

## **Organic Catsup Found to Contain More Than 50% Higher Levels of the Beneficial Antioxidant Lycopene**

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A team of U.S. Department of Agriculture scientists stationed at the Western Regional Research Center in Albany, California studied the lycopene content of 13 commercially available brands of catsup - six major national brands, three organic brands, two store brands, and two brands sold in fast food restaurants and/or vending machines (Ishida and Chapman, 2004).

They measured the micrograms of trans-lycopene per gram of catsup. The average level in the organic brands was by far the highest - 174.2 micrograms per gram of catsup. The major national brands averaged 110.7 micrograms per gram, the store brands 112.3, and the fast food/vending brands, 102.5.

The average level in the organic brands was 57 percent higher than the national brands and 55 percent higher than the store brands. In the Organic Center's "State of Science Review" (SSR) on the impact of organic production methods and food processing on antioxidant levels, organic food was found to have on average 30 percent higher levels of antioxidants compared to conventional foods grown under otherwise similar conditions (Benbrook, 2005; see link below).

The USDA scientists also measured total antioxidant capacity using the TEAC assay (Trolox Equivalent Antioxidant Capacity; for more details on this and other methods to measure total antioxidant capacity in foods, see the Center's antioxidant SSR). One of the organic catsups had the highest level - 350 TEAC units, about double the level in the fast food/vending brands and about two-thirds higher than the major national brands.

The authors note that catsup is a major form of tomato consumption in the U.S. and offer an interesting observation:

"Tomato catsup is an excellent source of lycopene, carotenoids, and antioxidant compounds. A good estimate of lycopene content can be made by the dark red appearance of the product. The organic brands had a much deeper red color than the other brands examined."

*Sources: "A Comparison of the Carotenoid Content and Total Antioxidant Activity in Catsup from Several Commercial Sources in the United States."*

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