'Jewel' is a new strawberry cultivar (*Fragaria × ananassa* Duch.), adapted to the Northeastern, Great Lakes, and Midwestern regions of the United States. It is a hardy and consistent cropping cultivar with large, attractive, high-quality fruit.

**Origin**

'Jewel' was selected in 1971 from the progeny of NY 1221 × 'Holiday', a cross made in 1969 (Fig. 1). It was tested as NY 1324 for many years in unreplicated plots at Geneva, N.Y. 'Jewel' was included in replicated trials in 1981 and 1982 at Geneva, and was widely distributed to cooperative testers in the eastern United States in 1983 and 1984.

**Description**

Plants are moderate runner producers. Foliage is not excessive, relatively compact, and dark green in color. Fruit mature in the mid-to-late part of the strawberry season. Fruit are very large and are wedge-conic in shape with a bright red color, and a high gloss and uniform development (Fig. 2). Fruit flesh and skin are moderately firm, with uniform internal color. The flavor is pleasant with a mild 'Holiday' aroma.

**Performance**

'Jewel' is exceptional in all-around performance. It is hardy, widely adapted, and consistently produces good yields. The fruit combine size, beauty, ease of picking, moderate firmness, good skin, good internal color, high fresh fruit quality, and good frozen fruit quality. In addition, the fruit appear to have a significant degree of postharvest fruit rot resistance.

Two years of replicated trials at Geneva are summarized in Table 1. 'Jewel' had good yield performance in the first stress (drought) year (3rd highest yield of 29 entries). In the 2nd year, yields were less than average, relative to other cultivars. Data from other locations, however, indicate 'Jewel's' yields compare favorably with the standard cultivar 'Guardian'. Mean berry size was very large (11.3 g) and held up well over the season. Subjective fruit appearance scores were among the highest observed. In numerous evaluations, 'Jewel's' fresh fruit flavor consistently was scored as among the best. A taste panel in 1984 gave 'Jewel' the highest score out of 21 entries for fresh fruit quality. Although 'Jewel' flesh was only moderately firm (mean puncture force of 33 daltons), the resilience of the skin was subjectively scored among the best. Among 29 entries, taste panels evaluating frozen fruit in 1982 and 1983 determined that 'Jewel' was 1 of 8 entries rated good or very good for frozen fruit quality. Previous postharvest fruit rot studies revealed that 'Jewel' had the 4th highest resistance score of 34 entries (1).

'Jewel' was distributed widely to cooperative testers (large growers, nurserymen, and state experiment stations) to determine the range of adaptation and to obtain commercial grower's reactions. Cooperative testers were asked to compare 'Jewel' with standard commercial cultivars for various relevant characters. A questionnaire was employed which used a subjective 1–5 scale, with 3 average and 5 optimal. Highly favorable reports were received from a wide range of locations, including Nebraska, Iowa, Michigan, Massachusetts, Delaware, Ohio, Maryland, New York, and Vermont. No unfavorable reports for 'Jewel' have been received as of 1 Jan. 1985. For the 12 cooperative testers responding, mean scores were 4.1 for yield, 4.0 for flavor, 4.6 for size, 4.4 for fruit appearance, 4.0 for firmness, 4.6 for keeping quality, and 4.0 for foliar disease resistance. Scores for all characters were predominantly 4 or 5, with no scores below 3 for any character. These off-site tests support data that performance of 'Jewel' can be expected to be superior in many respects, indicating it has a wide range of adaptation.

'Jewel' is not resistant to red stele root-rot (*Phytophthora fragariae* Hickman) or verticillium wilt (*Verticillium alboatrum* Reinke and Berth). Therefore, 'Jewel' should not be planted on soils infested by these organisms. In addition, while 'Jewel' consis-

![Fig. 1. Pedigree of 'Jewel' strawberry.](image1)

![Fig. 2. Fruit of 'Jewel' strawberry in a quart box. Note size of fruit, wedge-conic shape, and glossy attractive appearance.](image2)

### Table 1. Yield and fruit characteristics of 'Jewel' and other strawberry cultivars.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Yield1</th>
<th>Yield2</th>
<th>Berry size</th>
<th>Fruit appearance</th>
<th>Flesh firmness</th>
<th>Skin resilience</th>
<th>Frozen quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jewel</td>
<td>5.2</td>
<td>6.4</td>
<td>11.3</td>
<td>6.8 abc</td>
<td>33 abc</td>
<td>7.4 a</td>
<td>good</td>
</tr>
<tr>
<td>Allstar</td>
<td>3.2</td>
<td>6.6</td>
<td>13.6</td>
<td>5.5 c</td>
<td>39 a</td>
<td>6.2 ab</td>
<td>poor</td>
</tr>
<tr>
<td>Honeyoye</td>
<td>2.8</td>
<td>10.4</td>
<td>10.0</td>
<td>6.3 abc</td>
<td>28 c</td>
<td>4.5 c</td>
<td>very good</td>
</tr>
<tr>
<td>Lister</td>
<td>2.8</td>
<td>6.5</td>
<td>11.2</td>
<td>7.6 a</td>
<td>28 c</td>
<td>6.3 ab</td>
<td>acceptable</td>
</tr>
<tr>
<td>Raritan</td>
<td>3.4</td>
<td>9.9</td>
<td>9.3 bc</td>
<td>5.7 c</td>
<td>25 c</td>
<td>5.0 c</td>
<td>poor</td>
</tr>
<tr>
<td>Scott</td>
<td>4.3</td>
<td>8.3 ab</td>
<td>9.1 c</td>
<td>6.1 bc</td>
<td>37 ab</td>
<td>6.5 ab</td>
<td>good</td>
</tr>
</tbody>
</table>

