Registration of IG KY 171 and IG KY 160 Tobacco Germplasm Lines

IG KY 171 (Reg. no. GP-48, PI 578863) and IG KY 160 (Reg. no. GP-49, PI 578862) dark tobacco (Nicotiana tabacum L.) germplasm lines were released by the Kentucky Agricultural Experiment Station in 1992 for their indeterminate growth habit. Plants of IG KY 171 and IG KY 160 continue vegetative growth until shorter day lengths in late summer. Other terms often used to describe tobacco with an indeterminate growth habit are mammoth, gigantism, and nonflowering. Indeterminate growth is inherited as a simple homozygous recessive trait (1,2). IG KY 171 and IG KY 160 were developed by transferring this trait from a mammoth flue-cured line, Mammoth C187, into fire-cured 'KY 171' (3) and air-cured 'KY 160'. The backcross method was used, and IG KY 171 and IG KY 160 were identified as homozygous lines in the second self generation following five backcrosses (BC$_5$S$_2$).

Agronomic performance of IG KY 171 and KY 160 depends on topping time and height. Three-year performance trials have been conducted in which the two lines were topped on the same date as KY 171 and KY 160 and at a similar point, which was directly above the smallest leaf exceeding 15.25 cm (6 inches) in length. Compared with KY 171, IG KY 171 had six more leaves, was 19 cm taller, had leaves that were about 3 cm longer and 3 cm narrower, yielded 44% more cured leaf, and had about the same level of nicotine in cured leaves. Compared with KY 160, IG KY 171 had two more leaves, was 25 cm taller, had leaves that were longer and 1.6 cm wider, yielded 64% more cured leaf, and had about the same level of cured-leaf nicotine. The tall plants and big stalk sizes of IG KY 171 and IG KY 160 are undesirable for commercial production; however, they can be used as sources of germplasm for development of populations such as segregating generations from crosses with short-internode lines.

Small quantities of seed of the two germplasm lines are available upon written request to the author.

Registration of PY KY 171 and PY KY 160 Tobacco Germplasm Lines with the Pale-Yellow Trait

PY KY 171 (Reg. no. GP-50, PI 578865) and PY KY 160 (Reg. no. GP-51, PI 578864) dark tobacco (Nicotiana tabacum L.) germplasm lines were released by the Kentucky Agricultural Experiment Station in 1992 for the rapid yellowing of all leaves on the plants ~1 mo after the start of flowering. This characteristic, known as pale yellow, has potential usefulness in the development of cultivars that are less prone to sunburn or sun scald at harvest and also less prone to curing of leaves with green streaks or a greenish cast.

The origin, inheritance, and characteristics of the pale-yellow character have been discussed in detail (1). PY KY 171 and PY KY 160 were developed by transferring the genetic factor for pale-yellow (PyPy) from PY NC 95 by the backcross method to 'KY 171' and 'KY 160', respectively. PY NC 95 is a pale-yellow flue-cured line (2), KY 171 is a dark cultivar used to produce fire-cured and Green River air-cured tobacco, and KY 160 is a dark cultivar used to produce one-sucker air-cured tobacco (3). PY KY 171 and PY KY 160 were identified as homozygous lines in the second self generation following five backcrosses (BC$_5$S$_2$).

PY KY 171 was comparable to KY 171 in days to flower, plant height, leaf size, and yield in performance trials over 3 yr. Cured-leaf nicotine concentration for PY KY 171 was 5.31%, compared with 4.70% in KY 171. PY KY 160 has not differed significantly from KY 160 for these same agronomic and chemical traits. Visual observations have indicated that cured leaves of both PY KY 171 and PY KY 160 have excellent quality; however, on-farm performance and industry evaluations have not been obtained.

Small quantities of seed of PY KY 171 and PY KY 160 will be provided upon written request to the author.

References and Notes

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