

Dry or Canned: Which Is the Greener Bean Choice?

By Nina Shen Rastogi
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Now that it's picnic season, I'm back to making my famous three-bean salad. But every time I'm at the grocery store, I feel torn between the canned kidney beans and the dried ones in bags. Transporting the canned ones must produce more emissions, because they're heavier, but how does that compare with the carbon footprint of boiling dried beans for hours on a stove top?

Until you pick them off the shelf, there's no question: Dried, bagged beans are greener than the canned variety. The real X factor here is what you plan to do with those beans once you get them home.

Whether they're sold in a bag or a can, beans that are meant to be eaten in seed form (such as kidney, black or pinto beans) are initially processed the same way. Mature bean plants are cut down near their roots and left to dry in the fields. Then the dried seeds are threshed out and sent to a processor, where they're washed, milled, polished and packed into bulk bags.

At this point, beans destined to be sold dry are simply decanted into smaller, shelf-ready bags. Canned beans, on the other hand, go through several additional steps. First, they have to be hydrated, which happens either with a long, room-temperature soak or a relatively brief, hot bath. (The latter requires more energy but is often preferred because it cuts down on time and labor and helps prevent bacterial growth.) Then the beans are blanched for a few minutes before being sealed in cans and then cooked and sterilized in a retort, a machine that's essentially a big steam-powered pressure cooker.

According to an analysis done at one Oregon processing facility, canning 10 1/2 ounces of green beans -- the amount you'd find in a typical grocery store can after draining the water -- requires roughly 1,500 British thermal units of natural gas. (That's about as much energy as it takes to drive a car one-quarter of a mile.) Because kidneys and pintos are tougher and take longer to cook -- about 75 percent longer than green beans, according to Truitt Bros., the cannery that commissioned the study -- processing them would require more energy.

Then there's the excellent point you raised: Getting those canned beans from the production facility to your Piggly Wiggly is indeed going to require more fuel. Beans, when cooked, get 150 percent heavier because of water absorption. Plus, each can is one-quarter to half full of water, adding to its overall load. (The weight listed on a can's label refers to the total weight of its contents.) That's why Goya's 16-ounce can of black beans yields just 3 1/2 servings, while its 16-ounce bag of dry beans yields 12.

But transportation doesn't make a huge difference when you consider the can's life cycle. In the green-bean study, for example, getting the cans to the customer accounted for only 8 percent of their overall greenhouse gas emissions. The canning process itself -- i.e., getting the veggies into the cans and then cooking them -- contributed 23 percent. Both of those phases were dwarfed by the production of the packaging, which accounted for a whopping 55 percent of the total.

(It should be no surprise that making steel cans has a much bigger carbon footprint than making the plastic used in food bags.)

So far, our bag of beans is winning handily. From pantry to plate, however, things get a lot murkier. Cooking dried beans at a simmer on the stovetop, the most common method, can require anywhere from 30 minutes to three hours, even after a lengthy pre-soak. Based on some recorded energy figures provided by food researchers at the University of Bristol in England, cooking five ounces of beans for that long might require 1,400 to 5,600 BTUs on a gas stove top or 4,100 to 16,500 BTUs on an electric stove top, though everything from the amount of water to the kind of pot used could alter those numbers. (The large difference is due to the fact that electricity generation is a highly inefficient way of providing energy to appliances. The numbers above assume that the electricity is coming from a coal-fired plant, but as has often been noted, the fuel mix in your area may be cleaner.)

On the high end, that's a lot more energy than the industrial cookers use. Cooking dry beans on the stove would take up to 11 times as much energy as at a commercial facility. It's tough to say for sure, given the number of assumptions we've had to make in our analysis, but that seems like more than enough to tip the scale in favor of canned beans.

Of course, in the grand environmental scheme of things, whether you decide to eat your pinto beans out of a can or a bag doesn't really matter a hill of you-know-whats. So until someone undertakes a more thorough cradle-to-grave analysis of the topic, you can rest assured that getting some of your protein from beans instead of meat is a kind move to make for the planet's sake. The Lantern forgives you for any increase in personal methane emissions that might result from that decision.