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## Plucking the truth from research

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[http://commentisfree.guardian.co.uk/peter\\_melchett/2006/12/whos\\_conning\\_who\\_over\\_organic.html](http://commentisfree.guardian.co.uk/peter_melchett/2006/12/whos_conning_who_over_organic.html)

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"I've been conned," [complained](#) Cristina Odone bitterly in the Daily Telegraph earlier this month. Not for the first time, some may feel - but who has abused Cristina's trust now? She says that "according to research unveiled last week by Strathclyde University, I paid through the nose for a bird [an organic chicken] that is no better than its much cheaper (by £5 at my local Waitrose) regular counterpart. Organic chicken was shown to contain lower levels of healthy antioxidants, more fat and less flavour." Cristina is furious: "Producers are making a fortune from our gullibility." To other food cons, "we can now add the 'organic is best' myth".

Christina got her new facts about organic chicken from two other newspapers - the [Daily Mail](#) (December 3), and the [Sunday Times](#) (3 December). There is little evidence in the articles that either Fiona MacRae of the Daily Mail or Cristina herself read the actual scientific papers these absurd claims were allegedly based on. Nor, it would seem, did Eva Langlands of the Sunday Times, as what she originally wrote bore no relation to what was in the latest scientific paper. The Sunday Times claimed that "Organic chicken is less nutritious, contains more fat and tastes worse than free-range or battery-farmed meat, scientists have discovered. Tests on supermarket chicken breasts found organic varieties contained fewer omega-3 fatty acids and lower levels of antioxidants, giving the meat an inferior taste. Some were found to contain twice as much cholesterol. The study, by food scientists at Strathclyde University, contradicts the common view that the premium paid for organic meat guarantees a healthier and tastier product."

Who's really conning who? These are the facts. Three scientific papers have been [published](#) by Alistair Paterson and his colleagues at the University of Strathclyde, Glasgow - one was published this year and two in 2005. The paper published this year contains no new research on this issue (Kishowar Jahan, Alistair Paterson, Corinne M Spickett, 2006: "Relationships between flavour, lipid composition and antioxidants in organic, free-range and conventional chicken breasts from modelling", International Journal of Food Sciences and Nutrition,

57(3/4): 229-243). However, this paper does refer back to data collected for the two papers published by the same scientists in 2005.

One of the old papers compared organic, free-range, corn-fed and conventional chicken (Kishowar Jahan, Alistair Paterson, John R Piggott (2005): "Sensory quality in retailed organic, free range and corn-fed chicken breast", *Food Research International*, 38;495-503). In all, 20 samples were tasted by a panel. No detailed information was given about the source of any of the samples, except that they were chicken breasts bought at "primarily major supermarket chains", and some of which seem to have been frozen. No comparisons were made of nutritional content. The paper concluded, "Free choice profiling [panel tasting] provided a vocabulary development step for sensory quality in breast meat from organic, free-range, corn-fed and conventional chickens. Only certain assessors [panellists] could discriminate organic from other chicken on the basis of aroma and flavour discrimination and this was not apparent in conventional profiling data, although it was from appearance and texture. Corn-fed were differentiated on appearance but not flavour; organic differentiated on texture, and free range generally similar to conventional breast meat."

The second old paper compared a grand total of nine samples, some each of organic, free-range, corn fed and conventional chicken, and tested them for fatty acid content (Kishowar Jahan, Alistair Paterson, John R Piggott and C Spickett, 2005: "Chemometric modelling to relate antioxidants, neutral lipid fatty acids, and flavor components in chicken breast", *Poultry Science*, 84; 158-166). However, the sample size was too low to draw any conclusions on comparative differences, since it only included two samples of organic chicken. Again no detailed information was given about the source of the samples.

So it is impossible to draw any valid scientific conclusions about the comparison between organic and non-organic chicken from this series of research papers, nor indeed did the authors try to do so. It is unscientific to suggest that any data based on the analysis of two samples, the source and age of which are unidentified, can provide any valid information about the nutritional content of organic and non-organic chickens. As one of the authors, Dr Corinne Spickett from the Department of Bioscience at Strathclyde University, said in an interview on Radio 4: "The differences were not very large, the organic samples we looked at were quite variable." She went on to say that this was simply a "small and preliminary study".

In contrast, a 2002 study published in the journal *Meat Science*, compared the nutritional content of organic and non-organic chicken meat, using a much larger sample size than the studies that led to the Sunday Times article (C Castellini, C Mugnai and A Dal Bosco 2002: "Effect of organic production on broiler carcass and meat quality", *Meat Science*, 60, 219-225). The scientists reared 500 chickens of the same breed themselves, half of which were reared organically and half non-organically. Of these, 40 birds were randomly selected for analysis,

20 from each group. The study found that the organic chicken contained higher levels of polyunsaturated fatty acids, including 38% more omega-3, than the non-organic chicken. It also found that the free-range behaviour of organic chickens "reduced the[ir] abdominal fat [by 65%], and favoured muscle mass development". Taste tests found that the organic chicken scored significantly higher for juiciness. The study concluded that "organic production systems seem to be a good alternative, due to better welfare conditions and good quality of the carcass and meat".

Cristina Odone ended her Daily Telegraph article by saying "Contrary to the clever marketing that taps into our health fears, and the impressive plugs from apostles as distinguished as the Prince of Wales, John Humphrys and Jonathan Dimbleby, the organic label is not a seal of unqualified excellence." No, of course it is not a guarantee of "unqualified excellence". We need to do more to improve the quality, animal welfare and environmental benefits of organic farming and food. But Cristina, it is not a con. Yes, you were conned, but by a newspaper report, not by organic farmers. Organic food does have significant environmental, quality and animal welfare advantages over non-organic, and organic farmers are certainly not making a fortune out of anyone's gullibility.

What is behind these stories is the usual, cheap media trick of thinking that once they have praised something for a while, the only story worth running is that - shock, horror - it is actually not as good as we all thought after all. Private Eye has been satirising these regular media about-turns for years, but some journalists and their editors are beyond satire. If the media agenda demands knocking organic copy, that's what we get, and don't let the facts stand in the way. And the people who seem to fall for this journalistic nonsense most readily are other journalists.