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JEWEL' STRAWBERRY

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Figure 1. Fruit of 'Jewel' strawberry. Note size of fruit, wedge-conic shape, and glossy attractive appearance.

'Jewel' is a new cultivar of strawberry *(Fragaria x 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 (Fig. 1).

ORIGIN

'Jewel' was selected in 1971 from the progeny of a NY 1221 x 'Holiday' cross made in 1969 (Fig. 2). It was tested as NY 1324. 'Jewel' was tested for many years in unreplicated plots at Geneva, New York. '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. Fruit mature in the mid-to-late part of the strawberry season. Fruit are very large and are wedge-conic in shape with bright red color, high gloss and uniform development (Fig. 1). Fruit are moderately firm with firm skin, have uniform internal color, and have a pleasant flavor and 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 post-harvest fruit rot resistance.

Two years of replicated trials at Geneva are summarized in Table 1. 'Jewel' has good yield performance in the first stress (drought) year (3rd highest yield of 29 entries). In the second year yields were less than average, relative to other cultivars. However, data from other locations indicate 'Jewel's' yields compare favorably with the standard cultivar 'Guardian'. Mean berry size was very large (11.3 grams) and held up well during the season. Subjective fruit appearance scores were among the highest observed. In numerous evaluations, 'Jewel's' fresh fruit flavor consistently ranked among the best. A taste panel in 1984 gave 'Jewel' the highest score for fresh fruit quality out of 21 entries. While Ruby was found to have only moderately firm flesh (mean puncture force equals 34 daltons), the resilience of the skin was subjectively scored among

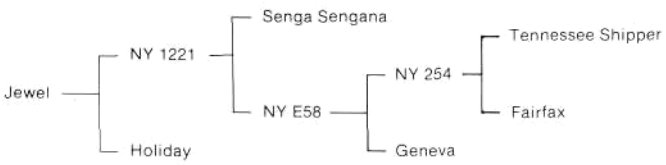

Figure 2. Pedigree of 'Jewel' strawberry.

Table 1. Summary of data from replicated trials, contrasting 'Jewel' to other cultivars. Cultivars were grown in 3-meter matted-row plots at Geneva, NY, on a silty-loam soil, in three replicates. Means within the same column and followed by the same letter are not significantly different, based on Waller and Duncan's BSD test, k=100 (Waller and Duncan, 1969).

Cultivar	Yield[1] 1981	Yield[2] 1982	Berry[2] Size	Appearance[3] Score	Flesh[4] Firmness	Skin[5] Resilience	Frozen[6] Quality
Ruby	5.2 a	6.4 b	11.3 b	6.8 abc	33 abc	7.4 a	good
Allstar	3.2 a	6.6 b	13.6 a	5.5 c	39 a	6.2 ab	poor
Honeoye	2.8 a	10.4 a	10.0 b	6.3 abc	28 c	4.5 c	v. good
Lester	2.8 a	6.5 b	11.2 b	7.6 a	28 c	6.3 ab	acceptable
Raritan	3.4 a	9.9 a	9.3 bc	5.7 c	25 c	5.0 c	poor
Scott	4.3 a	8.3 ab	9.1 c	6.1 bc	37 ab	6.5 ab	good

[1] Kg per 3 meter plot, total fruit yield.

[2] Grams per berry, based upon total yield per plot and total fruit number per plot.

[3] Fruit appearance was scored subjectively. Each replicate was scored independently on each harvest date. Berries were rated 1 to 9, with 9 being most attractive.

[4] Mean flesh firmness scores based upon Instron measurements (Ourecky and Bourne, 1968). 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.

[5] Mean fruit skin resilience based upon subjective scores, as determined by observing damage done by rubbing. Each replicate was scored independently on each harvest date. Berries were rated 1-9, with 9 being best.

[6] 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.

the best. Taste panels evaluating frozen fruit in 1982 and 1983 determined that 'Jewel' was among the eight entries rated good or very good for frozen fruit quality, among 29 entries. Previous post-harvest fruit rot studies revealed that 'Jewel' had the fourth highest resistance score of 34 entries (1).

'Jewel' was distributed widely to cooperative testers (large growers, nurserymen, and state experiment stations) to determine its 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 being average and 5 being 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 January 1,1985. 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 our own data that 'Jewel' can be expected to have well-rounded over-all performance, and indicate it has a wide range of adaptation (Table 2).

'Jewel' is not resistant to red stele root-rot *(Phytophthora fragariae* Hickman) or verticillium wilt *{Verticil-Hum alboatrum* Reinke and Berth). Therefore, 'Jewel' should not be planted on soils infested by these organisms. In addition, while'Jewel'consistently produces respectable yields, it does not produce the extremely high yields of a cultivar such as 'Honeoye' (1).

Table 2.

Cooperative Testers' Evaluations of NY 1324
1 = poorest, 3 = average, 5 = optimum

Tester	Yield	Flavor	Size	Looks	Firm	Keeping	Resistance	Recommend
Chandler, OH	4	4	5	4	4	---	---	---
Hurwitz, MA	4	4	4	5	4	4	---	yes
Sedgwick, NY	5	4	5	4	4	---	---	yes
Nourse, MA	3	5	4	4	4	4	4	yes
Salsbury, NY	5	4	5	5	5	5	5	yes
Peterham, NY	4	4	4	5	4	5	4	yes
Randall, MA	3	4	5	5	4	5	---	---
McConnell, OH	4	4	4	4	3	3	---	yes
Buntings, DE	4	4	4	3	3	3	---	yes
Gray, VT	4	3	4-5	5	4	4	3	yes
Hincle, NY	5	4	5	4	4	5	5	yes
Craig, NY	4	4	5	5	5	4	4	yes

AVAILABILITY

Cornell University has applied for a plant patent on 'Jewel'. Plants of 'Jewel' are available from the New York State Fruit Testing Cooperative Association, Inc., HedrickHall, Geneva, New York 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, New York 14850.

LITERATURE CITED

1. Ourecky, D.K. 1979. 'Honeoye' and 'Canoga' strawberry cultivars. N.Y. Food and LifeSci. Bui. No. 83.
2. Ourecky, D.K. and M.C. Bourne. 1968. Measurements of strawberry texture with an I nstron machinge. Proc. Amer. Soc. Hort. Soc. 93:317- 325.
3. Waller, R.A. and D. Duncan. 1969. A Bayes rule for the symetric multiple comparisons problem. J. Amer. Stat. Assn. 64:1464-1503.