AN INTERNATIONAL OVERVIEW OF F. O. V. IN COTTON FROM INDUSTRIAL PERSPECTIVE Muhammad A. Bhatti Monsanto St. Louis, MO

Abstract

Fusarium wilt of cotton (Gossypium hirsutum) caused by Fusarium oxysporum f.sp. vasinfectum (FOV) is one of the major diseases of cotton in most cotton producing areas of the world. The pathogen can be seed borne and it can spread through soil and crop residues attached to the farm machinery or can be carried in irrigation water. Recent advances in our knowledge on the development of new FOV races highlight the need for additional research in order to protect cotton industry against this pathogen. In general the Fusarium wilt of cotton is associated with Root Knot Nematode (RKN). However, FOV race 4 has been reported to cause severe disease without predisposition by the nematode. Disease expression of this race has been most severe in Pima cotton fields, but Acala and Upland cotton varieties are also susceptible depending upon inoculum levels. The spread of virulent FOV race 4 emphasizes a need for research on the identification of races of the pathogen and techniques for monitoring the distribution of populations in plant tissue and soil. Improved resistance to Fusarium wilt and Root Knot Nematode has been a successful disease management strategy in some countries especially for less virulent races of the pathogen. However, higher levels of resistance will be needed for virulent races of Fusarium wilt such as race 4 that can cause significant damage without the presence of nematode. The recent rapid increase in the distribution and incidence of Fusarium wilt in Australia suggest that new races of the pathogen are more aggressive under certain soil and environmental conditions. The disease management for new virulent races of Fusarium wilt will include a combination of comprehensive actions both from the cotton industry as well as the strategies that growers can adapt at the farm level.