REGISTRATION OF MONTANA-1 MALE STERILE INTERMEDIATE WHEATGRASS GERMLASM
(Reg. No. GP 1)
Jurgen Schulz-Schaeffer

Montana-1 male sterile intermediate wheatgrass (MT-1) was released in 1978 by the Montana Agric. Exp. Stn. for breeding and experimental purposes.

Male-sterile intermediate wheatgrass SB1-1-9-79 (Montana-1), derived from an amphiploid hybrid Triticum turgidum L. var. durum × Agropyron intermedium (Host) Beauv., was backcrossed three times with intermediate wheatgrass (Schulz-Schaeffer, 1972). The original intergeneric hybrid was made during the period between 1923 and 1935 at Beltsville, Maryland (USDA, 1958) using as durum wheat source the cultivar 'Nodak' (C.I. 6519). The first two backcrosses (SB1 and SB2) were carried out by hand emasculation and pollination. The A. intermedium source was not identified. The third backcross (SB3) was obtained by natural field pollination with the cultivar 'Oahe' (P.I. 98568). The high percentage of male sterility in the SB3 material made this backcross procedure possible.

Male sterility in MT-1 was determined during 4 years (1971: 98.3%, 1972: 100.0%, 1973: 98.2%, 1975: 98.2%). The sterility type was described by Young (1976). At dehiscence, the majority of the pollen had an appearance characteristic of late vacuolate microspores when stained with acetocarmine. A single nucleus peripheral to a large central vacuole was observed in most of the gains. Starch was usually completely absent in pollen stained with IKI.

MT-1 has reasonable bivalent pairing in meiosis (19.9%) with an average of 2.0 univalents contributed by the durum wheat. Seed set per single plant was 38.1 seeds/spike with cultivar Oahe as pollinator in 1971, and in field production 18.2 seeds/spike with Oahe and 27.1 seeds/spike with cultivar 'Oahe' as pollinators in 1976. Average seed set in the grass is 40 seeds/spike.

MT-1 can be distinguished by drooping leaves yellow-green color. Rhizome formation is vegetatively propagated from a single plant. Plants were transplanted in the fall of 1971 to hybrid isolation nurseries, each approximate Material for another 3,200 plants is available to be transplanted into the field in the spring. This material is presently being used for F1 hybrid plants will be tested for hybrid vigor in intrastate forage yield. Trials. This is the first male sterile in intermediate wheatgrass material available for testing heterosis.

Small amounts of vegetative material of MT-1 will be provided to sugarbeet breeders upon written request to R. T. Lewellen. Seed stocks are maintained at the U. S. Agricultural Research Station, P. O. Box 5098, Salinas, CA 93915. Small quantities of seed will be provided to sugarbeet breeders upon written request to R. T. Lewellen.

REGISTRATION OF TWO SUGARBEET PARENTAL LINES
(Reg. Nos. PL 13 to PL 14)
E. D. Whitney and R. T. Lewellen

Two pollinator lines of sugarbeet (Beta vulgaris L.), C36 and C02, were released to sugarbeet breeders in June 1977. These lines were developed by SEA-FR USDA in cooperation with the Beet Sugar Development Foundation and the California Beet Growers Association, Ltd. Both of these lines have a high level of resistance to bacterial vascular necrosis and soft rot incited by an Erwinia sp. Field tests have shown that both lines are similar to their source, line C13, for resistance to virus yellows and curly top and for their combining ability for sugar yield. Although currently not used commercially, one or the other of these Erwinia-resistant pollinator lines may supersede Erwinia-susceptible C13 to produce US H9 type hybrids resistant to soft rot. Semicommercial quantities of hybrid seed are now being produced to extensively test these pollinators on a statewide basis. Seed set per single plant was 38.1 seeds/spike with cultivar Oahe and 27.1 seeds/spike with cultivar 'Oahe.' Average seed set in the grass is 40 seeds/spike.

MT-1 can be distinguished by drooping leaves yellow-green color. Rhizome formation is vegetatively propagated from a single plant. Plants were transplanted in the fall of 1971 to hybrid isolation nurseries, each approximate Material for another 3,200 plants is available to be transplanted into the field in the spring. This material is presently being used for F1 hybrid trials. This is the first male sterile in intermediate wheatgrass material available for testing heterosis.

Small amounts of vegetative material of MT-1 will be provided to sugarbeet breeders upon written request to R. T. Lewellen. Seed stocks are maintained at the U. S. Agricultural Research Station, P. O. Box 5098, Salinas, CA 93915. Small quantities of seed will be provided to sugarbeet breeders upon written request to R. T. Lewellen.