‘Encore’ Floricane Raspberry

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1 ‘Encore’ is a new floricane fruiting red raspberry (Rubus idaeus L., Rosaceae Juss.) developed by Cornell University at the New York State Agricultural Experiment Station in Geneva, N.Y. Summer harvest of red raspberry generally peaks in mid-July in the East Coast and Great Lakes growing regions, creating a considerable gap before harvest of primocane fruiting raspberries in mid-August (Pritts and Handley, 1989). ‘Encore’ is noted for having a very late floricane (summer) crop, maturing a high percentage of fruit from late July to early August in these areas, thus extending summer harvest and decreasing the gap between the summer and fall (primocane-fruited) harvest seasons. This makes ‘Encore’ the latest fruiting floricane cultivar adapted for this region.

2 ‘Encore’ has performed consistently for late summer production over many years of testing. It compared favorably to ‘Taylor’ (the traditional late cultivar in this region), ‘Titan’ (the leading late, large-fruited cultivar), and ‘Canby’ (parent) in replicated trials. ‘Encore’ produces large, attractive, conic fruit with a firmer texture than ‘Taylor’ and ‘Canby’. The flavor is good, mild, and balanced and is superior to the late season ‘Titan’. Fruit are easy to harvest, dry to the touch, and well suited for wholesale packaging and distribution.

3 The fruiting season of ‘Encore’ is mid-August, similar to its ‘Canby’ parent (Waldo, 1953) with short, downward-pointing spines present mainly at the cane base. It is exclusively floricane fruiting and produces sufficient cane density to maintain high annual yields without the need for extreme cane thinning during the dormant season to reach the recommended 30 to 50 canes/m². Canes are sturdy with an average floricane height of 1.4 m, which have displayed consistently good winter hardness in zone 5 (minimum temperature range of –23.4 to –26.2 °C). Plant vigor is very good compared to other standard cultivars. The canes do not require trellising, although they are very productive and have long fruiting laterals that benefit from trellis support for improved harvest efficiency.

4 Mature foliage of ‘Encore’ is dark green with a coarse upper surface and noticeable ridges, while actively growing terminals are light green. The leaf margins have double serrations that are larger than those of ‘Taylor’ but not notched like those of ‘Tulameen’ (Daubney and Anderson, 1991) nor as distinctly pointed as those of ‘Titan’ (Sanford et al., 1985). Leaves are predominantly trifoliate with no petioles on the lateral leaflets. There are two straight stipules at the leaf base and the leaf cross-section is convex.

5 The average harvest period for ‘Encore’ over from 1994 to 1997 at Geneva was 11 July to 7 Aug. On average, 49% of the crop matured after 23 July 23. The average total yield of ‘Encore’ was equal to ‘Taylor’ and ‘Canby’ but less than ‘Titan’ (Table 1) in plots

6 Table 1. Mean yield for four late season floricane fruiting raspberry cultivars in Geneva, N.Y., from 1995–97.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>1995</th>
<th>1996</th>
<th>1997</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encore</td>
<td>8,838</td>
<td>8,046</td>
<td>9,382</td>
<td>8,912 b</td>
</tr>
<tr>
<td>Canby</td>
<td>8,152</td>
<td>11,342</td>
<td>3,435</td>
<td>7,643 b</td>
</tr>
<tr>
<td>Taylor</td>
<td>7,812</td>
<td>6,982</td>
<td>9,697</td>
<td>8,164 b</td>
</tr>
<tr>
<td>Titan</td>
<td>9,272</td>
<td>15,061</td>
<td>8,928</td>
<td>11,087 a</td>
</tr>
</tbody>
</table>

7 *Yields were extrapolated from five 5-m plots planted at a density of 3590 plants/ha.

8 *Numbers followed by the same letter are not significantly different at P ≤ 0.05 according to Duncan’s multiple range test.

9 Table 2. Mean fruit weight for four floricane fruiting raspberry cultivars in Geneva, N.Y., over three seasons.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>1995</th>
<th>1996</th>
<th>1997</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encore</td>
<td>2.8</td>
<td>3.0</td>
<td>2.8</td>
<td>2.9 a</td>
</tr>
<tr>
<td>Canby</td>
<td>2.2</td>
<td>2.2</td>
<td>2.0</td>
<td>2.1 b</td>
</tr>
<tr>
<td>Taylor</td>
<td>2.0</td>
<td>2.1</td>
<td>2.0</td>
<td>2.0 b</td>
</tr>
<tr>
<td>Titan</td>
<td>3.0</td>
<td>3.1</td>
<td>2.8</td>
<td>3.0 a</td>
</tr>
</tbody>
</table>

10 *All unblemished fruit was weighed throughout each season.

