

Synbio firm Intrexon snaps up Okanagan, developers of new GM Arctic Apple

It's been less than two weeks since the genetically modified Arctic Apple approval and already the small British Columbia company that developed the apple has been snatched up by the Maryland-based synthetic biology company [Intrexon](#). Okanagan Specialty Fruits was bought for \$31 million in stock and \$10 million in cash, which will be split among its [45 investors](#). Additionally, the eight employees, including founder Neal Carter, will retain their positions.

[Intrexon](#) is also a majority owner in AquaBounty Technologies, which has developed the genetically engineered salmon, and Trans Ova Genetics, which provides reproductive technologies to the livestock industry.

In the past, anti-GMO groups haven't been able to use the same arguments to oppose the Arctic Apple. Many of the common points against other biotech crops don't apply.

One key argument that falls flat has been the food justice movement's beef with corporate control of the food system. Okanagan Specialty Fruits was started in 1996 by an apple and cherry grower Neal Carter; its shareholders have largely been fruit tree growers throughout the Okanagan Valley. It has nine full time employees. This is not Big Ag.

That hasn't stopped anti-GMO activists led by the Organic Consumer's Association, which runs a campaign called Millions Against Monsanto, to include a petition against the Arctic Apple under the same campaign.

Okanagan developed non-browning trait, which it licensed from Australia's national science agency, the Commonwealth Scientific and Industrial Research Organization.

Okanagan will market its non-browning apples to growers wanting to increase their sales to the fresh-cut fruit segment of the industry. The non-browning apples will cut expenses and reduce the use of chemical solutions or antioxidants on pre-cut apples.

The apples use RNAi technology to turn off the genes responsible for polyphenol oxidases—the enzyme that causes apples to turn brown. Additionally, with a keen eye on consumer preferences, the Okanagan Specialty Fruits stated:

Aware of potential concerns over consumer acceptance of foods enhanced through biotechnology, OSF is intentionally taking a conservative approach to our work. As a policy, we will not add foreign gene traits to our products. While we are committed to using genetic engineering tools and believe strongly in their value, we aim to only use tree fruit genes to develop new tree fruit varieties.

Despite this commitment, the Center for Food Safety, which opposes GMOs, raises concerns about the affects of gene-silencing RNAi technology, claiming it is a “new technique”, although it mimics natural

processes. After the USDA's approval of the Arctic Apple two weeks ago, Doug Gurian-Sherman, senior scientist at Center for Food Safety, [wrote](#):

The agency has failed to analyze whether suppressing fruit browning with these novel RNAs impacts the rest of the gene family in the tree, or whether there are off-target impacts on other genes. USDA should hold off on deregulating RNAi-engineered crops until they have gotten a grip on the latest research in this area.

Durian-Sherman is wrong, as the agency thoroughly reviewed the biological and environmental impact of the familiar RNAi technology.

The Intrexon-Okanagan merged company plans to apply GM technology to other fruit tree products.

“Joining forces with Intrexon and applying our combined technical know-how is an important step to introducing beneficial products for consumers and growers,” said Carter.

The acquisition enables Intrexon, which has divisions in health, environment and energy in addition to aquaculture and livestock, to expand to include fruit trees in its programs using Okanagan's expertise. [intrexon](#)

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“Okanagan is a world leader in the development of fruit-bearing plants to express enhanced, advantageous traits with tremendous potential to revolutionize the tree fruit industry,” said Thomas R. Kasser, Ph.D., Senior Vice President and Head of Intrexon's Food Sector.

Future innovations in the pipeline include using the non-browning traits in cherries and pears, as well as addressing the plum pox virus in peaches and the fire blight in pears.

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Additional Resources:

- [Should consumers be concerned about the healthfulness of the non-browning GMO Arctic Apple?](#) Genetic Literacy Project
- [Consumers Should Get To Try The First Biotech Apples](#), Applied Mythology
- [Washington's apple growers fear stigma by association after GM apple approval](#), Yakima Herald
- [Non-browning apple approved ... Now comes the scare campaign?](#) Kevin Folta