Monthly Agromet Bulletin National Agromet Centre

Pakistan Meteorological Department Islamabad

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Highlights...

•Above normal rains were reported in lower KP, central Punjab and GB region. Whereas below normal rainfall reported in upper KP, Potohar region/ southern parts of Punjab, Sindh and Baluchistan.

•Thermal regime in this month remained normal in most agricultural plains of the country.

•ETo and R.H mostly remained below normal in the agricultural plains of the country.

• Agricultural soils showed mostly normal to cooler trend in the country due to satisfactory rains and normal air temperature.

• Picking/harvesting/crushing of cotton, rice, potato, sugarcane and sowing of wheat/ seasonal vegetables were the major field operations in most of the agricultural areas of the country during the month. Farmers have mostly completed sowing of Rabi crops in irrigated areas. Weeds removing operation is in progress in early grown wheat crops in areas of Sindh and Punjab.

•Farmers are advised to protect nurseries and orchard trees from expected frost in this month if night time temperature starts to drop below 0.5°C. Late sowing of wheat crop after sugarcane cutting should be completed before 15th of December.

NOVEMBER, 2014

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EXPLANATORY NOTE

- 1. This Agrometeorological bulletin is prepared on the basis of data from 15 stations of Pakistan Meteorological Department (PMD). These stations, selected in consultation with the agricultural authorities, represent major agricultural areas of the country. There are still important agricultural areas which are not represented by the stations included in the bulletin. This may be (a) because there are no PMD stations in these areas and /or (b) the fact that we had to limit the number of stations due to the requirement of speedy data communication and processing (both of which are important for producing and dispatching timely Agrometeorological bulletins).
- 2. Due to the above, all inferences and conclusions hold true primarily for the above areas and not for Pakistan territory which include areas that may not be very important from the agricultural point of view and the climate of which may not bear directly on agriculture in the major producing areas.
- **3.** The normally expected weather of next month is prepared on the basis of premise of normal or near normal weather prevailing during the coming month. As such it should not be confused with synoptic weather of the next month.
- 4. Summer Season/ Kharif remains from April/May to October/November and Rabi season from November to April. Mean Daily Maximum Temperature images are included in summer and Mean Minimum Temperature images are included in winter in the Bulletin.
- 5. In the tables, the values in the parentheses are based on 1981 to 2010 normal. Normal values (in parenthesis) of Soil Temperatures are based upon 10 years data. Dotted line (---) means missing data. Solar radiation intensities are computed from sunshine duration using co-efficients developed by Pakistan Meteorological Department.



Crop Report during November, 2014

Picking/harvesting/crushing of cotton, rice, potato, sugarcane and sowing of wheat/ seasonal vegetables were the major field operations in most of the agricultural areas of the country during the month. Farmers have mostly completed sowing of Rabi crops in irrigated areas. Weeds removing operation is in progress in early grown wheat crops in areas of Sindh and Punjab.

In **Punjab:** Picking/harvesting of cotton crop has been almost completed and good yield is expected this year. The sowing of wheat crop in rainfed as well as in irrigated areas has been almost completed. Germination and early growth of sown crop is reported satisfactory, however further rains are required for its proper growth both in irrigated and rainfed areas. Sowing of Gram and oil seeds has been completed and its germination is reported satisfactory. Sowing of Lentil crop is in progress. The germination of early sown crop is satisfactory. The harvesting of rice and maize crops has completed and good yield is reported. Harvesting/crushing of sugarcane crop is in full swing and good yield is expected. Harvesting of winter vegetables including potato is in progress. The growth of citrus orchards is reported satisfactory and good yield is expected this year.

In **Sindh:** Picking/harvesting of cotton crop has been almost completed. The sowing of Rabi crops has been completed. Castor oil is growing at flowering, stage and condition of the crop is reported satisfactory. Rape mastered is growing normally and is reported at germination stage. The biofuel crop of Jtropha is normally growing at capsule formation stage. Harvesting/crushing of rice, sugarcane, sesame and sunflower is in progress and normal to above normal yield is expected

Seasonal fruits like Guava, banana are in good condition, Cheeko is in flowering stage and apple stone(Bare)are at fruit formation stage. Picking/harvesting of winter vegetables are now available in market.

In **Khyber Pakhtunkhwa:** Cultivation of wheat crop in the province has almost completed, while sowing of wheat crop after sugarcane harvesting is still in progress and will continue during the month of December in plain areas of KPK. Harvesting of maize crop is completed and above normal yield is obtained this year. Harvesting/crushing of sugarcane crop is in progress and harvesting of rice has completed. Harvesting of winter vegetables is in progress and vegetables are available in market. Growth of orchards is satisfactory and good yield of citrus is expected.

