

Apple Varieties in a Cold Climate

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This article may aid in the selection of fruit varieties for climates similar to that in the Champlain Valley of New York. Occasionally trees have been planted specifically for test purposes, but the conclusions are based principally on observations in commercial orchards of that area during the past 23 years.

Climatic Conditions

The climate resembles that of Vermont, New Hampshire, southern Maine, the higher elevations of Massachusetts and certain parts of central and southern New York, and of southeastern Canada. Summer temperatures are lower than in those sections of the midwest that have similar minimum winter temperatures. During most winters, a mini-

mum temperature of minus 15° to minus 20°F. is experienced; the lowest ever recorded was minus 37° in 1933-34. Annual precipitation averages about 30 inches or less. Damage from spring frosts is not especially prevalent because buds start growth relatively late in the spring.

The main information is contained in the accompanying table. Some of the characteristics apply to the variety wherever grown, but most of them are influenced by the local climate. The varieties are listed in the approximate order of ripening. Those that are crosses of McIntosh are in **bold type**. ? Some well known varieties, unimportant in the region, are included to provide criteria with which to compare less familiar newer sorts. Eighty percent of the commercial production of the area is McIntosh, with Fameuse about 10% and Cortland approaching 5%. The main reason why early varieties are not grown more extensively is that the markets to the south receive the respective varieties from more southern producing areas, and tariff regulations restrict shipment to Canada.

Choice of Apple Varieties

Longevity of trees in the area is limited by minimum winter temperatures more than by other factors. It seems unwise to plant trees which are less hardy than those given a rating of 3 on the scale. Likewise it seems unwise to plant



The Cortland apple, a cross of McIntosh and Ben Davis, blooms and bears annually, and is not subject to preharvest dropping.

varieties with a flavor rating below 2 (or good) except for cooking. Planting varieties listed as having small fruit is justified if the grower is prepared to thin, either chemically or by hand, to bring the fruits up to the medium size class.

McIntosh is so susceptible to scab as to make it unsuitable for home orchards. Most McIntosh crosses and Fameuse are likewise susceptible to scab. The home-owner usually finds control of diseases and insects of apples so arduous that he gives up. The use

of dwarfing stocks would make it easier to spray or dust the trees, but the various dwarfing stocks have not been tested adequately in cold climates, or with all varieties.

Fruits Other Than Apple

Peaches and sweet cherries do not survive in the Champlain Valley. Montmorency sour cherries are grown for local market, about one crop in three being lost through winter-killing of blossom buds. English Morello seems slightly harder in tree and bud than

Characteristics of Tree and Fruit of Some Apple Varieties (Varieties Listed in Approximate Order of Ripening)

Variety	Annual or Biennial Bearing	Years to Start Bearing	Yield	Crotch Angle	Winter Hardi- ness	Fruit Size	Fruit Flavor
Yellow Transparent	B	6	3	3	3	5	3
4 Red Astrachan	B	10	3	3	4	5	3
Anoka	B	4	1	1	1	3	4
Early McIntosh	B	8	3	3	3	5	1
Melba	B	7	3	3	2	3	1
Milton	B	7	3	1	2	3	1
Wealthy	B	8	3	5	3	5	3
Dolgo Crab	A	4	1	1	1	5	3
McIntosh	A	8	1	1	2	3	1
Macoun	B	9	3	1	3	5	1
Kendall	B	10	1	1	2	1	3
Cortland	A	7	1	1	2	1	2
5 R. I. Greening	A	10	1	1	5	1	2
N. W. Greening	B	8	1	5	3	1	4
Fameuse	B	10	3	3	3	5	2
Tolman Sweet	B	8	3	1	3	3	2
4 5/8 Delicious	B	11	5	5	4	3	1
5/8 Yellow Delicious	B	7	3	3	5	3	1
4 1/2 Lawfam	A	10	5	1	3	5	3
5/8 Northern Spy	B	13	3	5	4	1	1
5/8 Baldwin	B	11	5	1	5	3	3
Va. Crab	*	*	*	1	1	*	*
Hibernal	*	*	*	1	1	*	*
Haas	*	*	*	3	3	*	*

*Indicates variety used as framework for other varieties.

In the column for Yield, Crotch Angle, Winter Hardiness, Fruit Size and Fruit Quality, Number 1 is the first place or most desirable rating and five indicates the lowest or poorest rating. In yield 1 = highest yield, 5 = lowest yield. In crotch angle 1 = widest strongest crotch, 5 = narrowest weakest crotch. In hardiness 1 = most hardy, 5 = least hardy. In size 1 = largest, and 5 = smallest size. In flavor 1 = best dessert quality and 4 = poorest.



The sparse foliage and absence of fruit on this unsprayed McIntosh tree in August are due to apple scab. The susceptibility to this disease renders the McIntosh unsuitable for most home orchards.

Montmorency. Flemish Beauty pear thrives, when scab is controlled. The sulfur fungicide program used on apple is effective in controlling this disease. The Burbank plum (Japanese) bears well. European plum crosses developed

in Minnesota, bear heavily but the bark on the trunk tends to split during cold winter and the fruit of most varieties is not palatable.

Conclusion

The superior fruit-color, quality, productiveness and hardiness of the McIntosh under these climatic conditions seem to warrant its dominance in commercial orchards. When apples that ripen at different dates are needed, the McIntosh crosses offer the greatest commercial promise for the area at this stage of our knowledge. The choice for home orchards would be different. Among the sour cherries, plums and pears, a few sorts do moderately well. Wider testing of varieties in such climates is needed. Many new kinds from experiment stations in the United States and Canada are worthy of consideration.



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