REGISTRATION OF GERMPLASMS

REGISTRATION OF IL 83-2 ALFALFA
GERMPLASM

IL 83-2 (Reg. no. GP-193) is an eight-clone alfalfa (Medicago sativa L.) synthetic developed and released March 1985 as a germplasm source by the University of Illinois Agricultural Experiment Station at Urbana-Champaign. This germplasm was derived from ramets of plants from a four-yr-old alfalfa cultivar trial at Brownstown, IL. These cultivars consisted of 'WL303', 'Saranac', 'Honeoye', and 'Vernal'. The original 15 ramets possessed distinctive branched roots. These were intercrossed and progeny exhibiting at least three branched roots within 2.5 cm of the crown and with no major tap root were selected during the first year (1). Selected progeny were backcrossed to two of the original clones. Backcross progeny were grown for 1 yr and selected for branched roots. IL 83-2 resulted from intercrossing 55 plants from the BC-3 generation.

IL 83-2 has over 35% branched-rooted plants and has good resistance to heaving. It has good winter hardiness with a rating of 5.2 compared to 7.5 for 'Ladak' and 4.5 for Saranac. In a test for bacterial wilt [caused by Corynebacterium insidiosum (McCull) H. L. Jens] it was 58% resistant. It possesses the same level of resistance to phytophthora root rot (caused by Phytophthora megasperma Drechs. f. sp. medicaginis Kuan and Erwin) as 'Phytor' with 30% resistance, while 'Apollo II' was 54% and Saranac was 3% resistant.

IL 83-2 exhibits rapid establishment under less than ideal conditions. It should be adapted to shallow soils, hard pan areas and poorly drained soils (2). Three-year average dry matter yield of the BC-2 generation grown at Brownstown Agricultural Research Center, Brownstown, IL, was 110% of the average of the four check cultivars: 'Rily', 'Saranac AR', and 'Vernal'. At the end of the first year the percent stand was 92%. This site was a loam soil (Mollic Albaqualf) with a poorly drained subsoil. First-year dry matter yield of IL 83-2 (BC-3) was 128% of the mean of the same four cultivars, while 'Saranac' was 128% of the mean of the same four cultivars. The soil type at Urbana was a Drummer silt loam (Typic Haplaquoll) a fairly well drained soil with a permeable subsoil.

IL 83-2 may be useful as a source of branched root characteristics for future breeding programs in the development of cultivars for shallow soils or resistance to heaving.

Up to 2 g of seed of IL 83-2 may be obtained from the Department of Agronomy, AE108 Turner Hall, Goodwin Ave., University of Illinois, Urbana, IL 61801. It is requested that this source of germplasm be appropriately recognized if it contributes to the development of a cultivar.

REGISTRATION OF MU-81 BIRDSFOOT TREFOIL
GERMPLASM

MU-81 birdsfoot trefoil (Lotus corniculatus L.) germplasm, (Reg. no. GP-61) cooperatively developed by USDA-ARS and the Missouri and Minnesota Agricultural Experiment Stations, was released in May 1985. MU-81 is a randomly mated, highly heterogenous population that provides a diverse genetic source to those involved in the study and genetic improvement of birdsfoot trefoil.

This germplasm is the seed resulting from three cycles of intercrossing plants that trace to 56 foreign introductions and 35 experimental synthetics, or cultivars. Included were the germplasms MO-20, T-68, and NC-83, and the cultivars 'Leo', 'Maitland', 'Dawn', 'Empire', 'Carroll', 'Viking', 'Fargo', 'Cascade', 'Baker', 'Geyser', 'Ladak', 'CS21', and 'Dawn' (2). The merit of MU-81 germplasm is attributable to the broad gene combinations, and to provide the genetic base included in MU-81 that would allow studies of gene action and selection. The foreign introductions included, however, chosen for moderate to high with resistance to Phytophthora megasperma Drechs. f. sp. mediciaginis, which is a problem in the midwestern USA and Canada.

The foreign introductions were collected in 20 countries and obtained from USDA Regional Plant Introduction Stations at Geneva, NY, Ames, IA, and Columbia, MO. The merit of MU-81 germplasm is attributable to the broad gene combinations, and to provide the genetic base included in MU-81 that would allow studies of gene action and selection. The foreign introductions included, however, chosen for moderate to high resistance to Phytophthora megasperma Drechs. f. sp. mediciaginis, which is a problem in the midwestern USA and Canada.

No selection was practiced in any cycle. Materials were intercrossed to increase the frequency of new gene combinations, and to provide the genetic base included in MU-81 that would allow studies of gene action and selection. The foreign introductions included, however, chosen for moderate to high resistance to Phytophthora megasperma Drechs. f. sp. mediciaginis, which is a problem in the midwestern USA and Canada.

MU-81 are available to each applicant upon written request. Request seed from P.R. Beuselinck, Agronomy Department, Department of Agronomy, AE108 Turner Hall, 1102 S. Goodwin Ave., University of Illinois, Urbana, IL 61801. It is requested that this source of germplasm be appropriately recognized if it contributes to the development of a cultivar.

References and Notes


3. Seed was increased in cooperation with NC-83 project, 1984 experiment.

4. Professor of plant breeding and genetics, Dep. of Agronomy, University of Illinois, Urbana, IL 61801. Registration by the Crop Improvement Program. Accepted 6 Feb. 1986.