

# Why Are Organic Onions So Much Better?

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## STORY AT-A-GLANCE

- › Red onions can kill up to 75% more cancer cells than other varieties, but organic red onions exhibited more antioxidant activity and 20% greater potential from flavonols
- › Red varieties grown organically release the most health-beneficial compounds; there are ways to cook them that cause minimal damage and may even enhance some of the many phytonutrients available
- › Among five onion varieties, red onions kill between three and four times more cancer cells than the yellow and white ones
- › Antioxidant flavonoids, principally quercetin, myricetin and kaempferol, were the most bioactive compounds, showing how red onions exert potential anticancer activities, but allicin, sulfur and anthocyanins weighed in, as well

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You don't have to be a cook to know how delicious onions are. If you're looking for mouthwatering, savory flavor to enhance other foods, onions are your go-to veggie. Or, when you cut them into slices and bake or sauté them whole, all by themselves, drizzled with coconut oil and sprinkled with dried thyme, [rosemary](#) and/or basil, the fragrance and flavor are simply heavenly.

Onions are also impressive because they're such a healthy food, imparting vitamins, minerals and powerful compounds that, besides making your eyes water when you cut into them, also help heal your body.

The knife you use to slice them can make all the difference. When certain vegetables get nicked or cut, they'll produce even more polyphenols to protect against damage. Cutting with ceramic knives can help slow the browning process that naturally occurs when slicing certain vegetables and fruits.

Antioxidants, including flavonoids, polyphenols and quercetin, help enhance your health in numerous ways. The minerals iron, folate, thiamin and potassium, plus [vitamin B6](#), or pyridoxine and vitamin B5 (better known as pantothenic acid), join forces to positively impact the way your entire body functions, from your brain to your gut to your heart.

Moreover, these anti-inflammatory, antifungal, antimicrobial, antibacterial (inhibiting the bacteria *Helicobacter pylori*<sup>1</sup>), antiviral, antidiabetic and anticarcinogenic compounds can help minimize, treat and even reduce the risk of disease, including coronary artery disease, diabetes, stroke and cancer, and numerous so-called "lesser" ailments that lead to those more serious conditions. It can't get any better than that, right? But what if they're [red onions](#)? What if they're organic, as well?

## The Curious Power Behind Red Onions

Well, as it happens, studies show that when red onions, specifically, were pitted against white onions (while yellow onions, having more pigment than the white ones, also contained more disease-fighting flavonoids), the aforementioned nutrients went way beyond what scientists had already known they could do. In short, the Canadian study<sup>2</sup> reported:

*"Flavonoids, which are found in high levels in onions, have been shown to exert antiproliferative and potentially anticancer activities. To test their therapeutic potential, we assessed the antiproliferative, cytotoxic, apoptosis-inducing and antimigratory activities of five onion varieties grown in Ontario against human adenocarcinoma cells."*

Adenocarcinoma is a type of cancerous tumor that begins in the glands, against which the Stanley onion variety demonstrated the strongest anticancer effects. The scientists

compared the properties of the **onion extracts** to pure flavonoid extracts, containing principally the antioxidant flavonols quercetin, myricetin and kaempferol.

All five onion varieties showed antiproliferative activity (which Dictionary.com describes as "a substance used to prevent or retard the spread of cells, especially malignant cells"<sup>3</sup>).

## How Quercetin in Onions Can Impact Your Health

Quercetin contains molecules that can zap harmful free radicals in your system caused by toxic substances you might encounter from day to day, such as pollution, chemicals in your water and food, and even stress. The effects of these can lead not only to cancer but also to many other debilitating conditions exacerbated by inflammation.

One study<sup>4</sup> on obese and overweight patients who had a higher heart disease risk returned particularly encouraging results in regard to eating onions versus taking quercetin supplements. Scientists found that 150 milligrams of quercetin a day was enough to lower both blood pressure and cholesterol oxidation.

As Natural Society quips: "In other words, it was shown to help prevent cardiovascular disease. To put this in perspective – the average quercetin supplement contains 500 milligrams, while a particularly potent onion may contain 100 milligrams."<sup>5</sup>

Research has also revealed quercetin's association with cancer prevention, inhibiting the growth of breast, prostate, stomach,<sup>6</sup> endometrial, esophageal, ovarian, lung and colon cancer cells, and many more. A University of Maryland Medical Center article<sup>7</sup> listed several more findings in regard to this powerful compound, in terms of prevention and treatment:

- **Allergies**, asthma, hay fever and hives, as it prevents immune cells from releasing histamines
- Optimized cholesterol, as it prevents damage to LDL cholesterol
- Interstitial cystitis and accompanying bladder pain

- Inflammation of the prostate (prostatitis), due to fewer symptoms
- Rheumatoid arthritis (RA) – Some reports indicate that people with RA experienced fewer symptoms after transitioning from a typical Western diet to one rich in berries, fruits, vegetables, roots and sprouts, which are high in quercetin and other antioxidants.<sup>8</sup>

## What Else Do Compounds in Onions Do for Health?

Kaempferol helps to inhibit oxidative damage of your cells, lipids and DNA, and according to an article<sup>9</sup> in Structural Chemistry, is a chemopreventive agent that may help "prevent arteriosclerosis by inhibiting the oxidation of low-density lipoprotein and the formation of platelets in the blood."

