None of the T lines was as desirable agronomically as the recurrent parent, Centurk (Table 1). Variation among the T lines in the qualities studied suggests differences in the sizes of the translocations.

The disomic substitution line was less desirable agronomically than the T lines in most qualities, due apparently to its having more chromatin from weathgrass than the T lines and less chromatin from common wheat.

The gene for immunity to wheat streak mosaic was found to lie closer to the wheatgrass centromere than to the distal end (1). Tc has the centromere of weathgrass but other T lines have the centromere of common wheat. The lengths of the translocated segments were not the same. Line DS, has a disomic substitution. Measured by the meiotic index, line Tc was about as stable as Centurk. The other lines were less stable. Disomic substitution line DS, was lower in all characters studied than the translocation lines, except in seed weight in which it resembled Tc and Tc.

The amounts of protein in seed and flour of Tc, Tc, Tc, and disomic F exceeded those of Centurk in 1977. The amounts of flour protein of Tc, and DSf, the highest of the group, were 1.6 percentage points greater than that of Centurk (13.7%). Mixogram mixing time to the point of minimum mobility (optimum mixing time for breadmaking) was 2% min (medium) for Tc, 3% min for Tc, 3% min for disomic F, and 3% min (medium-long) for Centurk. Good overall breadmaking properties for all would be predicted from their mixing times and other physical dough properties.

Winter survival was measured in an unreplicated field test at Brookings in 1980. Winter survival, measured by stands in May, was 85% for Centurk, 2% for Tc, 80% for Tc, 60% for Tc, 80% for Tc, 40% for Tc, and 100% for Winoka. Germplasm will be maintained by South Dakota State Univ., Brookings, SD 57007, and is in the National Seed Storage Laboratory.

REFERENCES

REGISTRATION OF NB320 RED SPRING WHEAT GERMPLASM
(Reg. No. GP203)
NB320 red spring wheat (Triticum aestivum L.) was developed at the Agriculture Canada Research Station, Swift Current, Saskatchewan. NB320 was released for its merit as a pollen parent in a breeding program.

NB320 derived from the cross 'Tobari 66V'Romany'. NB320 was developed using early generation yield testing techniques. Yield testing was performed in the F4 and F6 generations. The yield test consisted of growing experimental lines in 2.74 m plots replicated twice at each of two locations. Heads from superior lines in each of the F4 and F6 generations were selected and grown in a winter nursery which was used for inbreeding and seed multiplication of F5 and F7 lines. NB320 was evaluated in the Non-Bread Wheat Cooperative Test from 1974 to 1978. The main attribute of NB320 has been high stable yield in all areas of Western Canada. In 53 station years of tests it has yielded 32% more than 'Neepawa' and 15% more than 'Glenlea'. This is noteworthy performance for a photoperiod insensitive, semidwarf wheat. NB320 has strong straw and matures about 4 days later than Neepawa. The spike is oblong to fusiform, medium, erect, and awned. The glumes are long, wide, glabrous, and white with shoulders that are narrow to midwidth and obtuse, and beaks are wide and acuminate. The light red kernels are long to midlong, medium-wide, and oval to elliptical in shape.

In the field, NB320 is moderately resistant to leaf rust, caused by Puccinia recondita Rob. ex. Desm. f. sp. tritici; moderately resistant to stem rust, caused by P. graminis Pers. f. sp. tritici Erli and E. Henn.; moderately susceptible to common root rot, caused by Bipolaris sorokiniana (Sacc. in Sorok.) Shoem. and Fusarium sp.; and susceptible to bunt, caused by Tilletia foetida (Wallr.) Lino and to loose smut, caused by Ustilago tritici (Pers.) Rest. The Grain Research Laboratory of the Canadian Grain Commission assessed the milling and baking properties of NB320 relative to Neepawa. The major consistent differences between them were that NB320 had a larger kernel size, a lower flour yellow pigment content, less damaged starch, lower farinograph and baking absorption, and more extensible dough properties.

Requests for small amounts of seed should be addressed to the authors.

REGISTRATION OF KY M-1 ZIGZAG CLOVER GERMPLASM
(Reg. No. GP43)
Norman L. Taylor, P. L. Cornelius, and R. E. Sigafus
KY M-1 germplasm of zigzag clover (Trifolium medium L.) was released by the Kentucky Agriculture Experiment Station in March of 1982. This germplasm is the fourth cycle of phenotypic recurrent selection for increased vigor and seed yield. The base population was C-1 zigzag clover.

Selection was conducted by sowing seeds in a greenhouse, then exposing the seedlings to low winter temperatures in a cold frame, and subsequently transplanting them to the field in the spring. Plants were scored for vigor and only the most vigorous (= highest yielding) were allowed to intercross. Heads were counted, and harvested from the selected plants. Seed heads were threshed and the number of seeds per head and per plant was calculated. Seeds from high seed yielding genotypes were

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