conditions and to its hard seed content. Also, grain and protein yields, total N uptake, and water use efficiency were greater for spring wheat following George black medics than following the Australian medics.

Seed production of George shall be on a limited generation basis; breeder, foundation and certified. Foundation seed will be limited to that harvested the year of seeding and harvested from the stands regenerating from residual buried seed the 3 succeeding years. Certified seed will be limited to that harvested the year of seeding and harvested from the stands regenerating from residual buried seed the three succeeding years. The Montana Agric. Exp. Stn. will maintain breeder seed.

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REGISTRATION OF ‘LANCER’ OATS

LANCER oats (Avena sativa L.) (Reg. no. 308) (Cf no. 9256) is a spring oat developed by the South Dakota Agric. Exp. Stn. It was tested as SD 9095 and released in January 1979.

1. ‘Lancer’ came from a 1965 cross of ‘Neal’/’Clintonland 64’. The first selection was a single F₂ plant, and it was tested as an F₂-derived line until a single F₃ panicle was selected. The F₃ selection, designated 9095, was used in state and regional testing.

Lancer was tested statewide in 1976–1983 and in the Uniform Midseason Performance Nursery in 1976–1978. Based on performance in these tests, Lancer is a stiff-strawed, midseason variety that heads at the same time as ‘Holden’ but slightly later than ‘Spear’ and ‘Chief’. It is about 2 cm shorter than Spear or Chief. Seed yields are comparable to these three varieties in South Dakota tests while straw strength is better than that of any of these varieties.

The kernels of Lancer are white and fluoresce under ultraviolet light. Most fluoresce a light color, but some fluoresce yellow. Under certain conditions, the palea exhibits black shading. In South Dakota tests, Lancer has averaged 2 to 2.5 kg/hl. higher test weight than Spear. Groat percentage is high, averaging 5% above Spear in South Dakota tests. Lancer’s milling yield has been very good. Groat protein percentage is high, averaging 4.9, 1.2, and 2% above Chief, ‘Noble’, and ‘Burnett’, respectively, for the 1976–1978 statewide trials in South Dakota. Groat oil is intermediate to that of ‘Lodi’ and ‘Clintonland 64’.

Under field conditions, Lancer had moderate resistance to predominate races of crown rust, Puccinia coronata Cordr. var. loliith Brown and the winter net blotch disease (caused by Drechslera diastioideis f. sp. perenne).

The parental germplasm of Lancer perennial ryegrass was developed by making crosses among plants selected from ‘Diplomat’, ‘Pennfine’, ‘Omega’, Syn F (a late maturing synthetic developed by the New Jersey Agric. Exp. Stn.), ‘Manhattan’, K-79 (a 80-clone synthetic derived from germplasm collected in Central Park in New York City) and L4H (a selection from a school playground in Baltimore, MD). Seedlings from these crosses were screened for resistance to crown rust. Four thousand of the most resistant plants were transferred to a spaced-plant nursery at Adelphia, NJ. Over 200 clones were selected from this nursery on the basis of uniform maturity, attractive appearance, freedom from disease, and promising seed yield potential. Polygenic progenies of these clones were seeded in turf trials and evaluated for attractive appearance, resistance to winter net blotch, turf performance and improved mowing qualities. Tillers were subsequently removed from turf plots of the seven highest ranking progenies and transferred to an isolated, spaced-plant nursery. The least promising plants were removed from this nursery prior to anthesis. Seed was then harvested from the remaining 407 plants, which was given the experimental designation Syn R. A subsequent cycle of reselection was made in a spaced-plant nursery grown in Rilland, the Netherlands: 5% of the plants were removed before anthesis. Bulked breeder seed was harvested from the remaining plants under the experimental designation HE 129.

Ranger is a later maturing, densely tillering turf-type perennial ryegrass with an attractive dark-green color and a fine-textured turf. It has good mowing qualities and excellent wear-tolerance under treading. Ranger has good winter-hardiness and it has shown a high degree of resist-