong type, CL-24, PTS-38, PCT-13, VK-145

Green gram : T44, AAU 34, AAU 39, Pratap

Black gram : T 9, Pant U 19, JU 78

Cucumber : Chinese green, Pusa

Meghalaya

Khariif 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.

Moong: Jawahr, Pusa Baishakhi, KM

Urad: PDU 1, Barkha, Type 1ND U 99-2

Manipur

Cabbage: Rare ball & Golden Acre

Cauliflower: Pusa Snow Ball 1, Pusa Snow Ball 2 & Snow Ball

Tripura

Okra : Arka Anamika, Parbhani, Kranti

Ridge gourd : Pusa Nasdar, Satputia.

Gourds Cucumber : Japanese long, Straight 8

Sweet Gourd : Indigenous

Orissa

Okra: Utkal Gourav, Arka Anamika, Varsha Uphar, Parvani Kranti and 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).

Ginger: Suprava, Suruchi, and Suravi

Bihar

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

Moong: Pusa Baishakhi, T-9.

West Bengal

Jute: Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali.

Water melon: Sugar Baby, Ashi Yeamoto.

Jute : Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali.

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 :

Brinjal: ArkaNidhi, PPC

Shimla mirch: California wonder

Agetibhindi: P-8, Prabhnikranti, Arkaanamika,

Frenchbean: Contender

Pepper : Surjmukhi,

Rajmash: Triloki, Jwala, baspa Kailash

Raddish: japoni white and early mino white,

Turnip: PTWG-1.

Himsona Cabbage Varun, Bahar, Bajrang, Green challenge.

Knolkhol : White Bina,

Cauliflower: Pride of India, Shweta, Madhuri, Himrani.

Peas: Angoori, PS1100/Azad1.

Cucumber : Kiyam seedless/243, Matgaura, Maliniseeded

Tomato : Naveen2000plus, Avtar, Solan hybrid 1 and 2,

Redcapsicum : Natasha, Tanvi

Yellow capsicum : California wonder, bharat, solan sankar 1, Indira, Orivelle

Summersquash : Pusa Alankar Jacuni types.

Sarson : KBS3

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),

Bottle gourd (Pusa Summer Prolific Long, Punjab Komal, Punjab Round, Pusa Summer Prolific Round), **Sponge gourd** (Pusa Chikni, Pusa Supriya), **Ridge gourd** (Pusa Nasadar, Swaran Manjari, Pant Tori-I), **Bitter gourd** (Pusa Domousmi, Pusa Vishesh, Coimbatore Long, Pusa Hybrid- Kalyanpur Baramasi), **Cucumber** (Japanese Long, Straight Eight Poinsette), **Pumpkin** (Arka Suryamukhi, Arka Chandan),

Bhindi (Hissar Unnat, A-4, Varsha – Uphar, Parbhani Kranti), **Radish** (Pusa Chetki) and **turmeric** (local),

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

Beans : Contender, Pusa Parvati, Arka Komal

Maize (unirigated) : Super Composite (Mansar), C-6, Vijay, Him-123, Local Tall

Rice (Irrigated) :_Var. of dhaincha seed K-84, K-39 having southern aspects, Giza-14

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, Pusa Ratna, Samrat

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.
Radish: Pusa Chetki and R.R.W.T

Uttarakhand

Sunflower: KBSH-44, PAC-36, PAC-1091, PAC-3776, PAC-6457, DRSH-1.
Okra: Pusa Savani, Punjab Padmini, Selection -1, HissarUnnat, Vaishali, Madhu, Parbhani Kranti, VL Bhindi-1 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.
Moong : Pant Moong-2, Pant Moong-4, Narendra Moong-1
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-206, VL-Dhan-207, VL-Dhan 208, VL - Dhan 209, Pant Majdera-7
Jhangore : P.R.J.-1, V.L.-172
Green fodder (Maize) : Ganga-2, Ganga-7, African Tall
Green fodder (Lobia) : Russian Joint, EC-4216, UPC-5286
Maize (for green cob) : Sweta or Surya
Maize : hybrid var. Him.-129, composite var. NAvin, Sartaj, V.L. Makka 16

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, Japani, 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)
Cotton : (Desi kapas) R.G. -8, R.G.-18, H.D. 123, hybrid Var. : Raj D.H.-9, (B.T. kapas) : M.R.C.H. 6304, M.R.C.H. 6025, R.C.H. 134, R.C.H. 314, J.K.C.H. 1947, M.R.C. 7017 (BG-11), N.E.C.H. 6,
Sugarcane : C.O. 6617, C.O. 7717, C.O.S. 95255, C.O.S. 767
Cucurbits : Bottle guard : Pusa Naveen, ArkaBahar, **Pumpkin :**Pusa Vishwas, ArkaChandan, PusaAlankar, ArkaSuryamukhi, **Bitter guard :**Arka Harit Pusa Vishesh, Priya, **Round gourd :** Arkatinda, Bikaneri green, Punjab-48.

Gujarat:

Cluster bean: Gujarat Guar-2.

Maharashtra

Fodder (Madhya Maharashtra)

Jowar: Ruchira, Phule Amruta, Maldandi 35-1, M.P. Chari,
Bajra: Giant, **Maize:** African Tall
Fodder (East Vidarbha) Jowar: Pusachari, M.P. Chari and SSG 898.
Irrigated cotton: Phule-492, NHH-44(Nanded-44) (Hybrid)

Madhya Pradesh

Ladies Finger- Pusa Makhamali, Pusa Sawani, 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 18.04.2012