In **Baluchistan:** Condition of standing crops and orchards is reported satisfactory. All varieties of apples have developed colour and picking of the fruit is in progress. Sowing of Rabi crops has completed and wheat crop is in germination/early growing stage. Winter vegetables reported in normal condition and are now available in the market.

Moisture Regime during November, 2014

In Pakistan, winter rains generally start late in the month of November. During this November, below normal rainfall is reported in upper parts of KP, Potohar region/southern parts of Punjab, agricultural plains of Sindh and Baluchistan .whereas above normal rain is reported in lower KP, central Punjab and GB region. Highest rainfall recorded in the country was 66mm in Kalam followed by 57mm in Dir and 52mm in Pattan.



The evaporative demand of the atmosphere represented by reference crop evapotranspiration (ETo) remained normal to below normal in most of the agricultural plains of the country except lower KP and Gilgit Baltistan region where it remained slightly above normal. The highest value of ETo was estimated in DI Khan due to its dry climate in this month.



The mean daily Relative Humidity (R.H) observed below normal in the agricultural plains of the country. Significant drop in R.H was observed in areas of Punjab and Gilgit Baltistan.



From overall analysis of this month it is evident that moisture condition is satisfactory in most parts of the country. But still light to moderate rains are needed for wheat crop especially in rainfed areas.

Temperature Regime during November, 2014

Temperature plays vital role in the growth and development of crops. Thermal regime in this month remained mostly normal in the agricultural plains of the country. Mean daily temperature remained normal in most of the agricultural plains of the country .Mean daily temperature ranged 16 to 18°C in Khyber Pakhtunkhwa and Potohar region, 19 to 21°C in remaining parts of Punjab, 23 to 24°C in agricultural planes of Sindh, 5 to 9°C in Gilgit Baltistan region and was observed 11°C in the high elevated agricultural plains of Baluchistan represented by Quetta valley.



The night time temperature represented by mean minimum remained normal to below normal by 1-2°C in KP, Pother region, parts of central Punjab, lower Sindh and GB region. Whereas it remained above normal by the same extent in agricultural plains of southern Punjab, parts of central Punjab and upper Sindh. The lowest minimum temperature was recorded -6.6°C at Skardu.



Agricultural soils showed cooler trend in the agricultural areas of the country. Significant drop in soil temperature was observed in Quetta followed by Tandojam, Faisalabad and Rawalpindi division at major root zone.



From the general analysis of air and soil behavior in this month, it is concluded that moisture has gained satisfactory status in the irrigated as well as rainfed areas of the country. Hence overall condition of moisture content in rainfed and irrigated areas is satisfactory during the present early growing stages. Further rains are needed in rainfed areas for better soil moisture condition and normal growth of wheat crop.

Solar Radiation and Wind Regime during November, 2014

Total bright sunshine hours and solar radiation intensity remained normal to below normal in most of the agricultural plains of the country Mean wind speed throughout agricultural plains of the country ranged between 1 to 4 km/h with North-east to North-west and South trend. Maximum wind speed was observed 5 km/h in Quetta.





Cumulative Rainfall, ETo and water stress for Rabi Season (October to April)





Normally Expected Weather during December, 2014

During the month of December, winter weather systems commonly known as "Western Disturbances" become active over the country. Three to four troughs of westerly waves are expected to pass across the upper Khyber Pakhtunkhwa, sub mountainous areas and snowfall over the hills. Generally the northern half of the country receives the precipitation more frequently than the southern half under the influence of western disturbances.

Under the influence of western rain bearing systems, northern Punjab and high agricultural plains of Baluchistan are expected to receive precipitation between the ranges of 25mm to 45mm. over rest of the agricultural plains of the country; it may range from few millimeters to 15 mm. the probability of occurrence of rainfall over Potohar plains is given below:

AMOUNT / DATES	PERCENTAGE PROBABILITY OF OCCURRENCE OF DIFFERENT AMOUNTS OF RAINFALL IN DECEMBER					
	1 – 5	6 – 10	11 – 15	16 - 20	21 - 25	26 - 31
10 mm	6	14	15	14	23	22
15 mm	4	12	11	11	15	19
25 mm	3	8	7	6	7	15

The evaporative demand of the atmosphere will decrease as compared to November by 1 mm/day to 2 mm/day. The ETo values may range from 1.5 mm/day to 2.0 mm/day in Khyber Pakhtunkhwa, Punjab and high agricultural plains of Baluchistan. However, in Sindh, the ETo is expected to remain slightly higher due to less cloudiness and brighter sunshine. It may remain generally in a range of between 2.0 mm/day to 3.5 mm/day during the month of December 2011. The mean daily relative humidity is likely to range from 60 to 70% in Upper Punjab, Khyber Pakhtunkhwa, lower Sindh and high agricultural plains of Baluchistan. It may vary from 50 to 60% in rest of the country.

