

Monthly Agromet Bulletin

National Agromet Centre

Pakistan Meteorological Department Islamabad



Vol: 07-2014

JULY, 2014

Highlights...

- Normal to below normal rains were reported in most of the agricultural plains of the country during the month.
- Thermal regime in this month remained mostly normal/slightly warmer in the agricultural plains of the country.
- ETo and R.H observed mostly below normal in the country.
- Agricultural soils showed mostly normal to cooler trend in most of the agricultural plains of the country.
- Picking of seasonal vegetables and fruits, removal of weeds manually and through weedicides and application of pesticides were the major field activities in most of the agricultural plains of the country.
- Farmers are advised to clear the crops from weeds due to present monsoon rains especially in upper parts of the country.
- August is one of the wettest months in most parts of the country. Therefore farmers should be careful to protect their crops and livestock from expected heavy rains/flash flooding in this month.

Contents

| | |
|----------------------------------------|--------|
| Explanatory Note | Pg. 2 |
| Seasonal Rain, ETo & Water stress Maps | Pg.3 |
| Crop Report | Pg. 4 |
| Moisture Regime | Pg. 5 |
| Temperature Regime | Pg. 7 |
| Solar & Wind Regime | Pg.9 |
| Cumulative Maps | Pg.10 |
| Expected Weather | Pg. 12 |
| Seasonal Weather Update | Pg. 13 |
| Farmer's advisory In Urdu | Pg. 18 |

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Published by: National Agromet Center (NAMC)

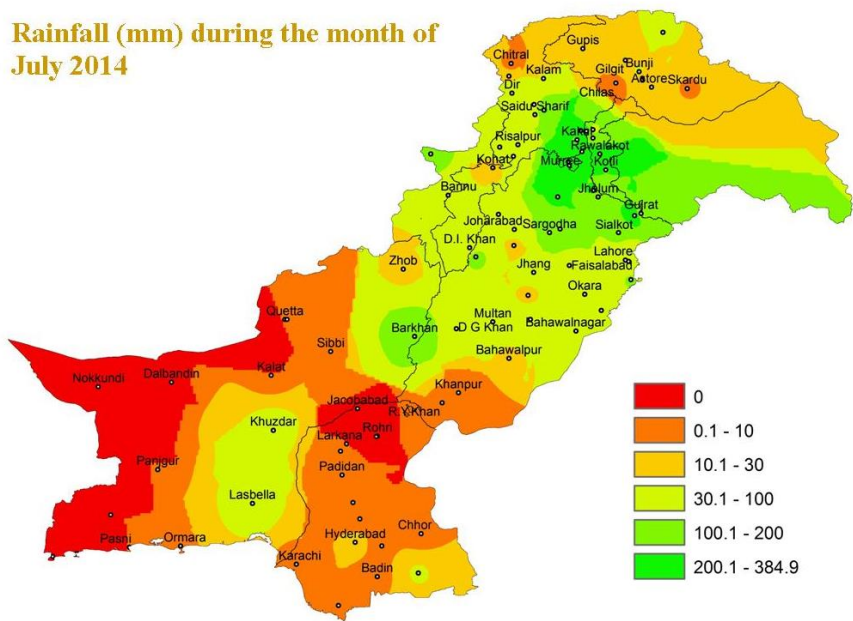
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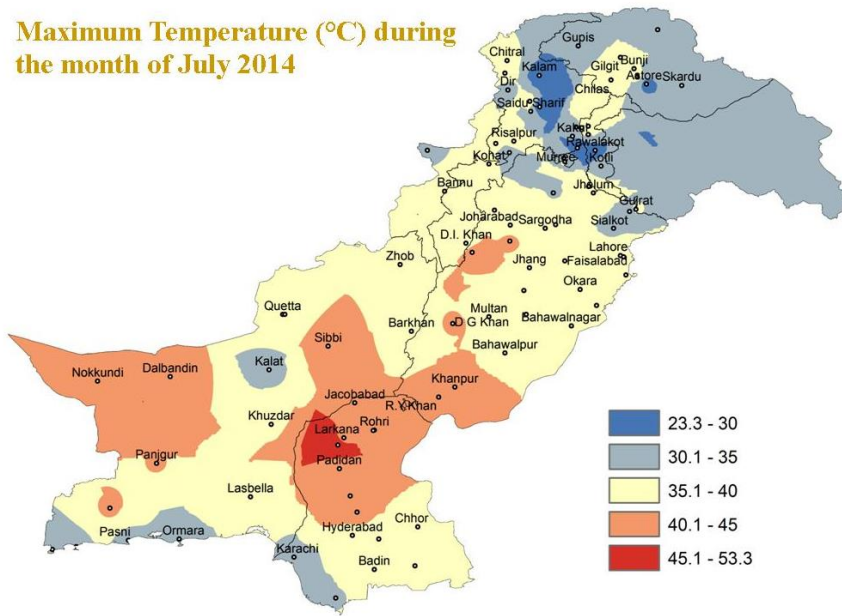
EXPLANATORY NOTE

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.

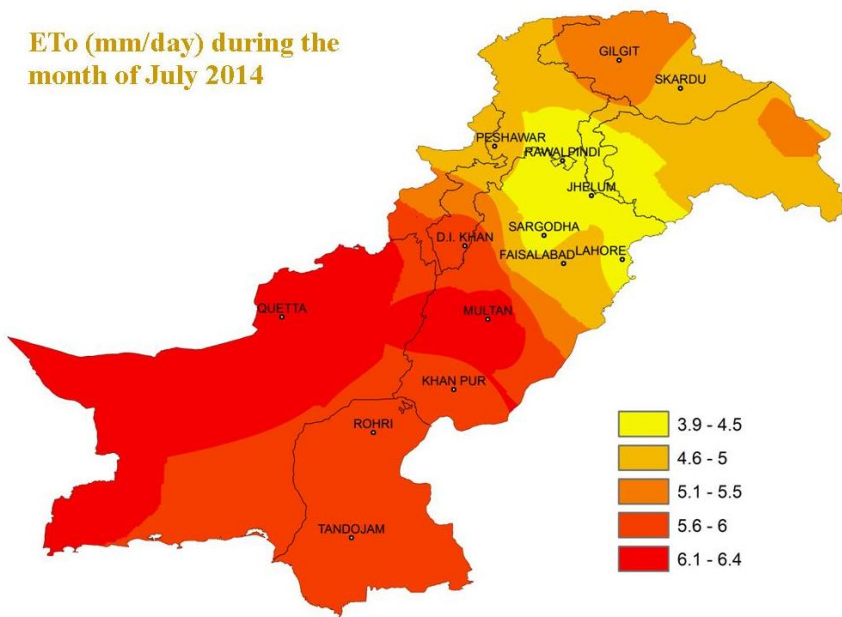
Rainfall (mm) during the month of July 2014



Maximum Temperature (°C) during the month of July 2014



ETo (mm/day) during the month of July 2014



Crop Report during July, 2014

Spraying chemicals on cotton crop and transplantation of paddy nursery by manual and mechanical methods in irrigated planes were the major field activities in this month. Weeds removing and hoeing practices were also in progress. Satisfactory monsoon rains have positively affected the crop growth and development in most of the agricultural plains of the country.

In **Punjab**: The stand and growth of cotton crop is reported satisfactory. Early sown varieties are at squaring/boll formation stage and picking has reported at certain places. Attack of sucking pests on early grown varieties has been reported at some places, which are being controlled by applying recommended pesticides. Transplantation of rice Irri and Course varieties was completed and of Basmati varieties were in progress till the end of this month. Sowing of autumn maize was reported in progress. Growth of sugarcane was reported satisfactory except some reports of attack of top borer, being observed at some places. The growth of the crop has reported much better in the central and northern parts due to good rains received there.

In **Sindh**: Cotton is at boll formation stage and is growing satisfactory. Sugarcane crop is also growing satisfactory and is growing at vegetative stage. Transplantation of rice crop is completed and general conditions of the crop are reported satisfactory. Growth of Sesame is reported normal and is growing at flowering stage. Threshing of linseed, castor oil and safflower is completed and ground nut is growing at vegetative stage. Overall production of Banana, mango and other fruits is reported well.

In **Khyber Pakhtunkhwa**: Sowing of Hybrid/open pollinated varieties of maize has completed in the province. Hoeing, weeding and application of second dose of fertilizer are in progress. Harvesting of sunflower is in progress and normal yield is expected. Curing of Virginia tobacco is reported in progress. The growth of sugarcane was going normal. No disease or pest attack is reported. Transplantation and fertilization of rice has been completed. Condition of fruit orchards is reported satisfactory. Harvesting of garlic was in progress. Sowing of mung/mash has completed in hilly areas and is in progress in plane areas of the province.

In **Baluchistan**: Wheat crop at northern hilly areas is at maturity stage and barley at milk maturity stage. Sowing season of paddy crops was near to end. Harvesting and marketing of seasonal fruits and vegetables was in progress. Growth of sunflower was at flowering stage. Condition of the crop was reported normal.

In **Gilgit Baltistan**: The main standing crops in the area are maize and lobiya. Their normal growth is reported and they are in shooting stage. Condition and yield of orchards and summer vegetables is reported satisfactory.

