

Your Organic Apple Pie This Thanksgiving is Still Genetically Modified



By Julianna LeMieux — November 16, 2017



Apple Pie [1]

Ask anyone who makes a great apple pie and they will tell you that the secret is in the apples. My apple pie would never have a combination other than half Macintosh, half Granny Smith. The particular cultivar is up to the chef, but, all bakers know that its the ratio of tart to sweet that separates the good from the great.

With the introduction of the first genetically modified apple, [the non-browning arctic apple](#) [2], we have a new variety to chose from. But, how different is the GMO arctic apple from other apples that you find in the store? (1)

Not much. No matter which apple you buy, you are getting some of the most genetically manipulated foods available.

Genetic manipulation has been part of apple breeding as long as edible apples have been around. The only difference between organic and arctic apples is whether the manipulation was done in a greenhouse or a lab, the genetic engineering remains. For each new apple cultivar that is created, there are 15 years of work behind it. Without them, our apples would be inedible - bitter and full of insects. What the people who made the arctic apple have done is simply speed up the process.

Apples are a flowering plant, and therefore reproduce sexually using pollination. New apple seeds are made when the male part of the plant (the pollen) reaches the female part (the apple blossoms).

Out in a wild orchard, this cross pollination is happening all of the time, resulting in thousands of types of apple varieties that look bad and taste worse. So, apple breeders need to intervene by

doing the breeding manually, either in an orchard or in the more controlled setting of a greenhouse.

To do this, the botanist first needs to cover the apple blossoms with a piece of fabric so that pollen from a unintended plant does not come into contact with them. Then, pollen from the desired apple cultivar is harvested from the flowers of the male parent and added to the blossom manually. Then, the blossom is again covered and the decade long process of making a new apple has begun.

The cross-pollination process done by hand will yield seeds that, when planted, take four to eight years to make a tree that bears fruit. Whether that fruit is going to be useable or not is another question entirely. Apple scientists choose the apples that both look and taste appealing. But, there is much more to it than that. Those apples are then tested for desirability in qualities such as disease susceptibility, ability to be damaged by insects, frost hardiness, tree form and climate adaptability.

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So, when you're eating apple pie this Thanksgiving, please remember that those apples are both the fruits of nature and were also made by scientists - organic or not.

Notes:

(1) You can find a good explanation of the science behind how arctic apples are made [here](#) [3].

References:

<http://www.knouse.com/AllAboutApples/OriginsofApples.aspx> [4]

<https://www.sciencelearn.org.nz/resources/844-breeding-a-new-apple-cultivar> [5]

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Links

[1] https://commons.wikimedia.org/wiki/File:Steven%27s_Apple_Pie.jpg

[2] <https://www.arcticapples.com/>

[3] <https://www.okspecialtyfruits.com/demystifying-arctic-apples-modern-science-tools/>

[4] <http://www.knouse.com/AllAboutApples/OriginsofApples.aspx>

[5] <https://www.sciencelearn.org.nz/resources/844-breeding-a-new-apple-cultivar>