

ASPARAGUS VARIETY PERFORMANCE

Erik B. G. Feibert, Clinton C. Shock, Lamont Saunders, and Greg Willison
Malheur Experiment Station
Oregon State University
Ontario, Oregon, 1996

Introduction

Acreage of asparagus for canning has been expanding in the western Treasure Valley since 1994. This trial compared the performance of varieties in the Treasure Valley of eastern Oregon.

Procedures

Asparagus crowns of five varieties (Table 1) were planted at the Malheur Experiment Station on an Owyhee silt loam soil on April 7, 1994. The crowns were dipped in a liquid mixture of Benlate at 1 percent (v/v) and Captan at 1/2 percent (v/v) and planted 8 inches apart in trenches 12 inches deep and 5 feet apart. Plots were four rows wide and 40 feet long and arranged in a randomized complete block design with six replicates. The field was sprinkler irrigated until the spears emerged (April 18, 1994), thereafter furrow irrigation was used. Furrow irrigations were run as necessary on every furrow (every 5 feet). The field was fertilized with 50 lb N/ac as broadcast urea in May 1994 and with water-run urea at 15 lb N/ac in 1995, and 56 lb N/ac in 1996. The field was hand weeded twice in 1996 to control volunteer asparagus. The first harvest season was in 1996. Spears were picked eight times from April 8 to April 30. The harvest was terminated on April 30 due to declining spear diameter. The minimum spear length for harvest was 6 inches measured from ground level to spear tip. Spears from the central 20 feet of each of the middle 2 rows in each plot were cut using asparagus knives and graded immediately. The spears were graded and weighed by class (US Number One and US Number Two), and by diameter 5 inches from the tip (small: <6/16 inch, medium: 6/16 to 8/16, large: 8/16 to 10/16, mammoth: 10/16-13/16, and colossal: 13/16 to 16/16) according to USDA canning asparagus standards. Spears were graded by class based on straightness and head compactness. Asparagus beetle feeding damage was not taken into account when grading. Data were analyzed by analysis of variance. Means separation was determined by the protected least significant difference test.

Results and Discussion

Spears were harvested for 3 weeks before diminishing spear diameters prompted the termination of harvest. Adults of the asparagus beetle (*Crioceris asparagii*) were observed feeding on the spears during harvest and feeding on the ferns later in the season. Feeding damage observed on the stems and heads would have rendered a

substantial proportion of the spears as either US Number Two grade or culls. Overwintering adults start feeding as soon as the spears emerge, so control measures must start early during the harvest with insecticides of short pre-harvest interval. One backpack application of rotenone at 0.4 lb ai/ac immediately after harvest and two aerial applications of Lannate at 0.6 lb ai/ac during the season were used for asparagus beetle control.

Asparagus growth is minimal when air temperature is below 50 °F and increases with increasing temperature above 50 °F. The total yield for a season can be influenced by temperature. The total degree days (50 - 86 °F) for April 1996 of 128 was slightly lower than the average for April from 1990 to 1996 of 133.

Jersey Giant had the highest total yield for grades US Number One and large US Number One, followed by Mary Washington (Table 1). Jersey Giant was among the highest for yield of US Number One mammoth grade yield and for total yield followed by Mary Washington. Asparagus contracted with American Fine Foods is paid as all US Number One if less than 10 percent of the total is US Number Two. The proportion of US Number Two yield was low for all varieties (10 percent or less) and the differences between varieties in US Number Two yield were not statistically significant.

Table 1. Yield and grade of five asparagus varieties harvested from April 8 to April 30, 1996. Asparagus was planted on April 7, 1994. Malheur Experiment Station, Oregon State University, Ontario, Oregon.

Variety	US Number One						US Number Two						Proportion of total yield	Culls	Total yield
	Small	Medium	Large	Mammoth	Colossal	Total	Small	Medium	Large	Mammoth	Colossal	Total			
	lb/ac												%	lb/ac	
Jersey Giant	167.7	521.7	307.9	102.9	3.1	1,103.3	10.1	32.7	34.2	5.4	0.0	82.4	6	144.4	1,330.1
Jersey Knight	82.2	227.0	145.4	48.4	2.5	505.5	10.4	22.8	20.0	11.5	2.7	67.4	10.1	51.1	624.0
M. Washington	181.6	345.2	172.3	52.6	2.7	754.4	14.3	33.9	18.6	18.3	0.0	85.1	7.8	220.0	1,059.5
UC 157	115.9	203.1	49.0	7.9	0.0	375.9	10.1	18.0	5.1	0.0	0.0	33.2	6.2	153.7	562.8
Del Monte 361	162.8	351.2	138.8	41.4	2.3	696.5	27.3	43.2	24.9	7.5	0.0	102.9	9.9	224.3	1,023.6
LSD0.05	55.6	121.0	110.3	58.3	ns	275.3	ns	ns	ns	ns	ns	ns	ns	64.3	350.8