BIOLOGICAL CONTROL OF COTTON DISEASES

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Soil microorganisms play an important role in plant health, nutrient cycling, soil structure, crop residue degradation and organic matter formation. Greater knowledge and appreciation of the role of soil microorganisms will contribute to the development of sustainable cotton production. The primary focus of the CRDC project DAN96 is development of biocontrol methods for cotton diseases.

Research into biocontrol of cotton diseases at the ACRI began in 1991. Since then numerous microorganisms have been tested. Several of these have controlled seedling diseases, Verticillium wilt and Fusarium wilt effectively in the glasshouse. Recently their usefulness in controlling seedling diseases was demonstrated in a field trial at the ACRI. Biological control agents increased seedling emergence, protected the seedlings from damping-off and increased seed cotton yield. Their performance was better than, or on par with the standard fungicide treatment. In previous years, plant growth promotion effects (regardless of disease control) were also observed under field conditions.

Biocontrol methods are recognised as being more environmentally acceptable than chemical control measures. Successful use of biocontrol agents on commercial cotton farms requires studies on the ecological competence of the biocontrol agents. For large scale use a biocontrol agent needs a suitable formulation and delivery system.

We are prevented from publishing the actual results of this work as it would jeopardise potential commercialisation.