

MEDIAN LIFE OF SILVERLEAF WHITEFLY IN COTTON CULTIVARS

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Abstract

The median life of Silverleaf Whitefly was estimated under no choice condition in tolerant cultivars. Results indicate important differences among varieties. The most tolerant were DELTAPINE 5415, CIANO CÓCORIM-92 and PAYMASTER 1277.

Introduction

Since 1994, Silverleaf Whitefly is the main pest in the farming production system in the Yaqui Valley, affecting cotton besides other crops. In order to make an efficient control of this pest it is necessary to manage the pest in all crops involved in the regional production system. In this aspect, the influence of each crop or cultivar in the development of Silverleaf Whitefly population is basic to the crop protection of the region.

Materials and Methods

This study was conducted at Yaqui Valley, Sonora, México, during 1998. The cultivars evaluated were PAYMASTER 1277 (PM 1277), DELTAPINE 5415 (DP 5415), DELTAPINE 5690 (DP 5690), DELTAPINE 5432 (DP 5432), and CIANO CÓCORIM 92 (CC 92). A hierarchical design was used with 10 replications per variety. The plot size was 4 row plots, 10-meter long, of 1 meter between rows.

The evaluations were carried out in the 5th leaf of each cotton variety. Prior to the evaluation, in order to avoid undesirable ovipositions from field adults, non-developed leaves were confined in organdy bags when they appeared at the top of the plant.

When the confined leaves reached the 5th position, adults of Silverleaf Whitefly were captured in groups of fifty by using a manual aspirator and were placed on the leaves of the confined organdy bags. After 24 hours of induced oviposition, adults were released.

In one evaluation, ten of the 20 confined leaves were taken off and the eggs in the leaves were immediately counted. In the second evaluation, the ten remaining leaves were maintained in the field for adult emergence, then adult

population was assessed in each confined leaf. Median life of Silverleaf Whitefly was estimated using the values of egg oviposited and adults in the first generation.

Results and Discussion

Table 1 shows the behavior of Silverleaf Whitefly under no choice conditions in five cotton cultivars that have been considered tolerant to this pest under natural conditions of the Yaqui Valley, Son., México (Hernández y Pacheco, 1997, and Pacheco and Hernández, 1998). The data show clear differences among varieties evaluated. Despite the fact that DP 5415 and CC 92 were the varieties that had the highest egg oviposition, the median life of the pest was lower (this information agree with the data reported by Pacheco and Hernández, 1998). It is critical to know the median life because this parameter is considered very important to define the population dynamics of this pest, because is wiser to plant successful - well adapted varieties that will generate a lesser number of Silverleaf Whitefly in future generations to the agricultural system.

Summary

There are differences among cultivars in regard to preference for egg oviposition. Similar number of adults emerged from the different varieties. Silverleaf Whitefly has a lower life expectancy when feeding on DELTAPINE 5415, C. CÓCORIM-92, and PAYMASTER 1277.

Reference

- Hernández-Jasso, A. y J. J. Pacheco-Covarrubias. 1997. Respuesta de nuevas variedades de algodónero a la mosquita blanca de la hoja plateada (*Bemisia argentifolii* BELLOWS & PERRING) en el Valle del Yaqui, Son. 1996. *IN*: [F. Pacheco M. y J.J. Pacheco C.] 1996. MOSQUITA BLANCA EN EL NOROESTE DE MÉXICO. Memoria Científica Núm. 3. INIFAP-CIRNO. Cd. Obregón, Sonora. p. 38-40.
- Pacheco-Covarrubias J. J. and A. Hernández-Jasso. 1998. Differential susceptibility of cotton cultivars to Silverleaf Whitefly, in the Yaqui Valley, Sonora, Mexico. *Proceedings Beltwide Cotton Conferences*. p. 1281-1282.

Table 1. Eggs, adult emergence, and median life of Silverleaf Whitefly on cotton under no choice conditions. 1998.

Variety	Eggs	Adults	Median life
DP 5415	713	297	41.65
CC 92	858	436	50.81
PM 1277	440	243	55.27
DP 5432	427	337	78.92
DP 5690	377	303	80.37