Registration of ‘Nanryo’ Tall Fescue

‘Nanryo’ tall fescue (*Festuca arundinaceae* Schreb.) (Reg. no. CV-96, PI 639920) was developed by the Kyushu Okinawa National Agricultural Research Station (KONARC), Kumamoto, Japan and is being jointly released by the Japanese Grassland Farming Forage Seed Association and the USDA-ARS, Grazinglands Research Laboratory, El Reno, OK USA. Nanryo is being registered in the USA as an endophyte free tall fescue cultivar that will be suitable for graze-plus-grain grazing systems in the Southern Plains where livestock are rotated in the early spring (mid-March in Oklahoma) from dual purpose wheat pasture to cool-season grass forage pasture (Redmon et al., 1995). Nanryo may be useful in blends with later maturing, endophyte free tall fescue cultivars to provide earlier grazing opportunities for livestock producers. Nanryo was first tested under the experimental designation number Kyushu No. 2 (Sato et al., 1985).

The first Breeder seed of Nanryo was produced at Kumamoto, Japan, in 1992 from a breeder’s block composed of eight clones; two selected clones from the cultivars Fawn (Frakes and Cowan, 1974), Kentucky 31 (Fergus and Buckner, 1972); one selected clone from the cultivars Rozelle (Frame, Harkess and Hunt, 1974), Electa (an ecotype from the Netherlands), Krasnadorskaja (a local ecotype from the Krasnadorskaja region, Russia) and Yamanami (Kawabata et al., 1972).

In 1972, 554 plants were selected from 11c082 single clones representing selections from the above six cultivars. In 1973, the 554 selected plants were clonally propagated and evaluated for 2 yr. In 1975, from these 554 clones, five superior clones were selected. In 1973, a second, independent selection process was initiated in which an additional 296 plants were selected from a second 3741 clone nursery representing the same six cultivars. In 1974, 296 plants were clonally propagated and evaluated for 2 yr. In 1975, three superior clones from this second selection process were selected. Seed generated from the five clones selected in the first selection/evaluation process were combined with seed from the three clones selected in the second selection/evaluation process. Selection was based on earliness, yield, vigor, disease resistance, heat resistance. All selections were performed in the nurseries of KONARC, Kumamoto, Japan. Nanryo has been evaluated in both Japan and USA (Oklahoma) forage performance trials. The Japanese 2002–2003 performance trials indicate Nanryo is superior to Bronson, Barcel, Baroless, TF-33 and Penngrazer and equivalent to Dovey, Southern Cross, Georgia 5 and MaxQ-Jessup. The 2000 Oklahoma forage performance trials indicate that total forage production of Nanryo was not competitive to Fawn, Maximize or Penngrazer. However, under extreme drought conditions of 2002 and 2003, spring and fall forage production of Nanryo was equivalent to Barcarella, Kentucky 31, Maximize, EA79 and Dovey in 2002 and competitive to Penngrazer and superior to Maximize and Fawn in 2003 (Kindiger et al., 2004). Early spring forage production yields obtained on 11 March 2005 at El Reno, OK, indicate that Nanryo and Dovey were equivalent to Barcarella, Kentucky 31, Maximize, EA79 and Dovey. In Oklahoma, Nanryo is about 10 d later than Dovey and 2-wk earlier than MaxQ-Jessup.

In 1989, Nanryo was evaluated for head stem rust (caused by *Puccinia graminis* Pucc.) and net blotch. In the same test, Kentucky 31 generated scores of 1.0, 1.3 and 1.7 for crown rust and 1.9, 3.3 and 2.8 for net blotch. In the first test, Kentucky 31 of 3.3, 4.3, 4.0 for crown rust and 2.4, 5.0 and 4.3 for net blotch. In 1989, Nanryo was evaluated for head and stem rust by *Drechslera dictyoides* f. sp. dictyoides (Drechs.) and crown rust and net blotch disease trials conducted in 1988, and 1989 (0 = none; 5 = severe), Nanryo generated scores of 1.0, 1.3 and 1.7 for crown rust and 1.9, 3.3 and 2.8 for net blotch. In the same test, Kentuck 31 of 3.3, 4.3, 4.0 for crown rust and 2.4, 5.0 and 4.3 for net blotch. Nanryo is an early maturing, endophyte free, upright tall fescue that has shown good growth and production in trials in Japan and Oklahoma. Nanryo is about 10 d later to flower than USA (Oklahoma) and 5 d later to flower than Japan. Nanryo has been evaluated in both Japan and USA (Oklahoma) forage performance trials. The Japanese Krasnadorskaja (a local ecotype from the Krasnadorskaja region, Russia) and Yamanami (Kawabata et al., 1972).

Breeder seed is maintained by KONARC of Japan, Agriculture and Bio-oriented Research Organization, Kumamoto, Japan (NARO). Nanryo is being released as a non-protected cultivar. Limited samples for research purposes are available on request from the corresponding author in the USA or from the Japanese Grassland Farming Forage Seed Association, Kumamoto, Japan (NARO). Nanryo is being released as a non-protected cultivar. Limited samples for research purposes are available on request from the corresponding author in the USA or from the Japanese Grassland Farming Forage Seed Association, Kumamoto, Japan (NARO).

Acknowledgments

The technical support of the Japanese Grassland Farming Forage Seed Association is gratefully acknowledged as is the assistance of the National Agriculture and Forage Seed Association, Tokyo, Japan for assistance in the USA or from the Japanese Grassland Farming Forage Seed Association, Kumamoto, Japan (NARO).

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