population (Flemish). In the next four generations selections were made for resistance to the following pests: spotted alfalfa aphid in Cycle 1, Phytophthora root rot in Cycle 2, bacterial wilt in Cycle 3, and both anthracnose Race 1 and Phytophthora root rot in Cycle 4. In each selection cycle a minimum of 300 plants (1 to 3% of screened population) were intercrossed (bees).

The evaluations for resistance to Phytophthora root rot and bacterial wilt at St. Paul, Minn., indicated the percentage of Phytophthora root rot resistant plants was low in NCMP1 (4.1%) and moderate in NCMP2 (23.0%), NCMP10 (22.4%), and NCWMP22 (19.5%) in comparison to resistant check 'Agate' (40.9%) and susceptible check 'Saranac' (0.7%). The percentage of bacterial wilt resistant plants was intermediate for NCMP2 (17.9%) and NCWMP22 (16.5%), moderate for NCMP1 (26.8%) and very high for NCMP10 (77.9%) in comparison to susceptible check 'Narragansett' (0.7%) and highly resistant check 'Vernal' (51.0%).

A greenhouse evaluation of resistance to anthracnose Race 1 and Race 2 at Raleigh, N.C., indicated moderate to high levels of resistance to Race 1 in all germplasms: 35% in NCMP1, 75% in NCMP2, 63% in NCMP10, and 44% in NCWMP22. The resistant check 'Arc' had 65% resistant plants and the susceptible check Saranac had 0% resistant plants. Resistance to Race 2 was low for NCMP1 (7%) and NCWMP22 (7%), moderate for NCMP2 (18%) and high for NCMP10 (36%) in comparison to resistant check 'Saranac AR' (43%) and susceptible check Saranac (0%).

Spotted alfalfa aphid resistance was evaluated at Tucson, Ariz. Resistance was moderate in NCMP1 (57.9%) and high in NCWMP22 (85%) in comparison to resistant check germplasm MST'T (72%) resistant. NCMP2 and NCMP10 have no resistance to spotted alfalfa aphid.

Evaluation of pea aphid resistance at Manhattan, Kans. indicated moderate levels of resistance in NCMP1 (29%), NCMP2 (48%), and NCMP22 (44%) and high resistance in NCMP10 (61%) in comparison to resistant check 'Riley' (70%) and susceptible check 'Ranger' (2%).

Three years of harvest data collected from a variety trial near Raleigh, N.C. indicated the following ranking of yields in descending order: NCMP10, NCWMP22, NCMP2, and NCMP1. Each year NCMP10 forage yields were significantly greater than the best of 12 adapted cultivars in the test and the yields of NCMP1 approximated those of Arc.

Five grams of each germplasm are available to each applicant upon written request and agreement to appropriately recognize this material as a source in the development of a new cultivar, germplasm or hybrid. Seed stocks are maintained by the Forage Research Unit, Oxford Res. Stn., Route 2, Box 16 G, Oxford, NC 27565.

REGISTRATION OF NY WINTER BARLEY ATRACOMP GERMPLASM

Mark E. Sorrells and Neal F. Jensen

NY Winter Barley Atracomp was developed by annually recycling genotypes of winter barley (Hordeum vulgare L.) that survived when planted in soil pretreated with various rates of the triazine herbicide, atrazine.

The composite was first grown in 1968 and has experienced a total of 9 cycles of selection (it was not grown in 1969). For each cycle, the field was treated with one or more rates of atrazine in June. The following fall the treated field was planted at the rate of 108 kg/ha with seed harvested from the previous cycle. In the early cycles, seed from more than one atrazine treatment level was harvested to have adequate quantities of seed for the next cycle. The different treatment levels harvested each year were as follows: 1968--1, 2.2, 3.4, 4.3, and 5.6 kg/ha; 1970--6.7 and 9 kg/ha; 1971--4.5 and 9 kg/ha; 1972 and 1973--5.6 and 11.2 kg/ha; 1974--1976--11.2 kg/ha; 1977--16.8 kg/ha. Harvested seed was screened each year on an air cleaner separator to remove small and light seed.

The germplasm that went into the composite is quite diverse and includes the following materials: 1) Cornell bank germplasm, 2) all 1967 Cornell early generation materials; 3) part of the World Collection of Small Grains, and 4) winter barley composite crosses C.C.XXVI and C.C.XXVII. Information on genetic gain for tolerance to atrazine comes from trials conducted at Ithaca, NY in 1979. NY Winter Barley Atracomp, 'Hudson', and 'Schuyler' were grown on soil pretreated the previous June with 0, 2.2, 4.5, 9.0, and 13.4 kg/ha of atrazine. Since the 0, 2.2, and 4.5 kg/ha treatment levels were not significantly different, the mean of these treatments was compared to the mean of the 9 and 13.4 kg/ha treatments. Grain yields of NY Winter Barley Atracomp, Hudson, and Schuyler were reduced 17, 24, and 52%, respectively, at the higher treatment levels. Reductions in plant survival were 53, 58 and 71% for NCMP1, 63% in NCMP10, and 44% in NCWMP22. The plant morphology of selections from the NY Winter Barley Atracomp is similar to most cultivars, although many selections have more tillers per plant. The composite has excellent winter hardiness and selected lines average 10 to 20% better winter survival compared to selection from other composites.

Stock seed of the germplasm comes from a 1979 increase of the 1977 cycle of selection. The germplasm stock will be maintained by the Cornell Univ., Agric. Res. Stn., Ithaca, NY 14853, and is available from the senior author.

REGISTRATION OF XR-235-1-1 BEAN GERMPLASM

G. F. Freytag, M. J. Bassett, and M. Zapata

Bean (Phaseolus vulgaris L.) line XR-235-1-1 was developed cooperatively by the USDA-ARS, the University of Puerto Rico, and the University of Florida, and released 25 June 1981, as a source of resistance to bacterial blight caused by Xanthomonas ssp. and to root rots, especially ashem stem blight caused by Macroclonia phasmati (Maul.) Ashby.

XR-235-1-1 is the result of intensive selection through five generations following the interspecific cross, P. vulgaris × P. cocineus L. The female parent, 6-19, was a bulked F1, line from Florida that was selected for reching foliage and short internodes from the cross Guatemala 14-2 (Cambridge collection) × 'Remus'. The male parent, PC-H-46-1BK, was released from Mayaguez in 1979 as a multiple disease resistant Scarlet Runner


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