OVERVIEW OF COTTON DISEASES IN WEST TEXAS IN 2017 J. E. Woodward Texas A&M AgriLife Extension Service Plant and Soil Science, Texas Tech University Lubbock, TX T. A. Wheeler Texas A&M AgriLife Research Lubbock, TX T. Isakeit Texas A&M AgriLife Extension Service College Station, TX

Abstract

Cotton is an economically important crop that is grown throughout much of west Texas. This region is comprised of the High Plains, Rolling Plains, Trans Pecos, Concho Valley and El Paso Valley. Overall, the later part of the 2017 growing season was characterized by below average temperatures and above average relative humidity. Such conditions were conducive for a number common and several unique diseases. Severity of the seedling disease complex was marginal due to relatively dry conditions that were experienced at and after planting. These conditions persisted for several weeks and exacerbated damage caused by root-knot (Meloidogyne incognita) and reniform (Rotylenchulus reniformis) nematodes. As the season progressed, increased humidity led to outbreaks of Bacterial blight, caused by Xanthomonas citri subsp. malvacearum, that were widespread in parts of the High Plains and Rolling Plains. Fusarium wilt, caused by the soilborne fungus Fusarium oxysporum f. sp. vasinfectum (FOV) race 4, was identified for the first time in Pima cotton in the El Paso Valley. Efforts are currently underway to identify the distribution of the fungus in that region, as well as monitoring potential spread to other cotton producing areas in Texas. In the High Plains, severity of FOV race 1, which is found in conjunction with M. incognita, was similar to what has been observed the past few years. Moderate levels of Verticillium wilt, caused by the soilborne fungus Verticillium dahliae, were recorded with the disease being more readily observed in fields in the northern High Plains relatively new to cotton production. While relatively uncommon, leaf spot and boll rot diseases were readily observed during the latter part of the growing season as a result of the humid conditions and moderate temperatures that occurred. Alternaria leaf spot, caused by Alternaria macrospora, was observed on Pima and Upland cotton in the El Paso Valley, whereas, stem blight symptoms associated with the fungus were found in the High Plains and Rolling Plains. A small spore-type Alternaria sp. was associated with leaf spot symptoms throughout much of the region and became quite evident during late September. Southwestern rust, caused by Puccinia cacabata, commonly occurs in the Trans Pecos and El Paso Valley; however, observations of the disease in the High Plains and Concho Valley are rare, because of limited initial inoculum. The disease was observed in several fields at a low frequency in July and early August. Several reports of an unknown leaf spot disease were made from south Texas (Brazos Co.), the Wintergarden area, as well as the Rolling Plains and Southern High Plains. In addition, two boll rot diseases of unknown origin were observed in Bailey, Cochran, Hale, Lubbock and Swisher counties in the Southern High Plains. Experiments are currently underway to characterize these unknown diseases and to prove pathogenicity on commonly grown cotton varieties. The occurrence of many of these diseases can be attributed to atypical weather conditions experienced. Observations will continue to be made in subsequent growing seasons to better determine the geographic range of current and possibly emerging diseases.