
The importance of culture collections as resources for novel sources of biocontrol agents.

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There is a growing need to rely more heavily on the use of biologically-based strategies for pest arthropod and pathogen control in agricultural crop and livestock production and eliminate the use of broad-spectrum chemical pesticides. Such a transition will require improve methods of screening for, and production of, valuable biological molecules that can function in pest/pathogen control strategies. This work presents the development of biomolecule deliver strategies and screening methods for bioactive molecules for agricultural use, and how this can be aided through the utilization of culture collections. Examples provided include: 1) the use of *Agrobacterium tumefaciens* (new nomenclature *Rhizobium radiobacter*) in a biomolecule delivery strategy for plants and why screening *A. tumefaciens*/*R. radiobacter* libraries for strains with specific activities is important; 2) screening for microbially produced bacteriocins that can be used to control the causative agent of citrus greening disease, '*Candidatus Liberibacter asiaticus*'; and 3) the potential use of culture collections in identifying biological control microorganisms for the control of various species of ticks that are vectors of serious diseases in livestock production (and in humans). This work on tick species demonstrates how we envision and are using new DNA sequencing methods as a screening tool to discover desirable biomolecules from culture collections. Finally, the advances in the development of a unique plant cell culture system for production of biomolecules discovered in culture collection screenings will be presented.