

MONOCLONAL ANTIBODIES FOR RAPID DIAGNOSIS OF SUMMER PATCH  
AND NECROTIC RING SPOT DISEASES OF TURFGRASSES

OHIO STATE UNIVERSITY  
Columbus, Ohio

Drs. William W. Shane &  
Stephen T. Nameth,  
Principal Investigators

1987 Research Grant: \$10,000

THIS REPORT REPRESENTS ONGOING WORK WITH 1987 FUNDS

Summer patch and necrotic ring spot diseases of Kentucky bluegrass annual bluegrass, and other turf grasses are extremely difficult to diagnose with traditional techniques. Research at Ohio State University is focused on the use of immunological techniques for rapid diagnosis of these two diseases.

Antibody-producing clones were developed for the causal agent of necrotic ring spot (Leptosphaeria korrae [LK]). Sixteen original clones were subcloned, purified, and screened against LK and non-LK fungi, soil, plant tissue. A single clone with the desired selectivity was increased for bulk antibody production. The final antibody reacted strongly against all verified strains of LK tested (including three from bermudagrass) and did not react significantly with 42 non-LK antigens (including (Magnaporthe, Gaumannomyces, plant tissue, soil and common plant-inhabiting fungi). Final refinements underway are: testing of LK antibodies using field-infected plant material and optimizing assay procedures for routine clinic use.

Similarly, monoclonal antibodies for summer patch (Magnaporthe poae) are under development. The first screen has been completed and indicated that the mouse antibodies react well with the original M. poae strain used for immunization. Subcloning, purification, and extensive screening are underway to acquire antibodies of the desired selectivity.