of pubescence is the primary distinguishing characteristics as there are no other short-grain glabrous cultivars in commercial production in the United States at the present time. CS-S4 has fewer and shorter awns than Caloro. Panicles normally exert completely from the leaf sheath. Paddy seed length is 7.0 to 7.2 mm and the width is 3.3 to 3.7 mm. Paddy seed size is influenced to some extent by environment and position of the seed on the panicle. The 1000-grain weight for CS-S4 is about 6% less than for Caloro. CS-S4, like Caloro, is not a short-stature type. Height is greatly influenced by environmental factors such as nitrogen fertility of the soil, and time of seeding. CS-S4 and Caloro are similar in heading vigor and growth characteristics but CS-S4 sometimes heads 2 to 3 days earlier. As many as 15 plants per acre of a cultivated mutant which are otherwise similar to CS-S4 have been noted.

Kernel characteristics of CS-S4 are similar to those of Caloro; they have light brown pericarp color, white endosperm with relatively low amylose percentage, are non-waxy, and are non-aromatic. The iodine value and alkali reaction, for CS-S4 were 23 and 6.3 as compared to 22 and 7.0, respectively, for Caloro. Milled rice of CS-S4 is slightly less chalky than Caloro. A taste panel comparison of the cooked rice of CS-S4 and Caloro revealed no preference for one over the other. Aroma and cooking properties of CS-S4 for brewing were very satisfactory.

CS-S4 has performed well in all areas of California where tested. It was compared with Caloro or ‘Calrose’ in 15 replicated yield trials since 1965 in representative sections of the California rice area. The average yield advantage of CS-S4 was 7.5%.

Breeder seed of CS-S4 will be maintained by the California Cooperative Rice Research Foundation, Inc., P.O. Box 306, Biggs, California 95917.

REGISTRATION OF PENNFINE
PERENNIAL RYEGRASS

J. M. Duich, A. T. Perkins, and H. Cole

‘PENNFINE’ perennial ryegrass, Lolium perenne L., is a non-fluorescent turf-type developed as a three-clone synthetic variety at The Pennsylvania Agricultural Experimental Station. Two clones were selected from golf course fairways and one was found on a tennis court in southeastern Pennsylvania.

Pennfine is fine textured with a leaf width averaging 2.5 mm at 2.5-cm (1-inch) mowing height. Other ryegrasses have comparable widths as follows: ‘Linn’ perennial—3.8; ‘Combi’—3.3; ‘Pelo’—3.1; ‘Nolea’—3.0; ‘Manhattan’—2.7; and annual ryegrass —5.6 mm. Pennfine exhibits the least leaf shredding following mowing of currently available ryegrasses. Vertical seedling growth is 50% less than Linn perennial. Pennfine has demonstrated high level resistance to Helminthosporium sp., Fusarium oxysporum, Sclerotinia dollar spot, and leaf rust and moderate resistance to Corticium red thread and Typhula snow mold.

Although comparatively dense and persistent among ryegrasses, Pennfine is recommended as a valuable and aesthetically pleasing mixture component in establishing cool-season turfgrasses, particularly slow-developing bluegrasses, and for rejuvenating injured turfgrass areas. Preliminary results indicate superior performance as a winter overseeding for bermudagrass putting greens.

Pennfine was released in August 1969 and is being commercially produced on a foundation and certified generation system from breeder seed maintained by The Pennsylvania Agricultural Experiment Station. Application made for plant variety protection.

REGISTRATION OF SC 71 TOBACCO

T. W. Graham¹, J. F. Chaplin², Z. T. Ford³, and R. E. Currin⁴

‘SC 71’ is a flue-cured tobacco (Nicotiana tabacum L.) resistant to tobacco mosaic (TMV). The new variety was developed by the Plant Science Research Division, Agricultural Research Service, U. S. Department of Agriculture, and the South Carolina Agricultural Experiment Station, from a cross between cultivars ‘NC 95’ and ‘MRS 3’. MRS 3 is a TMV-resistant breeding line developed from a cross of ‘Coker 139’ and ‘Va 69’. The TMV resistance is the local lesion type derived from Nicotiana glutinosa L. The new cultivar was developed over a period of 10 years and was in the tenth selfed generation at the time of its release. SC 71 was released in 1971.

In addition to TMV resistance, SC 71 has moderate resistance to black shank and bacterial wilt and high resistance to fusarium wilt. It resembles NC 95 but is 5 cm taller and its leaves are slightly wider and longer especially in the top of the plant. The new cultivar has about one more leaf per plant and requires the same number of days to flower as NC 95. Curing and handling qualities of SC 71 have been satisfactory and are comparable to those of other varieties currently grown.

The new cultivar was evaluated for 3 years in South Carolina and 2 years in regional tests in five states throughout the flue-cured tobacco growing areas. In comparison with the standard checks (‘Hicks’ in 1969, ‘NC 2326’ in 1970, and NC 95 for both years) the yield was slightly higher than Hicks or NC 2326 and about equal to NC 95. The value per 45.4 kg (cwt) was slightly lower than NC 95, however, the value return per hectare was equal to the check varieties. SC 71 also compared favorably with the check cultivars for chemical and physical characteristics of the cured leaf.

Breeder seed will be maintained and distributed by the South Carolina Agricultural Experiment Station, Clemson, South Carolina 29631.

REGISTRATION OF VA 309 TOBACCO

R. G. Henderson

The fire-cured tobacco cultivar ‘VA 309’ (Nicotiana tabacum L.) originated from a series of crosses involving ‘Vesta 55’ for resistance to black shank [Phytophthora parasitica Dast. var. nicotianae (B. de Haan) Tuck.], ‘Va 512’ for resistance to black root rot [Thielaviopsis basicola (Berk. & Br.) Ferr.], and ‘Lizard Tail Orinoco’ for leaf weight and quality. This cultivar,