



The *Red Delicious*, mother-in-law's favorite. Why has an apple that looks so appetizing with its deep red coloration and conical shape fallen out of favor?

The Fall of an Icon

For 70 years, the Red Delicious dominated the apple market in the USA. But now the iconic fruit has become little more than a decorative object. Delicious by name... but for most people, no longer by nature. *Why is that?*

By Bettina Gartner

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Red Delicious is my mother-in-law's favorite, an internet user shares with a forum's readers. His mother-in-law also eats only well-done meat and doesn't like chicken or eggs. In other words, this woman has a questionable palate. But she is old enough to remember the times when the Red Delicious was the number one apple on offer. In fact, it was US consumers' apple of choice for decades. Competitors didn't stand a chance. That there are internet forums today on which people get wor-

ked up over the question of why anyone would still buy a Red Delicious at all shows what a massive fall from grace the former market leader is undergoing.

Why have customers lost their appetite for an apple that, with its deep red color and elongated shape, literally looks good enough to eat? Have they had their fill of them over the years, or do new varieties simply taste better?

“The Red Delicious has become a victim of its own success.”

Markus Bradlwarter, *Managing Director of the South Tyrol Variety Innovation Consortium*

“Red Delicious has become a victim of its own success,” says Markus Bradlwarter, Managing Director of the South Tyrol Variety Innovation Consortium. “The focus has increasingly been on cosmetic appeal, and people forget that the quality on the inside also counts.”

In its early years, the Red Delicious delivered on inner qualities such as tasty flesh. Back in the 1880s, the “father” of this apple, Jesse Hiatt, even dubbed it the “best apple in the world”. Walking through his orchard one day in 1872, the lowan fruit farmer had discovered a chance seedling among his trees which he didn’t want and chopped it down. But the interloper – which was thought to be an offshoot of the Yellow Bellflower variety – just wouldn’t go away. Hiatt gave in, and the tree went from strength to strength. After a few years, it produced a new apple variety, which Hiatt named “Hawkeye” after the nickname of his home state.

This ancestor of the Red Delicious looked nowhere near as promising as today’s specimens, either in shape or in color: it was strangely elongated and heavily striped. But it tasted good. When in 1893 the Stark Brothers Fruit Company of Louisiana ran a nationwide competition to find the “apple of the future”, the Hawkeye won over the judges at first bite. “Delicious!” Clarence M. Stark, the company’s president, reportedly proclaimed after tasting it. And that is how Hiatt’s apple, the rights to which were later bought up by the Stark Company, got its name. However, the high-flyer’s career was almost nipped in the bud when the data sheet containing Hiatt’s name and submission details disappeared. If Hiatt – who was as resolute as his tree – hadn’t tried his luck again

the following year, the apple’s story would have been very different.

The Stark Company spared no expense or effort to popularize the “Stark Delicious”, as it was known at the time. The new variety proved to be wonderfully uncomplicated, as it was resistant to fire blight and not prone to cedar apple rust. It wasn’t long before orders started flooding in. When the Stark Company added the Golden Delicious to its assortment in 1914, Hiatt’s apple was given the attribute “Red”, even though the two varieties bore no resemblance to each other bar the name.

Red Delicious: the name said it all. The ideal apple had to be red because red represents ripeness – and ripeness represents flavor. In 1923, a fruit farmer in New Jersey who had planted Red Delicious in his orchard noticed a branch on one of his trees with fruits that turned red earlier than the others and produced a deeper, more uniform color. These mutant branches, known as sports, which grow from spontaneously mutated buds and can be propagated by breeding, are not uncommon on Red Delicious trees. The Stark Company bought the New Jersey fruit farmer’s special branch for \$6,000.

This news struck a chord with breeders, who began working tirelessly to make the red of the Red Delicious even redder and the shape even more attractive. Elongated, conical fruits borne on spurs promised commercial success. In South Tyrol, these apples thrive particularly well at an altitude of 400 to 800 meters, where the days are still warm in the fall, but the nights are already noticeably cool. “The temperature differences are crucial for the formation of sufficient gibberellins in the trees – plant hormones that make the shape taller,” Bradlwarter explains.

