

Crop Water Requirement and Effect of Planting Date on Yield of Gladiolus Under Polyhouse, Shade Net and Open Conditions

D Kalyana Srinivas, G Chandra Mouli, G Ravi Babu and R Ganesh Babu
College of Agricultural Engineering, Bapatla 522 101, Andhra Pradesh

ABSTRACT

Water is becoming increasingly scarce worldwide. Aridity and drought are natural causes of scarcity. More recently however man-made desertification and water shortages have aggravated scarcity phenomenon. In order to apply irrigation water efficiently, the water requirement of the crops is to be estimated accurately. Several computer models are now available to estimate the crop water requirements. Crop Water Requirement (CWR) was effectively calculated using Penman-Monteith method using CROPWAT simulation programme. Accuracy of estimation of CWR greatly depends on the cropping pattern followed and staggering of crops sown in the command area. Crop Water Requirement (CWR) under different field conditions, open condition was estimated to be ranging from 201.8 – 219.8 mm/season, shade net ranging from 197.4 – 312.2 mm/season and polyhouse ranging from 202.7 – 310 mm/season. The corms of American beauty in poly house recorded significantly more number of days to sprout (11.5), while the earliest sprouting of corms was observed in the open condition (9.2) and the more earliest sprouting of corms was observed in shade net house(6.5). Number of spikes (1.2) in open condition recorded more which was on par with shade net (1.1) and least in poly house (1.0) condition. Spikes yield in open condition recorded maximum number of spikes per hectare (94666.6 ha⁻¹) where as the value was recorded under shade net (10138.4 ha⁻¹) and poly house it was (80888.9 ha⁻¹). Shade net recorded maximum vase life (11.5 days) compared to open condition (10.66 days) and poly house recorded less vase life (9.5 days).

Key words: *Crop, Gladiolus, Yield.*