supermarket.

From our experience, we have learned that *A. arguta* is a new crop worthy of commercial attention. Sufficient knowledge exists for its cultivation and with its natural appeal, we believe that it can be successfully marketed. Research work is needed to improve postharvest characteristics, particularly evenness of ripening.

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Performance of 'Mutsu' on MAC.9 and M.9 Interstems Over Nine Years

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Abstract

'Mutsu' on MAC.9, M.9/MM.106 and M.9/MM.111 (30 cm interstems) were planted in 1983. Trees on MAC.9 made less growth throughout, and after 9 years had 65% smaller TCAs and approximately 40% smaller spread and heights than either interstem. There was no difference in production efficiency (cumulative yield ÷ TCA) and due to larger tree size, interstem trees had higher cumulative yields/tree. Average fruit size was not influenced by rootstock or interstem.

Introduction

'Mutsu' has performed well in Ohio (2, 3,4) and other eastern areas and has a favorable sales record in farm markets. Being a triploid it results in a very large sized tree (2,3) with very vigorous growth. The present study was initiated to evaluate its performance on a dwarfing rootstock and interstems.

Materials and Methods

In April 1983, 'Mutsu' trees on MAC.9, M.9/MM.106 and M.9/MM.111 produced in a nursery at the Ohio Agricultural Research and Development Center were planted at a spacing of 3 m x 5 m. Interstem length was 30 cm with the upper union just above the soil surface. Trees were trained to a free-stand-

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ing central leader with minimal pruning. A 2 m herbicide strip was used with sod middles for soil management and they received a standard control program for pests. The rootstock treatments were arranged as a randomized complete block design with 8 single-tree replications. Trunk circumference and yield/tree were collected annually. Length of 10 terminal shoots/tree were measured in 1987, 1990 and 1991. At harvest, a sample of 25 fruit/tree was used to determine average fruit weight. At the completion of the study in 1991 tree height and spread were measured.

Results and Discussion

Trees on MAC.9 made less growth throughout and had 65% smaller trunk areas after 9 years than M.9 interstem trees on both MM.106 and MM.111 (Table 1) Tree height and spread was approximately 40% smaller than on either of the M.9 interstems. Trees on the M.9 interstems did not differ in tree size. In a comparison of 18 cultivars on M.26, 'Mutsu' had a larger TCA than any other cultivar after 10 years (3). The trees on M.26 were 40% larger than the interstem trees in this trial. The trees in this trial made good growth, however, they were not as excessively vigorous as 'Mutsu' has been in other trials. Although it is not possible to separate the rootstock and site influence, it appears that interstems had a greater influence on reducing the vigor of 'Mutsu' than M.26 (3) or MM.106 (2). Average shoot growth followed the above pattern in 1987 with no difference among root systems in 1990 or 1991 (date not shown). Due to larger tree

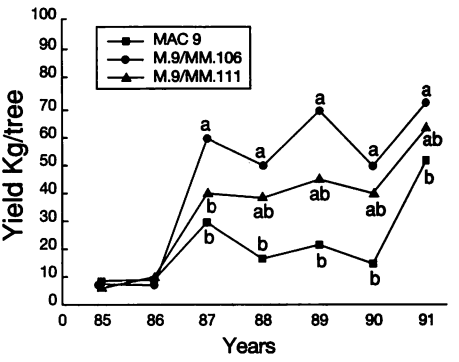

Figure 1. Yield/tree (kg) of 'Mutsu' on MAC.9 and M.9/MM.106 and M.9/MM.111. Means separated by Duncan's multiple range test, P = .05.

size, interstem trees had higher cumulative yields than trees on MAC.9 with no difference between the two interstems. Cumulative yield efficiency did not differ among the rootstocks or interstems. Efficiency of 'Mutsu' has been relatively low in previous trials (2,3,4) compared to other cultivars and the values for cumulative yield/TCA in this trial are very similar to those measured previously. However, long-term production per tree of 'Mutsu' has generally been high (2,3,4) and a comparison of spur leaf size and total leaf area per spur indicated that 'Mutsu' had very high values compared to other cultivars. Spur quality was highly correlated to long-term cumulative yield/tree (4). Over 9 years, all trees on MAC.9 survived, while 25% of the trees on both interstems died.

Yield per tree was generally lowest on the small trees onMAC.9 and intermediate on trees on M.9/MM.111 and greatest

Table 1. Performance of 'Mutsu' on MAC.9 and M.9 interstems on either MM.106 or MM.111 over nine years.

Rootstock/	Trunk Cross-sectional Area (cm^2)			Tree Size (m)		Cumulative yield	Cumulative efficiency
	Change						
Interstem	1987-'83	1991-'87	1991	height	spread	(kg/tree)	(kg/cm^2)
MAC.9	22.8b*	23.0b	48.0b	2.3b	2.5b	93.5b	2.4
M.9/MM.106	56.2a	86.4a	145.3a	3.5a	3.4a	305.9a	2.3
M.9/MM.111	51.0a	82.3a	136.1a	3.8a	3.5a	247.2a	1.8

* Means separation by Duncan's multiple range test, P = .05.

on trees on M.9/MM.106, but the differences were not always statistically significant between the interstems (Fig. 1). Average fruit size was not affected by rootstock or interstem during the 5 season it was measured (data not presented).

If cumulative yield/ha is calculated using actual spread as the in row spacing and this distance plus 2.5 m for between row spacing, cumulative yield for M.9/MM.106 was 67.3 tons/ha; with M.9/MM.111, 46.8 tons/ha. Even though tree density was much higher at 800 trees/ha for trees on MAC.9, calculated cumulative yield/ha was only 33.9 tons. Much lower than the interstem trees. Long-term productivity of other cultivars on MAC.9 has not been high in previous Ohio studies (1).

MAC.9 and interstems were successful in reducing tree size of 'Mutsu', however, trees on interstems were more productive. Although they were not significantly higher, yields of trees on M.9/MM.106 were consistently slightly higher than trees on M.9/MM.111 over the 9 years of this study.

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Fruit Set of Eight Rabbiteye Blueberry (*Vaccinium ashei* Reade) Cultivars in Response to Gibberellic Acid Application

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Abstract

Eight rabbiteye blueberry (*Vaccinium ashei* Reade) cultivars were treated with gibberellic acid (GA_3) under greenhouse conditions to determine the growth regulator's effectiveness in inducing parthenocarpic fruit set. Cultivars were 'Baldwin', 'Bluebelle', 'Briteblue', 'Brightwell', 'Climax', 'Premier', 'Tifblue', and 'Woodard'. All cultivars had less than 10% fruit set in the absence of pollination or GA_3. Fruit set of most cultivars was increased to 25% or more by a single application of 250 mg/L GA_3 applied at stage 5 to 6 of development (just before anthesis). A second application of GA_3 7 to 10 days later further increased fruit set of all cultivars except 'Premier' and 'Woodard'. Fruit set in response to GA_3 ranged from 30% for 'Briteblue' to over 74% for 'Brightwell'. Average weight of the parthenocarpic fruit ranged from 0.62 g/berry for 'Briteblue' to 1.08 g/berry for 'Baldwin'. These results suggest that exogenously applied GA_3 can induce parthenocarpic fruit on many rabbiteye cultivars, although the resulting fruit set and size may vary.

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