

METHODS FOR CULTURING *FUSARIUM LATERITIUM*. Nabaraj Banjara, John L. Lindquist, Gary Yuen, Graduate Research Assistant and Associate Professor, Department of Agronomy and Horticulture, University of Nebraska, Lincoln, NE 68583 and Professor, Department of Plant Pathology, University of Nebraska, Lincoln, NE 68583.

Research has shown that the soil fungus, *Fusarium lateritium*, can be pathogenic to velvetleaf (*Abutilon theophrasti*) in the field. To effectively quantify the effect of *F. lateritium* on velvetleaf demographic parameters in the field, large areas of soil lacking the fungus will need to be inoculated with sufficient populations of *F. lateritium* to elicit a pathogenic effect. Cultural media and temperature affect fungal growth and the number of reproductive structures produced. Two experiments were conducted to determine optimal temperature conditions and media for culturing *F. lateritium* to produce sufficient quantities of reproductive structures for mass soil inoculation. In the first experiment, a pure culture of *F. lateritium* was used to inoculate ½ Potato Dextrose Augar (PDA) media in 12, 9 cm diam Petri dishes. Two dishes were placed in each of 6 growth chambers set at 12, 17, 20, 28, 32 and 37 C. Growth of *F. lateritium* was quantified by measuring the diameter of colonies after 6 d of growth. The second experiment was conducted to quantify *F. lateritium* growth in three types of culture media, tall fescue (*Festuca arundinacea*) seed (15 g), wheat straw (15g dry) with a nitrogen source (3 g ammonium nitrate, NH_4NO_3), and wheat straw (15 g) plus tall fescue seed (3g). Each media was inoculated with *F. lateritium* grown on ½ PDA media and incubated for two weeks, then dried at room temperature for one week. Dry samples were sieved with a 0.2 mm screen and thoroughly mixed with 1000 gram of sterile soil to produce a stock inoculum soil. Number of *F. lateritium* colony forming units (CFU) per gram of stock soil was determined by dilution plating on Nash Snyder (NS) media. *F. lateritium* growth was optimal between 20 and 28 C and completely inhibited above 37 C. The stock soil produced from growing *F. lateritium* on only 15 g tall fescue seed produced 6×10^5 CFU's per gram of soil compared to only 4.5×10^5 and 7500 CFU's per g soil for wheat straw plus tall fescue seed or wheat straw with nitrogen source, respectively. We will grow *F. lateritium* on tall fescue seed to inoculate field soils and quantify its effect on velvetleaf demographic parameters in monoculture and in mixture with corn.