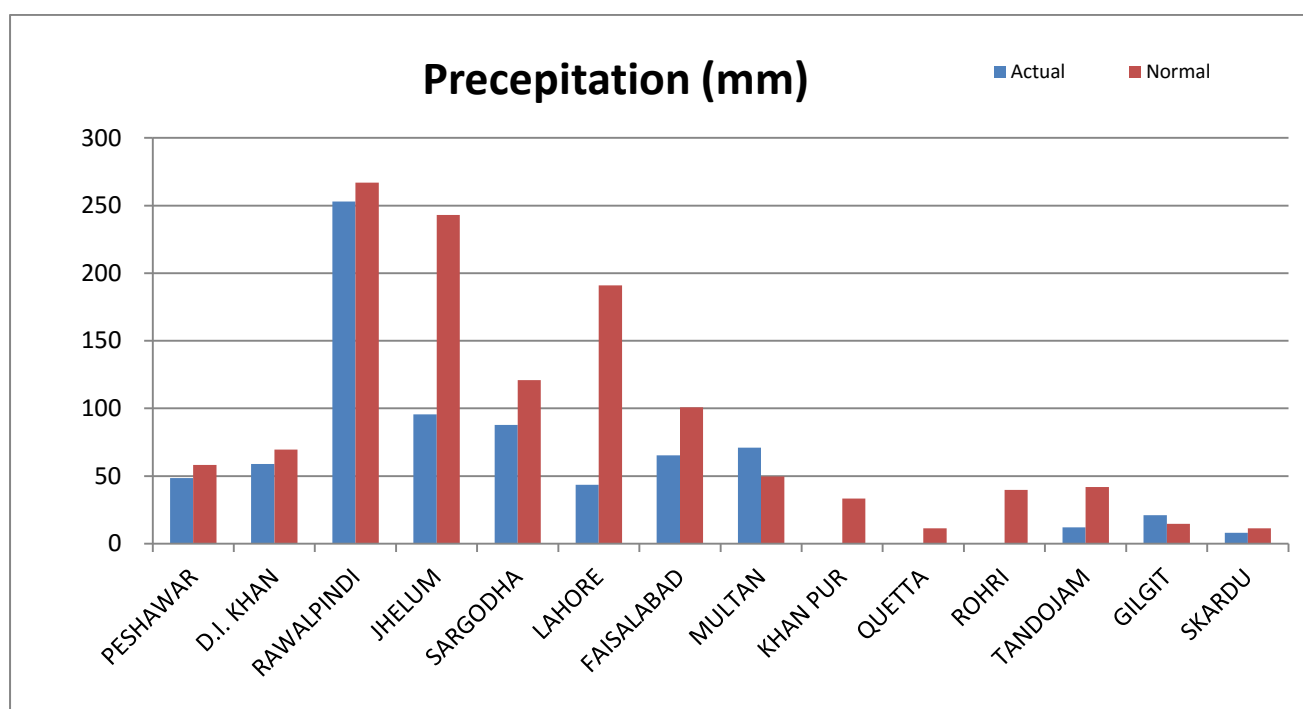
Moisture Regime during July, 2014

July remains generally hot and wet in Pakistan. During this July, in general, the moisture condition of soil and atmosphere remained satisfactory in most of the agricultural planes of the country due to near to normal/ normal/ slightly below normal rainfall received in different parts of the country, which has produced satisfactory atmospheric conditions for the growth of standing crops.

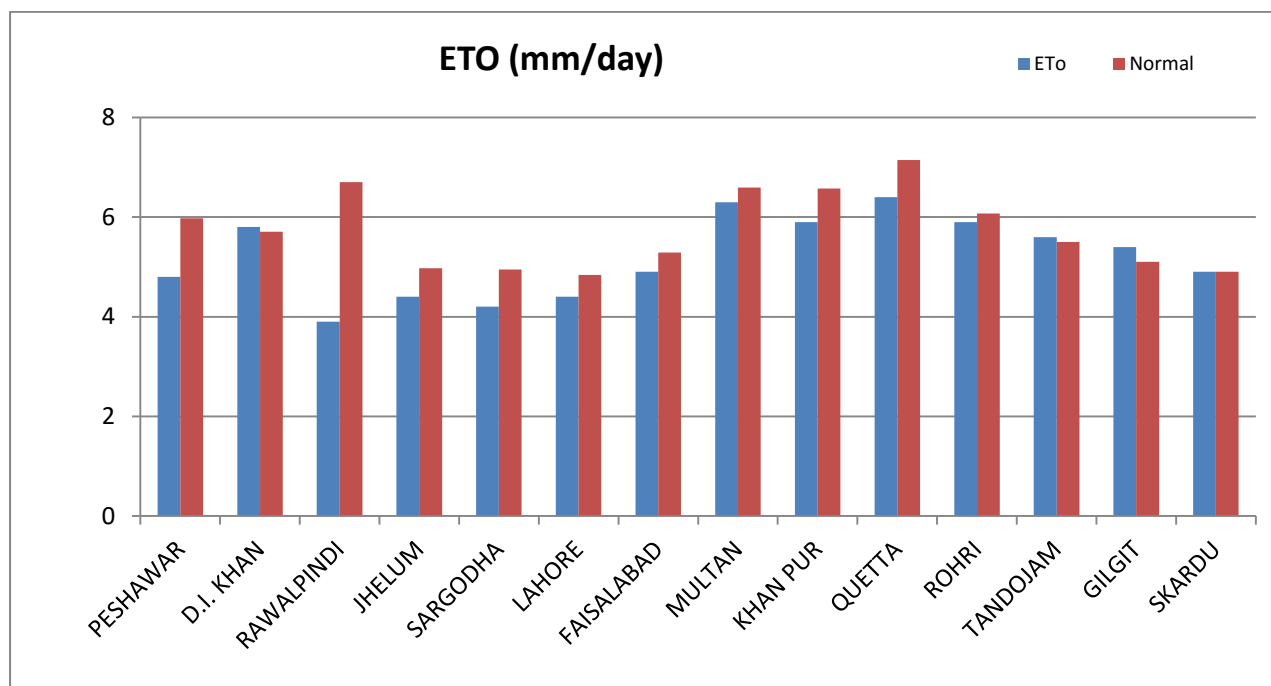
Rainfall remained below normal in the agricultural planes of KP, Punjab except Multan division, and agricultural plains of GB, whereas it was observed normal to above normal.

The highest amount of rainfall reported in the month was 387mm in Islamabad followed by 316mm in Islamabad, 289mm in Rawalakot and 288mm in Murree.

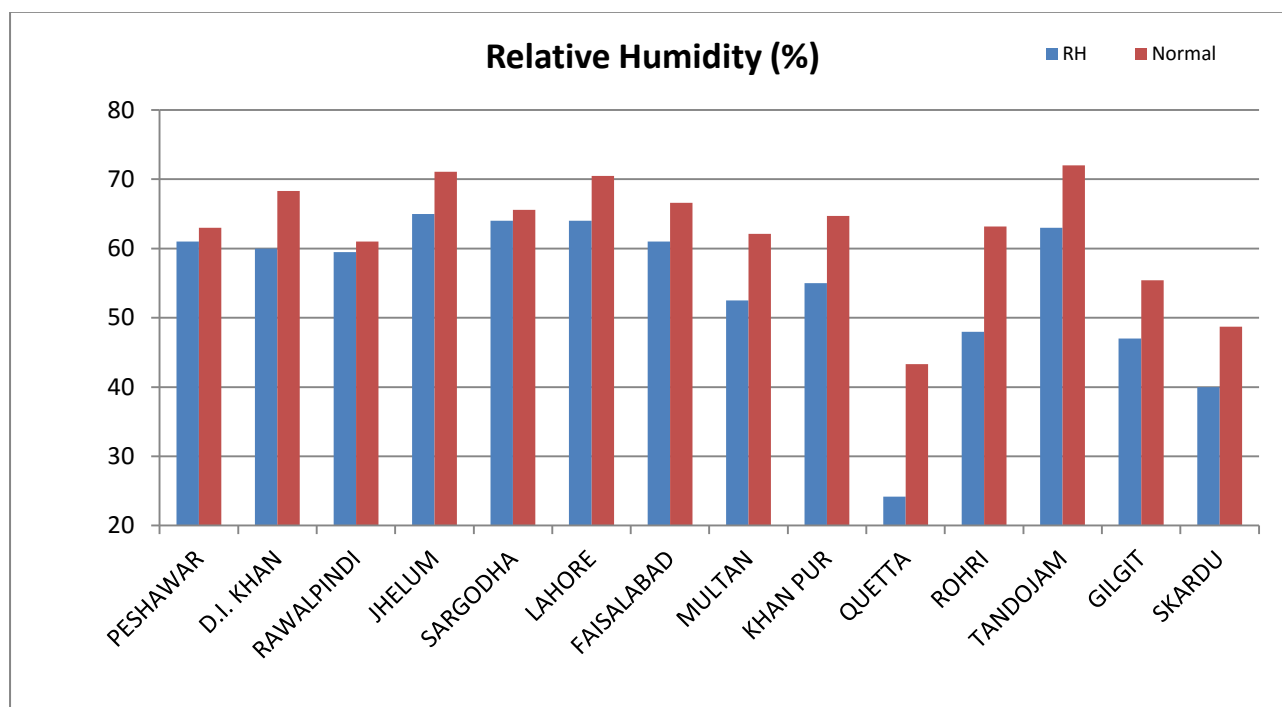
Number of rainy days recorded in agricultural plains of the country ranged from 1 to 20. Maximum number of rainy days was recorded 20 days in Muzaffarabad followed by 19 days in Rawalakot and 18 days in Murree.



The evaporative demand of the atmosphere represented by reference crop evapotranspiration (ET_o) remained normal to slightly below normal in most of the agricultural Plains of the country. The highest value of ET_o was estimated in high elevated agricultural planes of Baluchistan represented by Quetta due to its dry climate and dry weather reported during the month.



