

PANELLA, LEE, USDA, Agricultural Research Service, 1701 Center Ave., Fort Collins, CO 80526-2083. **Pathogenicity of different Anastomosis Groups and subgroups of *Rhizoctonia solani* on sugar beet.**

*Rhizoctonia* root and crown rot (caused by *Rhizoctonia solani*) continues to be a problem in most sugar beet-growing areas in the United States, and is a growing problem world wide. Understanding the genetic variability of the pathogen provides information for diagnosis and management of the disease. Ninety four isolates of *Rhizoctonia solani* representing fifteen Anastomosis Groups (AG) or subgroups were tested for pathogenicity on susceptible sugar beet hybrid, 'Monohikari', and the resistant germplasm, 'FC708CMS'. Ground, *R. solani*-infested barley was placed by the root of 10 wk old plants in pots in the greenhouse. Roots were evaluated on a Disease Index (DI) of 0 (no damage) to 7 (dead), 28 d after inoculation. Data were analyzed using PROC MIXED (SAS), and means were separated with Dunnett's one-tailed *t* test, which tested if any isolate caused a significantly ( $p = 0.05$ ) higher DI than the uninoculated control. With few exceptions, only isolates from AG-2-2 (IIIB or IV) were pathogenic on sugar beet, and those from AG-2-2 IIIB were more virulent than the isolates from the AG-2-2 IV subgroup.

Isolate	Mean DI	SE
AG-2-2 IIIB	2.0	0.2
AG-2-2 IV	0.3	0.1

\* All lines were PI hybrid except for O-type line NR-184.  
 \* Includes root and crown.  
 † Represents a scale of 0-7, 2 being most severe.  
 ‡ Value represents the mean of 2 replicates (10 plants per).  
 § Means followed by the same letter are not significantly different according to Dunnett's multiple range test ( $P=0.05$ ).