met also had a greater impact on tobacco cyst nematode populations than Poquonock, averaging 76.3 and 65.0% population reductions per year, respectively.

Metacomet shade tobacco will allow the production of high quality shade tobacco in fields infested with *G. t. tabacum*. This cultivar allows growers to produce a tobacco crop while reducing cyst nematode populations in a manner comparable with a fumigant nematicide.

Breeder seed of Metacomet will be maintained and distributed by the Connecticut Agricultural Experiment Station Valley Laboratory, 153 Cook Hill Rd., Windsor, CT 06095. U.S. plant variety protection for Metacomet will not be applied for.

J.A. LaMondia* (8)

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Registration of 'Poquonock' Tobacco

'Poquonock' Connecticut shade tobacco (*Nicotiana tabacum* L.) (Reg no. CV-121, PI 612392) was developed by the Connecticut Agricultural Experiment Station and released in 1999. It was released because of it's resistance to the tobacco cyst nematode [*Globodera tabacum tabacum* (Lownsbery & Lownsbery) Behrens], which will allow shade tobacco production in cyst nematode-infested soils without the application of fumigant nematicides. Yield and sorting qualities are equal to or better than the nematode-susceptible shade cultivar O-40.

The tobacco cyst nematode is widely distributed in shade production areas in Connecticut and Massachusetts. All previous Connecticut shade cultivars evaluated were suseptible to *G. t. tabacum* (1). Cyst nematode infection may cause leaf quality reduction, dramatic early season stunting, and fresh leaf weight losses exceeding 40% at high nematode densities (2). Flue-cured tobacco lines with resistance to *G. t. solanacearum* (Miller & Gray) Behrens were also resistant to *G. t. tabacum* (3). Resistance to *G. t. tabacum* is conferred by a single dominant gene (1). Resistance to *G. t. tabacum* and *G. t. solanacearum* may be linked to wildfire [*Pseudomonas syringae* pv. *tabaci* (Wolf & Foster) Young et al.] resistance (4). Wildfire resistance was transferred from *N. longiflora* Cavanilles to the breeding line TL 106, which had a pair of chromosomes from the wild species (5), and eventually to VA 81. *Nicotiana longiflora* was resistant to *G. t. solanacearum* in pot experiments (6).

Poquonock is an inbred derived from an initial cross made in 1987 between the nematode-susceptible Connecticut shade tobacco cultivar O-30 and the *G. t. solanacearum* resistant flue-cured line VA 81. The pedigree system of breeding was used. Poquonock was selected from the F_2 generation of the O-30 and VA 81 cross, back-crossed to O-30 twice, then to the nematode-susceptible shade cultivar O-40 twice, then crossed again to a selfed inbred (three generations) from the cross of O-30 by VA 81. Both O-30 and O-40 were developed and commercially grown by Windsor Shade Tobacco, Inc. Resulting selections were selfed to homogeneity for six generations. Individual plants in the second and fourth selfed generations were selected with cyst nematode resistance using a greenhouse seedling assay (1). Progeny testing was performed in 1993 to identify plants homozygous for *G. t. tabacum* resistance. The experimental designation CT-107 was used during development.

Poquonock was selected for growth and yield characteristics under field conditions. Selection was done in the presence of damaging population levels of *G. t. tabacum* to avoid severe intolerance to nematode infection. Poquonock was also selected for the dominant hypersensitive gene for resistance to tobacco mosaic virus derived from *Nicotiana glutinosa* L. and for reduced sensitivity to weather fleck, caused by ozone.

Poquonock reduced cyst nematode population densities by 67% in 1994 and 63% in 1997 in field plots in a cloth-covered shade tent at the Experiment Station Valley Laboratory in Windsor. In comparison, the susceptible cultivar O-40 increased *G. t. tabacum* populations by more than 200% annually. Production of Poquonock shade tobacco reduced cyst nematode populations in a manner similar to soil fumigation after production of a susceptible cultivar.

