REGISTRATION OF VIRGINIA 310, SEARS SPECIAL, AND VIRGINIA 509 TOBACCO\(^1\)  
(Reg. Nos. 41, 42, and 43)  
R. G. Henderson and L. Spasoff\(^2\)

'Virginia 310' tobacco (Nicotiana tabacum L.), (Reg. No. 41) fire-cured type, was developed by the Virginia Polytechnic Institute from crosses involving cultivars 'Vesta 55,' 'West Kentucky 2,' 'Virginia 312,' and 'Hastings.' Selections were made in each generation for plant type, leaf quality, and disease resistance. Prior to release, Virginia 310 was identified in tests as Va. 4310, and was released in 1968 in the F7 generation.

Plants of Virginia 310 do not closely resemble any plant used in crosses, but have some characteristics of each parent. The leaves are large like Virginia 312 and Vesta 55, but tend to fold upward from the midrib like Hastings. The upper leaves have a crinkled appearance which results from the veins being depressed slightly below the lamina. The leaves on the stalk are spaced more closely than either parent. At maturity, the leaves droop somewhat, but not as much as heavy leaves of the 'Lizard Tail Orinoco' variety. The cured leaf is reddish brown in color.

Virginia 310 has moderate resistance to black shank (Phytophthora parasitica (Dast.) var. nicotianae (Breda de Haan) Tucker), and low resistance to black root rot (Thielaviopsis basicola (Berk. & Br.) Ferr.). In performance tests yields were good and leaf quality was fair. The percentage of green grades was high which reduced quality. Special attention to cutting the variety when fully mature is suggested.

Breeder seed will be maintained by the Department of Plant Pathology and Physiology, Virginia Polytechnic Institute, Blacksburg, Va. 24061.

'Sears Special' tobacco (Nicotiana tabacum L.), (Reg. No. 42) fire-cured type, was developed by the Virginia Polytechnic Institute from crosses involving cultivars 'Burley 37' and 'Burley 21' cultivars. It was released to commercial seed producers in 1967 in the F8 generation.

'Sears Special' tobacco has large leaves like Virginia 312 and Vesta 55, but tend to fold upward from the midrib like Hastings. The upper leaves have a crinkled appearance which results from the veins being depressed below the lamina. The leaves on the stalk are spaced more closely than either parent. At maturity, the leaves droop somewhat, but not as much as heavy leaves of the 'Lizard Tail Orinoco' variety. The cured leaf is reddish brown in color.

Virginia 310 has moderate resistance to black shank (Phytophthora parasitica (Dast.) var. nicotianae (Breda de Haan) Tucker), and low resistance to black root rot (Thielaviopsis basicola (Berk. & Br.) Ferr.). In performance tests yields were good and leaf quality was fair. The percentage of green grades was high which reduced quality. Special attention to cutting the variety when fully mature is suggested.

Breeder seed will be maintained by the Department of Plant Pathology and Physiology, Virginia Polytechnic Institute, Blacksburg, Va. 24061.

'Virginia 509' tobacco (Nicotiana tabacum L.), (Reg. No. 43) burley type, was developed by the Virginia Polytechnic Institute in cooperation with Mr. M. O. Neas, Tobacco Station, Greeneville, Tenn. It originated from crosses of 'Burley 57' and 'Burley 21' cultivars. It was released to commercial seed producers in 1967 in the F8 generation.

Virginia 509 is a stand-up type of plant with characteristics intermediate between the parent cultivars. The leaves are not as erect and compact on the stalk as Burley 21, but are more erect than Burley 21. Leaf shape resembles Burley 21. The top leaves are slightly wrinkled and tend to twist which are not characteristics of either parent. General color of growing plants is medium green with a slight yellow cast. The flowering date is approximately 2 days later than Burley 21.

Disease resistance of Virginia 509 is high for fire blight (Erwinia amylovora (Berk. & Foster) F. L. Stevens), moderate for tobacco mosaic virus (Tobacco Mosaic Virus), and low for wilt (Fusarium oxysporum (Schlecht f. spez. Johnson)).

The average yield of the new variety was equal to that of Burley 21 in farm tests. The leaf quality was excellent. Breeder seed will be maintained by the Department of Plant Pathology and Physiology, Virginia Polytechnic Institute, Blacksburg, Va. 24061.

\(^1\) Registered by the Crop Science Society of America. Received Dec. 20, 1969.
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Registration of Germplasm

REGISTRATION OF HEXAPLOID ALFALFA GERMPLASM\(^1\)  
(Reg. No. GP 10)  
E. T. Bingham\(^2\)

Hexaploid alfalfa (2n=6x=48) Medicago sativa L. provides many new opportunities for both theoretical and applied research. A population of hexaploid alfalfa carrying diverse germplasm was developed and released as W6XGP-1 by the University of Wisconsin for breeding and other research.

Original 6x plants were isolated among varietal plants of 'Saranac' and likely were produced by the union of reduced (2x) and unreduced (4x) gametes. Subsequent 6x plants were produced by crossing triploids (2n=3x=24) of diverse origin to form aneuploids and tetraploids as 2n=4x=32 and 2n=4x=40. The aseptic conditions of vegetative propagation and the ability of plants from these crosses to endure temperatures in excess of 100° C permitted the production of many new opportunities for both theoretical and applied research.

The original and triploid-derived hexaploids carry diverse chromosome associations which were mostly bivalent. Nucellar fertility was good, and they were self-and cross-fertile. Breeder seed descended from these hexaploids were grown in the greenhouse to produce seed of diverse germplasm. The color of seed is a unique valuable in the transfer of germplasm level.

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W6XGP-1 is now being observed in its first year in the field; it has not undergone screening for drought resistance or agronomic characteristics. A population of hexaploid alfalfa carrying diverse germplasm was developed and released as W6XGP-1 by the University of Wisconsin for breeding and other research.