

## **GENETIC DIVERSITY BETWEEN *AGROSTIS* SPECIES BY AFLP ANALYSIS AND STUDIES ON DISEASE RESISTANCE TO *TYPHULA INCARNATA* IN CREEPING BENTGRASS**

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The turfgrass industry sees the need for better breeds of turfgrasses with a focus on improving tolerance to stress like drought, heat, salinity and better resistance to major disease like snow mold blight. Bentgrass, *Agrostis* spp. derivation from Greek: grass, forage, has about 220 species distributed throughout the world. It is perennial or annual outcrossing polyploids ( $x=7$ ,  $2n=14, 16, 21, 28, 42$ , etc.), and is widely used for putting greens and golf courses. Very little is known about their genetic relationships and there is much confusion regarding assignment of groups and classification. In this study we investigated the genetic diversity between 40 accessions of plant introductory lines representing 14 *Agrostis* species from several countries by amplified fragment length polymorphism (AFLP). Also we studied the comparative genetic diversity between the creeping bentgrasses represented by old and new cultivars, experimental lines and germplasm accessions through AFLP.

Bentgrass is also susceptible to a wide range of diseases caused by different fungi. One economically devastating disease is gray snow mold, caused by *Typhula incarnata*. There are no known resistant cultivars of *Agrostis palustris* (creeping bentgrass) and other turfgrass to snow mold. The main focus of this research is to screen and identify resistant plants of creeping bentgrass from a population sampled in Michigan and also from the plant introductory lines. Over 30 creeping bentgrass clones have shown a good resistance to snow mold disease. Those clones will be used in our breeding program as snow mold resistant parents for new developed cultivars.