The mean daily Relative Humidity (R.H) remained normal to below normal in most of the agricultural planes of the country. Maximum value of mean Relative humidity was observed 65% at Jhelum, followed by 64% at Sargodha and Lahore each. Maximum number of days with mean R.H greater or equal to 80% was observed for 7 days at Jhelum.



The combined impact of slightly below normal relative humidity along with mostly below normal ETo along with satisfactory rains during the month has produced satisfactory/normal growing conditions for

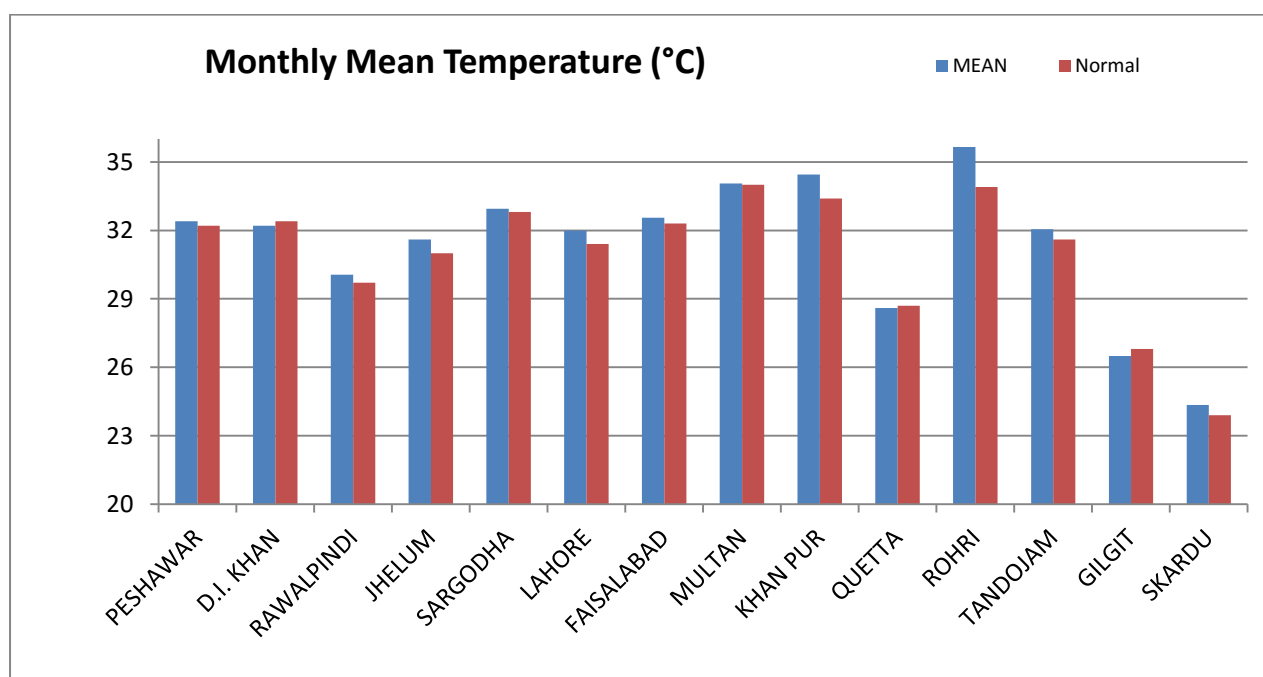
standing crops. However expected monsoon rains during August may help to bring normal moisture condition for standing crops in the coming monsoon season. Hot and wet conditions sometime favor pests attack on standing crops, especially in sugarcane and cotton growing areas. Reports of pest attacks have already been reported on cotton in certain areas. Therefore farmers must be careful about timely and proper use of pesticides to avoid/minimize such losses during monsoon season.

Farmers of the cotton growing areas should also be careful about the bad effects of stagnant water in the fields during monsoon season, which ultimately reduces/stops the normal growth of cotton plant.

Temperature Regime during July, 2014

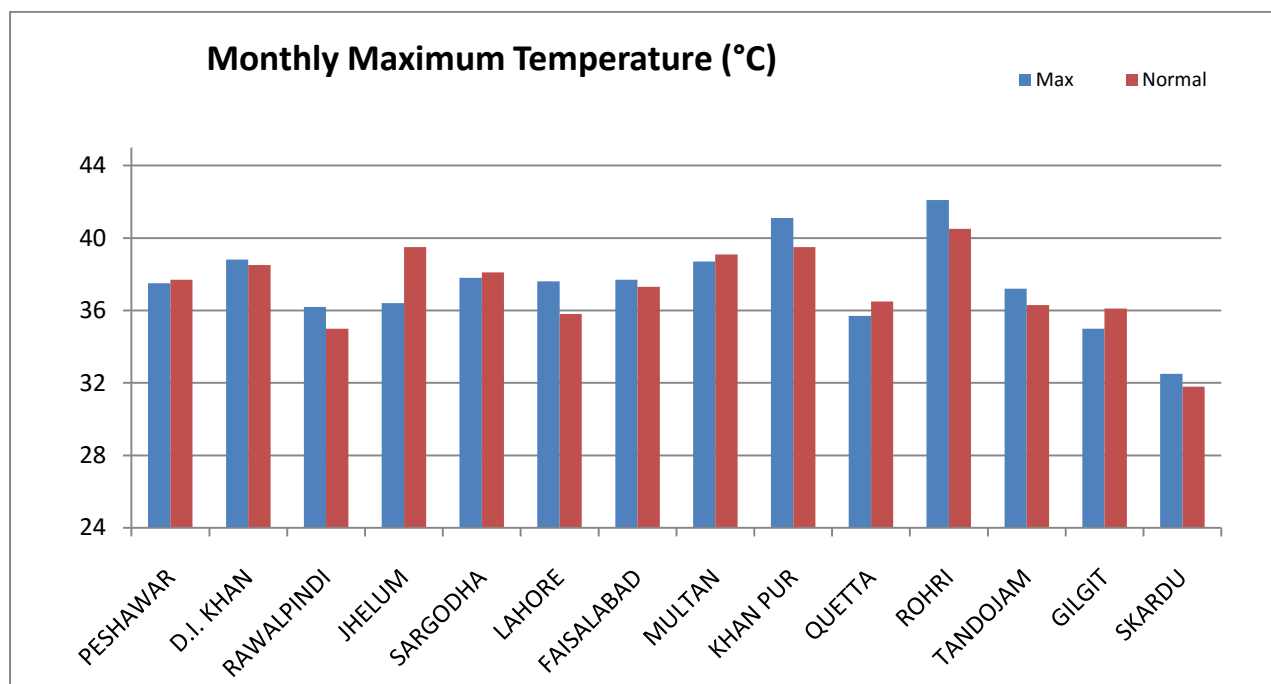
Temperature plays vital role in the growth and development of crops. Thermal regime in this month remained normal to slightly above normal (1-2°C) in most of the agricultural planes of the country.

Mean daily temperature rounded to 32°C in Khyber Pakhtunkhwa, 30-31°C in Potohar plateau, in remaining parts of Punjab it ranged 32 to 35°C, in Sindh it ranged 32 to 36°C, in Gilgit Baltistan region it ranged 24 to 26°C and it was rounded to 29°C in the high elevated agricultural plains of Baluchistan represented by Quetta valley.



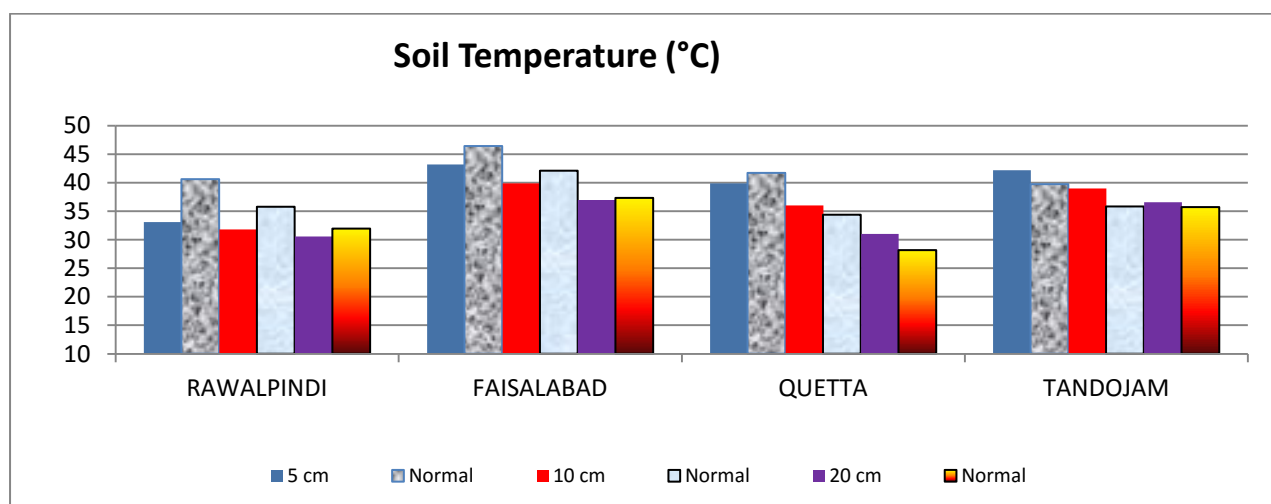
The day time temperature represented by mean maximum also remained normal to above normal by 1-3°C in most of the agricultural plains of the country. The highest maximum temperature was recorded 47.5°C at Nokkundi.

Maximum number of stress days with maximum temperature greater or equal to 40°C and R.H. less than or equal to 30% was observed nil in the country.