The mean daily temperatures are expected to range from 11°C to 15°C in Punjab and Khyber Pakhtunkhwa while in Sindh; it is likely to occur in the range of 17 to 19°C. However over high agricultural plains of Baluchistan, mean daily temperature would be around 5°C. Mean daily maximum temperatures may range between 19 to 23°C in Punjab and Khyber Pakhtunkhwa, 25 to 27°C in Sindh and around 13°C high agricultural plains of Baluchistan.

Mean minimum temperatures are expected to vary from 5 to 12°C over most parts of the country except high agricultural plains of Baluchistan represented by Quetta where it would be around -4°C. Freezing nights are likely to occur in northern Punjab, Khyber Pakhtunkhwa an upper Baluchistan during December 2011. The highest frequency of occurrence of freezing nights is expected at high agricultural plains of Baluchistan and Khyber Pakhtunkhwa.

The mean daily duration of bright sunshine may remain around 7 to 9 hours with southward increasing trend. Te intensity of solar radiation is likely to vary between 9 to 14 MJ/M2/day. Wind speeds are expected to range from 2 Km/hour to 7 /Km/hour. Generally they may prevail from north to west directions over most of the agricultural plains of the country.

Following is the water requirement of full canopied healthy crops in different regions of the country during December 2011. For wheat, barley and oats fifty percent water supply than the given amounts may satisfy their water demands fully.

S. No	Pagion	Water Requirement		
	Region	(mm)	Cubic Meter / Hectare	
1	High plains of Baluchistan	25 - 30	250 - 300	
2	Potohar Plateau	45 - 50	450 - 500	
3	Upper NWFP	40 - 50	400 - 500	
4	Northern Punjab	50 - 55	500 - 550	
5	Central Punjab & Lower NWFP	50 - 60	500 - 600	
6	Southern Punjab, upper Sindh and	60 - 70	600 - 700	
	Lower Baluchistan			
7	Lower Sindh	70 - 75	700 - 750	

Seasonal Weather Update Introduction

A variety of methods including dynamical models, statistical methods, regional expert judgments and combination of them have been used to generate long-range weather forecast by the different climate prediction centers around the world. National Agromet Center (NAMC), Pakistan Meteorological Department adopts an ensemble approach to formulate its seasonal weather outlook for Pakistan (on experimental basis), taking into consideration available products from major climate prediction centres and different Global Climate Models (GCMs).

Regional weather (precipitation and temperature) outlook is predicted from different global climate models by using persisted sea surface temperature on 0000 Oct 01, 2013. Model's output then tuned by applying Regional Correction Factor (RCF). RCF has computed by comparison of Long Range Averages (LRA) with model's simulation for the period (2004-2012) on monthly basis. That might be somewhat different from actual weather because of time to time variation in Sea Surface Temperature (SST) during the season. Accuracy of Outlook seasonal weather mainly depend upon SST used in global climate models. Even with use of accurate SST, still is uncertainty in the climate forecast due to chaotic internal variability of the atmosphere.

Acknowledgement: NAMC is gratefully acknowledges the International Research Institute (IRI) for climate and Society for providing access of dynamical prediction of Global Climate Model ECHAM4P5, developed and operated by European Center for Medium-Range Weather Forecasts model's simulations and hindcast data to support the formulation of seasonal weather outlook of Pakistan. Output maps have been prepared by using IRI climate software.

Synoptic situation

Location of jet stream (U wind at 200 hPa) is at normal position with higher intensity with bigger convergence areas of high winds towards the west. Intensity of jet stream will be slightly above normal during predicted period

Probability outlook: Above normal intensity is associated with above normal precipitation in the region and vice versa.

A ridge at 500 hPa is expected to be at same position as normal with less intensity causes de track western disturbances towards north.

Probability outlook: Precipitation is likely to occur over upper half of the country causes less rain over southern parts the country.

Surface temperatures are expected to be on lower side than normal over towards Area of high surface temperature expands during November from normal (1982-2010) over central parts of the country. Day temperature will be on higher side during November over central parts of the country.

