Registration of ‘Ross’ Meadowfoam

The meadowfoam (Limnanthes alba ssp. alba Benth.) cultivar Ross (Reg. no. CV-13, PI 634713) was developed and released in 2003 by the Oregon Agricultural Experiment Station. Ross was developed by three cycles of recurrent half-sib family selection for increased seed yield and lodging resistance from OMF58, a heterogenous, open-pollinated population. The first and second cycles of selection were performed between 1990 and 1997 (Crane and Knapp, 2000; 2002). Seed increases and field tests of Ross were performed at Corvallis, OR, between 1997 and 2003. Half-sib family seed for cycle three \((C_3)\) was produced from open-pollinated plants in an isolated field in 1997–1998. Ross was developed by field testing 114 \(C_1\) half-sib families in 1998–1999, selecting 10 families for seed yield, bulking nearly equal quantities of remnant seed of the selected families, and growing and intermating the selected families in an isolated field in 1999–2000. Breeder seed of Ross was produced in an isolated field in 2000–2001 from OMF58 \(C_3\) seed produced by intermating selected \(C_3\) families. Breeder seed was further increased in an isolated field in 2001–2002.

Ross was tested as OMF164 in replicated yield trials at Corvallis, OR, from 2000 to 2003, where single prophylatic sprays of the insecticide Capture (bifenthrin) were applied in January or February of each year to control meadowfoam fly \((Scaptomyza apicalis\) Hardy\) (Fisher et al., 2000). Ross was tested in unsprayed replicated yield trials at Corvallis from 2001 to 2003. Three check cultivars, Wheeler, Knowles, and Floral (Jolliff, 1994; Crane and Knapp, 2000, 2002) were grown in both sprayed and unsprayed yield trials. Seed yields were significantly greater for Ross than check cultivars in individual trials and across trials. The cultivar–trial interaction was non-significant and cultivar rankings for seed yield were identical in every trial. The seed yield for Ross across trials was 1681 kg ha\(^{-1}\), compared with 1529 kg ha\(^{-1}\) for Wheeler, 1307 kg ha\(^{-1}\) for Knowles, and 1084 kg ha\(^{-1}\) for Floral (LSD 0.05 = 127 kg ha\(^{-1}\)). The last two cycles of selection in OMF58 increased seed yield by 374 kg ha\(^{-1}\), and three cycles of selection in OMF58 produced a cultivar outyielding Floral by 597 kg ha\(^{-1}\).

The seed oil concentration of Ross \((292 g kg^{-1})\) was significantly greater than Floral \((277 g kg^{-1})\) (LSD 0.05 = 10 kg ha\(^{-1}\)), whereas the seed oil concentrations of Ross, Wheeler \((293 g kg^{-1})\), and Knowles \((290 g kg^{-1})\) were not significantly different. Ross produced significantly more seed oil per hectare than the other cultivars tested. The mean seed oil yield for Ross across trials was 490 kg ha\(^{-1}\), compared with 448 kg ha\(^{-1}\) for Wheeler, 378 kg ha\(^{-1}\) for Knowles, and 308 kg ha\(^{-1}\) for Floral (LSD 0.05 = 42 kg ha\(^{-1}\)). The 100-seed weights for Ross, Wheeler, Knowles, and Floral were 0.89, 0.99, 0.95, and 1.03 g, respectively. Seed oil concentrations of Ross were significantly greater compared with 631, 46, 137, and 160 g kg\(^{-1}\) from Wheeler seed oil.

Ross is adapted for production as a winter annual in the Willamette Valley of Oregon and other milder climates. There were no significant differences among growing seasons or days to physiological maturity among genotypes. The upright growth habit and lodging resistance of Ross is similar to Wheeler, while both were more resistant to nematode than the other cultivars. Wild meadowfoam possesses a prostrate growth habit.

Breeders seed of Ross is maintained by the Oregon Agricultural Experiment Station. Recognized seed companies are Breeder, Foundation, Registered, and Certified. Small quantities of seed may be obtained from the corresponding author for research purposes for a period of 10 years.

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References


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Registration of ‘S99-3181’ Soybean

‘S99-3181’ soybean \((Glycine max\) (L.) Merr. \([\text{Reg. no. CV-136}, \text{PI 635039}]\)) was developed by the Mississippi State University \(\text{Department of Crop Science, 2350 \text{Hill Hall Road, Mississippi State, MS 39762}}\)