NOTICE OF NAMING AND RELEASE OF NEWPORT, A NEW MID SEASON BUSH NAVY BEAN FOR MICHIGAN AND THE GREAT LAKES REGION

The Michigan Agricultural Experiment Station and the United States Department of Agriculture, Agricultural Research Service, announce the joint release of Newport, a new determinate, mid-season, navy bean cultivar with resistance to all known isolates of anthracnose in North America.

Newport tested at MSU no. N90599 was derived from a cross made in 1987 between navy bean breeding lines N85606/'Harokent'. N85606 is a full-season, anthracnose resistant, upright, indeterminate (type II) breeding line; Harokent is a determinate (type I), mid-season, disease resistant cultivar with excellent seed and canning quality. The cross was designed to incorporate additional anthracnose resistance and erectness into the type I navy bean growth habit. The cross was coded 87N602 and subsequently single-plant F$_2$ selection no. 17 was identified as possessing the desired agronomic and seed traits. Progeny were advanced to the F$_6$ generation where breeding line numbered 87N602-17-01-04 entered replicated yield trials in 1990 and was coded with the permanent accession number N90599.

Newport was developed by the dry bean breeding team at East Lansing, Michigan, consisting of Dr. J.D. Kelly, Mr. J. Taylor and Ms. L. Afnanor of Michigan State University, Department of Crop and Soil Sciences; Dr. G.L. Hosfield of ARS, U.S. Department of Agriculture, Sugarbeet, Bean and Cereal Research Unit; Dr. M.A. Uebersax of Michigan State University, Department of Food Science and Human Nutrition; and Mr. G.V. Varner of the Michigan Dry Bean Production Research and Advisory Board.

Newport was extensively tested for yield and agronomic traits for five seasons (1990-94) over 33 locations. Huron averaged 2450 kg ha$^{-1}$ and outyielded early season navy bean cultivar 'Seafarer' by 8%; was equivalent in yield to the mid-season determinate cultivars 'Midland' and 'Albion'; but yielded from 10 to 17% less than the type-II cultivars 'Avanti' and 'Mayflower'.

Newport exhibits an upright type-I, determinate growth habit averaging 50 cm in height combined with excellent resistance to lodging. Newport is a mid-season bean maturing 94 days after planting with a range in maturity from 87 to 98 days depending on
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season and location. Newport matures 5 days earlier than the full-season cultivar Mayflower and 7 days later than the early-season cultivar Seafarer. Newport has demonstrated uniform maturity and excellent dry-down across a broad range of environments.

Newport carries the single dominant hypersensitive I gene resistance to Bean Common Mosaic Virus ( BCMV) but is sensitive to the temperature insensitive strains of BCMV like NL 3 and NL 8 which induce the black root reaction. Newport carries the combination of A and Are genes which conditions resistance to all known races of anthracnose present in North America. Newport carries the Ur-3 rust resistance gene which conditions resistance to race 53 and all indigenous rust races prevalent in Michigan. Newport has shown no tolerance to white mold in spite of the avoidance afforded by its erect plant architecture.

Newport has a large ovoid navy bean seed averaging 22 g 100 seed$^1$ and ranges from 19-23 g 100 seed$^1$. The seed is similar in size and color to Seafarer; dry seed color is brighter than Mayflower. In canning trials Newport has been subjectively rated by a team of panlists as being satisfactory in cooking quality. Newport scored 3.0 on a 5-point hedonic scale (3 is average). Data on cooked color, hydration and drained weight ratios exhibited no differences between Newport and other commercial navy bean cultivars. The texture of 45 kg 100 g$^{-1}$ is well within the acceptable range of 40 to 80 kg 100 g$^{-1}$ for processed navy beans.

Seed of Newport for experimental purposes may be obtained from Dr. J.D. Kelly, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824. The Agricultural Research Service has no seed for distribution.

Newport navy bean is being released as a public, non exclusive cultivar, jointly by the Michigan Agricultural Experiment Station and the Agricultural Research Service. A research fee will be assessed on each unit (hundredweight) of certified seed sold.

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Director                              Date
Michigan Agricultural Experiment Station

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Administrator                    Date
Agricultural Research Service
