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Aztec a New Pinto Bean for Michigan
Michigan State University Extension Service
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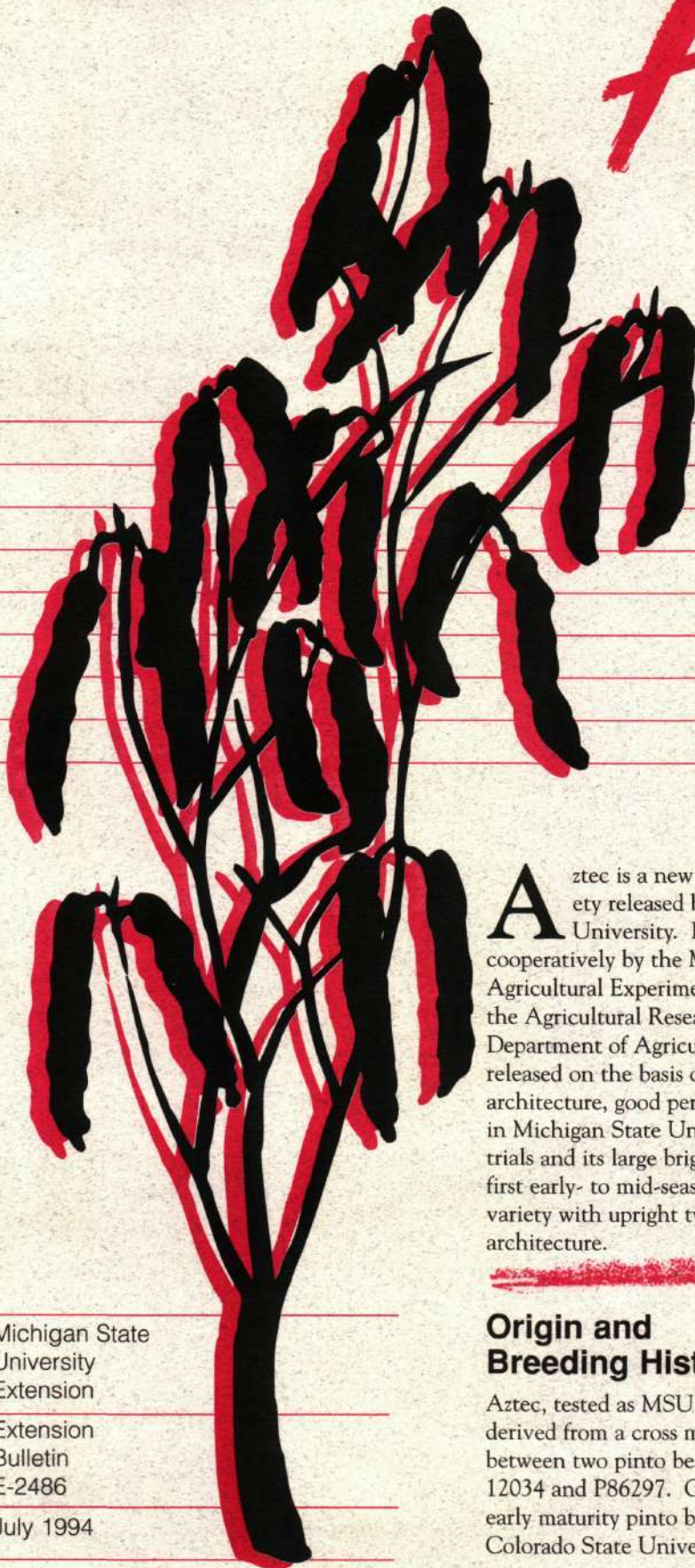
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**NEW from
MSU**

Aztec

A NEW
PINTO BEAN

for Michigan



- Erect indeterminate plant habit
- Short vine
- Good performance record
- Early- to mid-season variety
- Tolerance to alpha race of anthracnose
- Large, bright seed
- Produces satisfactory canned product

Aztec is a new pinto bean variety released by Michigan State University. It was developed cooperatively by the Michigan Agricultural Experiment Station and the Agricultural Research Service, U.S. Department of Agriculture. It is released on the basis of its upright architecture, good performance record in Michigan State University yield trials and its large bright seed. It is the first early- to mid-season pinto bean variety with upright type II architecture.

Origin and Breeding History

Aztec, tested as MSU No. P89430, was derived from a cross made in 1986 between two pinto bean lines C081-12034 and P86297. C081-12034 is an early maturity pinto breeding line from Colorado State University and P86297

is an upright, type II short vine pinto breeding line and a sister of pinto bean variety Sierra. The original cross was designed to improve seed size and quality of upright pinto beans being developed at Michigan State University. The cross was advanced and a single plant selection was identified for its upright growth habit and excellent pinto seed type. The F6 generation breeding line entered yield trials in 1989 and was given the code number P89430.

Yield Performance

Aztec has been tested for five seasons (1989-1993) over 38 locations in Michigan and has yielded an average of 25 cwt/acre (Table 1). It matures nine days earlier than Sierra, and because of its earlier maturity, has yielded 11% less than Sierra and is competitive with the vine variety Othello.

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Agronomic Features

Aztec has an erect, type II indeterminate plant habit with a short vine. It is slightly shorter than Sierra but taller, and more lodging resistant than Othello. Aztec carries the majority of its pods off the ground. This feature, along with its upright architecture and lodging resistance, makes Aztec better adapted to Michigan growing conditions.

Disease Resistance

Aztec exhibits tolerance to the alpha race of anthracnose which is the predominant race present in Michigan. It is susceptible to Michigan isolates of rust and bean common mosaic virus.

Quality Characteristics

The mature seed of Aztec weighs 41 g per 100 seeds which is equivalent to the preferred size of the pinto bean variety Othello. The overall bright seed color of the background and mottle of Aztec, combined with the yellow hilum ring, produces an attractive seed that meets the requirement for the dry pack marketing trade. Aztec has produced a satisfactory canned product over two years of testing. It has a better processed appearance than Sierra and was rated average on a 5.0 point scale where 5 is best.

Table 1. Aztec Pinto Bean — Comparison of Agronomic, Disease, Yield Performance and Canning Characteristics.

	Aztec	Sierra	Othello
Characteristics			
Growth habit	upright	upright	vine
Flower color	white	white	white
Days to flower	44	50	42
Days to maturity	90	99	86
Height (cm)	45	50	35
Lodging score (1-5)	1.5	2.0	3.5
Selection index (1-9)	5.5	5.0	3.5
Seed size (g/100 seeds)	41	38	40
Yield percent	100	111	107
Disease Resistance			
Bean common mosaic virus	S	S	R
Michigan rust races	S	R	S
Alpha anthracnose	R	I	S
Common blight	S	S	S
Canning Quality			
Organoleptic rating (1-5)	2.8	2.4	3.3

Lodging: 1=erect, 5=prostrate

Selection: 1=worst, 9=best, based on adaptation

Anthracnose: R=resistant, I=intermediate, S=susceptible

Blight: S=susceptible

Organoleptic Rating: 1=worst, 3=satisfactory, 5=excellent

Release and Research Assessment

Aztec is released as a public, nonexclusive variety by the Michigan Agricultural Experiment Station and the Agricultural Research Service, U.S. Department of Agriculture. A research fee will be assessed for each unit (cwt) of certified seed sold.

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