Gomal Univ. J. Res.
Vol. 11 No. 1 pp 13 - 22 (1991)

Printed in Pakistan

YIELD PREDICTION OF COTTON (GOSSYPIUM HIRSUTUM) AS RELATED TO EVAPOTRANSPIRATION (ET) IN PAKISTAN

Muhammad Ilyas
College of Agriculture, Rawalakot, Azad Kashmir.

Zafar Iqbal
Water Management Traning Institute, Thokar, Multan Road, Lahore.

Received 05-09-89.
Accepted 08-02-90.

ABSTRACT

Relative yields and evapotranspiration (ET) of cotton were made under different climatic and soil conditions using the model PLANTGRO which was developed in Western U.S.A. Field measurements of ET from Bhakar, Mianchannu, and Bhalwal in Punjab were used to verify the predictions. The model generally predicted very well and showed good agreement between measured and predicted ET. For Bhakar, Mianchannu, and Bhalwal predicted ET was 68.3, 72.7 and 77.8 cm while average measured ET of 4 years was 65.0, 73.2 and 77.4 cm respectively. Since predictions are accurate, the model can be used to aid in crop management and irrigation scheduling.

INTRODUCTION

For optimum production and most efficient use of water, plant must have soil moisture available throughout most of the growing season. If irrigation is applied too little or too late stress and a decrease in yield may result. If more irrigation is applied than the soil can hold, leaching of nutrients below the root zone will occur, which may cause a high water table, increased salinity and resulting decrease in crop production. For this, importance of irrigation scheduling and water distribution in irrigated areas of Pakistan has already been pointed out by Garth (1971), and Ahmed (1982). The key to efficient use of irrigation water is the deter-