Registration of ‘Oxford 207’ Tobacco

‘Oxford 207’ flue-cured tobacco (Nicotiana tabacum L.) (Reg. no. CV-114, PI 601992) was developed by the North Carolina Agricultural Research Service and was released in 1997 for its high resistance to the major soilborne diseases of flue-cured tobacco and its good yield and quality characteristics. Oxford 207 combines high resistance to bacterial wilt [caused by *Pseudomonas solanacearum* (Smith) Smith] with a high level of resistance to Race 0 of black shank [caused by *Phytophthora parasitica* Dastur var. *nicotianae* (Breda de Haan) Tucker; syn P. *nicotianae* Breda de Haan var. *nicotianae* G.M. Waterhouse]. It is also resistant to Races 1 and 3 of the southern root-knot nematode (*Meloidogyne incognita* (Kofoid & White) Chitwood) and has exhibited high resistance to fusarium wilt [*Fusarium oxysporum* Schlechtend.: Fr. f. sp. *nicotianae* (J. Johnson) W.C. Snyder & H.N. Hans.] in greenhouse tests. Oxford 207 is susceptible to the predominant virus diseases of flue-cured tobacco.

Oxford 207 was developed by pedigree selection from a single-cross between ‘Coker 319’ (PI 552426) and ‘K 399’ (PI 552504). Coker 319 has excellent handling characteristics and produces high-quality flue-cured tobacco. K 399 possesses high resistance to both bacterial wilt and black shank. Single plant selections were made in an F<sub>1</sub> population grown in a bacterial wilt disease nursery. Further selections were made among F<sub>2</sub>- and F<sub>3</sub>-derived lines on the basis of resistance and plant appearance in replicated trials in a bacterial wilt nursery. Selection for black shank resistance was carried out in the F<sub>2</sub> and F<sub>3</sub> generations in a naturally infected disease nursery. F<sub>2</sub> generation seed was composited from five generations in a naturally infested nursery, based on performance in yield and quality trials. Breeder seed was based on resistance and plant appearance in replicated trials in a bacterial wilt disease nursery. Selection for black shank resistance was carried out in the F<sub>2</sub> and F<sub>3</sub> generations in a naturally infected disease nursery. F<sub>2</sub> generation seed was composited from five generations in a naturally infested nursery, based on performance in yield and quality trials. Breeder seed was in the F<sub>2</sub>-1 generation at the time of release.

Oxford 207 was tested as OX2007 in the North Carolina Official Variety Test in 1993 (1), in the five-state Flue-Cured Tobacco Regional Small Plot Test 1994 and 1995 (2), and in the Regional Farm Test in 1995 (2). Oxford 207 has met the standards for chemical and physical characteristics of the cured leaf and for smoke flavor established by the Regional Minimum Standards Program (2). Average plant height (100.8 cm) and leaf number (19.5) of Oxford 207 are similar to other currently grown flue-cured tobacco cultivars. The average days to flower (69 d) of Oxford 207 is about three days later than other currently grown flue-cured tobacco cultivars. In the absence of disease the yield of Oxford 207 is comparable to many commercial flue-cured cultivars, but is about 10% less than the highest yielding cultivars such as K 326 and NC 71. In contrast, however, both of these cultivars have low resistance to bacterial wilt. Oxford 207 had a two-year average grade index of 68 which was equal to the average grade index of all released cultivars tested in the North Carolina Official Variety Test during 1996 to 1997. Data from the Regional Flue-Cured Variety Testing Program from 1994 and 1995 (2) indicate that Oxford 207 is adapted throughout the flue-cured-producing region in the USA. Its combination of high bacterial wilt and black shank resistance makes Oxford 207 especially suited to areas where these diseases are prevalent.

