

Registration of Germplasms

REGISTRATION OF C-6 ALFALFA
GERMPLASM

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The C-6 alfalfa (Medicago sativa L. and M. falcata L.) germplasm pool was released by the AR, SEA, USDA and the Colorado State University Experiment Station in April 1978. It combines and preserves valuable traits from early introductions in a form more usable by researchers.

C-6 traces to a collection of drought-resistant selections made by A. C. Dillman at Belle Fourche, S.Dak., between 1910 and 1914 and to a collection assembled at Mandan, N.Dak. Both collections trace directly to introductions made by N. E. Hansen in the early 1900’s. Open-pollinated seed from the drought-resistant plants was produced in South Dakota and was stored in an unheated, uninsulated building at Mandan, N.Dak. from 1915 to 1971.

The selections that still germinated provided 24 of the 34 entries of the C-6 germplasm pool. Origins of those 24 selections included: PI 19534 (Medicago falcata L. from Samara Province, Russia), PI 20571 (M. media), PI 20726 (seed from wild M. falcata plants, Samara Province, Russia). PI 20714 (‘Cossack’ cultivar). PI 23625 (M. falcata from Orenburg, Russia), PI 24452 (seed from wild M. falcata plants, Obb, Tomsk Province, Siberia), PI 25192, PI 27288, and PI 28070. (seed from wild M. falcata plants, Semipalatinsk region, Siberia). In addition to Cossack the known cultivars in the collection were: ‘Canadian Variegated’, ‘Cherno’, and ‘Sibturk’. The seven additional entries were all selections made at Mandan. Three entries originated from open-pollinated seed of three rhizomatous plants with yellow or variegated flowers; two entries were from a planting of one of Hansen’s Semipalatinsk introductions at Ardmore, S. Dak.; and two entries were selected for their spreading ability from an early planting of mixed seed from Dillman’s collection in North Dakota.

Seedlings from the 34 entries were planted in a replicated spaced-plant nursery with five plants per replication. Six entries had fewer than 10 plants. The largest number of plants for any entry was 25. The predominant flower colors for the 34 entries were 13 purple, 10 variegated, and 11 yellow. Considerable variability existed for plant vigor and growth habit, with the M. falcata types having relatively poor vigor. A few plants from PI 28070 were tall and bushy and generally resembled Melilotus spp.

Cycle-1 seed was produced at Fort Collins, Colo. in 1973 and 1974. Seed was harvested from about 600 individual plants and was bulked on an entry basis. Seed set was poor both years, particularly on the M. falcata types. Because of the low seed set in cycle 1, only 30 entries were included in the production of cycle 2 seed. The deletion of the four entries, however, did not result in the omission of any germplasm source because there were multiple entries of some sources. Cycle 1 seed was planted at a relatively low seeding rate in 1975. Cycle 2 seed was produced from that planting in both 1976 and 1977.

C-6 is a blend of equal quantities of cycle 2 seed (by weight) of the 30 entries. Seed stocks are maintained by the Crops Research Laboratory, Colorado State University, Fort Collins, CO 80523.


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REGISTRATION OF C-4 AND C-5 CIER MILKVETCH GERMPLASM

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The C-4 and C-5 cicer milkvetch (Astragalus cicer L.) germplasm pools were released by the AR, SEA, USDA and the Colorado State University Experiment Station. They were selected for seed weight and vigor. The source material originated from 27 entries selected from a 1,400-spaced plant nursery at Mandan, N.Dak. The two breeding populations were developed under spaced-plant conditions.

C-4 (GP No. 12) was developed by dialing with excellent vigor and high seed weight. Cycle 1 polycross progenies were produced from 550 F1 plants in the first cycle progenies, and progeny means ranged from 91 to 144%.

C-5 (GP No. 13) was developed by selecting the most vigorous plants observed in the species to date.

An equal amount of polycross seed from each parental plant was composited to form C-4 and C-5. Small (up to 50 g) of each pool may be requested from the Crops Research Laboratory, Colorado State University, 80523.

REGISTRATION OF TWO POPULATIONS OF MAIZE GERMPLASM

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The two breeding populations were developed and evaluated at the North Carolina Agricultural Experiment Station (GP No. 74) and NC JR10 (GP No. 75) were developed cooperatively by the North Carolina Agricultural Experiment Station and C. E. Townsend, C. E. 1977. Recurrent selection for high seed weight in cicer milkvetch. Crop Sci. 17:473-476.