

ABSTRACT

The climate of Pakistan is uneven and almost two third of the country demonstrate arid type climate. A narrow belt of sub mountainous regions illustrates humid climate. Most of the regions in central and southern Pakistan are tremendously arid, while the northern part of the country is humid except the extreme northern mountains which are relatively dry. The mountainous region composed with lofty hills in the northern and northeastern sides experience the type of climate having similarities with temperate climate and some areas in the south experience an arid and semi-arid climate with low precipitation and high temperature. Pakistan is an agricultural country, having diverse climate and almost two third area experiences arid type climate. Maize is the second most important cereal crop after wheat in Pakistan but its yield per unit area is very low. Climatic Variability has direct and adverse impact on the food production and sustainable development especially in rain fed areas. Along the foot-hills of Himalayas, a vast agriculture plain known as Potowar Plateau is isolated. Among climatic factors, the precipitation has great influence on the production of crops. Potowar Plateau is known for its highly variable precipitation characteristics both in terms of frequency and distribution. It has been observed that during vegetative and reproductive stages, as the rainfall increases from 100 mm to 250 mm and 50 mm to 200 mm respectively, the yield has been improved resulting in to maximum production i.e. 2400 Kg/Ha at certain amount of precipitation. Maize is generally planted in July with the onset of the monsoon (rainy season) and it attains maturity as the monsoon recedes from Pakistan in September. After crossing the peak values 300 mm during the growing season, the yield decreases with the increase in rainfall. Planting season is highly risky. If there is persistent rain, it does not provide gap to the soil suitable for seed sowing. On the other hand, if monsoon is delayed then deficient soil moisture fails to sustain the seed germination process. Moreover, maize plant is highly sensitive to moisture surplus and deficit. At an early stage, heavy rain may destroy the whole cultivar due to heating up of stagnant water in the maize field which blocks the pores of the soil. If not total destruction, the plant population reduces to that low resulting in uneconomic yields. The main objective of this study to find out the relationship between rainfall and the yield correlation at four stations i.e. Chakwal, Rawalpindi, Kamra and Jhelum. Well correlated yield with the rainfall amount at early stage of crop development helps to develop a model for yield prediction with a sufficient lead time which may be used by planners and policy makers to manage the probable shortages or surpluses.