

**Soil Technologies Corp.**  
**Research and Development Department**



## **Research Report**

**Title:** Evaluation of Fungastop and Procymidone Efficacy Against Downy Mildew

**Location:** Japan

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**Crop:** Cucumber

**Date:** 2001

### **Abstract:**

The purpose of this study is to evaluate the efficacy of the naturally-derived fungicidal product, Fungastop<sup>1</sup> to that of the chemical pesticide, Procymidone<sup>2</sup> against downy mildew, *Pseudoperonospora cubensis*. After receiving one of six treatment protocols, cucumber plants were inoculated with *P. cubensis* and were observed five days after inoculation. Both products demonstrated an ability to control *P. cubensis* in the cucumber plants. At all rates Procymidone had a 100% protective value. Fungastop provided a 92.4% protective value.

### **Methods:**

Cucumber plants were grown to the first and second leaf stage and treated with one of the following protocols; Fungastop at dilution rates of 100, 200, and 400 and Procymidone at rates of 16.7, 8.4, and 4.2 ppm. A control group of plants were left untreated. The plants were inoculated with *P. cubensis*. Five days after inoculation, the cucumber plants were evaluated for disease severity and treated plants were compared to the control.

<sup>1</sup>Fungastop is an EPA 25b list antifungal and antibacterial product manufactured by Soil Technologies Corp. in Fairfield, IA, USA

<sup>2</sup>Procymidone is a chemical pesticide CAS #32809-16-8

**Results:**

Disease severity and protective values are shown in Table 1 for each protocol. The chemical pesticide Procymidone demonstrated 100% protective value at all dosage rates. Fungastop also demonstrated high protective value with an average of 87.3% and at its highest concentration demonstrated a protective value of 92.4%. The untreated control group expressed a disease severity of 82.5%.

Treatment	Dilution	Disease Severity (%)	Protective Value (%)
Fungastop	X 100	6.3	92.4
	X 200	12.5	84.8
	X 400	12.5	84.8
Procymidone	16.7 ppm	0.0	100.0
	8.4 ppm	0.0	100.0
	4.2 ppm	0.0	100.0
Untreated	----	82.5	----

Table 1: Results of tests across all protocols

**Conclusions:**

Both Fungastop and Procymidone showed efficacy against *P. cubensis*. Procymidone had a protective value of 100% five days after being exposed. Fungastop had a 92.4% protective value at a 100:1 dilution rate.