*Yield in kilogram per 3 m plot, total fruit yield.*

*Fruit appearance was scored subjectively on a scale of 1–9, with 9 being the most attractive. Each replicate was scored independently on each harvest date.*

*Firmness scores based on Instron measurements (2). Each score reflects the force required for the Instron probe to penetrate the flesh of fresh fruit. Twelve berries tested for each replicate of each harvest date.*

*Mean fruit skin resilience based upon subjective scale of 1–9, with 9 being best, as determined by observing damage done by rubbing. Each replicate was scored independently on each harvest date.*

*Frozen fruit quality determined in both years in replicated taste panel tests. On the basis of these tests, cultivars were categorized as very good, good, acceptable, and poor.*
tently produces respectable yields, it does not produce the extremely high yields of a cultivar such as ‘Honeoye’ (1).

Availability

Cornell Univ. has applied for a plant patent on ‘Jewel’. Plants of ‘Jewel’ are available from the New York State Fruit Testing Cooperative Association (Hedrick Hall, Geneva, NY 14456) as well as from various commercial nurseries in the northeast. Licenses to sell plants of ‘Jewel’ are free, and may be obtained from the Cornell Research Foundation, East Hill Plaza, Ithaca, NY 14850.

Literature Cited


Release of Lily Clones as Germplasm

W.G. Ronald1 and L.M. Collicutt

Agriculture Canada, Research Station, Morden, Manitoba, Canada, ROG 1JO

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The lily hybrids RSM (Research Station, Morden) 73-9-1, 75-9-8, and 77-15-1 were developed through hybridization between 3 sections and 2 subsections of the genus Lilium. Several years of evaluation have shown these clones to be potentially useful for breeding and cultivar development, and for pollen-sty lar incompatibility studies. As germplasm, the clones may serve as basic breeding material, whereas further evaluation also may show direct commercial value for garden or greenhouse lilies.

Origin

Three hybrids were developed during the course of a long-term breeding program to overcome reproductive incompatibility among lily species, thus developing new genetic combinations within the genus. Interspecific incompatibilities were determined using detached styles which were pollinated, incubated at 21°C for 48 hr, and injected with aniline blue. The styles then were bisected and viewed under a dissecting microscope to measure the growth of the pollen tubes. Crosses then were made between plants of various sections or subsections in which pollen tube growth was apparently normal or compatible. Intersectional and intrasectional crosses were generally characterized by low frequencies of embryo development, with the majority of ovules devoid of normal endosperm. Embryos were cultured either on Murashige’s Minimal Organics Medium (Gibco Laboratories, Grand Island, N.Y.) or on a lily embryo culture medium (2).

The hybrid 73-9-1 was developed from an interspecific cross between a yellow-flowered Aurelian hybrid (L. × aurelianense Debras ‘Golden Clarion’) as the female parent, and an Easter lily cultivar (L. longiforum Thunb. ‘Ace’) as the pollen parent. The clone, 77-15-1, resulted from crossing 73-9-1 to L. longiforum ‘Nellie White’, the latter being the pollen parent. The L. longiforum cultivars ‘Ace’ and ‘Nellie White’ are the predominant Easter lily clones used in commercial growing, and both are in the 6b subsection of the Leucolirion section (1). The Aurelian hybrids are hybrids between trumpet species from section 6, Leucolirion, and L. henryi from subsection 5a of the Sino-martagon section. Clone 75-9-8 resulted from an intersectional cross between a trumpet lily hybrid L. × ‘Damson’ (section 6, Leucolirion) as the female parent, and an oriental lily cultivar L. speciosum ‘Tornado’ (section 4, Archelirion) used as the pollen parent.

Description

The flower buds of the hybrid 73-9-1 average 12 cm in length and are light green overlaid with light purple. Flowers are out-facing, trumpet-shaped, and off-white (RHS 158D) (3) with a light yellow-green center (Fig. 1). The leaves of hybrid 73-9-1 are narrower, not as closely spaced, and less shiny than those of the Easter lily but are more so in these respects than the leaves of the Aurelian lily. Plants of 77-15-1 generally resemble the

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1 Present address: P.O. Box 402, Portage la Prairie, Manitoba, R1N 3B7.

Fig. 1. Lily hybrid RSM 73-9-1.

Fig. 2. Lily hybrid RSM 77-15-1.

Fig. 3. Flowers of lily hybrids (a) RSM 77-15-1 and (b) RSM 73-9-1.

Fig. 4. Lily hybrid RSM 75-9-8.