The original Stark Delicious was followed by the Ruby Red, Royal Red, Top Red, Starkrimson and numerous other spontaneous mutations. Everyone was happy: the producers had their mature, high-yielding trees in plantations the production costs of which had long since been recouped. Consumers had their affordable apple, which looked phenomenal. The fact that the growers focused on the appearance of the Red Delicious also benefited the trade, since its visual charms had the added bonus of increasing the apple’s shelf life: since the fruits of new variants turn red before they are ready to eat, they can be harvested earlier and stored for longer. Once harvested in mid-September, they will keep for a good three

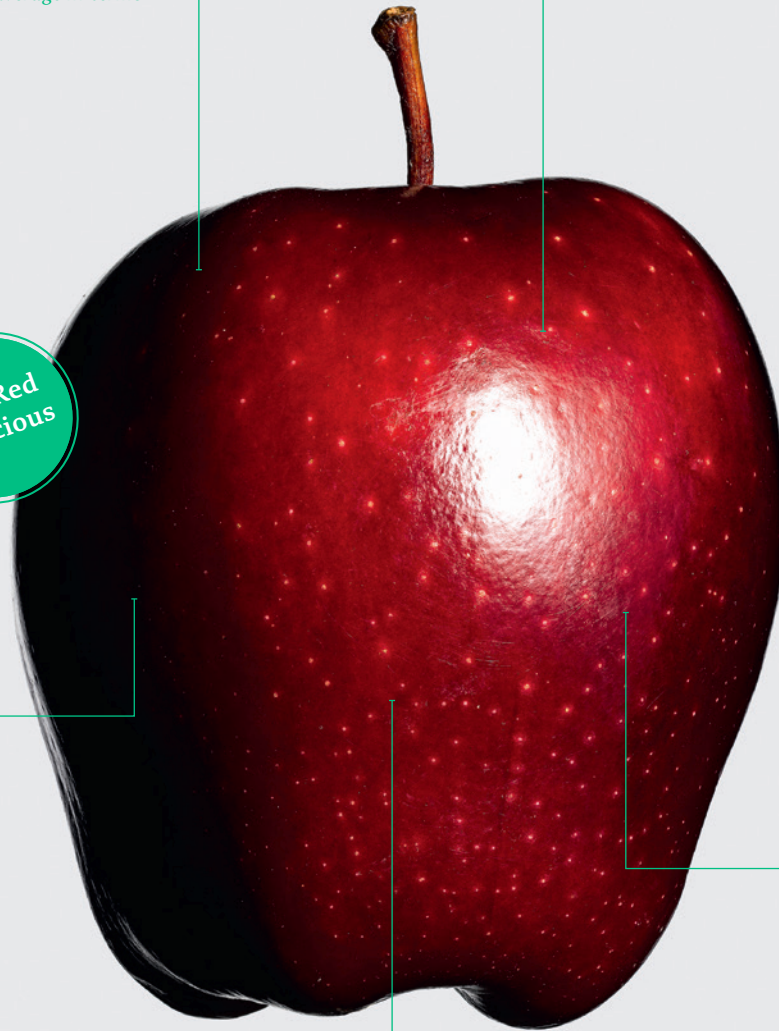
01

Balanced: The *sugar content* of Red Delicious (including skin) is between 11,3 and 12,5 °Brix. This puts the variety well within the apple average in terms of sweetness.

02

Off the mark: The Red Delicious is said to have lost its flavor because the *red coloration* was intensified. Experts disagree with this notion.

The Red
Delicious



03

Healthy: Compared to other apples, the Red Delicious is particularly rich in *polyphenols*. These substances, which are found in or directly below the skin, reduce the risk of certain types of cancer, support the immune system, and have an antioxidant effect.