Myricetin exerts its particular molecules to help fight inflammation, oxidative stress and, among many other things, control diabetes (which, untreated, may increase your risk of stroke, ischemic heart disease and peripheral vascular disease).<sup>10</sup>

**Anthocyanins** are another extremely important antioxidant element in onions. Responsible for the bright color in the red and purple onions (as they are in red cabbage, red and purple grapes and other berries, kale and beets), they can also kill breast and colorectal cancer cells.

Alliin is another compound found in members of the allium family, which includes onions, leeks, shallots and **scallions**, as well as chives and **garlic**. (And, in fact, allium is the Latin term for garlic.) Two onion compounds, allium and allyl disulfide, convert to alliin when onions are chopped or crushed, when the enzymes are released.

Numerous sulfur compounds in onions, garlic and other allium vegetables (which you can smell) play a large part in cancer prevention, blocking DNA damage and helping to magnify their antioxidant capabilities.<sup>11</sup> Supporting the role of this element in onions, another study notes, "[S]ulfur- and selenium-containing compounds have the capacity to protect against several kinds of cancer development."<sup>12</sup>

Inulin, a water-soluble form of dietary fiber found in onions, is a prebiotic that helps nourish beneficial bacteria in your body, helping you digest foods properly as well as absorb the nutrients in them, which in turn boosts your immune function. Inulin, it turns out, is beneficial because it may help lower the risk of ulcers and helps keep your bowel movement regular, fighting diabetes and helping with weight loss, the Global Healing Center<sup>13</sup> maintains.

## What's the Significance of Organic Onions?

Some studies have concluded there's no difference between conventionally farmed and organic, whether it's onions in question or other foods. In fact, a review involving more than 200 studies seemed the final word, until additional studies on the benefits of organic farming were conducted in relation to the phytochemicals in the foods produced.

Scientists came to the conclusion that **organic is better** in every respect, and dramatically so. Science Daily<sup>14</sup> suggested that earlier conflict in data may have been due to short study periods and the exclusion of variables such as weather.

Scientists then engaged in more in-depth analysis with a six-year study on two onion varieties, Hyskin and Red Baron, examining the effects of conventional, organic and mixed cultivation practices on many of the bioactive compounds previously listed, such as flavonoids, individual flavonols and anthocyanins, in part for their antioxidant capacity.

At the end of the study, all compounds were higher in the organic specimens, with differences, they wrote, "primarily due to different soil management practices used in organic agriculture rather than pesticide/ herbicide application."<sup>15</sup>

Simply stated, **eating organic**, whether it's onions or anything else, is so much better for you, not just because the health of the soil may enhance the nutritional value of the produce itself, but because standard, conventional gardening and farming methods use

toxic pesticides and other harmful practices without taking into consideration the damage being done.

Rather than gaining as many disease-fighting vitamins, minerals and arguably hundreds of phytonutrients, your body is instead fighting the poisonous effects of substances like **glyphosate**, which studies have shown can attack several of your body's most vital systems, damage reproductive organs and likely cause cancer.<sup>16</sup>

## **Onion Preparation – Releasing 'Pungent Chemical Warriors'**

Cooked onions, as we already observed, are quite delicious. If you're considering baking, sautéing or boiling onions, one study<sup>17</sup> tackled and observed that baking and sautéing produced a 7% to 25% increase in quercetin concentration, while boiling produced an 18% decrease. According to Zester Daily,<sup>18</sup> there are ways to handle onions to release the aromatic – and health-beneficial – compounds that may come as a surprise, such as:

- Cutting into onions releases the alliinase enzymes, but doing so at least 30 minutes before eating them and letting them rest even as long as six to eight hours on the counter gives the enzymes a chance to reach their full potential, nutritionally.
- Don't cut them too finely, however, or the enzymatic reaction will dissipate too quickly. You're advised to cut your onions into chunks first to let them rest, then chop them more finely just before you eat them.
- Onions are a cold-weather crop, meaning you can plant and harvest them with a frost in the air and it doesn't harm them like cold temperatures damage, say, lettuce or tomatoes. Consequently, you should choose smaller red and yellow onions grown in colder climates and peel them gently to get the most flavonoids.
- Sulfur compounds in all alliums are said to be destroyed when they're cooked, but the flavonoids in onions may be enhanced when sautéed on low heat, quickly and for four to five minutes; no longer.

- Combining allium veggies together maximizes the nutritional kick you receive from all the combined sulfur, flavonoid and antioxidant compounds they provide.

## The Takeaway on Onions

As alluded to earlier, organic red onions are by far your best bet for the best cancer-fighting (and other serious disease-fighting) potential, but yellow onions also fall into the cancer-combating, health-boosting arena.

When peeling the papery peeling from the outside of **onions (red or otherwise)**, peel as little as possible, because it's those outside layers that contain the highest concentrations of anthocyanin content.<sup>19</sup>

Further, you should eat at least one red onion every week, and strive for far more, to get the optimal nutritive benefits, and if you cook onions in soup or any other dish, don't worry – the nutrients simply leach into the broth. The takeaway here is – drink your broth.

## Sources and References

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