

International Asparagus Cultivar Trial

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Introduction

This is the third harvest from the International Asparagus Cultivar Trial organized in 1986 by Dr. Mike Nichols, Massey University, Palmerston North, New Zealand. The same 11 cultivars are being evaluated at 40 sites worldwide: 11 in Europe, three in Africa, eight in Asia, seven in Australia/New Zealand, three in South America and eight in North America. There are six trial locations in the United States: Prosser, WA; Davis and Stockton, CA; Raleigh, NC; New Brunswick, NJ and Yuma, AZ. The objective of the study is to evaluate the performance of the same cultivars over widely differing environmental conditions to assist in future cultivar selection and evaluation methodology.

Material and Methods

Eight week old asparagus seedlings were transplanted into shallow (5 to 6 inch deep) furrows on 20 April 1987 at the Yuma Mesa Agricultural Center. There are 25 plants per plot spaced 1 foot apart within the row with 5 feet between rows (8712 plants/acre). Plots are arranged in a randomized complete block with four replications. Throughout the fern-growing season plants are irrigated as needed; nitrogen fertilizer was applied in small increments to give 300 lb. N/A for the year. The last irrigation for this season's crop was October 1, 1990. Cool, rainy weather delayed burning the fern until January 8, 1991. First spear emergence occurred in early February with all cultivars harvested on February 13. All plots were then harvested daily; biomass production is recorded, spears cut to 18cm in length and graded. Grades are based on spearbase diameter (>25mm, 20-25mm, 8-20mm or <8mm). Marketable spears fall into one of these size categories, have firm tips with no more than 1mm axillary shoot stem visible above the bract tip, are relatively straight (such that the spear will not "hang") and are free from defects.

Results

Results of harvest data from February 7 through March 14, 1991 are presented in Table 1. Despite several prolonged periods of cool weather and beginning harvest approximately two weeks later than last year, yields of all cultivars have increased and spear quality has been excellent. As in the previous two years, UC 157 and Jersey Giant have produced the greatest number and weight of 8-20mm spears; overall yields of these two varieties are 50%+ greater than for a comparable harvest time frame last year. UC 157 produced fewer spears with greater weight than Jersey Giant (13g vs. 10.4g per spear) in contrast to last year when mean spear weight favored UC 157 by only 1 gram. This may be the initial expression of the intrinsic adaptability of UC 157 to our desert environment.

Also of interest is the cultivar Larac from France. This year's yield of 8-20mm diameter spears reflects a 120% increase over last year. Gynlim, Tainan No.1 and Largo 17-3 have kept pace with last year's production but may challenge Jersey Giant and UC 157 if spear production increases as expected with warm weather. Cito, Franklim and Lucullus 310 continue to produce relatively high numbers of culls (data not shown) while yields are moderate (Cito) to low; these cultivars, along with Del Monte and Lucullus 234 do not appear to be well adapted to desert production.

Table 1.

International asparagus cultivar trial early yield (7 Feb-14 March, 1991) at Yuma, AZ.

Cultivar	Origin	Yield/acre			
		8-20mm no.(000's)	diameter wt.(lb.)	<8mm no.(000's)	wt.(lb.)
UC157	USA(CA)	108b	3088a	32bcd	345c
Jersey Giant	USA(NJ)	126a	2898a	40abc	357bc
Larac	France	103b	2657ab	17e	186d
Gynlim	Holland	103b	2262bc	40abc	461ab
Cito	France	96bc	2239bcd	22de	198d
Tainan No. 1	Taiwan	85d	2205cd	31bcd	337c
Largo 17-3	Spain	97bc	2161d	41abc	436bc
Franklin	Holland	60e	1297e	30bcd	357bc
Lucullus 234	Germany	59c	1324e	24cde	283c
DelMonte 361	USA(WA)	54ef	1169ef	28bcde	307c
Lucullus 310	Germany	49f	953f	48a	536a

* Means followed by the same letter are not significantly different at the 5% level of probability.