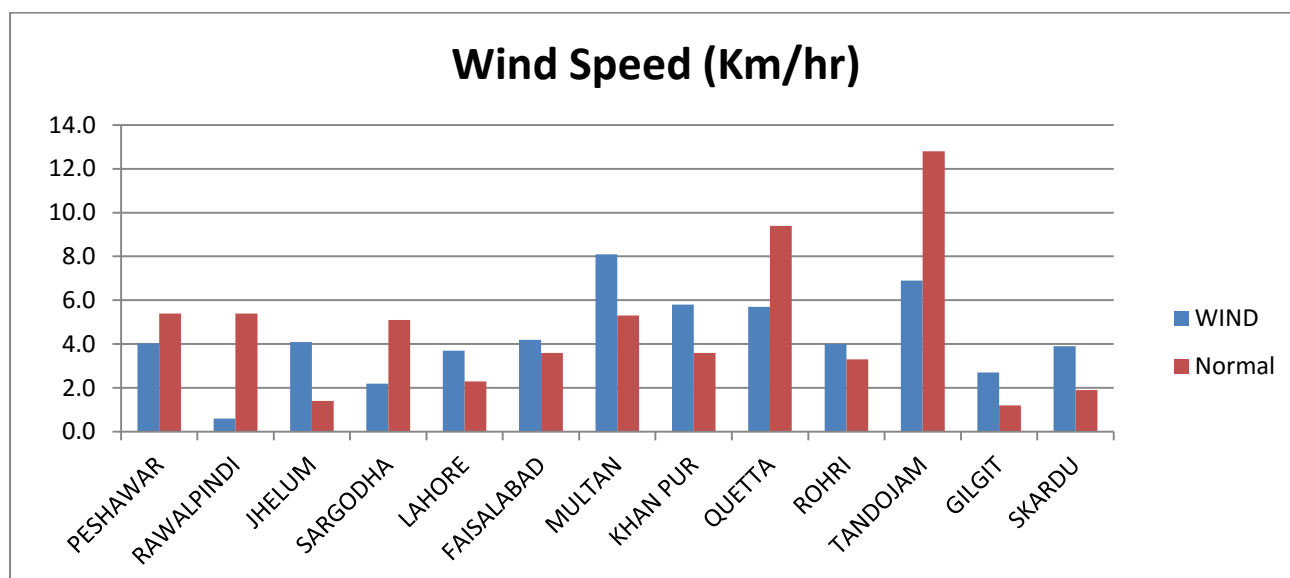
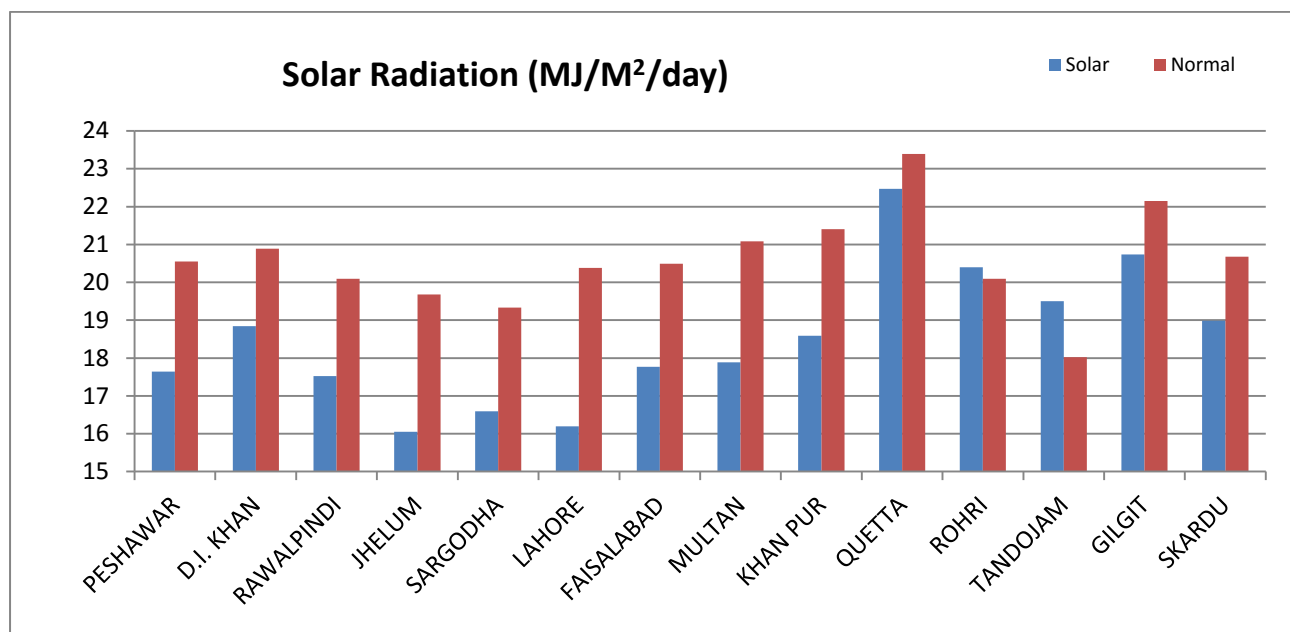
Agricultural soils showed normal to cooler trend in most of the agricultural plains of the country. Agricultural soils showed more significant drop in soil temperature in Potohar region and central Punjab. Significant drop in soil temperature at each station was observed at shallow layers than deep soils.

From the general analysis of soil behavior it is concluded that soil moisture condition is better all over the country due to satisfactory rains received during the month. Coming monsoon rains may further improve soil moisture condition in the coming month.



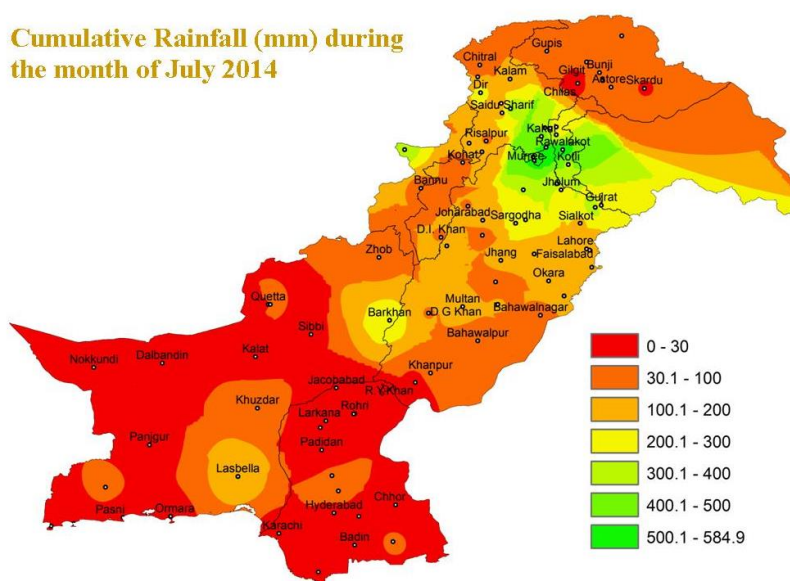
Solar Radiation and Wind Regime during July, 2014

Total bright sunshine hours and solar radiation intensity remained below normal in most of the agricultural plains of the country except agricultural plains of Sindh where these values remained above normal. Mean wind speed throughout agricultural plains of the country ranged between 1 to 8km/h with Northeast and South to Southwest trend.

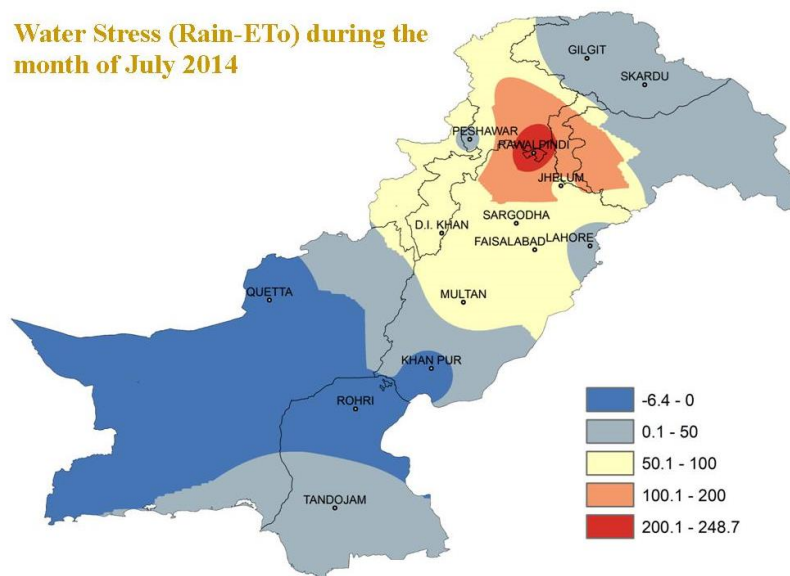


Cumulative Rainfall, ETo and water stress for Rabi Season (May to Sep)

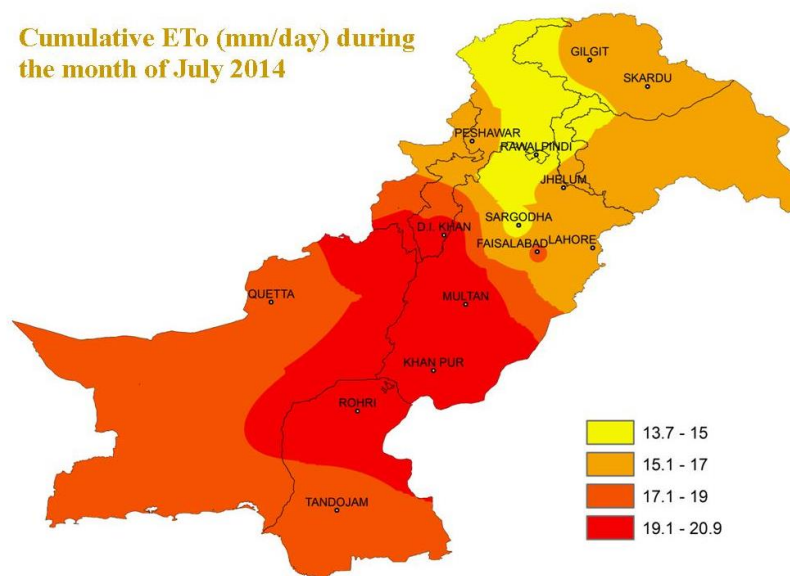
Cumulative Rainfall (mm) during the month of July 2014



