

In search of anechoic discussion

To ensure that political and societal decisions safeguard the sustainability of humanity, it is vital that the work of plant biologists is understood by policymakers and the public alike. Perhaps then issues could be discussed directly, not through the potentially biased lens of the media.

Last month, *Nature Plants* published a Review by John Reganold and Jonathan Wachter of the Department of Crop and Soil Sciences, Washington State University, USA, titled “Organic agriculture in the twenty-first century”. They surveyed the various studies, reviews and meta-analyses that have compared organic and ‘conventional’ agriculture, attempting to draw some general conclusions. The article was focused on four specific areas: production, environmental sustainability, economic sustainability and societal wellbeing. Reganold and Wachter concluded that organic farming performed in a more balanced fashion than conventional systems that tended to value high productivity over sustainability or social considerations.

This led them to the conclusion that a greater use of organic approaches would be desirable globally: “Although organic agriculture has an untapped potential role in global food and ecosystem security, no one farming system alone will safely feed the planet. Rather, a blend of organic and other innovative farming systems, including agroforestry, integrated farming, conservation agriculture, mixed crop and livestock, and still undiscovered systems, will be needed for future global food and ecosystem security.”

We never doubted that a Review Article on this topic would be controversial. As with all articles of this type in *Nature Plants*, it underwent full peer review — in fact, this one had more than the usual number of reviewers. It is also just one item in an ongoing discussion about the future of agriculture; we intend to always publish diverse views from a range of voices. What surprised us was the news coverage.

As is normal for Reviews in *Nature Plants*, we didn’t publish a press release. Review Articles survey already established information rather than present ‘new’ facts, so in our opinion they are rarely of particular interest to the general press. Nevertheless, the popular interest in organic farming should perhaps have tipped us off. Very quickly, the Review amassed a score of well over 300 on the coverage tracker [Altmetric](#) due to mentions

by 21 news outlets, 6 blogs, 185 Twitter users and 13 Facebook pages.

In general, the coverage in the conventional news media accurately portrayed the contents of the piece, albeit with somewhat less nuance. *Time* magazine used the headline “Why Organic Food Might Be Worth The High Price” to suggest that the Review had provided reasons to justify the average 47% premium for organic produce in the USA. The UK’s *Independent* newspaper stressed the sustainability aspects covered in the Review in the light of climate change: “Organic farming ‘could be key to feeding the world as global warming takes hold’”. Possibly the best headline came from the *Winnipeg Free Press*: “No Butz about it: organic farming is making big inroads”, playing on the name of Earl Butz (who served as US Agriculture Secretary under presidents Nixon and Ford in the 1970s), who memorably said, “Before we go back to organic agriculture in this country, somebody must decide which 50 million Americans we are going to let starve or go hungry”.

Coverage in social media tended to suggest that organic farming is an answer to sustainability, but was interspersed with critical comments complaining that the level of pesticide residues in organic products is neither low nor non-existent (Reganold and Wachter’s phrase was “less (or no) pesticide residues, compared with conventional farming”). Of course, some reporting was not of the original paper but of other coverage, and so there was a tendency to increase the perceived certainty in the conclusions that were reached. On the whole, though, this could be viewed as a fairly successful article that, through careful analysis and thorough peer review, produced an essentially balanced analysis of a complex and charged issue, the main conclusions of which were broadcast without major distortion by both conventional and social media.

However, there is a danger here that we see repeatedly with the coverage of scientific (and other) stories. The outlets, organizations and individuals who reported on this Review tended to be broadly in favour of organic farming from the outset,

whereas there was little mention of the piece in publications and blogs that favour high-tech and bioengineering approaches. The inverse tends to be the case when we publish papers describing the generation of useful agronomic traits through genetic or biotechnological manipulation. This divergence of coverage is seen in every sphere from politics and religion to sport and arts. ‘Echo chambers’ are established that reinforce the pre-existing opinions of readers by never challenging them with information that might run counter to those beliefs. In such a climate, where can a curious layman go to find information with which to form an opinion?

Step forward [Sense about Science](#) — a UK charity founded in 2002 dedicated to putting scientific evidence at the forefront of public discussions about science, and to correct unscientific misinformation. Sense about Science runs a wide range of activities and campaigns, for example: to help people request the evidence behind claims made in the news, marketing and government policies; to register all clinical trials before they are started and ensure their results are published whatever the outcome; or to change the libel laws to protect people engaging in genuine scientific debate. They have recently set up an American version with similar aims, [Sense about Science USA](#).

As part of their mission, Sense about Science has set up two boards of experts to help provide answers to questions from the general public: one on the subject of [energy](#), and another for [plant science](#). There you can find questions such as “How much of a threat are non-native species, in particular Himalayan balsam, giant hogweed and Japanese knotweed?” answered by Helen Roy and “Why not simply ban palm oil?” answered by Tim Benton, or Jeremy Sweet, Jonathan Jones and others tackling all manner of issues on genetically modified organisms. The outreach of the plant science panel recently went a step further when one of its members, Huw Jones — who wrote a [Comment](#) for *Nature Plants* in 2015 — was the subject of a [Reddit ‘Ask Me Anything’](#).

It is well worth a read. The questions are at least as interesting as the answers. □