

Plant Pathology Seminar Series

Potato Diseases in Sinaloa, Mexico

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Abstract

Potato diseases are a limiting factor of yield and quality of potato in northern Sinaloa, Mexico. Among them, late blight caused by the Oomycete *Phytophthora infestans* is one of the most important diseases; a forecasting system was implemented since 1996 to manage the disease and is still applied now days as a guide to making the first preventive spray application of fungicides and the subsequent sprays during the growing season. White mold caused by *Sclerotinia sclerotiorum* is also an important disease in potatoes. Its incidence has increased due to the use of sprinkling irrigation systems. Based on soil temperatures influencing the germination of sclerotia of the pathogen and the subsequent production of apothecia and ascospores as well as phenology of the crops, the growers are provided with recommendations for the spray application of fungicides against the disease. Black dot caused by *Colletotrichum coccodes* is an emerging disease, which has become important in the recent growing seasons. At the present time, the pathogenicity of the fungus on tomato and bell pepper is being tested. Furthermore, the efficacy *in vitro* and *in planta* of some fungicides is being determined for controlling the disease. *Fusarium* dry rot caused by *Fusarium oxysporum*, *F. falciforme*, and *F. nygamai* reaches up to 15% in some commercial fields affecting the quality of the tubers. Since no genetic resistance is available against the disease, research projects focusing on biological control will be initiate in the 2021-2022 growing season. *Rhizoctonia* canker and black scurf is an important disease. Recent studies indicate that *Rhizoctonia solani*, the causal agent of the disease on potato infects sweet corn, and common bean, which should be considered in the implementation of crop rotation to manage the disease. Among the bacterial diseases, common scab caused by *Streptomyces scabies* and *S. acidiscabies* is the most important disease. The control measures recommended are: a) potato-seed treatment with fungicides, b) sanitation of potato-seed storages, and c) spraying Fluazinam at seeding time. Stem and tuber rot caused by *Pectobacterium* spp. are also important diseases mainly during late planting dates when warm temperatures and high levels of humidity occur due to sprinkling irrigation systems.

Biography

Ruben Felix-Gastélum earned his bachelor's degree in agricultural engineering at the Autonomous University of Sinaloa, México and his master's degree in Plant Pathology at the Colegio de Postgraduados in Chapingo, Mexico. He holds a Ph.D. degree in Plant Pathology from the University of California, Davis. Among his academic activities, he founded the Master's program on plant pathology at the Universidad Autonoma de Occidente in Los Mochis Mexico. At present, he has the distinction as a research leader from the National Council for research and technology (CONACyT). He is a fulltime professor at the Universidad Autonoma de Occidente where he teaches principles on plant pathology and plant bacteriology. He has published 52 articles dealing with plant diseases of vegetable and field crops in Sinaloa, Mexico. He has received multiple acknowledgments by the grower association in northern Sinaloa for his contribution to the management of diseases caused by viruses, fungi, and bacteria.

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