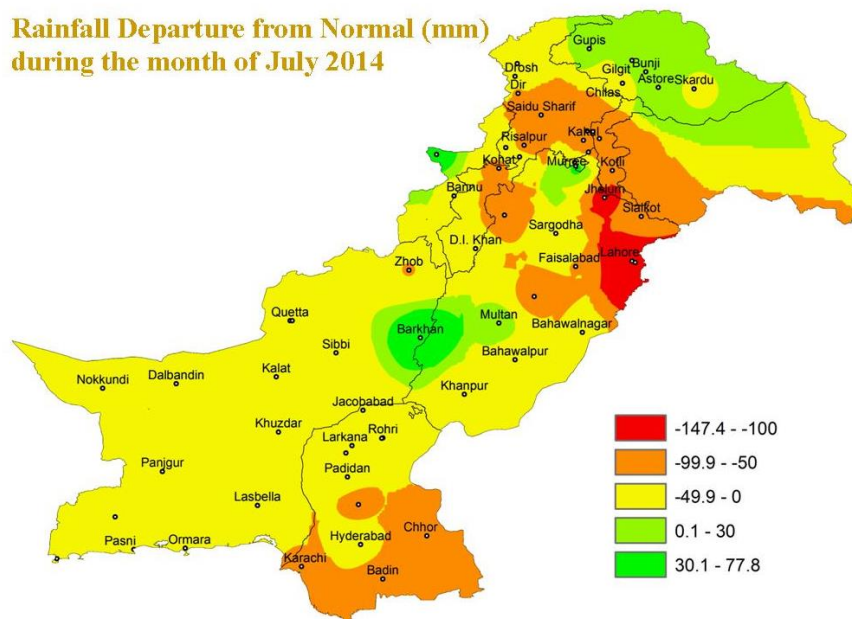
Water Stress (Rain-ETo) during the month of July 2014



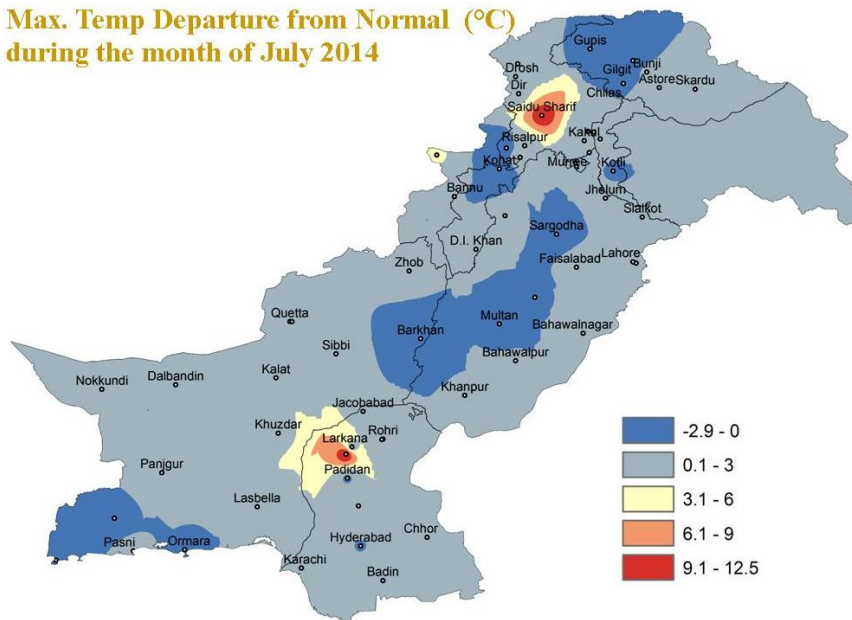
Cumulative ETo (mm/day) during the month of July 2014



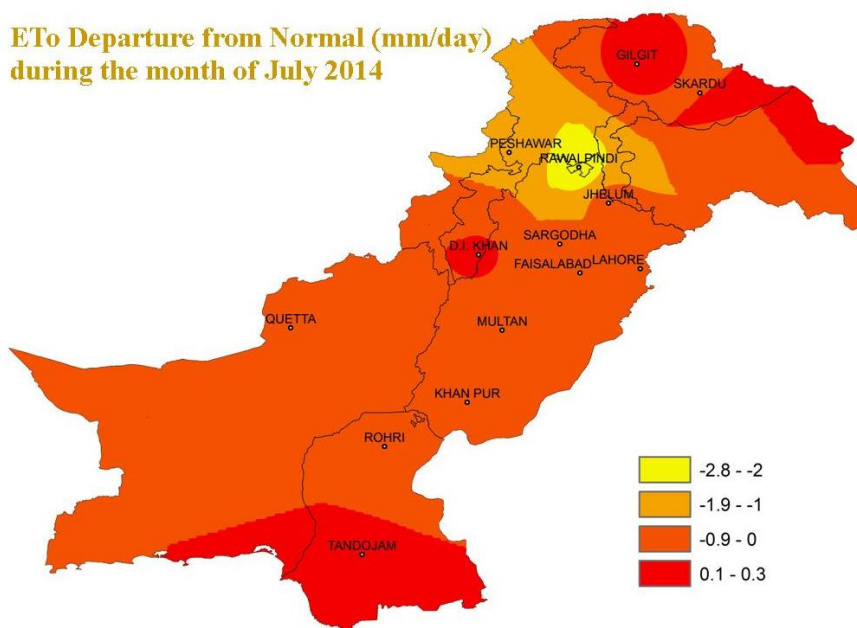
Rainfall Departure from Normal (mm) during the month of July 2014



Max. Temp Departure from Normal (°C) during the month of July 2014



ETo Departure from Normal (mm/day) during the month of July 2014



Normally Expected Weather during August, 2014

During August monsoon rain bearing systems will produce precipitation. These rains are of immense importance for the farmers in relation to present and future crop requirements. In the absence of proper land management, the intense rains may erode the upper soil layers and fertility of the soil would be badly affected. If soil and moisture conservation measures are exercised, the farmers of the area could be benefited through available moisture for sowing and early growth of Rabi crops. Due to weaker pace of monsoon this year, the rain are expected to remain 30% below normal in most of the agricultural plains of Pakistan with occasionally heavy rains in some parts.

The probability of occurrence of rainfall over Potohar plains is given below:-

| Amount Dates | PERCENTAGE PROBABILITY OF OCCURRENCE OF DIFFERENT AMOUNT OFF RAINFALL IN AUGUST | | | | | |
|-----------------|---------------------------------------------------------------------------------|------|-------|-------|-------|-------|
| | 1-5 | 6-10 | 11-16 | 17-20 | 21-25 | 26-31 |
| 10 mm | 71 | 81 | 78 | 69 | 75 | 64 |
| 15 mm | 68 | 74 | 73 | 66 | 70 | 52 |
| 25 mm | 56 | 68 | 58 | 56 | 49 | 40 |

The evaporative demand of the atmosphere would decrease as compared to July due to increased cloudiness, less solar radiation intensity and increase level of humidity. ETo values would range from 4 to 7 mm/day. The maximum ETo values would take place over agricultural areas along 30° latitude of the country. The mean daily relative humidity is expected to range from 60 to 75% except high agricultural plains of Baluchistan where it may be around 40%.

The mean daily temperatures may range between 31 and 33 °C over Sindh, Khyber Pakhtunkhwa, central and southern Punjab, Northern Punjab and high agricultural plains of Baluchistan may experience it from 26 to 29 °C. The mean maximum would be in upper 30°C and mean minimum in upper 20°C except high agricultural plains of Baluchistan where it would be around 18 °C. The occurrence of hygrothermal stress is not expected because of higher humidity level. The upper soil layers would be slightly cooler than July due to relatively cooler crop environment.

The daily bright sunshine duration during August is expected to range between 8 and 10 hrs throughout the country. The solar intensity will vary from 20 to 24 MJ/M²/day. Mean daily wind speeds will range between 3 and 12 Km/hr. The prevailing wind direction may vary from East to South.

Among the Kharif crops, most important crops are rice, cotton and sugarcane. All of them may be approaching their reproductive stage of development, i.e., the period of maximum water demand. Due to rains in northern parts of the country, soil moisture will be surplus in northern Punjab and adjoining KPK.

The water requirement of a full canopied, healthy growing crop is given below:

| S.No | Region | Water Requirement | |
|------|-----------------------------------------------------|-------------------|---------------------|
| | | (mm) | Cubic Meter/Hectare |
| 1 | Central Punjab & adjoining KPK | 130-160 | 1300-1600 |
| 2 | Southern Punjab Upper Sindh & adjoining Baluchistan | 170-200 | 1700-2000 |
| 3 | Lower Sindh & high plains of Baluchistan | 120-135 | 1200-1350 |

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 May 01, 2013. 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.

Synoptic Situation

- Location of jet stream (U wind at 200 hPa) is at normal position with slightly higher than normal intensity over north. Most of the region including Pakistan, western Nepal and northern parts of India may prevail slightly above normal zonal winds at 200 hPa.

