How to prevent organic food fraud

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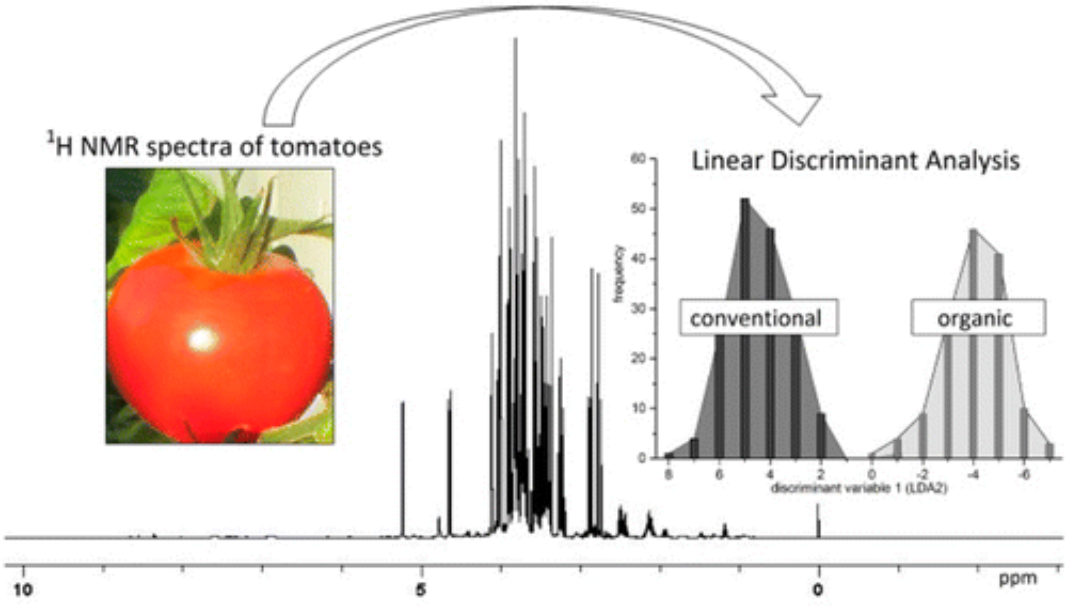

A growing number of consumers are willing to pay a premium for fruits, vegetables and other foods labelled "organic", but whether they're getting what the label claims is another matter. Now scientists studying conventional and organic tomatoes are devising a new way to make sure farms are labelling their produce appropriately. Their report, which appears in ACS' *Journal of Agricultural and Food Chemistry*, could help prevent organic food fraud.

Researchers from the Bavarian Health and Food Safety Authority and the Wuerzburg University note that the demand for organic food is

growing at a rapid clip. Its global market value nearly tripled between 2002 and 2011, when it reached $62.8 billion. But because organic food can fetch prices often twice as high as conventionally produced food, the risk for fraudulent labelling has grown just as fast. However, figuring out whether a fruit or vegetable was grown under organic conditions is fraught with complications. Currently, the most reliable authentication technique analyzes the stable isotope composition of nitrogen, but it is not fool-proof. Monika Hohmann and her colleagues decided to take a stab at developing a new method.

They looked to a technique called nuclear magnetic resonance spectroscopy, which has been used to authenticate foods, including honey and olive oil. They analyzed tomatoes grown in greenhouses and outdoors, with conventional or organic fertilizers. Their data showed a trend toward differentiation of organic and conventional produce. The researchers conclude that the test is a good starting point for the authentication of organically produced tomatoes, and its further refinement could help root out fraudulently labelled foods.

More information: "1H NMR Profiling as an Approach To Differentiate Conventionally and Organically Grown Tomatoes" *J. Agric. Food Chem.*, 2014, 62 (33), pp 8530–8540. DOI: 10.1021/jf502113r

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