

Asparagus Cultivar Evaluation

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The asparagus trial was initiated in 1995 to evaluate the growing number of new hybrids for yield potential and suitability to Iowa growing conditions. The trial consists of a replicated planting at the Muscatine Island Research Farm, Fruitland, Iowa (southeast), and observational plantings on ISU Research Farms at Kanawha (north central), Lewis (southwest) and Sutherland (northwest). Growing conditions at Fruitland include irrigation and a coarse sand soil. The observational locations are non-irrigated and have fine-textured loamy soils. There are twenty entries in the trial. *Geynlim*, *Greenwich* and all of the 'Jersey' cultivars are all-male hybrids, the rest of the entries are dioecious with both male and female plants.

Table 1 presents a cultivar performance summary from the replicated planting at Fruitland while Table 2 presents a 2000 yield summary from all locations. *Jersey Supreme* produced above average yields of good quality spears at all locations this year. *Atlas*, *Grande*, *Jersey Gem*, *UC 157*, *Jersey Giant*, *Jersey Jewel* and *Jersey Deluxe* also recorded strong yields. During harvest at Fruitland the following were occasionally noted to have 'open' or 'rough' spear tips: *Geynlim*, *Greenwich*, *Jersey Jewel*, *Jersey Gem*, *Jersey Deluxe*, *NJ 860* and *NJ 878*. *Purple Passion* and *Grande* produced the largest average spear weights while *Mary Washington*, *UC 157* and *Geynlim* produced the smallest average spear weights (Table 2).

Jersey Deluxe and *Purple Passion* were planted in 1997, two years after the other entries, and 2000 was just the second harvest season for them. Both cultivars produced good yields for their age. Harvested spears of *Purple Passion* were unique with their distinctive purple coloration and large diameter (39% jumbo size and average spear weight of 30 grams – Table 1.).

Materials and Methods - Fruitland

Planting: Greenhouse grown transplants set in field May 26, 1995. Soil type = loamy sand.

Plot Design: RCB, 3 reps. Plot = one row of 15 plants spaced 12" apart, rows 5' apart.

Culture: A no-tillage system utilizing herbicides for weed control. Old fern growth is mowed off in the spring and 400 lbs/acre 14-14-14 fertilizer applied before spear emergence. At the end of harvest 50 lbs/acre nitrogen applied. Overhead irrigation supplied as needed.

Pesticides: Karmex, Poast herbicide. Pounce, Sevin XLR insecticide.

Table 1. 2000 Asparagus cultivar performance summary, Fruitland, Iowa.

| Cultivar | Total Yield Marketable lbs/acre | Avg Spear Wt. grams | % <i>Jumbo Spear</i> | % <i>Large Spear</i> | % <i>Small Spear</i> | 1999 Total Yield lbs/acre | 1998 Total Yield lbs/acre |
|----------------------|---------------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------|---------------------------------|
| Grande | 5604 | 23 | 14 | 70 | 16 | 3520 | 2653 |
| Jersey Supreme | 4718 | 20 | 4 | 72 | 25 | 3648 | 2600 |
| Atlas | 4661 | 22 | 10 | 73 | 17 | 3807 | 2203 |
| Jersey Gem | 4372 | 20 | 1 | 76 | 22 | 3882 | 2370 |
| Jersey Giant | 4159 | 19 | 5 | 67 | 29 | 3210 | 2267 |
| Apollo | 4130 | 22 | 7 | 74 | 18 | 2771 | 1919 |
| UC 157 | 4104 | 17 | 1 | 70 | 29 | 3035 | 2228 |
| N.J. 878 | 3920 | 19 | 0 | 73 | 27 | 2805 | 2170 |
| Jersey General | 3790 | 21 | 2 | 81 | 17 | 2703 | 2108 |
| Greenwich | 3459 | 19 | 0 | 77 | 22 | 2772 | 1875 |
| Jersey Deluxe* | 3360 | 24 | 11 | 76 | 13 | 1952 | — |
| Jersey Knight | 3272 | 19 | 2 | 75 | 23 | 2431 | 1773 |
| Jersey Jewel | 3198 | 19 | 5 | 74 | 22 | 2699 | 2480 |
| Geynlim | 3145 | 16 | 1 | 67 | 32 | 2776 | 2561 |
| Jersey King | 3027 | 21 | 10 | 69 | 21 | 2309 | 1645 |
| N.J. 877 | 3026 | 17 | 1 | 58 | 41 | 2461 | 1704 |
| N.J. 860 | 2969 | 21 | 5 | 76 | 19 | 2335 | 1576 |
| Jersey Prince | 2890 | 18 | 1 | 71 | 28 | 2273 | 1807 |
| Purple Passion* | 2382 | 30 | 39 | 53 | 8 | 1666 | — |
| N.J. 498 | 2190 | 18 | 1 | 72 | 27 | 1639 | 1130 |
| <i>Trial Average</i> | <i>3706</i> | <i>20</i> | | | | <i>2712</i> | <i>2065</i> |
| <i>LSD 5%</i> | <i>1081</i> | <i>2</i> | | | | <i>975</i> | <i>766</i> |

