

CULTIVAR & GERMPLASM RELEASES

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'Liberty' Apple¹

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'Liberty,' which was tested under the number NY55140-19 is a good quality red apple that can be grown without fungicidal sprays in New York State (3). It is highly resistant to *Venturia inaequalis* (Cke.) Wint., apple scab, and to *Gymnosporangium juniperi-virginianae* (Schw.), cedar apple rust and resistant to *Podosphaera leucotricha* (E. & E) Salm. apple powdery mildew, and *Erwinia amylovora* (Burrill) Bergey et al, fire blight.

Origin

The pedigree of 'Liberty' is presented in Fig. 1. The pollen of PRI 54-12 was kindly supplied by Dr. J. Ralph Shay of Purdue University in 1955. There were 321 seeds produced from this cross, 261 of these were screened for resistance to *V. inaequalis* in the greenhouse and 38 resistant seedlings were planted in the orchard to fruit in 1956. 'Liberty' first fruited in 1961 and was propagated for further testing in 1964. It was made available for wider testing when it was listed in the New York State Fruit Testing Cooperative Association catalog in 1974. It was named and formally introduced in 1978 at the annual meeting of the New York State Fruit Testing Cooperative Association.

Description

'Liberty' is highly resistant to *V. inaequalis*. No sporulating scab lesions were produced when it was inoculated in the greenhouse. It has been grown for 23 years in the orchard without any fungicidal sprays, and no scab lesions

have been found on it. This cultivar also has a high level of resistance to *G. juniperi-virginianae*. In greenhouse tests it showed the indiscrete mottle symptom of 'McIntosh,' (2): no rust lesions of any kind have been found on it in the field. 'Liberty' has been tested for resistance to *E. amylovora* by artificial inoculation of vegetative shoots in the greenhouse and in the field (1), and was found to be more resistant than 'Delicious.' The reaction of 'Liberty' to *P. leucotricha* has been evaluated in

unsprayed plantings in the field for 11 years. It has an average rating of 1, which means that there are scattered lesions on the leaves but no infected terminals, which are the site of overwintering inoculum. The range in ratings has been from 0 to 2 (1 or 2 infected terminals). It is less susceptible than 'McIntosh' to *P. leucotricha*. No susceptibility to other apple diseases has been seen in 'Liberty' in the years it has been under test.

The tree of 'Liberty' is vigorous, round-topped and spreading. It is very productive. Fruit buds are differentiated terminally and laterally on shoots of the current season as well as on spurs. Most of the buds on 1-year-old shoots will break to form spurs (Fig. 2). Yield estimates of 'Liberty' in comparison with similar topworked trees of 'McIntosh' and 'Delicious' are presented in Table 1.

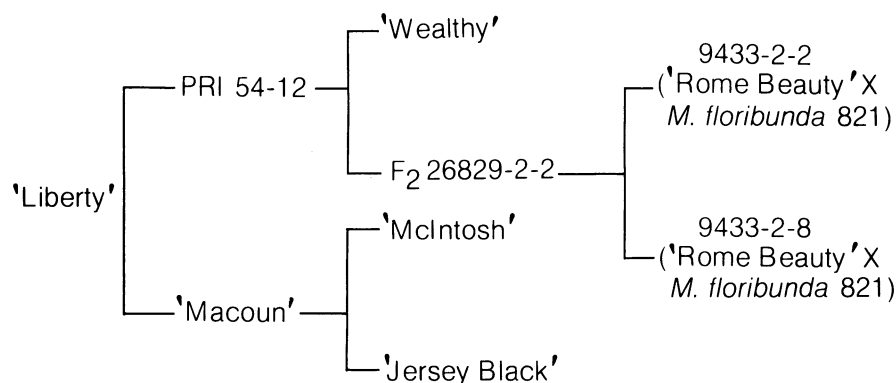


Fig. 1. Pedigree of 'Liberty' apple.

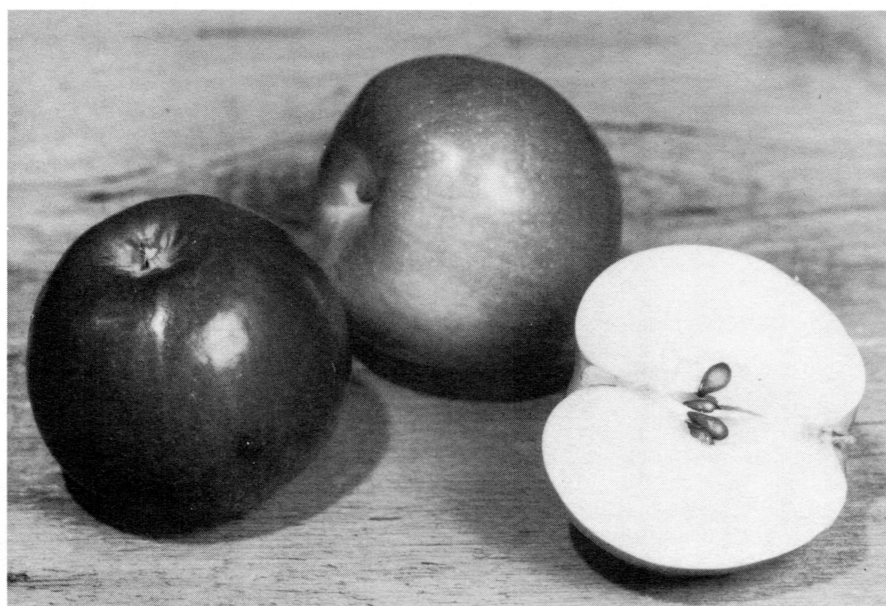


Fig. 2. Fruit of 'Liberty' apple.

