

**REPORT OF THE REGIONAL DISEASE
PROBLEMS COMMITTEE - 1996**

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Bacterial Blight Report

Texas - P. M. Thaxton and K. M. El-Zik - (Genetic improvement). The MAR-7 germplasm was evaluated for resistance to a mixture of races 1, 2, 10 and 18 of the bacterial blight pathogen (*Xanthomonas campestris* pv. *malvacearum*) in both the greenhouse (F₁ and F₃ populations) and in the field (F₄ MAR-7 progeny rows) at College station. The MAR germplasm continues to have high levels of resistance to all 19 USA races of the pathogen.

Texas - P. M. Thaxton and K. M. El-Zik - (Natural Disease Incidence and Severity). Due to the hot, dry conditions this year, natural infestation of the pathogen was not prevalent in most of Texas. Incidence of the disease occurred on the High Plains this season causing little leaf shed. Infested plant tissues were collected, and *Xcm* was isolated, and will be identified to race on the ten host differentials.

Leaf Spot Diseases

Alabama - W. S. Gasaway - Cotton in Alabama produced better yields (699 lb/A) than the 1995 crop. Overall weather conditions were ideal for optimal cotton production. Disease and nematode damage were not a serious problem in general. Fusarium wilt was practically nonexistent due to relatively cool weather in the early spring and again in the early fall. Seedling disease was somewhat of a problem on cotton planted in early April. Crusting soil prior to emergence was also a problem in some fields. Diseases that were worst than normal included Verticillium wilt in North Alabama and a leaf spot problem that caused early defoliation in certain fields across the state. Both Alternaria leaf spot and Stemphyllium leaf spot were associated with early defoliation. However, we believe that the defoliation might have been actually triggered by a potassium deficiency. Most cotton had a much heavier fruit load than normal, creating a demand for potassium. It might be possible that the demand for potassium could not be fulfilled by the plant's potassium uptake. The role of Stemphyllium and Alternaria in the early cotton defoliation is not clearly understood, but the leaf spots do appear to be coming in cotton much earlier than normal. If the problem continues, research will be necessary to determine which component (i.e. potassium deficiency or leaf spots) is the primary cause of cotton defoliation.

Phymatotrichum Root Rot Report

Texas - K. M. El-Zik and P. M. Thaxton - (Genetic Improvement). The MAR-7 multi-adversity resistance (MAR) germplasm was evaluated in the Phymatotrichum root rot nurseries at Temple and McGregor, Texas. Two tests were included in each location: Uniform MAR (UMAR) test (24 genotypes, 4 replications) and the Strains Test (80 strains and 12 cultivar checks, 2 replications). Plants killed by *Phymatotrichum omnivorum* were counted five times during the season, and the percentage of dead plants was calculated for each plot. Due to severe drought conditions this year, disease symptoms were minimal at both locations. Percent plants with symptoms ranged from 0% to 29% compared to 75% for susceptible strains under normal conditions.