REGISTRATION OF ‘RIEL’ OAT

‘RIEL’, a spring oat (Avena sativa L.) (Reg. no. 313), was developed by the Oat Rust-Area Project Group, which is coordinated from the Agriculture Canada Research Station, Winnipeg, Manitoba. It bears the accession no. W80474 and OT231 and was tested in the Western Oat Co-op Test from 1982 to 1984. Riel was licensed (no. 2535) by the Food Production and Inspection Branch of Agriculture Canada in 1985.

Riel originated from the cross RL3057 × ‘Otana’ made in 1977. RL3057 resulted from a complex series of crosses involving ‘Kent’, ‘Pendek’, ‘Rodney’, ‘Kelsey’, ‘Harmon’, ‘Rosen’s Mutant’, CI6792, a sister line of ‘Hudson’, and the Avena sterilis L. accessions CAV2647, CAV2648, and CAV5165. Kent, from Australia, is the source of the red (tan) hull color in Riel, which is the first red oat to be licensed in Canada. An F₂ line was bulked in 1979 to form this cultivar. The F₂ and F₄ generations were grown at Gore, New Zealand, and the F₂ and F₄ were grown in nurseries at Glenlea, Manitoba, which were artificially inoculated with stem rust caused by (Puccinia graminis Pers. f. sp. avenae Eriks. and E. Henn.), crown rust caused by (Puccinia coronata Cda. f. sp. avenae Eriks.) and smut caused by [Ustilago avenae (Pers.) Rostr. and U. kollerii Wille].

Riel possesses genes Pc-38 and Pc-39 that confer resistance to all known isolates of oat crown rust. It possesses genes Pg-2 and Pg-13, and possibly Pg-1 and Pg-9 for resistance to stem rust, but like ‘Dumont’ and ‘Fidler’ is susceptible to the rarely occurring race NA26. Like Dumont and Fidler it is resistant to all races and collections of loose and covered smut to which it has been tested. Riel appears to be very susceptible to barley yellow dwarf virus.

Based on 4 yr of testing, Riel has exceeded the yield of Dumont and Fidler in Manitoba by 4 and 10%, respectively, but yields poorly in Saskatchewan and Alberta. It also has yielded well in the USDA Cooperative Uniform Oat Performance Nursery, where it ranked first and third in 1984 and 1985. Riel is the same height as ‘Dumont’ and slightly better straw strength.

Riel’s panicle is equilateral but branches slightly to one side. Kernels usually are light tan, but red to almost white under different growing conditions. The lemma has a pointed tip and a few weak basal hairs. Riel’s grain has about 2 percentage points higher protein than other Canadian oats, and Dumont has 2 percentage points lower hull and 1 kg/L higher test weight. Oil content is similar to Dumont. Riel has slightly better resistance to after harvest sprouting than other Canadian oats.

Riel is well adapted for use in Manitoba because of its good yield and superior stem and crown rust resistance. It is named after Louis Riel, a famous Metis leader.

A total of 1500 kg of pedigree seed was sown in 1985. The Canadian distributor will be Secan Association, but breeders’ seed will be maintained by the Seed Section, Agriculture Canada Experimental Farm, Indian Head, Saskatchewan.


References and Notes