North Atlantic Oscillation (NAO) is in positive phase (0.9) and may cause to shift western disturbances towards north during coming months. Data source:

http://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/nao.shtml

Probability outlook: Normal precipitation over northern parts and below normal over southern parts of the country. The focus of weather tracks may be towards Northern parts of the country.

Most of the set of dynamical and statistical model predictions issued during late October and early November 2013 predict neutral ENSO conditions through the rest of 2013 and into early 2014, with a warming tendency during northern spring and summer 2014. Development of weak El Nino conditions appears possible by the middle of 2014. In the most recent week, the SST anomaly in the Nino3.4 region was 0.0Co. Data source: http://iri.columbia.edu/climate/ENSO/currentinfo/SST_table.html

Probability outlook: La Nina (3%), Neutral (96%) and El Nino (1%) during Dec-Jan-Feb, 2014 season Arabian Sea Surface Temperatures are expected to be slightly above normal near the coast of Pakistan and normal over far from coast.

Caspian Sea surface temperatures expected to be slightly below normal.

Mediterranean Sea surface temperatures are normal to slightly above normal.

Bay of Bengal Sea Surface Temperatures are normal. Probability outlook: Sea Surface Temperature trend is going towards normal leads to normal/below normal rainfall over the region.

Seasonal Weather Outlook Summary (Dec 2014)

 Location of jet stream (U wind at 200 hPa) is at normal position with less intensity. The area of jet stream may be squeezed during dec over northern of Afghanistan. Below normal strength of jet stream over west of the region.

Probability outlook: Normal to below intensity of jet stream is associated with normal to below normal precipitation in the region.

• A ridge at 500 hPa is expected to be over northern parts of the country. Slightly below normal trend is expected over northern and eastern parts of the region.

Probability outlook: Less than normal precipitation is likely to occurs the country. Lower and central parts of the country may be dry during December.

- Surface temperatures are expected to be on lower side than normal all over the Pakistan However higher than normal surface temperature over western states of India.
- North Atlantic Oscillation (NAO) is in negative phase (0.68) and in increasing trend. As a result normal track of western disturbances will persist. http://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/norm.nao.monthly.b5001.curr ent.ascii.table

Probability outlook: Below normal precipitation over all parts of the country will be expected. The focus of weather tracks may be towards northern parts of the country.

During November 2014, sea surface temperature (SST) anomalies increased across the central and eastern equatorial Pacific. At the end of the month, the weekly Niño indices ranged from +0.4°C in the Niño-1+2 region to +1.0°C in the Niño-3.4 region. The subsurface heat content anomalies (averaged between 180°-100°W) also increased during November as a downwelling oceanic Kelvin wave increased subsurface temperatures in the central and eastern Pacific. However, the overall atmospheric circulation has yet to show a clear coupling to the anomalously warm waters. The monthly equatorial low-level winds were largely near average, although weak anomalous westerlies appeared in a portion of the eastern tropical Pacific. Upper level easterly anomalies emerged in the central and eastern tropical Pacific during the month. The Southern Oscillation Index has been somewhat negative, but the equatorial Southern Oscillation Index has been near zero. Also, rainfall continued to be below average near the Date Line and over Indonesia, and near average east of the Date Line. Although the SST anomalies alone might imply weak El Niño conditions, the patterns of wind and rainfall anomalies generally do not clearly indicate a coupling of the atmosphere to the ocean. Therefore, despite movement toward El Niño from one month ago, the combined atmospheric and oceanic state remains ENSO-neutral.

Similar to last month, most models predict SST anomalies to be at weak El Niño levels during November-January 2014-15 and to continue above the El Niño threshold into early 2015. Assuming that El Niño fully emerges, the forecaster consensus favors a weak event. In summary, there is an approximately 65% chance of El Niño conditions during the Northern Hemisphere winter, which are expected to last into the Northern Hemisphere spring 2015 (<u>http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso tab=enso-cpc update</u>)

Probability outlook: La Nina (0%), Neutral (36%) and El Nino (64%) during Dec-Jan-Feb, 2015 season

• Arabian Sea Surface Temperatures are expected to be normal near western coastal belt of Pakistan.

- Caspian Sea surface temperatures expected to be slightly above normal over southern half and below normal over upper half.
- Mediterranean Sea surface temperatures are normal to slightly above normal.
- Bay of Bengal Sea Surface Temperatures are close to normal.

Probability outlook: Sea Surface Temperature trend is going towards normal leads to below normal precipitation over the region.

