

First evidence that weed killers improve nutritional value of a key food crop

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Use of certain weed killers on corn crops can boost levels of disease-fighting nutrients in corn kernels, researchers report. Credit: U.S. Department of Agriculture

Scientists are reporting for the first time that the use of weed killers in farmers' fields boosts the nutritional value of an important food crop. Application of two common herbicides to several varieties of sweet corn significantly increased the amount of key nutrients termed carotenoids in the corn kernels, according to a study scheduled for publication in the July 22 issue of *ACS' Journal of Agricultural and Food Chemistry*, a bi-weekly publication.

In the new study, Dean Kopsell and colleagues note that farmers grow about 240,000 acres of sweet corn in the United States each year, making it an important food crop. Corn is among only a few vegetable

crops that are good sources of zeaxanthin carotenoids. Consuming carotenoid-rich vegetables may reduce the risk of age-related macular degeneration (a leading cause of vision loss among older people), heart disease, and cancer, the study notes.

The scientists exposed several varieties of sweet corn plants to the herbicide mesotrione or a combination of mesotrione and atrazine, another commonly used weed killer, and harvested mature corn 45 days later. Herbicide applications made the corn an even-better source of carotenoids, boosting levels in the mature kernels of some varieties by up to 15 percent. It specifically increased levels of lutein and zeaxanthin, the major carotenoids in sweet corn kernels, which studies have linked to a reduced risk of age-related macular degeneration.

More information: "Increase in Nutritionally Important Sweet Corn Kernel Carotenoids following Mesotrione and Atrazine Applications," *Journal of Agricultural and [Food Chemistry](#)*

Source: American Chemical Society ([news](#) : [web](#))

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