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Laker Navy Beans

Michigan State University Cooperative Extension Service

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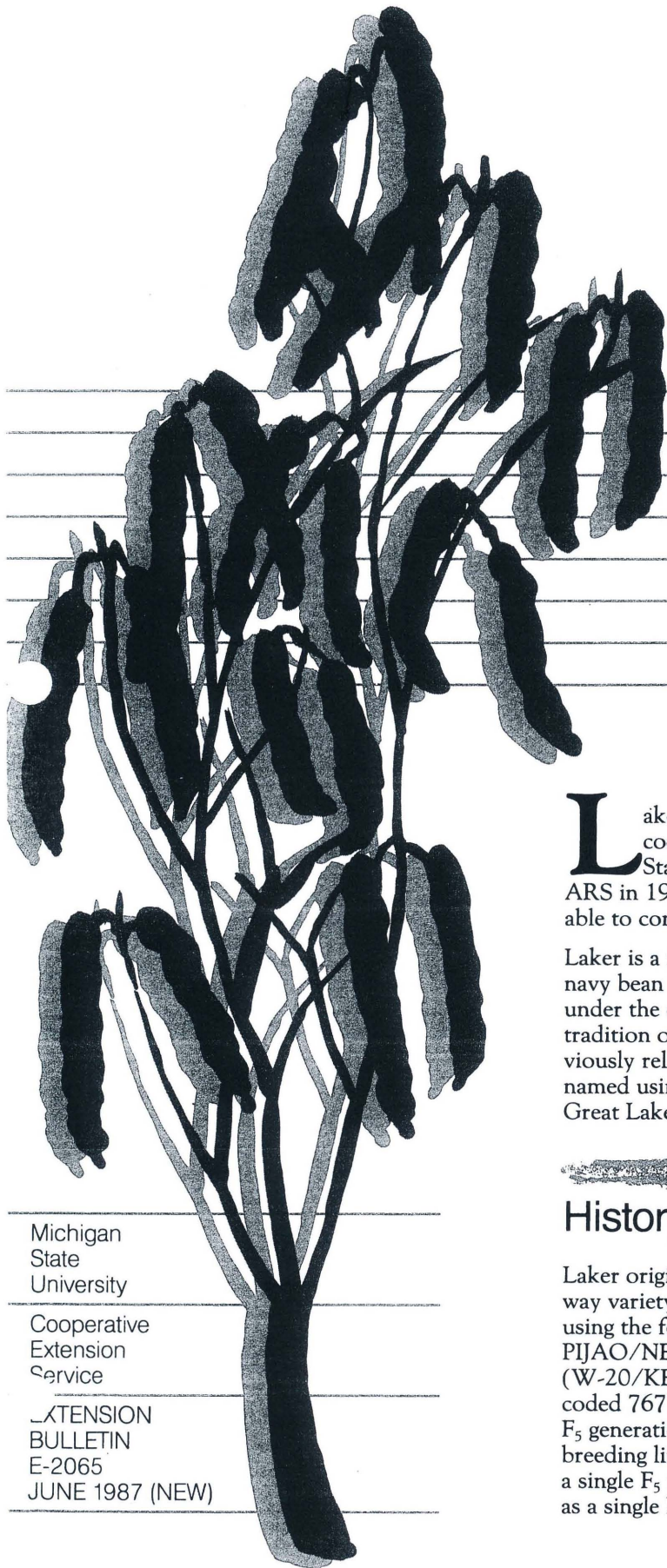
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Laker Navy Beans

JUN 26 1987



- Upright bush-growth habit
- Superior yield performance
- Full season maturity
- Excellent seed and canning quality
- Anthracnose and virus resistance
- Uniform maturity and dry down
- Good lodging resistance

Laker Navy Bean was released cooperatively by Michigan State University and USDA-ARS in 1983, and first became available to commercial growers in 1986.

Laker is a full season, upright bush navy bean variety previously evaluated under the code number C-15. In the tradition of navy bean varieties previously released by MSU, Laker was named using a nautical term with a Great Lakes connection.

History and Pedigree

Laker originated from the three-way variety cross made in 1976 using the following parents: PIJAO/NEP-2//73130-E2-B (W-20/KENTWOOD). The cross was coded 76713 and was advanced to the F₅ generation using single seed descent; breeding line 76713-E9 was selected as a single F₅ row in Ohio, and reselected as a single F₆ row in Sinaloa, Mexico.

In 1980, 76713-E9-B was unconditionally released to the Michigan Agricultural Experiment Station by Campbell Soup Company as an F₈-generation navy bean breeding line coded C-15.

Yield Performance and Maturity

Laker requires a full growing season to reach maturity, usually from 100 to 105 days after planting. Yields have exceeded those of the Seafarer variety by 17% over 4 years and 22 locations in Michigan. Yield potential of Laker varies with location like other type I determinate varieties, demonstrating the problem of developing a type I plant habit with yield stability. Laker appears best adapted to highly productive locations which attain adequate heat units and where type II cultivars frequently lodge. Type I varieties have a determinant growth habit while type

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Laker Navy Beans



It varieties are indeterminate and continue growing vegetatively after flowering and produce a trailing vine.

Plant Architecture and Agronomy

Laker exhibits an upright type I, determinate growth habit. Plants average 24-inches in height, about 10 inches taller than Seafarer; are erect, narrow in profile with a few basal branches and are highly resistant to lodging. These modified plant architectural characters, coupled with a vigorous root system, contribute to the lodging resistance of Laker and offer growers the opportunity of direct harvest.

Disease Resistance

Laker carries the single dominant hypersensitive I-gene form of resistance to all strains of bean common mosaic virus (BCMV) and is also resistant to the alpha race of anthracnose, the predominant race of this seed-borne pathogen in Michigan. Laker is resistant to many of the indigenous rust races prevalent in Michigan. It exhibits tolerance to Michigan isolates of halo blight and tolerance to the oxidant air pollutant, ozone. Most other standard bush navy varieties grown in Michigan are susceptible to ozone injury.

Seed and Canning Quality

Laker has an ovoid white seed averaging 19.4 g/100 seeds which is within the acceptable range of 17.5 to 20.5 g/100 seeds, characteristic of standard navy bean varieties. Dry seed color as measured by a Hunter color meter was 61.4 on the L-scale, well within the acceptance range of 61.4 to 63.4 exhibited by the Seafarer variety grown across the same locations and years. In cooking tests, Laker has produced a cooked product similar to other acceptable navy bean varieties with drained weight and hydration ratios similar to those of standard navy varieties tested concurrently.

Plant Variety Protection

Variety protection has been applied for under the Plant Variety Protection Act, Public Law 91-577, with the option that Laker may be sold for seed by name only as a class of certified seed. This provision is expected to help maintain varietal identity and help control serious seedborne diseases such as common blight.

Seed Availability

Breeder seed and a percentage of foundation seed is grown and maintained in dry, disease-free areas of the western United States by the Michigan Foundation Seed Association in cooperation with the Michigan Agricultural Experiment Station. Most certified seed is produced in Michigan although some may also be available from out-of-state.

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