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Eden™, a Non-browning Apple Cultivar

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***Eden*™ is a dessert apple with improved firmness and crispness, high quality flesh and much longer shelf life than *McIntosh* and *Cortland*. The fruits have superior flavor and do not fall from the tree at maturity. The flesh is juicy, firm, crisp and resistant to bruising. No browning occurs after cutting, making it an excellent candidate for fresh fruit slices, fruit salad, dried apple chips and processing juice, cider).**

Fruits of *Eden*™ apple.

Flesh color of *Eden*™ and *Macspur* 24 hrs after cutting. Cut fruit

Origin and Description

Eden™, also tested as *SJCA38R6A74*, originated from a cross between *Linda* and *Jonamac*, at *Agriculture and Agri-Food Canada* (AAFC), *Horticulture Research and Development Center* (HRDC), Saint-Jean-sur-Richelieu, Quebec.

*Eden*TM trees are upright to upright-spreading, semi-vigorous, with wide branch angles. New shoots are hairy. Fruit are borne on spurs, and the shoots tend to droop. Leaves are oblong to slightly obovate, doubly serrate with hairy undersides, cuspidate apex and cuneate to obtuse base. The leaf length: width ratio is 1.96 and the petioles are 3 to 6 cm long. *Eden*TM trees are hardy in Quebec, where average winter minimum temperature is –25ºC. There have been no signs of powdery mildew [*Podosphaera leucotricha* (Ell. & Ev.) Salm.] nor fireblight [*Erwinia amylovora* (Burr.) Winslow *et al*.] during the evaluation period. Flowering starts 5 days before *McIntosh*.

*Eden*TM fruits are globose, oblate and sometimes lopsided and irregular. The fruit are attractive, medium to large in size, with an average of 150 g, and are not susceptible to bruising or browning compared to other tested cultivars. Fruits are susceptible to scab similar to *Macspur*, *McIntosh* and *Cortland*. The fruit skin has average thickness; the color of the skin is washed out (faded) and solid dark red over a greenish-yellow ground. Lenticel number is low near the stem but very high near the basin. The flesh is white, juicy, firm, crisp yet melting, and fine textured. No browning occurs for several hours after the flesh is cut with a stainless steel knife, and it remains white until completely dried at room temperature, probably due to its low level of phenolic compounds as reported previously (Tsao *et al*., 2003; Oszmianski & Lee, 1990).
The flavor is very aromatic, sweet and acidic at optimum maturity, which is at the end of September, one week after *McIntosh*. *Eden*TM
is recommended for fresh eating, fruit salad and processing (dried apple chips). The fruits keep their firmness, juiciness and flavor very well in standard cold storage for 4-5 months.

*Eden*TM fruits are susceptible to bitter pit, specially if the season is dry and no irrigation is provided. The yield is very similar to the *Macspur* and fruits are resistant to water core, and unlike *Macspur*, they do not drop at maturity, but stay on the tree for several weeks after, even at -20ºC which might make *Eden*TM a good candidate for ice cider production.

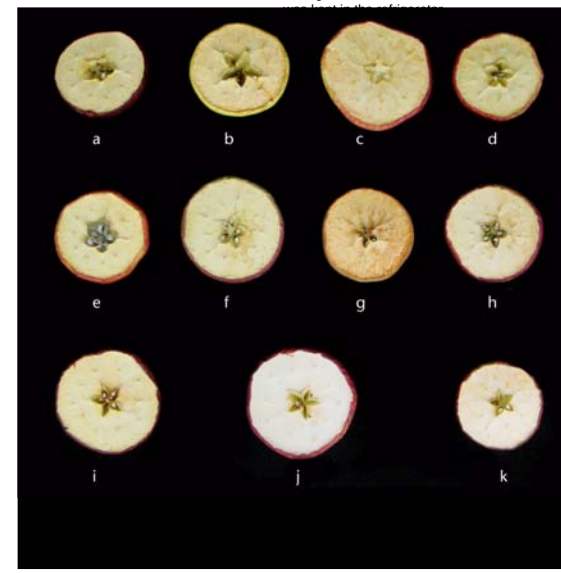
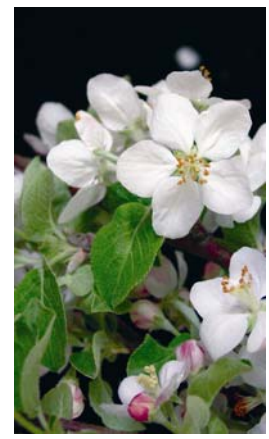


Photo: Susceptibility of selected apple lines and cultivars to browning, 4 days after cutting. Fruit were kept at 20ºC.

Trees of *Eden*™ and Persistence of *Eden*™ fruit at maturity. Photo taken on December 15, 2004.

Availability

Virus-free bud wood is available from the *Canadian Food Inspection Agency* (*Centre for Plant Health*, CFIA, 8801 East Saanich Road, Sidney, BC, Canada, V8L 1H3). Non-exclusive multiplication licenses can be obtained from AAFC at Saint-Jean-sur-Richelieu, QC.



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