Registration of Crop Cultivars

REGISTRATION OF RILEY ALFALFA

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‘RILEY’ alfalfa (Medicago sativa L.) was developed cooperatively by the Kansas Agric. Exp. Station and FR-SEA-USDA. It was tested as KS43 and released jointly with the Nebraska Agric. Exp. Stn. in January 1978.

Riley is an 8-clonal synthetic. Five parental clones of Riley were derived from ‘Cherokee’, one from ‘Kanza’, and one each from polycross progenies of clones that trace to ‘Buffalo’ and ‘Williamsburg’. Source materials were subjected separately to phenotypic recurrent selection in the laboratory. Cherokee and the polycross materials were selected for resistance to the pea aphid (Acyrthosiphon pisum (Harris)), spotted alfalfa aphid (Theroaphis maculata (Buckton)) and bacterial wilt (Corynebacterium insidiosum (McCull.) H. L. Jens.). Kanza materials were selected for resistance to the aphids and bacterial leaf spot (Xanthomonas alfae (Riker, Jones, and Davis Dows.). Selection for resistance to potato leafhopper (Empoasca fabae Harris) yellowing, summer black stem (Cercospora medicaginis Ell. and Ev.) and anthracnose (Colletotrichum trifolii Bain) were made in the field. Parental clones were selected on the basis of clonal and O. P. progeny tests.

Riley has a high level of resistance to bacterial wilt, pea aphid, and spotted alfalfa aphid biotypes present in Kansas (each exceeds Kanza). Riley has moderate resistance to rust (Uromyces striatus Schröt.) and downy mildew (Peronospora trifoliorum d By.) (similar to Arc). Resistance of Riley to potato leafhopper yellowing is about equal to that of Cherokee. Riley has shown resistance to anthracnose in field tests and has shown more resistance to summer black stem than any other cultivar tested in Kansas.

The probable area of adaptation is similar to that of Buffalo, Cherokee, and Kanza. Forage yields have been equal or greater than all check cultivars in Kansas. Seed yields in California and Idaho were similar to those of ‘Ranger’.

Seed increase will be on a limited generation basis with one generation each of breeder, foundation, and certified seed classes. Certified seed may be grown only from foundation seed. Breeder and foundation seed will be produced under the direction of the Kansas Agric. Exp. Stn. Foundation seed for production of certified seed can be obtained from the Agronomy Dep., Waters Hall, Kansas State Univ., Manhattan, KS 66506.

Riley was favorably reviewed by the National Certified Alfalfa Variety Review Board in December, 1977. Application will be made for plant variety protection under the certification provision.


2Research agronomist, FR-SEA-USDA, and professor Agronomy Dep.; associate professor, Dep. of Plant Pathology; and professor, Dep. of Entomology, Kansas State Univ., Manhattan, KS 66506, respectively.

Tifton 44 bermudagrass is a fine stemmed F1 hybrid that must be propagated vegetatively. Compared with Coastal, Tifton 44 has a cross between ‘Coastal’ bermuda and a best man alone. Tifton 44 has been winter-hardy in Michigan and Ohio since 1972. In a replicated clipping test established in 1974, Tifton 44 exhibited 60% more dry matter than Coastal. In vitro dry matter digestibility (IVDMD) analyses of all clippings from these tests show Tifton 44 to be 5 to 6% more digestible than Coastal.

Average daily gains (ADGs) of steers consuming Coastal and Coastal bermudagrass pastures for 2 years were 0.80 and 0.67 kg, respectively. The average ADGs of 30 steers consuming Coastal pellets were 0.75 and 0.63 kg. Thus Tifton 44 gave 19% better ADGs than Coastal fed as pellets. The ADGs of Tifton 44 and Coastal have been the same at the beginning of the grazing season but those of Tifton 44 become increasingly superior as the season progresses.

In a metabolism test, Tifton 44 pellets were more digestible than Coastal pellets produced in the same manner.

In a 56-day feeding trial with 250-kg heifers, 5-week-old Tifton 44 hay without supplement had an in vitro dry matter digestibility (IVDMD) of 65% and gave ADGs of 0.54 kg. The hay-to-gain test was 9:1.

The early growth of Tifton 44 has been very uniform throughout the South. Reports from 30 cooperators indicate that agronomically Tifton 44 is superior and about equal to Coastal. This is verified in a 3-year test at the north Louisiana Hill Farm Exp. LA, where Tifton 44 yielded as much as Coastal, 2700 kg/ha more than Midland.

Tifton 44 survived the winter of 1976-77 in Fayetteville, AR; Simpson, IL; Princeton, KY; NC, and all stations south of these locations. Nutrition will be normal winters in Wisconsin. Reports from cooperators suggest that Tifton 44 has as much winterhardiness and can be grown as far north as Midland.

The Georgia Coastal Plain Stn., Tifton, GA, registered breeder stock.

Foundation stock will be released to growers for certification on dates to be specified by the Georgia Coastal Plain Stn. On 3 May, and 21 July 1978, foundation stock was distributed to 253 growers from 10 states who are registered growers. Orders should be placed with Crop Improvement Association, Whitehall Rd, 30602.