Regional Performance Nurseries at the U. S. Grain Marketing Research Center, Manhattan, Kansas. All evaluations indicate TAM 106 has good quality characteristics. Mixing times of regional composites were intermediate to those of 'Scout 66' and Centurk, and loaf volumes were slightly greater than those of Centurk and Scout 66. All milling and baking characteristics evaluated during 3 years of regional trials were found to be satisfactory and overall quality characteristics were indicated as promising each of the 3 years.

Breeders seed will be maintained by the Texas Agric. Exp. Stn. at the USDA Southwestern Great Plains Research Center, Bushland, TX 79012. Foundation seed will be available from the Foundation Seed Service, Texas A&M University, College Station, TX 77843.

### Registration of Germplasms

#### REGISTRATION OF CREEPING-ROOTED ALFALFA GERMPLASM1

(Reg. Nos. GP105 to GP107)1

Norman L. Taylor2

ALFALFA (Medicago sativa L.) synthetics V-1, Y-1, and Z-1 were released by the Kentucky Agric. Exp. Stn. in August, 1979. The three synthetics were developed with the intention of incorporating the creeping-root trait into alfalfas adapted to the mid-Atlantic area.

One set of parents consisted of six creeping-rooted alfalfa plants obtained from Swift Current Research Station, Saskatoon, Saskatchewan, Canada. The plants originated from three populations (SC Ma 531, SC Ma 532, and SC 43917F) which were related to the cultivar 'Rambler.' The second set of parents consisted of six plants each from the cultivars 'Atlantic,' 'Narragansett,' 'Rhizoma,' and 'Vernal.' They had been selected in Kentucky from third-year stands managed to simulate grazing by animals. The creeping-root parents were crossed in all possible combinations with the non-creeping root parents. About 2,500 F1 plants were transplanted to a space-planted nursery, overseeded with Kentucky bluegrass (Poa pratensis L.), and allowed to grow for 3 years. The most strongly creeping plants were selected.

V-1 (GP 105) was synthesized by intercrossing the seven F1 clones with the best combining ability based on polycross progeny testing for yield and creeping habit. Three clones were from crosses with Vernal. Two clones were from crosses with Rhizoma and one each were from Narragansett and Atlantic crosses. One clone was also included in Z-1.

Y-1 (GP 106) was synthesized by intercrossing seven yellow-flowered F1 clones selected for yield and creeping habit by polycross progeny testing. Five clones were from crosses with Rhizoma, and two were from crosses with Vernal. Three of the clones were also included in Synthetic Z-1.

Z-1 (GP 107) was synthesized by intercrossing 30 F1 clones. The number of clones from crosses with Atlantic, Narragansett, Rhizoma, and Vernal were seven, five, nine, and nine, respectively.

Evaluation of the three synthetics indicated that none of them were as vigorous as the non-creeping parent cultivars. About 40% of the plants of all three synthetics expressed the creeping characteristics when space-planted and overseeded with Kentucky bluegrass. Very little creeping was expressed in broadcast alfalfa plantings. Nevertheless, the synthetics contain a wide range of variability which should be useful for further selection.

#### REGISTRATION OF 14-5 SAFFLOWER GERMPLASM

(Reg. No. GP 15)

A. L. Urie, D. J. DaVia, P. F. Knowles, and L. H. Zimmerman*

SAFFLOWER (Carthamus tinctorius L.) germplasm 14-5 was released jointly in 1978 by AR-SEA-USDA and the California Agric. Exp. Stn. The primary advantage of 14-5 is resistance to Phytophthora root rot incited by heterothallic and homothallic species of *Phytophthora.* The heterothallic *P. cinnamomi* and *P. megasperma* f. sp. *carthami* Kleb. and fusarium wilt incited by *Fusarium oxysporum* f. sp. *carthami* Kliewer & Houston.

This germplasm was one of the 27 families (VFstp-1)2 in 1974 root nurseries at Davis and Yuma, Arizona. 14-5 had better resistance to root rot than the other VFstp-1 families. When averaged over locations, plant death was 12% for 14-5 and the other VFstp-1 families, respectively. Considerable variation in severity was noted among years and locations; however, 14-5 consistently lower death rates than other entries.

The 14-5 germplasm and two susceptible cultivars, 'Gila' and 'Cima,' were compared in field root nurseries at Davis and Yuma, Arizona, for 4 years. When averaged over locations, plant death of 14-5, Gila, and N10 was 2% and 35%, respectively. Considerable variation in severity was noted among years and locations; however, plant death rates were consistently lower than other entries.

The 14-5 germplasm is closely related to LM-1, but it was not tested for resistance to *Phytophthora* root rot nurseries. Cultivars differ from 14-5 by resistance to *Phytophthora* when subjected to various levels of water stress before irrigation. VFstp-1 had superior resistance to *Phytophthora* when compared with other resistant cultivars.

This germplasm offers breeders a source of resistance developed under naturally infested field conditions. 14-5 is also one of the earliest flowering of the fall-flowering types.

1 Registered by the Crop Sci. Soc. of Am. Contribution of the US Grain Marketing Research Center, Manhattan, Kansas.

2 Developed and released by the AR-SEA-USDA and the Texas Agric. Exp. Stn.