Seasonal Weather Outlook Summary (Dec, 2014-Feb, 2015)

Synthesis of the latest model forecasts for Dec-Feb, 2015 (DJF), current synoptic situation and regional weather expert's judgment indicates that normal to slightly below normal precipitation is expected all over the country with average during December and January and slightly above normal during February. Slightly above average night temperature is likely to occur during December while below normal during January and February all over the country.

Weather outlook

"Slightly normal to below normal precipitation is expected during the season all over the country with slightly above normal temperature during early and below normal during late of the predicted season."

- I. Below average precipitation is expected over the country during December with higher deficit over Punjab, Sindh and Kashmir.
- II. Average precipitation is expected over Punjab, Sindh, GB, KP and Baluchistan, Slightly above average over FATA and lower KP during December.
- III. One to two light to moderate rainy spells are expected over northern parts of the country during December.
- IV. Average precipitation with snow fall over the hills is expected during January.
- V. Chances of dense fog over central parts of the country are positive but it would be less than normal during this winter season.
- VI. One moderate rainy spell is expected during first decade of January.
- VII. February would be wet month during the season.
- VIII. Less chances of rainy spell to approach over southern parts of the country.
- IX. Above normal night temperature are expected during December, while below normal during January.

	Dec, 2014		Jan, 2015		Feb, 2015		Dec14-Feb, 2015	
	ave	exp	ave	ехр	ave	ехр	ave	ехр
GB	16.3	Blw. Ave	27.2	Ave	29.7	Abv. Ave	73.2	Abv. Ave
КР	32.9	Ave	49.0	Ave	71.9	Abv. Ave	153.8	Abv. Ave
AJK	50.9	Blw. Ave	91.1	Ave	110.5	Abv. Ave	252.5	Ave
FATA	20.6	Abv. Ave	30.2	Abv. Ave	54.0	Abv. Ave	104.8	Abv. Ave
PUNJAB	12.0	Abv. Ave	17.2	Abv. Ave	27.2	Ave	56.3	Ave
BALUCHISTAN	14.8	Ave	19.5	Ave	20.9	Ave	55.2	Ave
SIND	5.0	Abv. Ave	3.0	Ave	5.4	Blw. Ave	13.4	Abv. Ave
Pakistan	14.9	Ave	20.8	Ave	27.2	Abv. Ave	62.8	Ave

Monthly Quantitative Weather Forecast

Ave.: average (1981-2010), Exp.: Expected rainfall, Below Average (Blw. Ave) < -15 %, precipitation range (Ave) = -15 to +15 %, Above Average (Abv.Ave) > +15 %

Average

Note: Average precipitation is computed by using Global Precipitation Climatology Centre (GPCC) gridded data by resolution $(0.5x0.5^{\circ})$ latitude by longitude. Ensembles of different climate models are used for computation of expected precipitation over the region.



Spatial distribution of expected rainfall during coming season (GCM-ECHAM)



Monthly expected Precipitation for Dec, 2014

Expected daily rainfall



Note: It is ECHAM climate model prediction. The numbers of spell can be predicted from above graph. However, the exact data of start or end of spell can be varied and this can be in advance or delayed from the actual observation over the region.

Monthly departure from normal (precipitation) during Dec-2014





Departure of rainfall from normal (Dec,2014-Feb,2015)

Spatial distribution of expected minimum temperature



Expected Minimum Temperature during Dec, 2014

Departure of expected minimum temperature from normal



Expected Dep. of Min. Temp. from normal, Dec-2014





دسمبر 4 2013ء میں کاشتکاروں کیلئے زرعی موسمیاتی مشورے

ماہ نومبر میں ملک کے زیادہ قر زرقی میدانوں میں موسم ختک رہا۔ ملک کے زیادہ قر زرقی میدانوں میں گندم کی اور پی ہو پی ہے۔ گندم ریسے بی اہم ترین فصل ہے۔ جس سے ملک کی زیا دہ قر اماق کی ضرو ریات پورکی کی جاتی ہیں ۔ خوراک کی جملی خبر و ریات کو پورا کرنے کیلیے گندم کی فصل سے زیادہ یہ یا وار کی س کسانوں کی رہنمائی کی خاطر مختلف ذرائع ہے معلومات بہم پہنچارہے ہیں یہ محکہ موسمیاتی مرکز بھی اس کے میں کی سانوں کیلیے زرقی موسل کے اور کی میں اور کی میں اور کی میں میں کر ای میں گندم کی ہو تک کی ہم ترین فصل ہے۔ جس سے ملک کی زیا دہتر اماتی کسانوں کی رہنمائی کی خاطر مختلف ذرائع ہے معلومات بہم پہنچارہے ہیں یہ محکہ موسمیاتی مرکز بھی اس سیلسلے میں کسانوں کیلیے زرقی موسمیاتی مشور سے جاری کر رہا ہے ۔