Probability outlook: Above normal intensity of jet stream is associated with above normal precipitation in the region and scenario indicates that average rainfall will be in the country. The weather system will be focused towards northern region.

- A trough at 500 hPa is expected to be over west of the country. However a strong ridge may prevail over the country during the season which causes to reduce influence of monsoon over the country.

Probability outlook: Rainfall may be below normal over the country with significantly below normal over southern parts of the country.

- Surface temperatures are expected to be on higher side than normal all over the country with higher values over central parts.. However, northern and southern parts may prevail normal surface temperature.

- North Atlantic Oscillation (NAO) is in negative phase (-0.97) during Jun. As a result normal track of western disturbances will persist.
<http://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/norm.nao.monthly.b5001.current.ascii.table>

Probability outlook: Weather system approaching from west will be focused over central and northern parts of the country.

- The SST anomaly in the Nino3.4 region in recent weeks has been near the borderline of neutral and El Nino during the mid-May to mid-June period, 2014. For May the Nino3.4 SST anomaly was 0.45 C, indicative of neutral conditions but very close to the borderline of El Nino, and for Mar-May it was 0.16 C. It is predicted that for likelihood for a transition from neutral ENSO conditions to El Niño conditions during summer 2014, with probabilities of El Niño rising to 70% by Jun-Aug 2014, and to approximately 80% by northern autumn 2014. The latest set of model ENSO predictions, from mid-June. For all model types, the probability for neutral ENSO conditions is below 25% between Aug-Oct 2014 and Jan-Mar 2015, being between 30% and 39% during Jun-Aug and Jul-Sep, and again at the end of the forecast period in Feb-Apr 2015. Probabilities for El Niño rise to more than 75% during the very same times, Aug-Oct

2014 to Jan-Mar 2015. Probabilities for El Niño fall to about 60% by Feb-Apr 2015. No model predicts La Niña conditions for any of the 3-month periods between Jun-Aug 2014 and Feb-Apr 2015. (http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-cpc_update)

Probability outlook: La Nina (1%), Neutral (26%) and El Nino (73 %) during Jul-Aug-Sep, 2014 season

- Arabian Sea Surface Temperatures are expected to be slightly above 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 normal rainfall over the region.

Seasonal Weather Outlook Summary (Jul-Sep2014)

Synthesis of the latest model forecasts for July- Sep, 2014 (JAS), current synoptic situation and regional weather expert's judgment indicates that below normal precipitation is expected all over the country with extremely below average during July, below normal during August and normal during September. Above average day temperature is likely to occur during whole predicted month all over the country. The months of July and August likely to prevail much higher day temperature ($> 4^{\circ}\text{C}$) over central parts of the country. A neutral lead to El Nina condition is expected to persist throughout the predicted period.

Weather outlook

“Below average precipitation is expected during the season all over the country with above normal day temperature.”

- I. Below average precipitation is expected during predicted season.
- II. In Jul, significantly below average precipitation is expected all over the country except GB. Day temperatures are likely to be above normal all over the country with higher value over southern Punjab.
- III. First phase (July) of monsoon is expected dry all over the country
- IV. Two to three rainy spells are expected during July with moderate intensity.
- V. Very limited chances of flash flooding in the country.
- VI. Very limited chances of monsoon rainfall over southern parts during July.
- VII. Below normal rainfall is expected during the month of August.
- VIII. One rainy spell is expected over southern parts of the country during August.
- IX. Above normal day temperature are expected during August causes more discharge will be expected in rivers of the country.
- X. Month of Ramadan will be hot and less than normal rain will be expected.
- XI. Two to three rainy spells are expected during August with moderate to higher intensity during first (1-10th) and last week of August.
- XII. Normal rainfall is expected during the month of September.

- XIII. Rainy tracks will be towards upper parts and southern parts of the country during September.
- XIV. Two to three rainy spell with moderate intensity are expected during first and third week of September.
- XV. Expected Maximum temperature will be above normal during whole predicted month with higher values will be during August. Day temperature will be much higher (about 5 °C) from normal.

Monthly Quantitative Weather Forecast

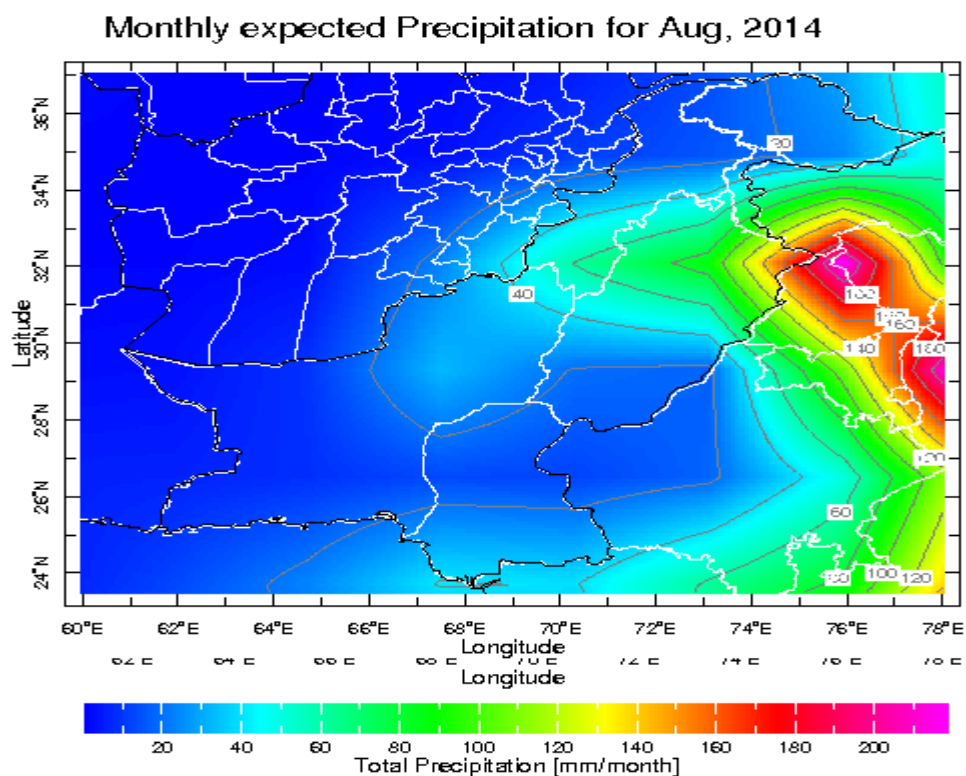
| | Jul, 2014 | | Aug, 2014 | | Sep, 2014 | | Jul-Sep, 2014 | |
|------------------------------|-----------|----------|-----------|----------|-----------|----------|---------------|----------|
| | Ave | Exp | Ave | Exp | Ave | Exp | Ave | Exp |
| GB | 15.9 | Blw. Ave | 16.8 | Blw. Ave | 12.4 | Abv. Ave | 45.1 | Ave |
| KP | 99.5 | Blw. Ave | 92.5 | Blw. Ave | 42.7 | Blw. Ave | 234.7 | Blw. Ave |
| AJK | 181.0 | Blw. Ave | 160.7 | Blw. Ave | 70.9 | Blw. Ave | 412.5 | Blw. Ave |
| FATA | 61.7 | Blw. Ave | 67.0 | Blw. Ave | 29.7 | Ave | 158.4 | Ave |
| PUNJAB | 105.3 | Blw. Ave | 96.1 | Blw. Ave | 36.8 | Blw. Ave | 238.2 | Blw. Ave |
| BALUCHISTAN | 29.5 | Blw. Ave | 22.2 | Blw. Ave | 4.8 | Abv. Ave | 56.5 | Blw. Ave |
| SIND | 63.5 | Blw. Ave | 60.2 | Blw. Ave | 20.2 | Abv. Ave | 143.9 | Blw. Ave |
| Precipitation is in mm/month | | | | | | | | |
| Pakistan | 60.7 | Blw. Ave | 54.5 | Blw. Ave | 20.3 | Ave | 135.5 | Blw. Ave |

