In the main area of winter wheat production in South Dakota (Presho), Nell out-yielded ‘Scout 66’ and ‘Centurk’ by 2 and 30%, respectively, over 3 years. In the northern range of this area it exceeded Scout 66 and Centurk in yield by 15 and 34% (Wall) and 23 and 22% (Redfield), respectively, over 2 years. Nell was similar in winterhardiness to these two cultivars and, also, was 2 to 3 cm shorter in height than either one. Its heading date was similar to the heading date of Scout 66. For test weight Nell equaled Scout 66. Its mixing time was between Centurk and Scout 66.

Nell resists the prevalent races of the organism causing stem rust (Puccinia graminis Pers. f. sp. tritici Eriks. and E. Henn.) and possesses genes Sr 7B and Sr 17 along with a possible unknown gene. It is susceptible to the leaf rust organism (Puccinia recondita Rob. ex Desm. f. sp. tritici), the wheat streak mosaic virus, and the Hessian fly (Mayetiola destructor Say.).

Its spikes are awned, white glumed, mid-long, mid-dense, fusiform, and nearly erect. The glumes are glabrous, narrow to mid-wide with narrow, oblique shoulders. The beaks of the glumes are acuminate and 2 to 4 mm long. The kernels are hard, red, mid-long, and ovate; the germ is mid-sized; the cheeks are mid-deep and mid-wide; the brush is mid-sized and mid-long.

Nell was named and released by the South Dakota Agricultural Experiment Station in 1981. Breeder seed will be maintained by the Foundation Seed Stocks Div., South Dakota State Univ., Brookings, SD 57007. Nell is not be patented.


Reference and Notes

Registration of Germplasms

UC 1249 AND UC 1250, STEMPHYLLIUM LEAFSPOT RESISTANT ALFALFA GERMPLASM

ALFALFA (Medicago sativa L.) germplasm pools UC 1250 (Reg No. GP128) [tested as UCSTB-14] and UC 1249 (Reg. No. GP127) [tested as UCSTB-1(M69)] were released by the Departments of Agronomy and Range Science and Plant Pathology, University of California, Davis, in March 1982. Both germplasm pools possess high levels of resistance to Stemphylium botryosum (cool-temperature biotype) (1). They were developed by phenotypic recurrent selection. The first and second cycle seed of UC 1250 and the first cycle seed of UC 1249 were produced by intercrossing resistant plants by hand pollination (without emasculation) in a greenhouse. The next (final) cycle seed of each germplasm pool was produced in cages using leaf cutter and honey bees as pollinators.

UC 1250 was derived from 60 symptom-free (disease severity score of 1) plants selected out of 200 plants from each of seven cultivars representing a range in fall dormancy. The numbers of plants selected from each cultivar were ‘Lew’, 4; ‘Lahontan’, 9; ‘CUP 101’, 3; ‘UC Cargo’, 7; ‘Moapa 69’, 8; ‘SW-44’, 15 and ‘Saranac’, 14. Cycles two and three were developed from 65 and 86 symptom-free plants, respectively.

UC 1249 was initiated by intercrossing the eight plants selected from Moapa 69 which contributed to UC 1250. Cycle two was developed from 49 resistant Cycle 1 plants.

UC 1250 and UC 1249 were evaluated for resistance to Stemphylium botryosum (cool-temperature biotype) simultaneously under the same high disease severity conditions used during selection. These conditions were achieved by inoculation with conidia representing a range of relative virulence in a controlled environment greenhouse. Disease severity was scored on a 10 class scale (1 = symptom-free, 10 = > 95% leaf area necrotic) and an average disease severity index (ASI) calculated (2). The ASI and percent resistant plants for UC 1250, UC 1249, Lew (susceptible control), and SW-44 (resistant control) were 1.06 and 93%, 1.68 and 67%, 5.04 and 3%, and 1.80 and 55%, respectively. Parental germplasm for UC 1250 and UC 1249 had ASI’s of 3.47 and 3.40 and 16 and 15% resistant plants, respectively. Reaction of other pests and relative fall dormancy characteristics of both UC 1250 and UC 1249 are unknown.

Five grams of UC 1250 and UC 1249 seed are available upon written request and agreement to make appropriate recognition of its source a matter of open record when this germplasm contributes to the development of either of new cultivar, hybrid, or germplasm. Request seed from the Dep. of Agronomy and Range Science, Univ. of California, Davis, CA 95616.

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References and Notes
3. Assistant professor, Dep. of Agronomy and Range Science; associate professor, Dep. of Plant Pathology, staff research associate, former graduate student, laboratory assistant, Dep. of plant pathology, and staff research associate, Dep. of Agronomy and Range Science, Univ. of California, Davis, CA 95616, respectively. Registration by Crop Sci. Soc. of Am. Cooperative investigations of Departments of Agronomy and Range Science and Plant Pathology. Accepted 17 Feb. 1983.

EUAN-5 ALFALFA GERMPLASM

EUAN-5 alfalfa (Medicago sativa L.) (Reg. No. GP129) germplasm was released by the New Mexico Agricultural Experiment Station in September 1982. It was released primarily as a non-dormant source of resistance to races 1 and 2 of anthracnose caused by Colletotrichum trifolii Bain, but also has useful levels of resistance to other pests.

EUAN-5 was developed by five cycles of phenotypic recurrent selection for anthracnose resistance in the cultivar ‘El Unico’ (Crop Sci. 13:129, 1973). Mixed cultures of local isolates and isolates obtained from other parts of the United States were used as inoculum. From 60 to 140 plants were selected in each selection cycle and intercrossed by honeybees (Apis mellifera L.) in screened wire cages. EUAN-5 was released as the Syn 1 generation.

In tests conducted at Beltsville, Md., percentages of plants resistant to anthracnose race 1 were 69, 1, 9, 80, and 74, and for race 2 were 47, 1, 1, 66, and 8 for EUAN-5, El Unico, Saranac, Saranac AR and Arc, respectively.