



Jo Robinson with vegetables from her demonstration garden in Washington state.

Q&A Jo Robinson

The nutrient hunter

Investigative food journalist Jo Robinson has spent more than a decade scouring the literature on plant nutrition. Her demonstration garden in Washington state opens this month as her book *Eating on the Wild Side* (Little, Brown, 2013) emerges in paperback. She talks about eating tomatoes to protect from sunburn, why bitter is better — and how purple is the new green.

What is the thesis of *Eating on the Wild Side*?

All plants make phytochemicals, which protect against predation, disease and other threats. When we consume certain plants, we may also receive some protection — I give evidence from the scientific literature in my book. Lycopene in tomatoes guards against ultraviolet light, and has been shown to protect us from sunburn, for example. A relatively new discovery is that since the invention of farming, we have been breeding varieties with progressively fewer beneficial phytochemicals, partly because many taste bitter or astringent. Fruit and vegetables with fewer of these compounds may offer less protection against hypertension, cholesterol, inflammation and other ills. Part of my work is to identify heirloom and modern varieties, such as Purple Peruvian potatoes, that are rich in phytochemicals and pleasing to the palate.

Which fruit and vegetables should we eat?

Purple, blue, red or black plants such as most berry varieties and red cabbage are good choices because they contain a

family of pigments known as anthocyanins. Test-tube, animal and now a few small-scale human studies show that anthocyanins have the potential to curb the risk of cardiovascular disease by reducing inflammation, improving blood lipids and lowering blood pressure. A pilot study determined that anthocyanin-rich berries slowed the growth of cancer cells in people with colon cancer. Evidence is mounting that anthocyanins may also slow the decline of cognition and memory that accompanies old age.

Is colour the only indicator of such effects?

No: most phytochemicals are not highly pigmented. The drab globe artichoke has more antioxidant activity than more brightly coloured vegetables because of its high concentration of colourless cynarin (which increases bile secretion and may protect the liver from carcinogens) and chlorogenic acid, which has antihypertensive effects. White onions, leeks and shallots contain an anticancer and flu-fighting compound called quercetin. Some varieties of white-fleshed

peaches have more antioxidant activity than yellow-fleshed peaches, even though the yellow varieties have more of the pigmented phytochemical β -carotene.

What is the best way to preserve the nutrients in stored vegetables?

Once a plant is harvested it does not die immediately. The harvested part is still metabolically active and begins to burn its natural sugars and lose phytochemicals and flavour. You can slow this process by reducing its exposure to oxygen, storing it in the fridge in a sealed plastic bag with 10–20 pinpricks.

What are the best ways to cook vegetables?

I cringe when I see people boiling vegetables, because the cells burst and nutrients leach out into the water. Lightly sautéing in oil is fine, but steaming is almost always best because it reduces exposure to water. If you microwave an ear of corn in the husk, you preserve nutrients and taste. Microwaving is also best for thawing berries, because it destroys an enzyme called polyphenol oxidase that breaks down antioxidants.

Could biotechnology help us to breed more-nutritious plants?

In my view we will never achieve the nutrient content of phytochemical-rich foods through genetic engineering. Say that we find a gene that produces cabbage with more cancer-fighting glucosinolates. This family of health-enhancing compounds is only one out of dozens in the vegetable, and, ultimately, it may not prove to be the most beneficial. But there is great promise in crossing wild species with modern ones through conventional breeding, which introduces myriad genes. In my garden I grow hybrid blackberries called Wild Treasure that are thorn-free and highly productive, but retain the nutrition and luscious flavour of wild berries.

Why open a demonstration garden?

I want to show people that by growing their own food they can choose varieties that will increase their odds of living longer and healthier lives. In my own garden there is a wild crab apple from Nepal that has more antioxidants in a single teaspoon than a large Honeycrisp apple. There are Indigo Rose tomatoes, an inky black variety rich in anthocyanins. And there are purple varieties of carrots, cauliflower and asparagus. You could say that purple is the new green.

What is next for you?

I may write a cookbook about findings on how to preserve and enhance plant phytochemical content. I also have enough data to write a book about nutrient-rich beverages such as tea, wine, coffee, whisky and beer. ■

INTERVIEW BY JASCHA HOFFMAN