Notice of Release of ‘NC03-2421’ Winter Oat

‘NC03-2421’ winter oat (*Avena sativa* L.) (PI XXXXXX) is a high yielding, full-season maturity, short statured, hulled oat with good test weight, winter hardness and moderate resistance to crown rust. ‘NC03-2421’ was derived from the cross Rodgers/TX83Ab2923//Rodgers, using a combination of mass selection and pedigree breeding methods. ‘NC03-2421’ is uniquely different from known cultivars, and it is adapted to oat-producing regions of the southeastern United States.

After the final cross was made in the greenhouse at NC State University during the winter of 1996-97, subsequent plantings and selections were conducted at Central Crops Research station at Clayton, NC. Selections during the development process included desired plant height, large panicle size and white or golden panicle color. Later selection criteria included winter survival, time of head emergence, straw strength and overall plant vigor. In comparison to oat cultivars with which it has been evaluated, ‘NC03-2421’ is most similar to ‘Rodgers’ (PI 593020). Both have similar leaf color, stem characteristics and panicle shape. However, the plant height of NC03-2421 is significantly shorter than ‘Rodgers’.

‘NC03-2421’ was evaluated in replicated trials from 2005 through 2009 in the NC Small Grains Program in-house evaluations, at 11 locations in eight states in the 2008-09 Uniform Winter Oat Yield Nursery, over six location-years in the North Carolina Official Oat Variety test in 2007-09, at six locations in the Georgia Official Variety Test in the 2008-09 season, and in eight locations in the US and Europe in the 2007-08 Uniform Oat Winter Hardiness Nursery. In all these evaluations, ‘NC03-2421’ displayed similar or superior grain yield, as well as test weight, to contemporaries. Generally, plant height was similar to or shorter than contemporaries and heading date was similar to other varieties (+/- 1 day). In the 2007-08 Uniform Oat Winter Hardiness Nursery, its mean winter survival rating was similar to other winter hardy check cultivars and was significantly better than a winter tender check.

Where evaluations were made, groat, protein, b-glucan and lipid percentages of ‘NC03-2421’ grain were similar to ‘Rodgers’.

NC Foundation Seed Producers Inc. received F<sub>10:13</sub> seed in fall 2009 for increase at the Upper Coastal Plain Research Station at Rocky Mount, NC. Although ‘NC03-2421’ has remained uniform and stable in composition since 2007, the breeders seed increase in fields in 2009 and 2010 contained up to .5% plants 10-15 cm taller than ‘NC03-2421’ and up to .1% plants with awned spikelets. These taller and awned plants were variants.
'NC03-2421', a SUNGRAINS agreement variety, will be licensed exclusively to a seed company selected from responses to an open bidding process made available to potentially interested seed companies. Breeder seed of 'NC03-2421', to be maintained by NCARS, will be available with a fully executed seed transfer agreement, to interested breeders or companies. Application for U.S. Plant Variety Protection will be filed for this cultivar, and the licensee will be expected to pay the PVP fee. Foundation seed will be maintained by the N.C. Foundation Seed Producers, Inc., 8220 Riley Hill Road, Zebulon, NC 27597 (919/269-5592).

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Director, North Carolina Agricultural Research Service

6/30/13
Date