

Eden™ – A new, non-browning apple cultivar

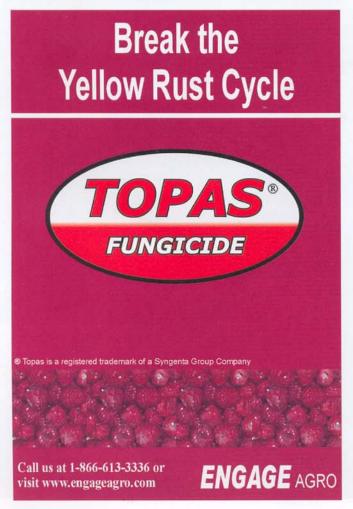
denTM is a dessert apple (*domestica Borkh.*) type with improved firmness, crispness, high-quality flesh and much longer shelf life than McIntosh and Cortland. The fruit have superior flavour and do not fall from the tree at maturity.

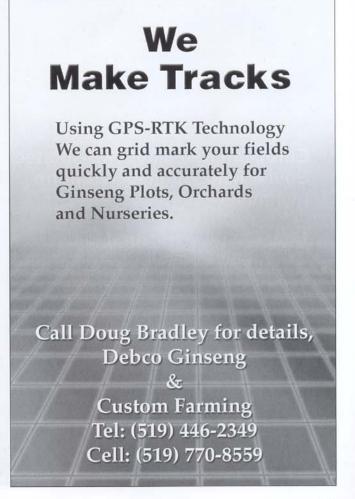


The flesh is juicy, firm, crisp and resistant to bruising. No browning occurs after cutting, making it an excellent candidate for fresh fruit slices, fruit salad, dried apple chips and processing (juice, cider).

Eden, also tested as A38R6A74, originated from a cross between Linda and NY44428-5 (Jonamac), at the Agriculture and Agri-Food Canada (AAFC), Horticultural Research and Development Center (HRDC) in Quebec.

Eden trees are spreading with a tendency to droop, semivigorous, with wide angle branches, new shoots are hairy and fruit are borne on spurs, and the shoots tend to droop. Leaves are oblong to slightly obovate, double serrated with a hairy underside, cuspidate apex and cuneate to obtuse base. The leaf length: width ratio is 1.96 and the petioles are 2.5 to 4.0 cm long. Eden trees are hardy at Frelighsburg and L'Acadie, Quebec (latitude 45°N, longitude 72°W), which have average winter minimum temperatures of -25°C. There have been no signs of powdery mildew (*Podosphaera leucotricha*) or fireblight (*Erwinia* amylovora) infections on leaves during the evaluation period. Flowering starts at the same time as Macspur and unopened flowers are medium pink in full balloon stage. The broad ovate petals overlap slightly and are mainly white with a slight medium





pink blush and the pedicels are green at full bloom.

Eden fruit are flat globose (oblate) or globose, attractive, medium to very large size, with an average size of 140g (Quebec) to 220g (B.C.) and are not susceptible to bruising or browning, as compared to other tested cultivars. Eden is susceptible to scab, similar to Macspur, McIntosh and Cortland. The basin is downy, medium width, fairly deep and slightly wrinkled. The calyx are partly open and the lobes are persistent and upright. The calyx tube is funnel shaped and stamens are in basal position. The cavity is acute and sometimes slightly russeted, with medium depth and width. The stem is uniform with medium to long length and clubbed on some apples. The core is in distal position and usually closed. The carpels are 30 mm height and 25 mm width. Fruit skin has an average thickness, the over colour of skin is dark red (RHS 185A), and the type of over colour of skin is washed out (faded) and solid, over greenish-yellow ground colour. Lenticel count is low near the stem but very high near the basin. The flesh is juicy, firm, and crisp, yet melting with a fine white texture. No browning occurred for several hours after being cut with a stainless steel knife and it remained white until completely dried at room temperature, due its low level of phenolic compound as reported by researchers in 1992. Slight browning may occur in slices when stored for three months and then cut and handled under conditions that simulate commercial fresh-cut processing. This may be due to cell deterioration and loss of membrane integrity over three months of air storage. The flavour is very aromatic, sweet and acidic at optimum maturity, which is at the end of September, one week after McIntosh. Eden is recommended for fresh eating, fruit salad and processing (dried apple chips). The fruit maintain firmness, juiciness and flavour very well in standard cold storage for four to five months. Eden fruit are susceptible to bitter pit, especially if the season is dry and no irrigation is provided. The yield is very similar to Macspur and the fruit are resistant to water core. Contrary to Macspur, the fruit of Eden do not drop at maturity and stay on the tree several weeks, even at -20°C, which might make it a good candidate for ice cider production. &

