

An Abnormal Fruit Character in Tomato

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During the summer of 1944 a single tomato plant which bore abnormal fruits occurred in a commercial field of Rutgers tomatoes. The fruits of this plant varied from the normal tomato fruit in several ways; namely, there were more carpels; the carpels did not fuse and the fruits were almost completely sterile. Most of the flowers dropped shortly after blooming, but some remained on and the peculiar looking fruits grew to maturity and ripened. In the case of those fruits which ripened there was usually present a considerable amount of proliferated tissue from the center of the axis. When the older part of the fruit was red ripe this proliferated tissue at the tip of the fruit was still green.

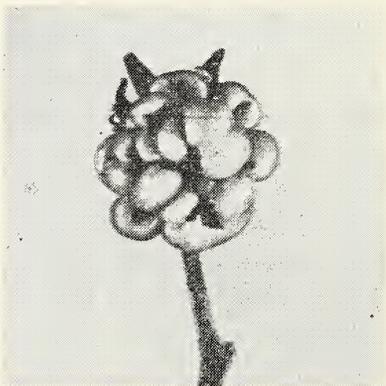


Fig. 1. A partially matured fruit showing the unfused carpels.

This original plant was brought into the greenhouse and propagated vegetatively. One fruit from the plant produced ten seeds which, although undersize, appeared to have embryos in them. These seeds were planted and four germinated. Of the four seedlings, two grew to maturity and produced fruits like those of the parent plant.

Pollen from the original clone was used to make crosses with normal plants of the Rutgers variety. This pollen seemed quite normal. F_1 plants from this cross were very vigorous and their fruits were essentially normal except that they were rougher than is characteristic of the Rutgers variety.

Selfed seed from these F_1 plants was planted and from this seed 123 F_2 plants were grown to maturity. The flowers of these plants were studied and the plants classified into two groups, those having normal ovaries and those having ovaries showing the abnormal characteristics

of the pollen parent. This distinction was very sharp and no intermediate conditions were observed. Of the 123 plants studied 92 showed normal ovaries and 31 showed ovaries with the unfused carpels.

These data warrant the conclusion that this abnormal type of fruit is a heritable character which is due to a single recessive gene.