

Reprinted with permission from: 1987 Leafy Spurge Annual Meeting. Fargo, North Dakota. July 8-9, 1987. p. 17.

Published by: Great Plains Agricultural Council: Leafy Spurge Symposium.

Alfalfa rust (*Uromyces striatus*) as a possible control of leafy spurge

G. D. STATLER, M. A. MCVEY, R. M. HOSFORD, JR. and J. G. JORDAHL

Professor, Specialist, Professor and Specialist, respectively, Department of Plant Pathology, North Dakota State University, Fargo, ND 58105

Leafy spurge (*Euphorbia esula*) is a serious pest in pasture lands of North Dakota and other states. Controls are being sought. *Uromyces striatus* (alfalfa rust) is a possible candidate for biological control of leafy spurge. Alfalfa rust was found infecting leafy spurge but not alfalfa (*Medicago sativa*) in the fall of 1982, southwest of Lidgerwood, N.D., in a meadow of alfalfa and brome grass. This site has been monitored for disease spread.

The rust (*U. striatus*) spread slowly during 1982-84. In 1985, it spread to scattered plains over about 3 acres of spurge. Spread was slower in 1986. Urediospores were found on alfalfa in the field in 1985, then produced in the greenhouse and stored in liquid nitrogen.

There are problems conducting research with *U. striatus*. The most difficult is that leafy spurge is the alternate host. The pycnial and aecial stage occur on spurge. The cycling stage (uredial) and the overwintering stage (telial) occur on alfalfa. Therefore, in order to inoculate spurge, one must produce and germinate teliospores. We have been unsuccessful to date in transferring rust from alfalfa to leafy spurge due to difficulties of teliospore germination.

In order to successfully conduct research of this nature, we need to find a rust which cycles on leafy spurge since *U. striatus* cycles on alfalfa. Dr. Hosford has collected and we have tested several isolates of *Melampsora* that have uredial stage on petty spurge. To date, we have found only necrotic flecks after inoculation.