

# Sclerotinia Leaf Drop of Lettuce - Screening New Fungicides for Disease Control in 1986.

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## ABSTRACT

In western Arizona, the incidence and severity of lettuce drop, caused by the fungus Sclerotinia sclerotiorum, can be significant during February, March and April. During 1986 a field trial was established to test new fungicides for disease control. Disease severity in the inoculated lettuce planting was significantly reduced by Baycor, Spotless and CGA-449, as well as the registered fungicides Ronilan and Rovral. Further testing of Baycor, Spotless and CGA-449 will be performed next year.

## INTRODUCTION

Sclerotinia drop or lettuce drop is a major disease of lettuce. Cool, moist weather favors development of the disease, caused by the fungus Sclerotinia sclerotiorum.

The effectiveness of fungicides such as Rovral (iprodione) and Ronilan (vinclozolin) have been demonstrated. These fungicides are registered for use on lettuce to control drop. However, we should continue to search for new compounds effective against his disease. Fungicides now registered could be lost in several ways, ranging from future environmental problems to the development of resistance by Sclerotinia. The goal of this research is to identify new fungicides that can control lettuce drop.

## MATERIALS AND METHODS

To test the efficacy of new fungicides for control of lettuce drop, a disease nursery was established in the field (1). Inoculum of Sclerotinia sclerotiorum was produced in the laboratory in flasks by seeding moist sterilized barley grain with sclerotia of the fungus. After 3 months incubation, abundant sclerotia were formed. The contents of each flask were then removed, spread on a clean surface and dried. The resultant sclerotia and infested grain mixture was used as inoculum.

Lettuce (Vanguard 75) seed was planted in double row beds at the Yuma Valley Agricultural Center. After thinning, about 400 cc of the dried sclerotia and infested grain mixture was distributed evenly in lettuce plots in bands 20 inches wide and 50 feet long. At this stage of growth, the lettuce plants have not formed a canopy over the surrounding soil, and the inoculum can be distributed close to the plants.

After distribution of the inoculum, the test fungicides were applied. A second application of fungicides was performed 3 weeks later. Frequent irrigations maintained high soil moisture throughout the growing season. Disease development was monitored by periodically counting the number of collapsed lettuce heads.

## RESULTS AND DISCUSSION

The results of this fungicide trial are summarized in Table 1. All tested compounds significantly reduced lettuce drop, provided that a sufficient rate of fungicide was applied. The best performing compounds wre Ronilan and Rovral, both of which are registered for use to control lettuce drop.

Significant disease control was achieved by application of Baycor, Spotless and CGA-449. Further testing of these compounds will be conducted next year.

## REFERENCE

1. Troutman, J.L. and J.C. Matejka. 1982. Establishing and maintaining a lettuce drop nursery. Plant Dis. 66:415.

**Table 1. Effect of fungicides on development of lettuce drop**

Treatment	Rate lb a.i./a	Percent diseased heads
Untreated	---	51 a*
CGA 449	0.125	48 ab
CGA 449	0.250	46 abc
Spotless	0.05	43 abcd
Baycor	0.50	40 bcde
Spotless	0.20	38 cdef
Spotless	0.10	38 cdefg
Baycor	0.25	34 defgh
CGA 449	0.50	31 efghi
CGA 449	1.0	26 hij
Rovral	1.0	18 jk
Ronilan	1.0	15 k

*\* Values followed by the same letter are not significantly different at the 5% probability level according to Duncan's Multiple Range Test.*