Leaf yield and quality of Poquonock and the nematode-susceptible O-40 were compared in field plots infested with 120 to 250 infective *G. t. tabacum* juveniles per cubic centimeter soil. Yields were similar or greater for Poquonock than the O-40 standard. Average fresh weight leaf yield of Poquonock and the susceptible O-40 was 731.9 and 614.7 g plant^{-1}, respectively. Cured leaf quality was determined by industry evaluation. Economic value, determined by leaf yields and percentage weight in each cured leaf quality grade in 1993, was \$44.00 kg^{-1} for Poquonock and \$24.20 kg^{-1} for the nematode-susceptible O-40 standard. Poquonock produces higher quality leaf grades than 'Metacomet', which has the advantage of higher leaf weights (6).

Poquonock shade tobacco will allow the production of high-quality shade tobacco in fields infested with damaging populations of *G. t. tabacum*. This cultivar allows growers a nonchemical nematode control tactic that can reduce nematode populations comparable with a fumigant nematicide.

Breeder seed of Poquonock will be maintained and distributed by the Connecticut Agricultural Experiment Station Valley Laboratory, 153 Cook Hill Rd. Windsor, CT 06095. U.S. plant variety protection for Poquonock will not be applied for.

J.A. LaMondia* (8)

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Registration of 'HoCP 91-555' Sugarcane

'HoCP 91-555' sugarcane (a complex hybrid of *Saccharum officinarum* L., *S. barberi* Jeswiet, *S. spontaneum* L., and *S. sinense* Roxb. amend. Jeswiet) (Reg. no. CV-112, PI 612671) was selected from progeny of the cross CP 83-644/LCP 82-94 made at Canal Point (CP), FL, in 1986, and selected in the seedling stage at Houma (Ho), LA, in 1988. HoCP 91-555 is a product of cooperative research by the Agricultural Research Service of the United States Department of Agriculture, the Louisiana Agricultural Experiment Station of the Louisiana State University Agricultural Center, and the American Sugar Cane League of the U.S.A., Inc., and was released in the fall of 1999.

Yield data from a total of 44 mechanically harvested, replicated trials on both light- and heavy-textured soils indicate that HoCP 91-555 was comparable to 'LCP 85-384' (1), the commercial check and principal cultivar grown in Louisiana in 1999, in yields per hectare of total recoverable sugar (kg ha^{-1}) and megagrams cane (Mg ha^{-1}) in the first-ratoon crop but significantly lower than LCP 85-384 in the plant-cane and second-ratoon crops. HoCP 91-555 exceeded all other commercial checks in yields per hectare of total recoverable sugar and megagrams cane in the plant-cane crop. HoCP 91-555 was comparable to 'CP 70-321' (2), another commercial check and the second principal cultivar grown in Louisiana in 1999, in yields per hectare of both recoverable sugar and megagrams cane in the second-ratoon crop. HoCP 91-555 is an early maturing, high sucrose cultivar similar in recoverable sugar per megagram (kg Mg^{-1}) to CP 70-321 at the start of the harvest season. Unlike CP 70-321, its level of recoverable sugar per megagram continues to increase throughout the harvest season or until the occurrence of a killing freeze (≈28°C); however, the ultimate effect of the freeze on sucrose accumulation is temperature and time dependent.

HoCP 91-555 produces a high population of small diameter, green stalks, but internodes become maroon to brown following exposure to the sun. Its stalk weight, averaged across the three crops (plant-cane and two ratoon crops), was 0.91 kg, compared with 0.93 kg for LCP 85-384 and 1.16 kg for CP 70-321. Desirable attributes of this cultivar are its moderate fiber content (13.6%), its good milling factor (1.009), its lack of brittleness, and its erect growth habit. The latter two attributes are conducive to mechanical harvesting. Yield losses (scrap) associated with mechanical harvesting are lower than LCP 85-384 and similar to 'HoCP 85-845' (3).

