

Chapter 2

EVALUATION OF SILICON AND THE BIOLOGICAL CONTROL AGENT, ECO-T, FOR THE CONTROL OF *SCLEROTINIA SCLEROTIORUM* ON PEANUTS (*ARACHIS HYPOGAEA*)

ABSTRACT

Peanuts (*Arachis hypogaea* L.) are an important oil-seed crop but are prone to fungal infections, including *Sclerotinia sclerotiorum* (Lib.). To determine if silicon (Si) plus the biological control agent, Eco-T, controlled the pathogen more effectively than Si alone, plants were grown in 15 cm diameter pots in a glasshouse. Three seeds were placed in each pot. Five replicates were used. Soluble potassium silicate (K_2SiO_3) at 0, 50, 75, 100, 200 ppm was added to the irrigation water immediately upon seed germination. Seeds were either treated with Si and Eco-T or treated with Si only. The third lateral branch of each plant was inoculated with *S. sclerotiorum* by using the cut stem method, two weeks after the application of Si. Lesion length was measured every 3-4 days for 18 days post inoculation (dpi). The trial was repeated. Silicon at 200 ppm plus Eco-T resulted in a significantly lower final lesion length (17.7 mm) at 18 dpi, than in the plants treated with Si at 200 ppm only (69.7 mm). Dry weight was significantly higher (2.30 g) for 200 ppm Si plus Eco-T treated plants compared to those treated with 200 ppm Si only (1.91 g).