

Apple Breeding, Years 1-10



Controlled crosses are made by bringing pollen from a desirable tree to a flower on another. The fertilized flower is bagged to prevent bees from pollinating it with an unknown parent. The apples are picked and seeds collected.

The seeds are grown into seedlings in a greenhouse, and in the second year a bud from each seedling is grafted to a rootstock to give a head start towards producing fruit.

10,000 seedlings are started each year, and over 8,000 are grown until they produce fruit in 4-10 years.



As the trees grow they are evaluated for disease resistance and hardiness. When they start producing apples the fruit is screened for flavor, texture, and appearance. Tree growth plus fruit size and quantity are monitored. Of 10,000 seedlings, perhaps only 20 have fruit of high enough quality to save as selections for future testing.

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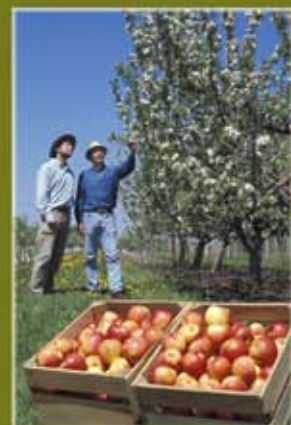
Apple Breeding, Years 10-30



Promising selections are subjected to many tests each year. Firmness is measured by a pressure tester, while an iodine spray reveals maturity and is ranked using a standard chart. Sensory information is gathered: appearance, taste, texture, and aroma.



Test results are not the same each year, depending on the season's rainfall and temperature. Each year some trees are eliminated. The best of the best are given to other research centers and commercial orchards for testing in a variety of climatic regions. Observations of many North American growers are gathered.



Twenty to 30 years after the first planting of 10,000 seedlings, only one truly outstanding new apple may survive to be named and introduced. Such was the case with HoneycrispTM, which was noted for its unusually long storage life - up to 9 months - even until the next year's crop has started to form! The final step for a new variety is at commercial nurseries, where thousands of trees are propagated for sale to orchards across the country and home gardeners.