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Problemas Fitosanitarios de los Cereales de Grano Pequeño en los Valles Altos de México
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Abstract

The high valleys of Mexico are regions conducive for rainfed wheat and barley cultivation, however, various diseases limit production. Minimum till practices and cereal monoculture have favored the increase of pathogens that cause foliar blotches, root rots and head scab. Scab is particularly important since it not only affects yield, but produces toxins on the grain harmful to humans and animals. Barley yellow dwarf virus and barley streak mosaic are virus diseases with low damage and also variable. Under favorable weather conditions, bacterial leaf streak, bacterial brown sheath rot and leaf necrosis can occur. Some years, barley yellow rust has caused severe losses. Wheat and barley leaf blotches can cause yield loss higher than 50%. The International Maize and Wheat Improvement Center wheat pathology and genetic breeding program in collaboration with The National Institute for Forestry, Agriculture and Livestock Research, have developed selection strategies to search for genetic resistance. This task has also been achieved through projects with universities from the United States of America and the Postgraduate college in Montecillo, State of Mexico. To be successful in selecting resistant material, specific methodologies (inoculation and evaluation) must be applied to optimize the appropriate characterization of each genotype. Another important factor for genetic resistance achievement, has been the use of wild grasses as source of resistance to various diseases. The study of pathogenic variability at the regional level, and through countries and geographical areas is strategic for future genetic breeding of wheat and barley

Keywords

Fusarium spp., Xanthomonas translucens, Pseudomonas fuscovaginae, Pseudomonas syringae pv syringae, Puccinia striiformis f. sp. hordei, Septoria tritici, Septoria nodorum, Pyrenophora triticirepentis, Cochliobolus sativus, Pyrenophora teres, Pyrenophora graminea, Rynchosporium secalis, Fusarium head scab