

EIDE, JOHN D., and GARRY A. SMITH, USDA, Agricultural Research Service, 1501 N. 15th St., Fargo, ND 58103-8477. Science and the role of Fusarium oxysporum f. sp. betae in response to Fusarium oxysporum f. sp. betae. We are studying the response to Fusarium oxysporum f. sp. betae. The objective of this study is to isolate the PR protein for use in antibody production. These antibodies will be used to screen sugarcane for Fusarium resistance. The PR protein was isolated from leaf spots resistant to Fusarium oxysporum f. sp. betae. The apparent molecular weight of the chitinase was 42 kd as determined by polyacrylamide gel electrophoresis.

HARVESON, R. M.\*, and C. M. RUSH, Texas Agricultural Experiment Station, P.O. Drawer 10, Bushland, TX 79012. - Studies of vegetative compatibility among isolates of Fusarium oxysporum f. sp. betae causing different disease symptoms.

Over a three-year period (1992-1994), 160 *Fusarium oxysporum* f. sp. *betae* isolates were collected from sugar beet and pigweed plants from seven counties in Texas. All isolations were made from surface-sterilized root pieces grown on half-strength potato dextrose agar. They were separated into two groups -- those causing tip rot and those causing only vascular necrosis. They were then stored on either sterile filter paper or soil. 132 of the 160 isolates were actually used for vegetative compatibility evaluations. 28 isolates were chosen as testers. They were paired in all possible combinations to determine the number of vegetative compatibility groups (VCGs) present. Those that produced dense, aerial mycelia at point of colony intersection were considered vegetatively compatible. Those that are vegetatively compatible are considered to be genetically similar and are placed in the same VCG. Six VCGs have been identified from the 28 testers. Most of the isolates (19 of 28) fall into one group. The remaining 104 isolates are being screened against one member of each of the 6 established VCGs. To date, VCG 1 has 53 members, with VCGs 2-6 containing 2, 12, 2, 2, and 2 isolates, respectively. No relationship exists between VCG and root rot symptom or host. Results indicate that endemic populations of *F. oxysporum* have been present in Texas for some time.