ا۔ گندم کیا گیتی اور درمیانی اقسام کی یوانی کاوفت گز رچکا ہے لہٰ اماہ دسمبر میں محکمہ زراعت کی سفارش کر دہ گندم کی پچھیدی اقسام کا شت کریں یہر دی بندرج شدت اختیا رکرتی جارہی ہے اور یوانی کا وقت آپ کے ہاتھ سے نگلا جارہا ہے یاپ کوعلوم ہونا چاہیے کہ اول قہ شدید سر دی میں گندم کے بیچ کی اگانی کم ہوجاتی ہے اور اگر اُگ آست کریں یہردی کی شدت ان کی نشرو نرا کو بُری طرح متاثر کرتی ہے اس لئے جنا جلدی کمکن ہوگندم کی کا شت کمل کرلیں ۔

۲۔ نہر کی ملاقوں کے کاشتگا مائی وقت راؤنی کر کے گندم کی کاشت کرنے کا ارادہ ترک کردیں ۔ کیونکہ راؤنی کے بعد وتر آنے میں کافی عرصہ درکارہوگا۔اور گندم کی بواتی ایٹ ہوجائے گی ۔اس لیے تجویز کیا جاتا ہے کہ گندم کے بیچ کورات بحر پانی میں بھکو کرر کھے کے بعد کاشت کردیا جائے اور پانی کی ای کی بھی ای کی بھی متاثر نہیں ہوگی اور لیٹ ہوجائے گی ۔اس لیے تجویز کیا میں کی بھی واقع نہیں ہوگی ۔یا درہے کہ گندم کی کاشت میں ایک دن دیر پیدا وار میں کٹی کن کی با رکی آنے پر کھیت کو سیراب کیا جائے ۔اسطر حیج کی اگاتی بھی متاثر نہیں ہوگی اور لیٹ ہوجائے گی ۔اس لیے تجویز کیا میں کی بھی واقع نہیں ہوگی ۔یا درہے کہ گندم کی کا شت میں ایک دن دیر پیدا وار میں کٹی کن کی کا با حث بندہ ہے ۔

۳۔ بارانی علاقوں میں گندم کی کا شت کمل ہو چک ہے۔ پھر بھی جہاں کاشت نہیں ہوتی ما رانی علاقوں کے کا شتکار یغیر با رش کا انتظار کئے گندم کا شت کردیں ۔ گندم کے بچ کولااتی سے ایک دن قبل پانی میں بیکو دیا جائے اور پھر دواتی لگا کر قطاروں میں کا شت کردیں ۔ کٹی مقامات پرزیکن میں نمی کی مقدا رگندم کی ان کا کوئی کی گی اور بچ اُگ7 ئیں گے۔

۴۔ گندم کی اکیتی اور درمیانی اقسام اُ گیچکی ہوں گی ۔ ایسے صیتوں میں پہلے پانی کے بعد زندن میں ویر آنے پر اس میں باہیر ہ ضرور چلا کیں ۔ اس طرح جڑ کی لوٹیوں کی بھی تلفی ہوجاتی ہے۔ اور کسی حدیک پودوں کے مراتھ شی بچی جڑ ھجاتی ہے ۔جس سے پودازیا دولونا کر سے گااورنیہ جڑاز دیے گا۔

۵۔ بوقت کاشت اور اس کے بعد کاشتکا ربحانی محکمہ زراعت کی سفارش کردہ مقدار میں کھا دویں اورا دویات استعال کریں کا شتکا رصفر ات محکمہ موسمیات کے ماہانہ درمالہ کابا قاعد گی سے مطالعہ کرتے رہیں اسکے صفحہ نمبر ۹ پر محتلف علاقوں میں گندم کی ماہا زجنر و ریات آ بیا شی معلومات درج ہوتی ہیں۔

