

# An Aberration in Carpel Number of Apple\*

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As part of the apple variety testing program at this station, apples are halved both longitudinally and transversely. This is done to characterize the flesh and core conditions of the respective apples being tested.

In one seedling, "X-Downing," the presence of six carpels was noted in the fall of 1964 (Figure 1). Approximately one-half bushel of these fruit were then sliced and the condition was noted in a 2:1 six-carpel to five carpel ratio. No prior reference to a six carpel condition in apples is known to the author.

This was the first year in which fruit characterization studies of this seedling have been made. Therefore, it is not known whether the six-carpel condition represents a true mutant or is an environmental effect.

The "X-Downing" seedling is one of two lots of seedling material obtained from Mr. Ernest J. Downing, New Madison, Ohio in the spring of 1948. Mr. Downing reported that his seedlings were the result of a cross of Golden Delicious x Red Rome. This seedling is not to be confused with the variety *Downing*, from a cross of Gallia Beauty X Kirkland, released by the Ohio Agricultural Experiment Station, Wooster, Ohio.

The fruits which contained six carpels were not different in external appearance from those having only five carpels. All specimens examined had a crown of five points at the calyx end similar to Golden Delicious.

The "X-Downing" fruit average 2

and  $\frac{3}{4}$  inches in diameter; resemble Golden Delicious in shape; and, have the rather dull-red wash overlaid with thin red stripes characteristic of Rome Beauty.

Its overall appearance, coupled with a crisp, yellowish flesh and sprightly subacid taste, make this a promising seedling, and it is being subjected to further comparative cultural testing at this station.

Aside from its promising value as an eating apple it is thought that this seedling may also have value to fruit breeders, because of the possible mutant six-carpel condition. Further observations will be made concerning this aberration. During 1965 attempts will be made to isolate the limb or portion of the tree in which the six carpel condition exists in the fruit.

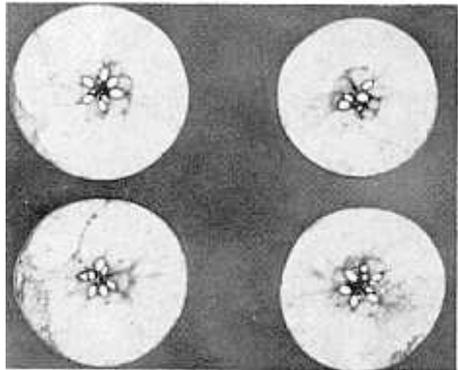


Figure 1. Cross sections of four apples of the "X-Downing" seedling. The apple at the top left distinctly shows the six-carpel condition and the other three show variations observed.

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