HoCP 91-555 is resistant to sugarcane mosaic virus (strains A, B, and D) and sorghum mosaic virus (strains H, I, and M). The cultivar is resistant to smut (caused by *Ustilago scitaminea* Syd. & P. Syd.) and is resistant to rust (caused by *Puccinia melanocephala* Syd. & P. Syd.) under field conditions. The cultivar is susceptible to leaf scald [caused by *Xanthomonas albilineans* (Ashby) Dowson] by artificial inoculation, but has shown adequate field resistance to natural infection. Ratoon stunting disease (caused by *Clavibacter xyli* subsp. *xyli* Davis et al.) has caused significant reductions in yields per hectare of cane and total recoverable sugar in the ratoon crops. For HoCP 91-555 to yield to its full potential, it is essential that seed cane be free or nearly free of this disease. HoCP 91-555 is considered susceptible to the sugarcane borer [*Diatraea saccharalis* (Fabricius)] and should not be grown in areas where insecticides cannot be applied.

Seed cane of HoCP 91-555 will be maintained at the Sugarcane Research Unit, USDA-ARS, Southern Regional Research Center, Houma, LA, for 5 yr. U.S. plant variety protectioin of HoCP 91-555 will not be applied for.

B.L. Legendre,* W.H. White, M.P. Grisham, E.O. Dufrene, D.D. Garrison, and J.D. Miller (4)

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Registration of 'Century' Barley

'Century' spring barley (*Hordeum vulgare* L.) (Reg. no. CV-281, PI 603073) was developed at the Utah Agricultural Experiment Station and released in 1997. It was initially selected at Logan, UT, in 1987, as an F_5 line derived from a single F_5 head selected in 1986, from a cross of WA641566/'Bracken', made in 1982. WA641566 (a sib to 'Steptoe') is a six-row breeding line from the cross WA Selection 3564/'Unitan'. The breeding history of Bracken has been described (1). F_1 plants were grown in the greenhouse during the winter of 1982-1983. Segregating generations (F_2–F_5) were grown at Logan, UT, as space-planted modified bulk populations, and agronomically desirable plants were selected each year from 1983 through 1986. Individual heads from 265 F_5 plants were selected in 1986, based on agronomic appearance, and were evaluated as head rows in 1987. The original F_5-derived line from which Century originated was yield-tested in Utah as UT87B604-1705 beginning in 1988 and in the Western Regional Spring Barley Nursery in 1990 and 1991 as UT1705. It was reselected in 1991 for both lax and dense head types. The reselections resulted in the development and release of two cultivars (Century and 'Statehood') from the same original UT87B604-1705 line (2). Two-hundred lax-type heads (from which Century originated) were selected from the original line and were produced as F_{10}-derived head rows in the greenhouse during the winter of 1991-1992. Off-type rows were rogued out and remaining rows were harvested in bulk. The reselected line was yield-tested at four irrigated sites and two nonirrigated sites annually in Utah as UT87B604-1705-L beginning in 1992 and in the Western Regional Spring Barley Nursery (1993–1995) as UT1705L. Breeder seed was produced in a 1994-1995 winter increase at Yuma, AZ, from 250 F_{13}-derived head rows selected in 1994. Off-type rows were rogued out and remaining rows were harvested in bulk. Foundation seed was produced at Logan, UT, in 1995. Registered and Certified seed were produced in 1996 and 1997, respectively.

Century is a six-rowed, midseason, erect-growing, spring feed barley. It has a strap shaped, lax head with little overlap of lateral kernels at the tip of the head and short hairs on the rachis edges. It has waxy leaves and heads. Glumes are long, with short hairs confined to a band, and have medium-length, semi-smooth glume awns. Lemma awns are long and rough. Stigmas are heavily feathered. The seed is covered, midlong-to-long, semi-wrinkled, with numerous long rachilla hairs, and a transverse crease at the base. Aleurone color is white and