REGISTRATION OF 10 VEGETATIVELY PROPAGATED PARENTAL LINES (MT-6 TO MT-15) OF INTERMEDIATE WHEATGRASS

MT-6 to 15 (Reg. no. PL-1 to PL-10, PI 537117 to PI 537126) are vegetatively propagated parental lines of intermediate wheatgrass [Elytrigia intermedia (Host) Nevski] developed and released in January 1990 by the Montana Agricultural Experiment Station for breeding and experimental purposes.

The MT-6 to MT-15 parental lines are potential plant material for the production of high yielding and extensively spreading F₁ hybrids. They were vegetatively increased from single plants (genotypes) of PI 440018 (MT-6), PI 286118 (MT-7), PI 273732 (MT-8), PI 273733 (MT-9), PI 440004 (MT-10), PI 316122 (MT-11), PI 228274 (MT-12), PI 401017 (MT-13), PI 173630 (MT-14), and PI 369174 (MT-15). They originated from a germplasm field collection of 2570 plants from 257 seed collection sites in Afghanistan, Denmark, Iran, Portugal, the Soviet Union, Spain, Turkey, and Yugoslavia, planted at Bozeman, MT. Seed of this germplasm collection was received from the USDA/ARS Western Regional Plant Introduction Station at Pullman, WA. A total of 102 superior plants of this germplasm collection was selected for tall plant height and high number of tillers as expressions of plant vigor. Open-pollinated seed of these accessions was tested for forage yield in progeny trials for 2 yr, and polycross seed for 1 yr. The open-pollinated progenies of MT-6,-7, and -8 had significantly higher (P < 0.05) forage yields than the standard 'Oahe' (PI 98568) during the first harvest year. MT-9 to MT-15 did not have significantly lower forage production than Oahe. MT-6 yielded 6227 kg ha⁻¹ and Oahe 3610 kg ha⁻¹ during the first harvest year. None of the MT lines had significantly lower forage yield than the standard during the second harvest year.

Controlled pollination polycross progeny for these lines in 1989 ranged from 8626 kg ha⁻¹ for Oahe, which is significantly higher than for MT-6 to MT-15. MT-6 to MT-15 did not have significantly lower forage yields than the standard during the second harvest year.

Vegetative spread varied from 1:20 in line MT-8 to 1:260 in line MT-11. Vegetative spread was measured as the number of plants that were field-cloned into 0.2 m² cuttings from an original parent plant during a 10-yr period (1 plant cloned from 1).

MT-6 to MT-15 are potentially good vegetative plant material for soil conservation. One of the requirements for the Conservation Reserve Program (CRP) and Security Act of 1985 (1) is that an acceptable conservation cover be established or maintained. A forage grass with potential for rapid spread like MT-11 would be suitable for conservation.

Vegetative propagules of MT-6 to MT-15 are available on request and will be provided upon agreement to make appropriate recognition of their source a matter of record when the germplasm contributes to the development of a new cultivar.

References and Notes
