REGISTRATIONS OF CULTIVARS

Registration of ‘Roane’ Wheat

‘Roane’ (Reg. no. CV-899, PI 612958) is a full-season, high yielding, apically awnleted soft red winter wheat (Triticum aestivum L.) with exceptionally high test weight and resistance to a broad spectrum of plant pathogens and insect pests. The Virginia Agricultural Experiment Station released Roane in the fall of 1999. Roane wheat was named in honor of Curtis W. Roane, Professor Emeritus, Virginia Polytechnic Institute and State University, for his contributions toward the development of disease and insect resistant small grain cultivars.

Roane was derived from the three-way cross of VA 71-54-147/’Coker 68-15’/IN65309C1-18-2-3-2. The first two parents, VA 71-54-147 (Cltr 17449) and Coker 68-15 (Cltr 15291), are also parents of the cultivar Saluda (Starling et al., 1986). The third parent, IN65309C1-18-2-3-2, was developed by Purdue University and obtained from the 1983 USDA-ARS Uniform Eastern Soft Red Winter Wheat Nursery (UESRWWN). The final cross was made in 1984, and the population advanced, using a modified bulk breeding method. Roane was derived as an F_{7:8} head row and tested under the designation VA 93-54-429.

Coleoptiles of Roane are predominantly red. Juvenile plants exhibit a prostrate growth habit. Plant color at booting is blue green, and a waxy bloom is present on the stem and flag leaf sheath. Anther color is yellow. Spikes are tapering, lax, and apically-awnleted. Glumes are medium in length and width, and have oblique shoulders with acute beaks. Kernels of Roane are red, soft, and ovate with a narrow and middeep crease, rounded cheeks, and a midlong brush. The phenol reaction is brown.

Head emergence (Day of Year 125) of Roane is similar to that of ‘FFR 555W’. Plant height of Roane (88 cm) is 2.5 cm taller than ‘Coker 9803’ and 5.0 cm shorter than ‘Jackson’. On the basis of Belgian lodging score (0.2–10), Roane has good straw strength with a 5 yr average score of 1.8, vs. 3.7 for Jackson. On the basis of average winter hardiness ratings (0–9 scale) from the 1996 and 1997 USDA-ARS Uniform Eastern Soft Red Winter Wheat Nurseries, Roane (5.3) is moderately hardy, based on comparisons with Pioneer Brand ‘2548’ (6.0), ‘Cardinal’ (6.1) and ‘Caldwell’ (6.2). Across 4 yr (1994–1997), the average grain volume weight of Roane was 770 kg m⁻³, which was 50 kg m⁻³ higher than the average of all genotypes evaluated in the Virginia Official Variety Test. In each of the past 4 yr, the average test weight of Roane has been 760 kg m⁻³ or higher in statewide tests. On the basis of quality evaluations conducted from 1994 to 1999 by the USDA-ARS Soft Wheat Quality Laboratory in Wooster, OH, milling and baking qualities of Roane are similar to those of ‘2580’.

With eight independent Allis-Chalmers millings, Roane had average values of 746 g kg⁻¹ for straight-grade flour yield, 12.5% for endosperm separation index, 59.3% for alkaline water retention capacity, 30.4% for break-flour recovery, and 5.9% for index of protein concentration.


The identity of the resistance genes in Roane is not known, but it likely inherited the gene Pm4a from VA 71-54-147, and also may possess Pm3a from VA 65309C1. Roane was resistant to 34 of 38 isolates of E. graminis DC. f. sp. tritici Eriks. & E. Henn. However, Roane has expressed a significant reaction is brown. level of resistance to Hessian fly even in areas where biotype Lr11 is predominant. Roane lacks any of the resistance to stem rust (caused by P. graminis f. sp. tritici Eriks. & E. Henn.). Roane is moderately susceptible to leaf blotch (caused by Septoria tritici Rob. et G. W. White) and glume blotch (caused by Stagonospora nodorum Berk. & bras.). Data on Fusarium head blight (caused by F. graminearum Sacc.) show Roane to be susceptible to leaf blotch (caused by Septoria tritici Rob. et G. W. White) and glume blotch (caused by Stagonospora nodorum Berk. & bras.). Data on Fusarium head blight do not indicate that Roane is resistant to Hessian fly [caused by Mayetiola destructor (Say)].

In yield trials conducted across 26 environments from 1994 to 1997, Roane had an average grain yield of 5510 kg ha⁻¹, which was not significantly different from the highest yielding commercial cultivar, 2580 (5710 kg ha⁻¹). For the 1994–1997 period, Roane had the highest average test weight (760 kg m⁻³) and was the highest yielding cultivar in the UESRWWN at 27 locations in 1996, and 29 locations in 1997. For grain yield, Roane ranked 10th among 33 entries in the Virginia Official Variety Test. Across 4 yr (1994–1997), the average grain volume weight of Roane was 770 kg m⁻³, which was 50 kg m⁻³ higher than the average of all genotypes evaluated in the Virginia Official Variety Test. In each of the past 4 yr, the average test weight of Roane has been 760 kg m⁻³ or higher in statewide tests. On the basis of quality evaluations conducted from 1994 to 1999 by the USDA-ARS Soft Wheat Quality Laboratory in Wooster, OH, milling and baking qualities of Roane are similar to those of ‘2580’.

Authorized seed classes of Roane are Breeder’s and Certified. Roane is protected under the act of Plant Variety Protection Act of 1994 (Applicable: PVP Certificate no. 200000148). The Department of Environmental Sciences and the Virginia Polytechnic Institute, Blacksburg, VA, will maintain seed stocks of Roane. Roane is widely adapted, based on a 2 yr performance in the quality evaluations conducted from 1994 to 1999 by the USDA-ARS Soft Wheat Quality Laboratory in Wooster, OH, milling and baking qualities of Roane are similar to those of ‘2580’.