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Table 1. Comparison of estimated yields of 'Liberty,' 'McIntosh,' and 'Delicious' (trees topworked in 1973, on 10 year old trees).

| Cultivar | Yields (kg/tree) | | | |
|-------------|------------------|------|------|------|
| | 1975 | 1976 | 1977 | 1978 |
| Liberty | 0.5 | 80 | 80 | 140 |
| McIntosh | 0.5 | 40 | 60 | 120 |
| Delicious * | — | 40 | 15 | 50 |

'Liberty' is relatively precocious. More 'Liberty' trees (7 of 8) flowered and set fruit in their third year than any of 37 other cultivars on Malling 7 in an experimental orchard at Geneva. All 8 trees had good bloom in their fourth year.

The bark of the shoots is dark red with small light colored lenticels. The shoots are rather small in diameter.

The blossoms of 'Liberty' are large and a faint pink color. Individual pedals measure 20 by 15 mm. The blossoming season is early midseason or just after 'McIntosh.' It produces good pollen and has successfully pollinated 'McIntosh,' 'Idared,' 'Northwestern Greening,' 'Tydeman Early' and 'Red Spy' as well as numerous other cultivars in controlled pollinations. It has similarly been successfully pollinated by many cultivars, thus, we have no evidence of cross incompatibility.

The average ripening date at Geneva is Oct. 6 or about 4 days before 'Delicious.'

The fruit is typically oblate to oblate conic in shape but it may be rather variable, and round or even oval apples may be found. The fruits average 70 mm in size but may be much smaller on heavily loaded trees. The color is 90% deep, but bright, red striped on greenish-yellow ground color. It is an attractive apple and its 'McIntosh' parentage can be easily recognized. The dots are rather small, inconspicuous, and sunken. The stem (pedicel) is short and frequently clubbed with a fleshy lump on one side or even all around. The cavity is obtuse, smooth and greenish. The calyx is medium large and closed. The basin is obtuse, slightly furrowed and symmetrical. Skin is thin, slightly tough, smooth and glossy.

The flesh of 'Liberty' is crisp, juicy, and slightly coarse in texture. The color is a very pale yellowish or nearly white. The flavor is sprightly-subacid and good. The flesh turns brown fairly rapidly on exposure to air. Soluble solids at harvest time were 14% and the pressure test reading for optimum date of maturity is 9.5 kg with a 8 mm plunger. 'Liberty' will store well in refrigerated storage until January.

This cultivar is primarily a dessert apple. It did give a good product, however, when processed as sauce and canned or frozen slices by the Food



Fig. 3. Branch of 'Liberty' with some of the leaves removed showing the fruiting habit. Note that fruit is set terminally and laterally on the 1977 growth and that the many spurs in 1976 growth are also bearing fruit.

Science Department. It scored very well in processing tests as juice or cider.

Availability

'Liberty' has not been patented and there are no restrictions on its distribution. The New York State Fruit Testing Cooperative Association, Geneva, N.Y. 14456 has trees available and can also supply buds or scions. Some commercial nurseries have obtained buds and should have trees available in 1980 or 1981.

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'Harogem' Apricot¹

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'Harogem' is an exceptionally attractive, very firm, high quality, mid-to late season apricot (*Prunus armeniaca* L.) suitable for the fresh market. It is cold hardy, resistant to brown rot [*Monilia fructicola* (Wint.) Honey], perennial canker (*Leucostoma* spp.), and skin cracking but moderately susceptible to bacterial spot [*Xanthomonas pruni* (E. F. Sm.) Dows]. It was introduced in 1979 to meet the need for a better adapted, more consistently productive, cold hardy and disease tolerant cultivar for the Ontario fresh market.

Origin

'Harogem' resulted from the cross 'Rouge du Roussillon' × NJA2 ('Morden 604' × open-pollinated) made in 1963 by L. F. Hough and Catherine H. Bailey at Rutgers, The State University of New Jersey, USA. It was selected at Harrow in 1969 from a progeny of 76 seedlings. The original tree was observed in fruiting trials from 1969 to 1972. It was propagated for regional trials through the Western Ontario Fruit Testing Association beginning in 1969. The first trees were released in 1971 under the designation H6305044. In subsequent years it was released under the number HW 405. 'Harogem' has performed well at several locations in Ontario near Lake Ontario and Lake Erie. Early reports of its performance in British Columbia, New York, Pennsylvania and France are encouraging. In this report 'Harogem' is compared

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