conditions when soil temperature was 18 to 22°C have given more than 80% emergence of vigorous seedlings. The lines have moderate resistance to common corn rust (Puccinia sorghi Schw.), but they are susceptible to Helminthosporium leaf blights (H. turcicum Pass. and H. maydis Nisik. & Miy).

Days to anthesis were 54, 56, 57, and 62 for M6415, M6411, M6421, and M6388, respectively. All lines have white color and the yellow kernel color can be described as light, dull, medium, and bright for M6388, M6411, M6415, and M6421, respectively. The silk color of any silks is light cream for both M6388 and M6411, while M6415 and M6421 have light tan silk color. Ear heights range from 0.53 to 0.79 m for M6411 and M6415, respectively. Plant heights were approximately 2.4 times greater than ear heights.

The mutant alleles were introduced from Purdue University line no. 61-1-79-1 (ae wx) and from Pennsylvania State University line no. 2462 (ae wx). Other parental lines used in the development of the germplasm lines were Illinois lines 197a, B2064, and USDA releases M97AC and M4206. The endosperm genotype of the released lines was confirmed by testcross with the 'Pennfresh ADX' (2).

Pedigrees of the four germplasm lines are as follows:

- M6388 = $F_6$(BC,F$_1$X Purdue 61-1-79-1) X Penn. State 2462.
- M6415 = $F_6$(BC,F$_1$X M97AC X Purdue 61-1-79-1) X Penn. State 2462.
- M6411 = $F_6$(BC,F$_1$X M4206 X Purdue 61-1-79-1) X Penn. State 2462.
- M6421 = $F_6$(BC,F$_1$X M4206 X Purdue 61-1-79-1) X Penn. State 2462.

Seed of these germplasm lines will be maintained and 50-seed samples distributed to breeders and research workers by the South Central Agricultural Research Laboratory, USDA-ARS, P.O. Box 159, Lane, OK 74555.

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References and Notes

3. Research geneticist, USDA-ARS, South Central Agric. Res. Lab., P.O. Box 159, Lane, OK 74555. Registration by the Crop Sci. Soc. of Am. Accepted 28 Feb. 1987.

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REGISTRATION OF RHIZOCTONIA ROOT ROT RESISTANT SUGARBEET GERMPLASM FC 70(4x)

SUGARBEET (Beta vulgaris L.) germplasm FC 70(4x) (Reg. no. GP-119)(PI 506238) was released 22 Apr. 1986 by USDA-ARS in cooperation with the Beet Sugar Development Foundation and the Colorado Agricultural Experiment Station. This germplasm was developed as a source of resistance to root rotting strains of Rhizoctonia solani Kuehn.

FC 70(4x) is an autotetraploid (2n = 4x = 36), multimer, pseudo-self-fertile sugarbeet germplasm that is resistant to root and crown rot caused by AG-2 R. solani. It is Cercospora leaf spot tolerant, curly top susceptible, easy bolting, and has pink hypocotyls. It is relatively vigorous and genetically heterogeneous.

FC 70(4x) is the C$_{1}$ colchicine-induced conversion of FC 707 (2), without additional selection for resistance to R. solani. FC 707 was a product of one cycle of selection for resistance from a synthetic that had been developed from progeny lines superior for R. solani resistance and sucrose production. These progeny lines were from two breeding lines, each of which had resulted from five cycles of mass selection for resistance. The sources of these two breeding lines were C 817, (experimental synthetic from GW 359) and GW 674. GW 359 and GW 674 are both obsolete, heterogeneous, open-pollinated, multimeric commercial cultivars adapted to the irrigated Great Plains of the USA.

In 3 yr of testing for resistance to R. solani in inoculated field experiments, FC 707(4x) had a mean disease index (DI; 0 = no infection to 7 = dead plant) of 1.8, compared with 2.5, 2.1, 3.0, 6.2, and 5.1 for FC 707, FC 705/1 (resistant check), FC 703 (moderately resistant check), FC 901 (susceptible check), and HH 32 (tolerant hybrid cultivar), respectively. The respective percentages of healthy plants (DI ratings 0 and 1) were 62, 50, 51, 32, 1, and 8. The respective percentages of harvestable roots (DI ratings 0 through 3) were 87, 79, 82, 59, 9, and 19. The general combining ability (GCA) for sucrose yield of FC 707(4x) has not been determined; however, FC 707 has relatively good GCA. FC 707(4x) is being released for use as a pollinator to develop Rhizoctonia-resistant triploid hybrids, or as a source of tetraploid resistant germplasm. Previous research has shown an additive dosage effect on resistance when 2x (susceptible) × 4x (resistant) hybrids are compared with diploid equivalents (1).

Breeder seed is maintained by USDA-ARS and will be provided to sugarbeet breeders upon written request in a quantity adequate for reproduction. It is requested that an appropriate recognition be made of the source when this germplasm contributes to the development of a new cultivar. Seed requests should be made to Sugarbeet Research, USDA-ARS Crops Research Laboratory, Colorado State University, Fort Collins, CO 80523.

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References and Notes


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REGISTRATION OF MONTANA-2 PERENNIAL XAGROTRICUM INTERMEDIODIURUM KHIZHNYAK

MONTANA-2 (MT-2) (Reg. no. GP-282) perennial XAgrotricium intermediodorum Khizhnyak was released in August 1986 by the Montana Agricultural Experiment Station for breeding and experimental purposes. It bears the NSSSL Serial no. 260 309 and the PI no. 505 820. MT-2 perennial Agrotricium was derived from an original intergeneric amphiploid hybrid between Triticum turgidum L. var. durum (2n = 28) and Agropyron intermedium (Host Beauv. (2n = 42) that was developed by W.J. Sando between 1923 and 1935 at Beltsville, MD (6). This hybrid was first described by Schulz-Schaeffer in 1970 (2). Seed of this hybrid was dis-