

Potentials For Improved Disease Control Through Integrated Interdisciplinary Research

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Tomato has been considered a model system for demonstrating the value of breeding for disease resistance. However there is potential for additional improvements in disease control to be gained through better integration of research in plant breeding and plant pathology. Research in the sphere of applied plant pathology can test new control compound for efficacy, determine scouting protocols, spray schedules, and develop condition-based forecast systems to reduce numbers of sprays required for disease control. However if all of this work is done using susceptible cultivars, the results obtained and protocols developed become obsolete upon release of new tolerant or resistant varieties. Similarly, plant breeding can identify and transfer new tolerances or resistances to cultivated tomato help control disease. However critical information on how best to incorporate the new varieties into a coordinated crop production system might well be lacking for extension staff and the growers they advise. True interdisciplinary interaction of breeders and pathologists, from the earliest stages of a program, provides greater efficiency to accomplish goals and more opportunities for success than is possible in separate uni-disciplinary programs. An example of this, in the coordinated control of defoliating diseases of tomato, will be discussed. An important consideration is how to build the necessary interdisciplinary interactions, for public and company researchers.