Registration of ‘Windsor’ Cicer Milkvetch

‘Windsor cicer milkvetch (Astragalus cicer L.)’ (Reg. no. CV-109, PI 568889), was released by the USDA-ARS, the Colorado Agricultural Experiment Station, and the Wyoming Agricultural Experiment Station in January 1993 for pasture and hay.

Windsor, a 15-clone synthetic, was derived by two cycles of recurrent selection for increased plant height and forage yield. The 15 clones trace to a 304-plant population that had been selected from the 39 component polycross progenies of ‘Monarch’ (1) for seedling elongation at 5/20 °C alternating temperatures in the laboratory and for seedling emergence in the field (2). Seventeen plants with excellent regrowth following an early August harvest were selected from this population. Growth chamber studies demonstrated that the increase in plant growth was due to the absence of a dormancy-type response to the decreasing photoperiods of mid- to late summer (1 August to 15 September) (3).

Seedlings from the polycross progenies of the 17 selected clones and Monarch were grown under irrigation in a replicated, spaced-plant nursery near Fort Collins, CO. About 850 plants, including those of Monarch, were evaluated. In the first and second years following establishment, date of flowering, extended height, and fresh weight measurements were taken on individual plants for each of these harvests annually. Plants were harvested on the day they began to flower, except for the third cutting, when all were harvested between 10 and 15 September. Plant spread was taken in late September of each year.

From the first cycle, 36 of the tallest plants with outstanding forage yield in both years of evaluation were selected as the parental clones for the second cycle of selection. Seedlings from the 36 polycross progenies and Monarch were established in a replicated, spaced-plant nursery. About 1480 plants, including those of Monarch, were evaluated. Procedures for evaluating plants in the second cycle of selection were the same as those for the first cycle.

Based on the mean of their 2-yr performance, 15 of the 36 clones were selected as the parental clones for Windsor. Mean plant weight for the polycross progenies of the 15 clones was 120, 117, 118, and 119% of that of Monarch for the first, second, and third harvests and for total yield, respectively. Mean extended plant height for the progenies was 109, 114, and 120% of that of Monarch for the first, second, and third harvests, respectively. Mean seed weight of the parental clones range from 3.55 to 4.59 g 1000 seeds (4). Seed weight of the parental clones is available on the susceptibility of cicer milkvetch to insect and disease pests, the reaction of Windsor to these pests should be similar to that of Monarch.

The probable area of adaptation for Windsor is similar to that for Monarch (1). This includes high-elevation meadows, irrigated pastures at lower elevations, and dryland areas with an annual precipitation of ≥ 40 cm. Although little information is available on the susceptibility of cicer milkvetch to insect and disease pests, the reaction of Windsor to these pests should be similar to that of Monarch.

Parental clones and breeder seed will be maintained by the USDA-ARS, Fort Collins, CO. Two generations of increase beyond breeder seed will be permitted: foundation (Syn 2) and certified (Syn 3). An exclusive release of Windsor has been made to the Peterson Seed Co., Inc., P.O. Box 346, Savage, MN 55378. Seed for experimental purposes can be obtained from the Crops Research Lab-USDA-ARS, 1701 Center Ave., Fort Collins, CO 80526 or from the Peterson Seed Co. Application will be made for U.S. plant variety protection.