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Newport a New Navy Bean for Michigan
Michigan State University Extension Service
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**NEW from
MSU**

Newport

A NEW NAVY BEAN

for Michigan

- Upright bush habit
- Early- to mid-season maturity
- Complete anthracnose resistance
- Competitive yield in mid-season maturity class
- Excellent seed quality
- Uniform maturity and dry-down



Newport is a new navy bean variety from Michigan State University. It was released jointly by the Michigan Agricultural Experiment Station and the United States Department of Agriculture, Agricultural Research Service. Newport has an upright bush growth habit and mid-season maturity combined with resistance to all known North American races of anthracnose.

Origin and Breeding History

Newport, tested as MSU No. N90599, was derived from a cross between MSU breeding lines N85606 and the Canadian navy bean variety, Harokent. N85606 is a mid-season, anthracnose resistant navy bean breeding line; Harokent is a determinate, mid-season, disease resistant variety

with excellent seed and canning quality. The cross was designed to incorporate different sources of anthracnose resistance into bush navy bean germplasm. The cross was made in 1987 and advanced to the F8 generation over three years. An anthracnose resistant breeding line entered yield trials in 1990 with the permanent code N90599.

Yield Performance

Newport was tested extensively for yield and agronomic traits for five seasons (1990-94) over 33 locations (Table 1). It averaged 23 cwt/acre and out yielded the early season navy bean variety Seafarer by 8 percent. Newport was equivalent in yield to the mid-season determinate bush bean varieties Midland and Albion, but it yielded 10-17 percent less than full season indeter-

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minate varieties like Avanti and Mayflower.

Agronomic Features

Newport exhibits an erect bush growth habit averaging 20 inches in height with the pods positioned high in the plant canopy. It has excellent resistance to lodging, with a score of 2 on a 1 to 5 scale.

Newport is a mid-season variety, maturing 93 days after planting with a range in maturity from 87-98 days depending on season and location. It matures a week earlier than the full season variety Mayflower and three days earlier than Avanti. It matures with Midland, is three

days later than Albion and one week later than Seafarer. Newport has demonstrated uniform maturity and excellent dry-down across a broad range of environments and fits a niche for a mid-season bush navy bean variety in Michigan.

Disease Resistance

Newport carries the single dominant hypersensitive I gene resistance to bean common mosaic virus (BCMV) but is sensitive to the temperature-insensitive necrosis-inducing strains of BCMV which cause the black root reaction. Newport carries the unique combination of A and Are genes for resistance to all North

American races of anthracnose which attacks other navy bean varieties. The A/Are combination affords resistance to the common alpha race and the new races 7 and 73 in Michigan and to the delta and alpha-Brazil races in Ontario. It carries the Ur-3 rust resistance gene which conditions resistance to all local rust races prevalent in Michigan. Newport has shown little tolerance to white mold in spite of the avoidance afforded by its very erect plant architecture, so chemical control is recommended when weather conditions favor disease development.

Quality Characteristics

Newport has a round navy bean seed averaging 22 g per 100 seeds and ranging from 19-23 g per 100 seeds. The seed is equivalent in size, shape and color to Seafarer. In canning trials, Newport has been rated by a team of panelists as acceptable in canning quality. Newport scored 3.0 or equivalent to other commercial navy bean varieties on a 5-point scale where 3 is average. Data on cooked color, texture hydration and drained weight ratios exhibited no differences between Newport and other commercial navy bean varieties.

Release and Research Assessment

Newport is released as a public, nonexclusive variety, jointly by the Michigan Agricultural Experiment Station and the Agricultural Research Service. A research fee will be assessed on each unit (cwt) of certified seed sold.

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Table 1. Newport Navy Bean — Comparison of Agronomic, Disease, Yield Performance and Canning Characteristics.

Traits	Newport	Seafarer	Midland	Albion	Huron	Mayflower
Agronomic Traits						
Days to flower	41	40	42	42	40	47
Days to maturity	93	87	93	88	92	99
Height (cm)	50	43	45	46	46	50
Lodging score (1-5)	2.0	3.0	2.5	3.0	3.0	2.0
Selection index (1-9)	6.0	3.5	4.5	4.0	5.5	5.0
100 seed weight (g)	22.0	20.0	18.0	21.0	22.0	19.0
Yield (percent)	100	92	101	103	113	117
Disease Resistance						
Bean common mosaic virus	R	R	R	R	R	R
Alpha anthracnose	R	R	S	S	R	S
Race 7 anthracnose	R	S	S	S	R	S
Race 73 anthracnose	R	R	S	S	S	S
Michigan rust races	R	S	S	S	R	R
Common blight	S	S	S	S	S	S
White mold (1-5)	4	3	4	3	2	3
Canning Quality						
Color L-scale	51	51	50	51	50	50
Hydration ratio	1.9	1.9	1.9	1.9	1.8	1.9
Washed drained ratio	1.2	1.3	1.4	1.2	1.3	1.3
Texture (kg/100 g)	45	37	44	45	45	44
Organoleptic rating (1-5)	3.0	3.3	3.8	2.0	4.3	2.8

Lodging: 1 = erect, 5 = prostrate
 Selection index: 1 = worst, 5 = average
 Diseases: R = resistant, S = susceptible
 White mold: 1 = resistant, 5 = susceptible
 Organoleptic rating: 1 = worst, 5 = best



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