NEW SOURCES OF RESISTANCE TO ROOT-KNOT AND RENIFORM NEMATODES IN MEXICAN ACCESSIONS OF THE USDA COTTON GERMPLASM COLLECTION A. F. Robinson, A. E. Percival, and A. C. Bridges USDA, ARS, College Station, TX

Abstract

Three growth chamber experiments were conducted to screen 48 USDA race stock accessions of Gossypium hirsutum simultaneously for resistance to Meloidogyne incognita race 3 and Rotylenchulus reniformis. Six replicate plants were included for each combination of cotton race stock and nematode species. Forty-two accessions were from Mexico and 41 of these had not been tested for nematode resistance previously. Virtually every latitude, elevation, and biotope where cotton is found in Mexico was represented. Additional accessions were from Cuba, Haiti, Nicaragua, St. Johns, and Venezuela. Deltapine 16 was included as a susceptible control. The Mexican accessions were also compared with five genotypes possessing resistance to *M. incognita*: Auburn 623, Auburn 634, Wild Mexican Jack Jones (USDA accession SA-2516), Clevewilt 6 (SA-245), and Stoneville LA887. Two accessions from high elevations in Veracruz, Mexico (TX-1347 and TX-1348) were found to have significant resistance to R. reniformis. However, when these plants were grown to maturity, they were identified as G. barbadense rather than G. hirsutum based on leaf. flower, and boll morphology. At least four accessions of G. hirsutum from Mexico TX-1174, TX-1440, TX-2076, and TX-2079) had levels of resistance comparable to that of Wild Mexican Jack Jones. Several other accessions also had significant levels of resistance. However, no accession possessed a level of resistance to *M. incognita* as great as that of Auburn 623. Most resistant accessions were from the Yucatan peninsula states of Campeche, Quintana Roo, and Yucatan, or the neighboring state of Tabasco.