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

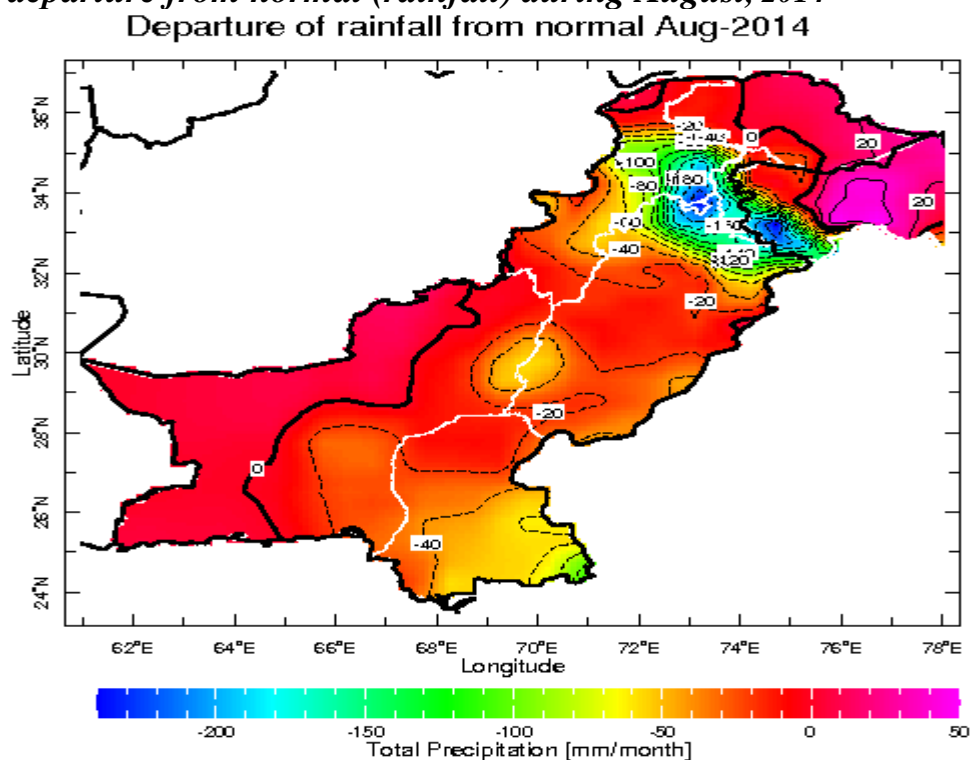
Average precipitation

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

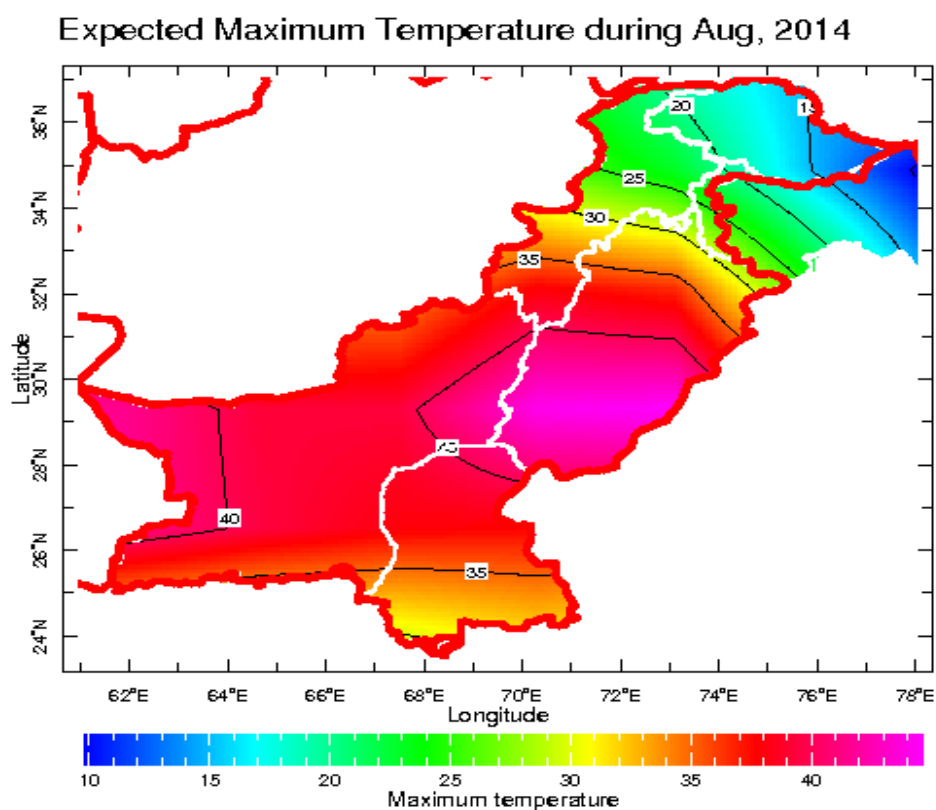
1. Spatial distribution of expected rainfall during August, 2014 (GCM-ECHAM)



2. Monthly departure from normal (rainfall) during August, 2014



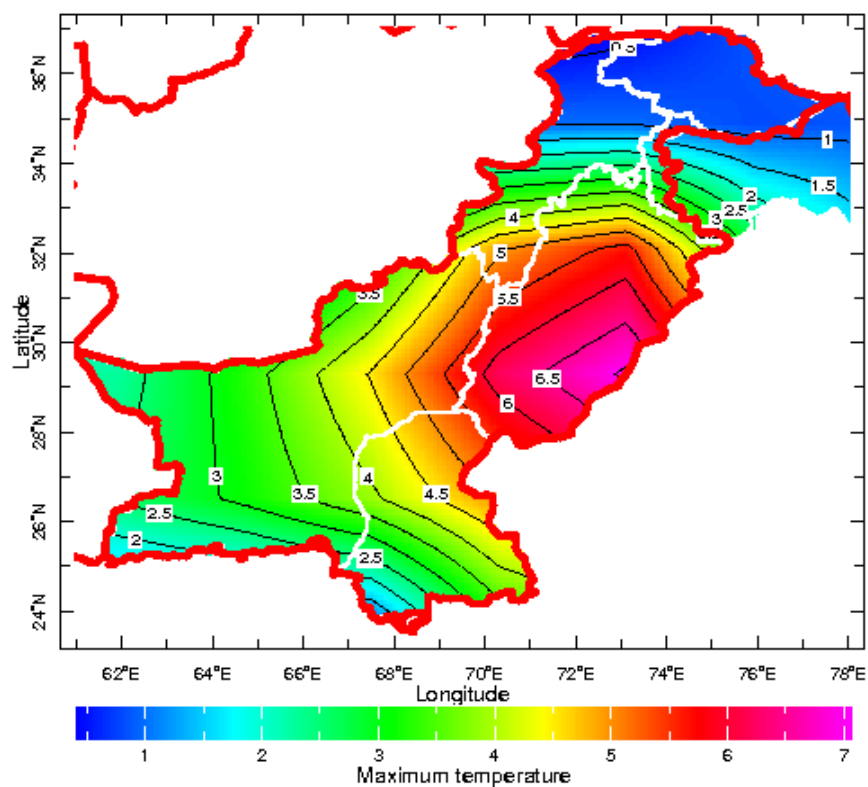
3. *Spatial distribution of expected maximum temperature during August, 2014*



4. *Departure of expected maximum temperature during August, 2014*

5.

Expected Dep. of Max. Temp. from normal during Aug, 2014



محکمہ موسمیات، اسلام آباد

اگست 2014ء میں کاشتکاروں کے لئے زرعی موسمیاتی مشورے

ماہ جولائی پاکستان میں مون سون بارشوں کے آغاز کا مہینہ ہوتا ہے۔ اس ماہ میں بارشیں زیادہ ہوتی ہیں جو زمین کو کٹاؤ کا باعث بنتی ہیں اس سال ماہ جولائی میں اچھی بارشیں ریکارڈ کی گئی۔ جولائی کے مہینے میں ہوا میں نمی کی مقدار زیادہ ہونے سے جس کی صورت حال ریتی ہے اس لئے یہ مہینہ ڈھواڑ میں مہینہ ہوتا ہے۔ ملک کے زیادہ تر حصوں میں اس مہینے وقفے وقفے سے مون سون کی بارشوں کا سلسلہ جاری رہنے کا امکان ہے۔ جس سے پانی کے ذخائر بہتر ہو سکتے ہیں اس صورت حال کو مد نظر رکھتے ہوئے مندرجہ ذیل تجاویز کاشتکار بھائیوں کیلئے پیش خدمت ہیں۔

- ۱۔ فصل کی بوائی سے پہلے زمین کو زیادہ سے زیادہ ہموار کرنے کی کوشش کریں کیونکہ اعلیٰ سطحوں سے پانی زیادہ تیزی سے بہتا ہے۔
- ۲۔ موسم برسات میں زمینوں میں مکمل حد تک بل نہ چلائیں اور کاشت شدہ کھیتوں میں گودڑی کرنے سے اجتناب کریں کیونکہ اعلیٰ سطحی زمین کی مٹی پانی سے با آسانی بہ جاتی ہے۔ جس کی وجہ سے اوپر زرخیز مٹی کی تہ بہ جاتی ہے جس سے پودے اپنی خوراک حاصل کرتے ہیں اس کا یہ ہرگز مطلب نہیں کہ فصلوں سے جوڑی بوٹیوں کو تلف نہ کیا جائے بلکہ زمین کی سطح کی کم سے کم چھدائی کی جائے۔
- ۳۔ اپنے کھیتوں کی وٹ بندی پراگئی ہوئی گھاس کو اس موسم میں ہرگز نکالیں کیونکہ یہ پانی کے بہاؤ کے ساتھ مٹی کے بہاؤ کو روکنے میں مدد دیتی ہے۔
- ۴۔ مون سون کے مہینوں میں بارانی علاقوں کے کسان اپنی زمینوں کے بند کو مضبوط بنائیں تاکہ زیادہ سے زیادہ پانی زمین میں جذب ہو کر آئندہ فصل کے لئے استعمال میں لایا جاسکے اور اگر ممکن ہو سکے تو پانی کیلئے ٹالاب بنائے جائے تاکہ پانی کو موشیوں کیلئے استعمال کر سکیں۔
- ۵۔ کپاس کی کاشت والے علاقوں میں زمینوں سے بارش کے دوران اضافی پانی نکال لیں جو کہ فصل کیلئے نقصان دہ ثابت ہو سکتا ہے۔
- ۶۔ یہ مہینہ زیادہ دھبہ حرارت اور نمی کی وجہ سے کپاس، کما داؤرکئی وغیرہ کی فصلوں پر نقصان دہ کیڑوں کے حملوں کیلئے بہت معاون ہے۔ اسلئے کسان حضرات مسلسل اپنی فصلوں پر نظر رکھیں۔ اور کسی بھی حملے کی صورت میں بروقت مناسب زہر پاشی کریں۔
- ۷۔ اپنی تمام تر کھیتی باڑی موہی پیچھوئیوں کے مطابق کریں۔ موہی پیچھوئیوں کے سلسلے میں اخبار، ریڈیو، ٹیلی ویژن سے مربوط رہیں اور اگر کوئی زرعی موسمیاتی مسئلہ درپیش ہو تو ہمارے مندرجہ ذیل دفاتر سے آپ بخوبی مدد حاصل کر سکتے ہیں۔