۲ ۔ میں میں کا یوٹیوں کی تلفی کیلیے محکمہ زراعت کی سفارش کردہ پختلف کیمیاتی ادویات استعال کی جائلتی ہیں۔ اگر کیمیاتی طریقے ہے ممکن نہ ہوتو ہاتھ سے جڑ کیا و ٹیاں تلف کریں ۔ کیونکہ چڑ کیا و ٹیاں اصل پودے سے حصکایا ٹی اور خوراک استعال کرلیتی ہیں اور پود کے کرور پڑ جاتے ہیں ۔ جڑ کیا و ٹیوں کی تلفی پرخصوصا اس وقت تک زیا دہ توجہ دیں جب تک فصل اچھی طرح زمین کوڈھا نب نہ لے ۔

۷۔ زراعت کی کامیانی میں موتک حالات کابہت عمل دخل ہے۔اور بہتر تکمت عملی نے غیر موزوں موتک حالات سے بھی استعفادہ کیاجا سکتا ہے محکمہ موسمیات کی پیشگو نی کولو ظاخا طرر کھ کر محکمہ زراعت کے ماہرین کی مشاورت سے اپنے معمولات طے کریں تو پیدادار میں خاطر خواہ اضافیمکن ہے یہ موتک حالات نے تعلق مزید معلومات کیلیے تحکمہ موسمیات کے قریبی دفتر سے ماہرین کا پینے در میں ذریا ہے۔

