

**POTENTIAL BIOCIDES OPTIONS AND BIOLOGICAL CONTROL AGENT FOR  
*Ceratocystis paradoxa* ISOLATED FROM COCONUT GROWING AREAS OF  
SRI LANKA**

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**Abstract**

*Ceratocystis paradoxa* is a pathogen causing stem bleeding, leaf and fruit rot in variety of crop plants including coconut. Since *C. paradoxa* is associated with coconut trees, there is an opportunity for the pathogen to be existed in coir and coir products as well. According to the quarantine requirements, this pathogen has to be free in coir and coir products that are exported from Sri Lanka. During this study the pathogen was isolated from the samples of coir collected from island wide coconut growing regions of Sri Lanka. Colony morphology and spore morphology were compared among these isolates. Bio-control and the sensitivity of the isolates to the antagonist were evaluated against *Trichoderma viride*. The biocide effects were evaluated against methyl bromide fumigation, formaldehyde fumigation and water vapor heat treatment.

According to the results the pathogen was present in all the samples collected from different locations of the coconut growing regions in Sri Lanka. The isolated colonies grown on Potato Dextrose Agar (PDA) plates produced two asexual spores; the endoconidia and chlamydospores. Endoconidia are formed in the conidiophores making long chains. The spore morphology comply with available literature that characterized *C. paradoxa*. Biological control of the pathogen using an antagonist; *T. viride* is equally effective for all the isolates as the biological control agent by killing the vegetative growth and losing the spore viability. Formaldehyde fumigation is proved as an alternative to the methyl bromide fumigation for elimination of *C. paradoxa* in coir products. The water vapor heat treatment when full-core temperature of coir dust matrix is reached up to 70 °C the viable spores of the pathogen are destroyed.

Keywords: *Ceratocystis paradoxa*, *Thielaviopsis paradoxa*, *Trichoderma viride*.  
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