

## Organic, Local, and Conventional Foods

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Seasonality of produce is only one aspect of choosing what to eat. What about organic, local, and conventional foods? There are lots of opinions and facts on these topics, and often the two get mixed together. Spoiler alert: the science doesn't back up a lot of the commonly held opinions, and there are some deep philosophical issues unrelated to the science here.

**Organic foods** are those produced following governmental regulations that restrict the use of fertilizers, pesticides, herbicides, and hormones and require humane treatment of animals. US-based food producers must be certified as following the USDA National Organic Program (NOP) regulations in order to claim organic status; likewise, businesses in the European Union must follow European Commission General Food Law regulations and pass annual audits. (As a side note, the EU and US use the same definition of organic so that the two regions can cross-ship organic foods.) Because of the current higher consumer demand for organic foods, their cost is typically higher: supply hasn't had time to catch up to demand. Organic foods also have a cost burden associated with paperwork and certification, so some smaller operations may follow the legal definition but opt to not pay for certification, and therefore can't label their food "organic."

**Local foods** have no formal legal definition, but the common lay definition is based on how many miles away a food was produced—typically, up to "a few hours' drive." *Food hubs*—sites that act as exchanges for local farms and ranches to sell product to larger-volume buyers like grocery stores—are quickly becoming common, and are strengthening local and regional food systems in fantastic ways. Eating foods produced locally has a number of benefits, including supporting the local economy, staying "within season," and connecting to the food supply on a deeper level. (Search online for the USDA's "Know Your Farmer, Know Your Food" site.) The term *local* is unrelated to *organic*, but to some consumers there is a shared ethos of sustainability, food security, and environmentalism. *Local* doesn't guarantee these things, though!

**Conventional foods** are those not certified for sale under the label *organic*. They must still be grown to acceptable government regulations, of course. Conventional food may or may not be local.

### *What's the difference in taste?*

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Organic food is viewed by some consumers as being more authentic and has a "halo of tasting better." Taste differences can certainly exist between a head of organic romaine lettuce and a conventional one at your local grocery store due to microclimate differences or how the produce is handled, but studies that have done head-to-head comparisons of identical plant varieties grown conventionally and organically have found zero difference in terms of taste. The use of organic pesticides over conventional ones does not, in and of itself, lead to taste differences.

Local produce is also often thought to taste better and has a similar “halo” effect. For some produce, flavor will deteriorate over time after harvest, so local produce may be fresher and taste better. But that’s not necessarily the case. Radishes, for example, taste better when grown in hotter climates. If you live in a comparatively cooler climate, radishes grown farther away may taste better, and their environmental impact can also be lower if locally grown ones rely on hothouses.

If this answer surprises you, consider the power of the placebo effect. If you *believe* that something is going to taste better, then it probably will. Placebo effects in taste can be incredibly, incredibly powerful, as the food marketing associations know. But the data doesn’t support the beliefs that most consumers have about any perceived taste differences.

### *What about exposure to chemicals?*

Regardless of whether you’re handling conventional or organic food, government regulations limit the levels of all types of herbicides and pesticides that are legally allowed to be present in the end products. No one should be exposed to pesticides or herbicides above certain levels, and this has been a real issue for farm workers. But is it an issue for you? The answer is complicated.

Exposure to organic pesticides and herbicides *as a category* has not been shown to be any safer than exposure to conventional ones. Some chemicals, regardless of type, are carcinogenic at sufficient concentration—dosage matters, as chemists like to say. The detectable levels of pesticides in our bodies are well below anything approaching toxic. To put some numbers to how much we’re being exposed to carcinogenic pesticides in conventional foods, consider what Dr. Belitz et al. wrote in *Food Chemistry* (Springer, 2009): “[T]he natural chemicals [in a cup of coffee] that are known carcinogens are about equal to a year’s worth of synthetic pesticide residues that are carcinogens.”

Organic products test as having lower levels of pesticides but don’t test as having better nutritional value than equivalent conventional products. Individuals who consume organic products do test as having lower levels of pesticide residues in their blood. But does having a pesticide in your bloodstream at some minimal quantity change your overall health or lifespan? The uncertainty here is why many consumers buy organic foods (especially, it turns out, new parents). There’s a lot we don’t know about long-term chemical interactions between pesticides/herbicides and our bodies. We do know that all approved pesticides are essentially safe, in the sense that they are well studied. But we don’t know, with 100% certainty, that their long-term impact is absolutely zero. It’s likely not (how could it be?), but is the impact meaningful? It may be unknowable. This is why I consider whether to buy organic or conventional products a philosophical question—how do you feel about uncertainty, when the scientific community has found very little to suggest there are risks?

### *How about no chemicals?*

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Well, food *is* chemicals, so presumably anyone asking this means added chemicals like pesticides. This may seem like an unnecessary point to make, but I've learned it's important! For example, a survey done in 1999 found that one in three respondents believed "Ordinary tomatoes don't have genes, but genetically modified ones do." Given the option, farmers would prefer to not spray any herbicides or pesticides on their crops and ranchers would rather not have to use vaccinations or drugs: they cost money and take time to use.

### *Best bang for buck?*

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Whether to shop specifically for foods that are local and/or organic is more of an ethical and moral question than a scientific one. There's a lot more to the spirit behind these choices than the nutritional value and taste sensation.

If you want to buy local produce, it's also generally cheaper: transportation costs aren't as high. Beyond the grocery store, look for a farmers' market. Farmers' markets are a great way to really understand where your food is coming from and to think about cooking and eating seasonally. Plus, your local farmer will thank you. If you want to "level up," see if you can find a nearby CSA (community-supported agriculture) share; these are fractional shares where you pay a few hundred dollars at the beginning of the growing season and then receive some fraction of the farm's yield and share in the risk (hopefully, not a drought year). They're as close as you can get to your produce without growing it yourself, and a great way to challenge yourself in cooking. (What the heck do you do with 10 heads of lettuce? Try lettuce soup: see page 116.)

If you want to buy organic but are on a tight budget, here are some general rules of thumb for where the biggest differences are in produce. For fruits, if you're going to eat the skin, buy organic. If you're going to peel them, buying organic appears to offer comparatively little difference. For veggies, organic bell pepper, celery, kale, and lettuce test as having lower levels of pesticides than their conventional counterparts. For animal products high in fat like butter and fatty meats, buy organic; a number of pesticides are fat soluble so remain in the end product.

My personal take? Being engaged in where your food comes from and taking time to cook for yourself and others is more important than whether your food is organic or conventional by the legal definitions.

*"Below legally allowed levels" doesn't mean "100% guaranteed," regardless of whether you're buying organic or conventional. In the US, the FDA inspects less than 1% of imports (as of 2012), and excess pesticide residues have been found in some foods imported from abroad when tested by independent researchers. Enforcement (and funding for it) needs to be stepped up.*