<u>پھلدار بودوں اور زمر بوں کی کورے سے تفاظت</u>

پھلدا ر پودوں کدموسی اثر ات سے بچانے کے لیےا حقیاطی تد اپیر کا جانتا بہت لا زمی ہے۔ جب رات کوکورا پڑتا ہے تو مستڈک کی وجہ سے یا ٹی جم جاتا ہے تو وہ بلحا ظرفتم پھیلنے کے عمل ے پنوں کے غلیے ٹوٹ جاتے ہیں اور بعد میں بنے مشک ہوجاتے ہیں۔ اگر کورے کی شدت بہت زیا دہ ہوتواس سے پودوں کی شہنیاں بھی مشک ہوجاتی ہیں اور پودوں کی، قابل تلقى نقصان ہوتا ہے جس سے پیدا داریر کی طرح متاثر ہوتی ہے۔سدا بہا ریودوں میں آم، کیچی مدینا، کیلا اور کیمن وغیر دکورے سے بے متاثر ہو تے ہیں ۔کورا زیا دہر دسر، جنوری اور فروری کے میزوں میں یہ تا ہے کورایٹ نے کاعمل اس وقت شروع ہوتا ہے جب دن کے وقت دھوپ پڑنے سے زمین اور یود کرم ہوجاتے ہیں اور گردو پیش کی ہوا گرم ہوجاتی ہے۔اس طرح باغات کے اور ایک گرم ہوا کی تہدین جاتی ہے۔اور رات کو میہ سلسلہ الٹ ہوجاتا ہے۔زمین این حرارت میرونی شعاع کے زریعے صاف اور شدرے آسان كی طرف خاری كرتى برس بن زين كرتريد كى موا شندى موجاتى ب بيشندى مواكى نسبت محمارى موتى ب-اس لئروه زين كی سطح كم تريب رينى ہےاور ات کو بیہوا کورے یا کہر کی شکل انتظار کر لیتی ہے۔ باغبان حضرات کو دسمبر، جنوری اور فروری کے میں بزا مختاط رہنا جاہے۔ کم سے کم درجہ جرارت معلوم کرنے کیلئے مخصوص جگہ ہویا یج فٹ بلند ہوتھ مامیٹر لگام جانے ۔ ایک تھ مامیٹر جا دہیلر رقبہ کے لئے کانی ہے۔ اگر درجہ حرارت 0.5 ڈگری سیٹی گریڈ سے پنچ کر جائے تو کورارڈ نے کی تو تع کی جاسکتی ہے۔اگر تھرمامیٹر موجود نہیں ہےتو سا دہطر لیتے ہے بھی کو دارٹر نے کے بارے معلوم کیا جاسکتا ہے۔ اس طریقے میں ایک چوڑے برتن میں آ دھاا تج تھرائی تک پانی ڈال کرا سے کھلے کھیت پایاغ میں رکھیں اگر شام تک یا ٹی جنے لگرتو کورا پڑنے کا اسکان ہوتا ہے۔ تر شادہ پیلوں اورآم کے چھوٹے درختوں کوسر دی اور کہر سے بچانے کے لئے جنتر جیے یودے کی چٹریوں کا یودے کی ٹا مت تک ڈھانچے بنا کرا س کے اور پرالی یا یو ٹی تھین ہے دھانپ دیٹا جاہتے یعض با غبان سیلطی کرتے ہیں کہ ڈھانچے بنائے بغیر کھوری پایرانی ہے ڈھانپ دیتے ہیں۔ پیطر یقد کھیک نہیں ہے۔ پچھ باغبان حضرات آم کے باغ کے گر دکیلا کاشت کردیتے ہیں ایہا کرنے سے یوداکورے کے فقصان سے تو یکی جاتا ہے لیکن پورے کی خوراک کا بیشتر حصہ کیلا حاصل کر لیتا ہے اوراً م کے پودے کمز ورہوجاتے ہیں۔ بعض با غبان حضرات اکتوبر، نومبر میں جارے کی فصل یتنی باجر دوغیر ہ کاشت کردیتے ہیں اس طرح یود کے درے سے فتاق جاتے ہیں لیکن بہت سارے اجزاء خوراک جارے کی فصلات کی بزرہوجاتے ہیں اور پھلدا ردرختوں کو فائد کے کی بجائے ا تقصان پانچتا ہے۔ یودوں کے نیچلےصوں پرٹی چڑ ھا کررکٹیں تا کہ یا ٹی شنخ کو نہ لگ سکےا ور رات کے وقت اخران کے لئے یودے زیا دہ سے زیا دہ حرارت جذب کرسکیں ۔اگر میانی (inter cropping) فصل کی کا شت ضروری ہوتو جوان یودوں کے چھیلا ڈ کیلئے معتول جگہ چھوڑ دی جائے اور اس میں اچھی طرح عل چلایا جائے۔اگر برسیم کی کا شت کی گئی ہوتوا سے ان مینوں میں زمین کے بالکل قریب سے کانا جائے۔ بودوں کے شوں کوسفیدی کی جائے۔ ایسے بودے جن پر چنوں کی چھتر کی ندین ہوا ورکم عمر ہوں ان کے گرد بور یوں، کھور یوں، یر الی یا پھر یوٹی تھیں کپیٹ دی جائے کورے یا کہر کی متوقع را توں کو تھیتوں میں یا ٹی دیا جائے اس سے امرود، آم اور تر شا دیکیلوں کو کورے کے اثر اعت ے با آسانی بیلا جاسکتا ہے۔ باغمان حضرات گندم کے بھو ہے گھا س چھوں یا کسی البی چیز پر بھٹی میں استعال شدہ فرنس آئل کوجلا کر مختلف جنگہوں پر دعواں پیدا کر میں لیکن دھواں معمولی طور پر کم کرتا ہے۔ ہوا تو زبا زوں کا استعال نہ صرف سردہوا ڈن سے بچاتا ہے جکہ گرم اور شک ہوا ڈن سے بھی محفوظ رکھتا ہے۔ آم کے کا شکار آم کے باغات کو کورے سے بچانے کے لئے فاسفور می والی کھاروں سنگل سر فاسفیٹ جساب 4 تا 6 کلوگرام پاٹر بل سر فاسفیٹ 1 تا2 کلوگرام بلحا لاحمر فی بودا ڈالیس اور بوماش والی کھاد ہجساب 2 کلوگرام ٹی یودا ڈالیں شیشم ،آم ہم توبت اورزیتون کے لیے جلے درختوں کی ہا ژیں بہت ضروری ہیں ۔انہیں باغ لگانے سے دونتین سال پہلے لگا کیں ۔زیا دہ شنڈک والے علاقوں لیٹن پوٹھوا رہا راولیندی ڈویژن میں تر شاد پھلوں کے یودوں کو پہلےا یک دوسال کورے سے بچانے کیلیج ڈھانیا شروری ہے۔ باغمانوں کو جاہتے کہ ریڈ یو/ٹی وی نشر ہونے والی موسمیاتی رپورٹ سے آگا در ہیں، کقبل از وقت کورے سے بیاؤ کیلیج عفائلتی اقد امات کتے جا تمیں شر آور باطات میں میانی فصل (inter cropping) بالكل كاشت نين كرنى جائي - كيونكدون محاوفت وه زيين كوترا رت جذب كرني نيس وردوس - كمركى رائو بكوفضائى رطوبت ميں اضافه كرتى بيں - كمركى متوقع رائوب یں آباش منر رکریں ۔ پھول نگلنے سے پہلے موسم بہا ریں بودوں پر سردی ہے متاثر جٹا خوں کو کاٹ دیا جائے اور زخموں پر بورڈ و پیبٹ لگائی جائے۔

مضمون کے ماخذ:

[&]quot; Monthly Zarat Nama, Agriculture Department Govt of Punjab for the period 15-31 Dec, 2012.