04

Double-edged: Apple seeds contain vitamins and minerals, but also *amygdalin*, a substance that can release toxic hydrogen cyanide into the body when consumed. But like all apples, the Red Delicious contains very low levels of amygdalin, so the seeds can still be eaten.

05

Not well tolerated: Red Delicious apples are not recommended for people with an *apple allergy*. Better suited are varieties such as Belle de Boskoop, King of the Pippins (Reine des Reinettes) and Glockenapfel.

“The goal of improving storage by slowing down ripening has had a particularly negative impact on quality in Red Delicious.”

Fabrizio Costa, *Professor of Agricultural Genetics at the University of Trento*

months at refrigerator temperature. Other varieties go soft after just a week. But the Red Delicious stays looking fresh for so long that the New York Apple Association recommends it as a decorative object in wreaths and holiday table centerpieces. Like a Coca-Cola bottle, the Red Delicious stands firm on its five bumps, encased in its comparatively thick skin. “When it comes to shipping and handling, the skin can’t be thick enough, as it protects the fruit against bruising,” Bradlwarter says. “Although it can be tough to eat.”

That sounds as if the inside of the Red Delicious doesn’t keep what its exterior promises anymore. What about that first bite – the “crispness” the experts refer to? The “crunch” that describes the sensation you get when you chew? Like other old varieties, the Red Delicious tends to turn mealy quite quickly. We describe an apple as “mealy” when the middle lamellae – the thin, glue-like layers that bind the cells together – separate under pressure when we chew, instead of the cells rupturing and creating that typical crunch. Fragments of these middle lamellae remaining in the mouth leave unpleasant residues behind.

The disintegration of the cell structures is stimulated by the hormone ethylene, which causes the fruits to ripen in the fall. As scientists led by Fabrizio Costa, Professor of Agricultural Genetics at the University of Trento, have discovered,

ethylene also plays an important role in the taste of apples with a mealy texture: it promotes the production of flavor carriers such as alcohol and esters. If ethylene is not present, the aroma disappears. Modern storage methods, in which the oxygen content of the air is lowered and the carbon dioxide content is increased, reduce the formation of ethylene. This enables Red Delicious apples to be stored for a good eight months – albeit at the expense of flavor. “The goal of improving storage by slowing down ripening has had a particularly negative impact on quality in Red Delicious,” says agricultural geneticist Costa.

A mouthful of mealy apple with no particular flavor is something that appeals to fewer and fewer consumers. In the US state of Washington, where two-thirds of all American apples are produced, the proportion of Red Delicious in the apple harvest has dropped from its peak of 75% in the 1980s to just 16% in 2021, and most of those are not eaten at home but exported. The Chinese love red apples as a symbol of happiness; in the Middle East, the Red Delicious with its five bumps still embodies the ideal image of the apple. “India, Greece, Mexico, Turkey, and Argentina are also tradition-bound markets,” says Walter Guerra, head of the Institute for Fruit and Viticulture at South Tyrol’s Laimburg Research Centre.

In the USA and Europe, other varieties have for some time now been elbowing their way onto the retail shelves once dominated by the Red Delicious, such as the Gala, market leader in the USA in 2021 with a 21% share, the Fuji, and the Honeycrisp. The logo of the Washington Apple Commission reflects the current diversity: a new, fantasy red, yellow and green apple has taken the place of the former Red Delicious. The apple of today should have a crisp, juicy texture and a complex aroma. “No-one is interested in a bog standard product any more,” Bradlwarter says. “It won’t be long before the Red Delicious disappears from the market altogether.”

But it still has a period of grace, as the world of the apple turns slowly. It can take anything between five and seven years for new trees to produce the same yields as old ones. And besides, clearing one hectare of apple plantation can cost around €15,000, and the bill for planting a new variety – including the irrigation system and hail nets – can be as much as €80,000 per hectare, Bradlwarter reckons. So all that buys the Red Delicious a little extra time. And the forum user’s mother-in-law on the internet will get to savor her number 1 apple for a few years yet. **BG**