۱۔ محکمہ موسمیات، نیشنل ایگرو میٹ سینٹر، پی۔ او۔ بکس نمبر 1214، بیکٹر ایچ اے ٹو، اسلام آباد فون نمبر: 051-9250299

۲۔ محکمہ موسمیات، نیشنل فورکاسٹنگ سینٹر برائے زراعت، پی۔ او۔ بکس، 1214، بیکٹر ایچ اے ٹو، اسلام آباد فون نمبر: 051-9250364

۳۔ محکمہ موسمیات، ریجنل ایگرو میٹ سینٹر، نزد رانی یونیورسٹی، مری روڈ، راولپنڈی فون نمبر: 051-9290635

۴۔ محکمہ موسمیات، ریجنل ایگرو میٹ سینٹر، ایوب ریسرچ انسٹیٹیوٹ، چنگ راولپنڈی فون نمبر: 041-2657047

۵۔ محکمہ موسمیات، ریجنل ایگرو میٹ سینٹر، ایگریکلچر ریسرچ انسٹیٹیوٹ، ٹنڈو جام۔ فون نمبر: 0222-766583

۶۔ محکمہ موسمیات، ریجنل ایگرو میٹ سینٹر، ایگریکلچر ریسرچ انسٹیٹیوٹ، سراب روڈ، کوئٹہ فون نمبر: 081-9211211

تفصیلی موہی معلومات کیلئے محکمہ موسمیات کی ویب سائٹ www.pmd.gov.pk ملاحظہ فرمائیں۔

کماڈ (گنے) کی فصل پر موسم سے متعلق اثر انداز ہونیوالے اہم عوامل

کماڈ پاکستان کی اہم ترین فصل ہے۔ پاکستان زیر کاشت رقبہ کے لحاظ سے دنیا میں پانچویں نمبر پر، کھل پیداوار کے لحاظ سے گیارہویں نمبر پر اور فی ایکڑ پیداوار کے لحاظ سے 60 ویں نمبر پر ہے۔ کماڈ سفید چینی اور گولہ بانی کا اہم زریعہ ہے۔ اس کے علاوہ تقریباً 100 کے قریب دوسری کارآمد اشیاء بھی اس سے بنتے ہیں۔ پاکستان میں کماڈ پنجاب، سندھ اور خیبر پختونخواہ میں خریف کے فصل کے طور پر کاشت ہوتا ہے۔ کماڈ کی فی ایکڑ پیداوار ملک میں 480 من کے لگ بھگ ہے۔ جبکہ ہمارے ملک کے ترقی پسند کاشتکار گنے کی فی ایکڑ 1000 من سے زیادہ حاصل کر رہے ہیں۔ گنے کی پیداوار میں کمی مٹی کی خشکی کے بنیادی وجوہات میں مناسب زمین کا انتخاب اور تیاری، مناسب بیج اور شروع، مناسب اور بروقت طریقہ کاشت، بروقت اور مناسب کھاد کا استعمال، مناسب مقدار اور گنے کے اوپر حملہ آور ہونے والے کیڑوں اور دوسرے بیماریوں کا بروقت تدارک، نئی فصل اور موڈی فصل (ratoun crop) کے مختلف ضروریات کی مطابقت نگہداشت بروقت کٹائی اور مل تک ترسیل، نہری پانی کیساتھ مناسب وقفوں کیساتھ بارشیں، طوفانی ہوائیں، خشک سالی وغیرہ شامل ہیں۔ گنے کی بہترین نشوونما کیلئے سب سے موزوں آب و ہوا گرم مرطوب ہے اسلئے یہ دنیا کے ان علاقوں میں کاشت ہوتا ہے جہاں بیشمار نشوونما کے دوران آب و ہوا گرم مرطوب ہو اور زمین میں نمی کی اچھی مقدار موجود ہو۔ جبکہ کٹائی کے دوران خشک اور نسبتاً کم درجہ حرارت درکار ہوتی ہے تاکہ گنے میں مٹھاس (Sugar) زیادہ سے زیادہ موجود ہو۔

1۔ کماڈ کے پودے میں 73-75 فیصد پانی ہوتا ہے۔ اس لئے پودے کو پانی کی ضرورت بہت زیادہ ہے۔ کماڈ کو کاشت کرنے کے لئے ایسے زمین کا انتخاب کرنا چاہئے جس میں پانی جذب کرنے کی صلاحیت زیادہ ہو۔ کلراور تھورزدہ زمین پر گنے کی کاشت نہ کرے۔ اسلئے پنجاب، سندھ اور خیبر پختونخواہ کے وہ زری علاقے جہاں آبپاشی کیلئے پانی دستیاب ہے وہ کماڈ کی کاشت کیلئے موزوں ہیں۔

- 2۔ پاکستان میں گنے کی کاشت زیادہ ستمبر-اکتوبر (موسم خزاں) اور فروری-مارچ (موسم بہار) میں ہوتی ہے۔ پیداوار کے لحاظ سے موسم خزاں کی کاشت موسم بہار کے مقابلے میں بہتر ہے۔ جبکہ خیبر پختونخواہ میں کاشت اکتوبر-نک مکمل کرنی چاہئے اس لئے کہ ستمبر اور اکتوبر کے کاشت والی فصل کو موزوں آب و ہوا میسر آ جاتی ہیں۔ دیر سے کاشت کرنے پر کھل پیداوار 30 فیصد تک کم ہو سکتی ہے۔ اسلئے دیر سے کاشت کرنے والی فصل کو مناسب آب و ہوا دستیاب نہیں ہوتی۔
- 3۔ دوسرے فصلوں کی طرح کماڈ کے پیداوار میں بھی 25 فیصد تک کی زائد جڑی بوٹیوں کیوجہ سے واقع ہوتی ہے۔ اس لئے کمیائی یا غیر کمیائی طریقوں سے جڑی بوٹیوں کو بروقت تلف کیا جائے تاکہ فصل سے پانی اور دوسرے غذائی اجزاء کا زیاں ختم ہو۔ مون سون کے بارشوں کے دوران خصوصاً کماڈ کے کھیتوں میں جڑی بوٹیوں کی بہتات ہو جاتی ہے جس کی بروقت روک تھام ضروری ہے تاکہ فصل کی نشوونما متاثر نہ ہو۔ مون سون سے پہلے ہی فصل کو Lodging سے بچانے کیلئے بروقت روایتی مواد محکمہ زراعت کے مشوروں کی مطابقت اختیار کرنی چاہئے۔ اسلئے کہ Lodging کماڈ کی پیداوار کم کرنے میں سب سے زیادہ کردار ادا کرتا ہے خصوصاً وہ علاقہ جہاں مون سون کی بارشیں زیادہ ہوں
- 4۔ کماڈ کے فصل کو 1500 سے 2000 mm پانی کی ضرورت ہوتی ہے۔ جو کہ 15 سے 20 دفعہ پانی دینے سے پورا ہوتا ہے۔ فصل کو پانی کی سب سے زیادہ ضرورت مون سون سے پہلے مئی اور جون کے مہینے میں ہوتی ہے۔ پانی کے کمی کیوجہ سے کماڈ کے پودے کا سائز کم رہ جاتا ہے اور پودا وقت سے پہلے پختگی (mature stage) کے مراحل طے کر لیتا ہے تاکہ ہم زائد پانی کیساتھ ساتھ لگ مون سون کی بارشیں ہو جائیں تو فصل میں زائد جڑی بوٹیوں کی بہتات ہو جاتی ہے اور نقصان دہ کیڑوں کے حملوں کا خدشہ بھی رہتا ہے۔ عام طور پر مارچ/اپریل میں 10-12 دن کے بعد، مئی/جون میں 8/9 دن کے بعد جولائی/اگست میں (اگر بارشیں ہوں) 12-14 دن کے بعد، ستمبر/اکتوبر میں 13-20 دن کے بعد اور نومبر/دسمبر میں 25-30 دن کے بعد پانی دینا چاہئے، فصل کے کٹائی سے تقریباً ایک مہینہ پہلے پانی دینا بند کرنا چاہئے لیکن فصل کے جس حصے کو اسلئے بیج کیلئے رکھنا ہوا نہیں پانی دینا چاہئے تاکہ دسمبر میں (Frost) کھورے سے نقصان نہ پہنچے۔ مون سون کے درمیان بہت صحت مند فصل کو پانی دینے میں احتیاط سے کام لیں تاکہ فصل (Lodging) گر جانے سے محفوظ رہے۔ مون سون سے پہلے ہی فصل کی Lodging سے بچانے کیلئے بروقت روایتی اور محکمہ زراعت کے مشوروں کی مطابقت اختیار کرنی چاہئے۔ اسلئے کہ Lodging کماڈ کی پیداوار کم کرنے میں سب سے زیادہ کردار ادا کرتا ہے خصوصاً وہ علاقہ جہاں مون سون کی بارشیں زیادہ ہوں۔
- 5۔ فصل کی کٹائی کاشت کے حساب سے ہونی چاہئے۔ اکھیتی فصل (Early Sown) اور موڈی فصل کی کٹائی نومبر، درمیانی فصل کی کٹائی دسمبر اور کھیتی فصل کی کٹائی جنوری میں شروع کر دیں۔ فروری/مارچ میں کٹی گئی فصل موڈی فصل (Ratoon Crop) کیلئے سب سے زیادہ موزوں ہے۔