

Editorial

Unbiased but Not Neutral

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Organic farming is often subject of heated scientific and public debates. This raises the question: How can scientists working in organic farming research achieve being impartial while simultaneously sharing enthusiasm about organic farming and promoting it as a solution to many of the problems of agricultural and food systems? Science needs to be unbiased and detached from its object of investigation. It should be hesitant to draw conclusions. Public statements must wait until evidence is strong and reproducible. Complex matters need to be communicated in a differentiated way that acknowledges pros and cons. Finally, science needs to follow a strict separation of facts and opinion. In which ways does this culture go hand in hand with a burning passion for organic farming?

In many cases, the conflict between scientific neutrality on the one hand and a vocal commitment and advocacy for change remains under the surface. In organic farming science, the slow and tedious daily business of evidence-based improvement of organic systems is mostly unaffected by questions of neutrality. However, studies with the potential to have a larger impact on politics, may quickly become drawn into this conflict. A recent example is the study on massive insect decline published by Hallmann et al. [1]. Based on long-term collection of insects the study showed how insect biomass has strongly decreased over the past decades. While the trend, in view of previously published work, as recently reviewed [2], was not so surprising to many experts, the suddenness and intensity of the ensuing international public response was astonishing [3]. Another example is the discussion about the appropriateness of new plant breeding techniques for the organic sector [4–6].

Paradoxically, the fight over the correct interpretation of scientific results and the way forward seems to inten-

sify even as scientifically gained ‘knowledge’ accumulates. The discussions become particularly polarised when they cultivate an image of an unbiased scientific expert who imparts his or her view exclusively based on facts. Fundamentally, however, most agricultural scientific enquiries contain strong normative elements. The concept of ‘pure facts’, which are completely separate from any valuations or value-based choices, may make sense in some branches of fundamental science. In agriculture, however, facts are almost always wrapped in multiple layers of value-laden contexts. This is particularly relevant for organic farming, and for its relationship with non-organic farming.

As a practice and a movement, but also as an object of scientific enquiry, organic farming is inextricably connected to several high-level aims, such as the promotion of health, as expressed in the IFOAM principles [7]. Too often, however, instead of asking what really contributes to these aims and principles, the aims we are studying are those we can measure easily. Further, once we start thinking about how high-level principles can be translated into measurable outcomes, it becomes clear that this again is always entailing value-based choices.

My expectation is that many of the global problems agriculture is facing do possibly not become a lot easier to solve with new scientifically established facts (nor with novel technologies, regardless of their compatibility with organic farming). Instead, they are fundamentally problems of clashing values and need a thorough and honest societal debate on how we want to live. The many trade-offs (e.g. between productivity and biodiversity) that are likely to remain largely intractable by technological or ecological advances [8] will force us to make choices—evidence-based, of course, but building on values and principles. Therefore, the agricul-

tural sciences need to build a stronger culture of normative education and debate. Significant progress needs to be made with regard to several questions: If there are limits to endless growth, what are we willing to sacrifice to achieve a more sustainable way of life and what is so essential we need to keep it? Is there a set and hierarchy of aims relevant for (organic) agriculture we can agree on, including those outside the organic sector? How do we best discuss our aims and arrive at acceptable, and accepted conclusions? How are these aims and principles integrated in

research, in agricultural advice, in practice, and in policy making? How do we assess aims and outcomes across multiple, potentially conflicting aims?

While scientific methods have been developed to address many of these questions [9,10], there is a lack of implementation by regularly and systematically integrating these into agricultural research. The organic movement has already long-term experience in dealing with these issues and it could therefore become a motor for innovation and change in this important area.

References and Notes

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