Jumbo: spear length 6 - 8", spear diameter greater than 3/4".

Large: spear length 6 - 8", spear diameter between 3/8" and 3/4".

Small: spear length 6 - 8", spear diameter between 1/4" and 3/8".

% Jumbo, Large, and Small: % of total yield by weight.

2000 Harvest: 4/21 - 5/25.

1999 Harvest: 4/22 - 6/3.

1998 Harvest: 4/13 - 5/15.

Trial planted in May 1995.

*Jersey Deluxe & Purple Passion planted 1997, first harvest in 1999.

Table 2. 2000 asparagus yield summary for Fruitland, Kanawha, Lewis and Sutherland.

| Cultivar | Yield lbs/acre | Spear grams | Fruitland lbs/acre | Kanawha lbs/acre | Lewis lbs/acre | Sutherland lbs/acre |
|-------------------|-------------------|----------------|-----------------------|---------------------|-------------------|------------------------|
| Jersey Supreme | 3803 | 20 | 4718 | 4221 | 4415 | 1858 |
| Grande | 3640 | 25 | 5604 | 2800 | 3865 | 2292 |
| Jersey Jewel | 3567 | 20 | 3198 | 4923 | 2879 | 3267 |
| UC 157 | 3491 | 18 | 4104 | 2883 | 3480 | 3498 |
| Jersey Deluxe | 3470 | 20 | 3360 | 5320 | 3522 | 1676 |
| Geynlim | 3237 | 19 | 3145 | 2626 | 4000 | 3177 |
| Atlas | 3156 | 23 | 4661 | 3913 | 3016 | 1033 |
| Jersey Gem | 2854 | 22 | 4372 | 3063 | 2586 | 1393 |
| Jersey Giant | 2800 | 21 | 4159 | 2955 | 2026 | 2061 |
| Jersey General | 2634 | 20 | 3790 | 3526 | 2469 | 749 |
| Purple Passion | 2571 | 28 | 2382 | 3849 | 3318 | 735 |
| Apollo | 2569 | 21 | 4130 | 3004 | 2264 | 879 |
| Mary Washington | 2559 | 17 | — | 2953 | 2503 | 2221 |
| Jersey King | 2066 | 22 | 3027 | 2518 | 2261 | 457 |
| Jersey Knight | 2027 | 19 | 3272 | 1616 | 1176 | 2045 |
| Jersey Prince | 2002 | 19 | 2890 | 1834 | 2552 | 733 |
| Greenwich | 1982 | 19 | 3459 | 1618 | 1521 | 1329 |
| <i>Trial Avg.</i> | 2866 | 20 | <i>3767</i> | <i>3154</i> | <i>2815</i> | <i>1730</i> |
| <i>LSD 5%</i> | 1149 | 3 | | | | |

Avg Yield = average of all four locations, total market yield (jumbo, large & small spears).

Harvest Dates: Fruitland 4/21-5/25; Kanawha 4/27-6/1; Lewis 4/22-5/20; Sutherland 4/24-5/26.