CULTIVAR & GERMPLASM RELEASES

HORTSCIENCE 25(10):1309-1310. 1990.

'Applethorpe Summerdel' Apple

L.B. Baxter and A.D. McWaters

Granite Belt Horticultural Research Station, Queensland Department of Primary Industries, Applethorpe 4378, Queensland, Australia

Additional index words. cultivar, germplasm, breeding, fruit crops, *Malus domestics*

'Applethorpe Summerdel' is the second cultivar to be released from the early red apple (*Malus domestics* Borkh.) breeding program at the Granite Belt Horticultural Research Station in Queensland, Australia. The fruit of this cultivar mature 2 to 3 weeks before 'Red Delicious' and are of superior appearance and shelf life to early red cultivars currently grown commercially on the Granite Belt.

Origin

'Applethorpe Summerdel' originated from a cross between 'Delicious' and 'Earliblaze' made at the Granite Belt Horticultural Research Station in 1969 by C.W. Winks. The aim of this cross was to combine the fruit appearance and internal characteristics of the commercially-important 'Delicious' with the earliness and flavor of 'Earliblaze'. The seedling was selected in 1982 and propagated on MM106 and M778 clonal rootstock for advanced testing in 1983. 'Applethorpe Summerdel' was released to the industry for commercial evaluation in 1985 as 64-111.

Description and performance

Trees of 'Applethorpe Summerdel' are medium in size, smaller and more compact than 'Delicious' and 'Granny Smith'. Growth is more spreading than that of 'Delicious'. It is compatible with and easily propagated on the semi-dwarfing clonal rootstock MM106 and 'Northern Spy', and the more vigorous rootstock M778 and M779. Propagation on the semi-dwarfing rootstock is only recommended for areas of high soil fertility and optimum growing conditions, and on the Granite Belt, M778 and M779 are the preferred rootstock.

Flowering is regular, just before and with 'Jonathan' and 'Delicious' and overlapping with 'Granny Smith'. Under Granite Belt conditions, 'Granny Smith' is the recommended pollinizer.

Fruit mature 2 to 3 weeks before 'Delicious'; with 'Adina', 'Goldina', 'Abas', and 'Earliblaze'; 1 week after 'Gravenstein'; and 2 to 3 weeks after 'Applethorpe Earlidel'

(Baxter and McWaters, 1990). They are medium in size (65 to 75 mm average diameter) and globose to flat-globose in shape (Watkins and Smith, 1982), often with 'Delicious'-like lobes (Fig. 1). The stem cavity is wide, deep and regular, with pedicels 3 to 4 cm long. The calyx basin is wide, moderately deep, with a tendency for the calyx

tube to be open. Color is 75% to 100% medium to cherry red (Red Group 46B), with darker red (Red Group 46A) over stripes (Royal Horticultural Society, 1966). The skin is smooth, covered with a thin waxy bloom, and of medium thickness. Lenticels are not usually conspicuous. Russet (up to 7 cm²/fruit) is observed in the stem cavity of some fruit.

Flesh is creamy white (Yellow-White Group 158D) to yellowish (Yellow-White Group 158B) (Royal Horticultural Society, 1966), of medium to coarse texture, firm, juicy, sweet (13% to 16% total soluble solids content), and sub-acid (0.25% to 0.33% titratable acid). Fruit have an-obvious aroma and a characteristic pleasant aromatic flavor that increases in intensity as the fruit mature. The shelf life of 'Applethorpe Summerdel'

Table 1. Mean fruit and flesh ratings for 'Applethorpe Summerdel', 'Applethorpe Earlidel', 'Hi-Early Delicious', and three commercial early cultivars at Applethorpe, Queensland (1983-88).

Cultivar	Fruit			Flesh quality ^z			
	Diam (mm)	Shape ^y	Area red (%)	Firm	Text	Flavor	Color
Applethorpe Summerdel	65-75	3	85	4	4	4	3
Applethorpe Earlidel	65-70	3	85	3	4	4	4
Abas	65-75	2	55	4	3	3	
Earliblaze	65-75	3	70	2	2	3	3
Hi-Early Delicious	70-80	4	75	3	4	4	4
Gravenstein	65-75	2	20	2	4	3	5

^zRated on a 1 to 5 scale, where 5 is the most desirable.

^yRated on a 1 to 5 scale, where 1 is flat and 5 is conical (Watkins and Smith, 1982).

Fig. 1. Fruit of 'Applethorpe Summerdel' apple.

Received for publication 11 Sept. 1989. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked advertisement solely to indicate this fact.

fruit is $\approx$ 12 days at 25C. Storage life in ordinary air at 0 to 1C is estimated at 2 months. The quality evaluations for 'Applethorpe Summerdel', 'Applethorpe Earldel', 'Hi-Early Delicious', and three early commercial cultivars are based on our evaluations (Table 1).

In most years, a small percentage (5%) of 'Applethorpe Summerdel' fruit is observed with dry moldy core (*Alternaria* spp.) infection. This cultivar is of similar susceptibility as 'Applethorpe Earldel', but is not as susceptible as 'Delicious' (25% infection).

'Applethorpe Summerdel' is susceptible to apple scab [*Venturia inaequalis* (Cke.) Wint.] and powdery mildew [*Podosphaera*

leucotricha (Ell. and Ev.) Salm.]. Under commercial conditions, the incidence of both of these diseases on 'Applethorpe Summerdel' has been successfully controlled using standard orchard spray programs. The susceptibility to fireblight [*Erwinia amylovora* (Burr.) Winslow et al.] is unknown, as this disease does not occur in Australia.

Availability

Limited quantities of budwood are available for testing and commercial propagation from the Queensland Dept. of Primary Industries, Granite Belt Horticultural Research Station, Applethorpe 4378, Queensland,

Australia. 'Applethorpe Summerdel' is not a patented cultivar. Budwood source trees have not been virus-indexed, but were propagated from the original seedling using virus-tested clonal MM106 and M778 rootstock.

Literature Cited

- Baxter, L.B. and A.D. McWaters. 1990. 'Applethorpe Earldel' apple. HortScience 25:234-235.
- Royal Horticultural Society. 1966. RHS Colour Chart. The Royal Horticultural Society, London.
- Watkins, R. and R. Smith. 1982. Description list for apples (*Malus*). Intl. Board for Plant Genetic Resources, Rome.