REGISTRATION OF ‘ENDURE’ ALFALFA

ENDURE alfalfa (Medicago sativa L.) (Reg. no. 140) was developed by Nickerson American Plant Breeders, Inc. The experimental designation was NAPB 108.

‘Endure’ was developed from populations which had undergone selection for winterhardiness, general desirability, resistance to Phytophthora root rot caused by Phytophthora megasperma Drechs. f. sp. medicaginis Kuan and Erwin, anthracnose caused by Colletotrichum trifolii Bain, bacterial wilt caused by Corynebacterium insidiosum (McCull.) H.L. Jens., and Fusarium wilt caused by Fusarium oxysporum Schlecht f. sp. medicaginis (Weimer) Snyder and Hans. at Ames, Iowa. The populations trace predominately to ‘Atlas’, ‘Olympic’, ‘Apollo’, ‘Thunder’, and ‘Armor’ with smaller contributions from several other cultivars. These populations were subjected to two cycles of field selection (One cycle each at Hermiston, OR, and Nampa, ID) for resistance to Verticillium wilt caused by Verticillium albo-atrum Reinke and Berth.

Endure is similar to ‘Ranger’ in fall dormancy. It has resistance to Phytophthora root rot (similar to ‘Agate’), bacterial wilt (equal to ‘Vernal’), Fusarium wilt (similar to Agate) and Verticillium wilt (similar to ‘Vertus’) and moderate resistance to anthracnose. Endure has been tested in the north central and northwest regions and is intended for use in these general areas for hay, dehydration and green chop purposes where Verticillium wilt limits production.

Approximately 6750 seedlings from the second cycle of selection for resistance to Verticillium wilt were inoculated and transplanted to an isolated field near Nampa, Idaho. Approximately 4200 symptomless plants were allowed to set seed, which was designated breeder seed. Leafcutter bees [Megachile rotundata (F.)] were used for pollination. Seed increase is limited to one generation each of breeder, foundation, and certified seed classes. Certified seed may be grown from breeder or foundation seed. A maximum of 3 and 5 harvest years is permitted on stands producing foundation and certified seed, respectively. Foundation seed production will be limited to the northern area of adaptation.

Endure was favorably reviewed by the National Certified Alfalfa Variety Review Board in 1983. Application for a plant variety protection certificate has been made.

J. B. MOUTRAY, W. G. HARTMAN, AND J. C. HAIGHT (2)

References and Notes

1. We gratefully acknowledge the guidance of P. N. Reade, USDA-ARS, and the students and staff of the Agronomy Department of the University of Idaho for their assistance in the development of ‘Endure’. One cycle of selection and evaluation at Idaho State College, Pocatello, Idaho, was conducted by P. N. Reade under the direction of D. M. Neilsen, and the second cycle of selection and evaluation at St. Paul, MN (1), and 36% and 21% for Dona Ana and Agate, respectively, in New Mexico. Forage yields have been similar to Mesilla, except in areas where Phytophthora root rot reduced stand density. In the 2nd and 3rd production years, Endure exceeded the yield of Mesilla by 12 and 13%, respectively.

Dona Ana traces to Turkistan (23%) and Chilean (77%). Dona Ana is adapted to hay producing areas of New Mexico. Forage yields have been similar to Mesilla in areas where Phytophthora root rot reduced stand density. In the 2nd and 3rd production years, Endure exceeded the yield of Mesilla by 12 and 13%, respectively.

The 141 parent clones will be replicated in geographically isolated crossing blocks to produce breeder seed. Seed classes will be breeders, foundation, registered, and certified. A maximum of 3, 5, 6, and 6 harvest years is permitted on breeders, foundation, registered, and certified seed fields, respectively. All classes of seed will be produced in the southern or central areas of the United States. Application for breeders or foundation seed should be made through the New Mexico Crop Improvement Association, Box 3CL, New Mexico State University, Las Cruces, NM 88003.

Dona Ana was favorably reviewed by the National Certified Alfalfa Variety Review Board in December 1983. Application for a plant variety protection certificate has been made.

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