11 *Numbers followed by the same letter are not significantly different at P ≤ 0.05 according to Duncan’s multiple range test.

12 Table 3. Mean juice soluble solids, titratable acidity, and pH for four floricane fruiting raspberry cultivars from 1995–97 in Geneva, N.Y.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Total soluble solids (%)</th>
<th>Titratable acidity (% citric acid)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encore</td>
<td>9.9</td>
<td>1.05</td>
<td>3.10</td>
</tr>
<tr>
<td>Canby</td>
<td>11.5</td>
<td>1.38</td>
<td>3.28</td>
</tr>
<tr>
<td>Taylor</td>
<td>11.0</td>
<td>1.91</td>
<td>3.20</td>
</tr>
<tr>
<td>Titan</td>
<td>9.0</td>
<td>1.92</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Fig. 1. Pedigree of ‘Encore’ raspberry.

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established in a Honeoye fine sandy loam soil typical of the region. ‘Encore’ yields averaged 8,912 kg·ha⁻¹ over three seasons compared to 7,643 kg·ha⁻¹ for ‘Canby’ (Table 1). Yields were extrapolated from 5-m plots in a completely randomized design with five replications with 3-m row centers and 1-m initial within row plant spacing (3590 plants/ha). Natural precipitation was supplemented with drip irrigation at a rate equivalent to 1 inch/week [0.62 gal/ft² (25.2 L·m⁻²)] within the row in the establishment year and 1.75 inches/week [1.09 gal/ft² (44.1 L·m⁻²)] during the fruiting seasons. Fertilization and pest control were based on recommended practices for the East Coast growing region (Pritts and Handley, 1989). A double-T trellis was used for support of fruiting canes (Pritts and Handley, 1989).

The season average fruit weight of ‘Encore’ was greater than ‘Canby’ and ‘Taylor’ and only slightly less than ‘Titan’ (‘Titan’ has the largest fruit weight potential of all cultivars adapted for the East Coast and Great Lakes growing regions (Sanford et al., 1985) (Table 2). ‘Encore’ berries have averaged 2.9 g/berry through three harvest seasons, with the average ranging from 2.8 to 3.0 g (Table 2). The berries are conic, firm, and dry to the touch when harvested. Fruit are easy to harvest, handle well, and are suitable for u-pick, retail, and wholesale markets.

‘Encore’ is outstanding for its ability to maintain large fruit weight over the entire harvest season. The average fruit weight of ‘Encore’ after 23 July was 2.9 g/berry. ‘Taylor’ had similar maturity compared with ‘Encore’, maturing 47% of its crop after 23 July, but had lower overall yields (Table 1) and smaller average berry size after 23 July (1.9 g).

‘Encore’ is distinctly later maturing than ‘Titan’ with similar fruit size (Table 2) while being more attractive and better flavored. It had higher soluble solids (sugars) than ‘Titan’ but lower than ‘Taylor’ and ‘Canby’ (Table 3). Titratable acidity of ‘Encore’ was higher than that of ‘Titan’ and ‘Canby’ but lower than that of ‘Taylor’ (Table 3). The pH of the juice of ‘Encore’ was lower than ‘Canby’ and ‘Titan’ and equal to ‘Taylor’ (Table 3).

‘Encore’ is not highly resistant or susceptible to most raspberry pests in the Northeast. It is less susceptible than ‘Taylor’ to raspberry leaf spot disease caused by the fungus *Sphaerulina rubi* Dem. and Wilc. ‘Encore’ shows intermediate resistance to root rot caused by *Phytophthora fragariae* var. *rubri* Wilcox and Duncan, being more resistant than ‘Titan’ but less resistant than ‘Latham’ (Maloney et al. 1993).

### Availability

‘Encore’ has been licensed to commercial nurseries in North America, which are listed at the Cornell Fruit Web page [http://www.hort.cornell.edu/nursery/](http://www.hort.cornell.edu/nursery/). Nonexclusive licensing arrangements can be made through the Cornell Research Foundation, Inc., 20 Thornwood Drive, Suite 105, Ithaca, N.Y. 14850.

### Literature Cited