U.S. plant variety protection for Oxford 207 is pending (PVP Certificate no. 9800044). Breeder seed of Oxford 207 will be maintained by the North Carolina Agricultural Research Service, Raleigh, NC 27695-7643. Seed is available exclusively from Gold Leaf Seed Company, Hartsville, SC; Raynor Certified Tobacco Seed, Rocky Mount, NC; and RG Seed Company, Oxford, NC.

V. A. SISSON* (3)

References and Notes

3. Dep. of Crop Science, North Carolina State Univ., Oxford Tobacco Research Station, P.O. Box 1555, Oxford, NC 27565. Registration by CSSA, Accepted 31 July 1998. *Corresponding author (verne_sisson@ncsu.edu).


Registration of ‘Kodiak’ Pinto Bean

‘Kodiak’ pinto bean (*Phaseolus vulgaris* L.) (Reg. no. CV-156, PI 604226) was developed and released cooperatively by the Michigan Agricultural Experiment Station and the USDA-ARS in 1998 for its high yield, midseason maturity, and disease resistance.

Kodiak, tested as P94207, was derived from a cross, P90557/G91213, made in 1992 between pinto and great northern bean breeding lines. P90557 is a midseason, rust-resistant, upright, indeterminate (Type II) pinto breeding line and G91213 is a virus-resistant great northern breeding line. The F<sub>1</sub> plants were advanced in the greenhouse and space-planted in an F<sub>2</sub> nursery at the Bean and Sugarbeet Research Farm near Saginaw, MI. A single-plant F<sub>2</sub> selection was identified as possessing the desired agronomic and pinto seed traits. The F<sub>3</sub> progeny were advanced as a plant row in Puerto Rico. A single-plant selection was made in a space-planted F<sub>3</sub> nursery in Michigan on the basis of agronomic traits, seed traits, and resistance to bean rust [caused by *Uromyces appendiculatus* (Pers.:Pers.) Unger]. The F<sub>4</sub> progeny were advanced as a plant row in Puerto Rico. The F<sub>5</sub> breeding line, coded P94207, entered replicated yield trials in 1994.

Kodiak was extensively tested for yield and agronomic traits at 26 locations in Michigan, North Dakota, Nebraska, Colorado and Washington over four seasons (1994-1997). Kodiak averaged 2860 kg ha<sup>-1</sup> and has outyielded ‘Aztec’ by 11% over 18 locations, ‘Othello’ by 10% over 21 locations and ‘Chase’ by 5% over 11 locations.

Kodiak averaged 48 cm in height and exhibits a Type II indeterminate growth habit, with moderate resistance to lodging. Kodiak has white flowers and blooms 51 d after planting. Kodiak is a midseason bean, maturing 94 d after planting and with a range in maturity from 91 to 99 d, depending on season and location. Kodiak matures 2 d later than Aztec, 7 d later than Othello and 2 d earlier than Chase.

Kodiak is the first pinto cultivar to possess the single dominant hypersensitive l gene for resistance to bean common mosaic virus (BCMV), combined with the recessive bc<sup>-1</sup> gene. This combination gives protection against the temperature-insensitive necrosis-inducing strains of bean common mosaic virus (BCMV) such as NL 3 and NL 8, present in the western USA. Kodiak possesses the Ur-3 and Ur-6 rust resistance genes, which conditions resistance to Races 47 and 53 and all indigenous bean rust races prevalent in Michigan. Kodiak is tolerant to root rot [caused primarily by *Fusarium solani* (Mart.) Sacc. f. sp. *phaseoli* (Burkholder) W.C. Snyder & H.N. Hans.], but is susceptible to Michigan isolates of halo blight [caused by *Pseudomonas syringae pv. phaseolicola* (Burkholder) Young et al.], common blight [caused by *Xanthomonas campestris pv. phaseoli* (Smith) Dye], white mold [caused by *Sclerotinia sclerotiorum* (Lib.) de Bary] and bean anthracnose [caused by *Colletotrichum lindemuthianum* (Sacc. & Magnus) Lams.-Scrib.).