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Editorial

How Scientific Is Organic Farming Research?

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Opening the third volume of this journal provides a renewed opportunity to reflect on the current developments within the world of organic farming. As the most recent international data show, the organic sector continues to grow on a global scale, in terms of organic area, market share and number of producers [1]. Yet, for organic farming—as for any movement—expansion always entails the difficulty of maintaining identity. Achieving both, i.e. becoming 'bigger' and 'better', is the explicit goal of Organic 3.0 [2], the international initiative to advance and evolve organic farming. Launched in 2014, Organic 3.0 is now gaining increasing momentum, e.g. as a key topic at the upcoming Organic World Congress in India this autumn. The Organic 3.0 initiative proposes an ambitious plan for promoting "a widespread uptake of truly sustainable farming systems" [2]. One of the suggested pathways to achieve the goals of Organic 3.0 is improved and extended research and development.

So what kind of research is needed for the ambitious development goals of organic farming? A recently published comprehensive review of this question concludes that a multitude of research approaches will be needed for advancing organic farming [3]. In particular, while it is recognized that holistic, interdisciplinary system research will need to play the lead role (e.g. [4]), also component research, following more specialized and reductionist approaches, is seen as necessary. Interactions between researchers and farmers will need to span the full range, including classical on-farm research and participatory action research.

However, the organic sector is not isolated in the research world. Choosing which research approach is to be pursued, and, in fact, which questions should be asked, is not a boundless process. In particular, these choices are often influenced by interactions with colleagues who work in non-organic fields. Such interactions are often determined by competition for research resources, e.g. when it comes to defining the denomination of academic chairs, setting up strategic plans for the future direction of research institutes, or allocating funds to, or within, public research programmes.

This struggle is particularly difficult when it is poisoned by the underlying view still pertinent outside the organic sector that organic farming research is somehow 'unscientific'. Over the past few decades, organic research has responded to such critique, partly by moving towards more established research, and away from heterodox methodologies, by expanding and professionalising, by increasing its research output, and by progressively focussing more on peer-reviewed articles [5]. Organic research, at least partly, has also followed the trend towards increased disciplinary specialization. So over the past decades, organic scientists have engaged in the mainstream of scientific publication, and this has partly resulted in increased reputation and credibility from outside.

At the same time, agricultural science from outside the organic sector is—at least in part—becoming aware of the importance of applied participatory and farmer-led research, calling for research to become more practice-oriented, and partly adopting organic research approaches. In addition, research outcomes and innovations, generated in the organic sector, e.g. in the area of legume cropping, are being taken up in non-organic systems. But for a minority, little can be more perplexing than when its goals become pursued by the mainstream.

More recently the earlier critique against the organic heterodoxy has been turned on its head: Now the argument

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has become that because organic methodologies are more or less fully transferable to other systems, organic research has no methodologies of its own, and has therefore no identity or right of existence as a separate branch of science. In this view, organic can be subsumed under bigger headings, because innovations and methodologies generated by organic research are transferable to other systems. Issues concerning organic farming are suggested to be taken up by specialists of mainstream science. The parts of organic research deemed as scientific enough can be swallowed whole. What was once a department of organic farming, to all intents and purposes, soon becomes occupied with other things, and is pulled away from concentrating its attention on solutions for the organic sector. Organic issues become hidden and diluted. The gain in credibility and reputation through mainstreaming organic research is followed by an embrace that is not always a friendly one.

Reasons for these developments are manifold. One of them lies in the disincentives against organic research imbued in current research evaluation [6]. Systems investigated by organic farming researchers are typically highly complex meaning that research can take longer so that research output per unit time is lower than for simpler systems. Further, the interdisciplinary nature of organic research is often not favoured by the gatekeepers of specialised disciplinary science. However, there are also various developments that are slowly bringing about significant changes in the practice of research evaluation, including the open access movement, which has particular relevance for organic agriculture [6].

There are now opportunities to bring these various movements together (open access, critique on inappropriate science evaluation) and it is likely that organic farming in particular will benefit from these new developments. It is now necessary to take action, and seize the opportunity to diversify the research evaluation system. More generally, the organic community will need to develop strategies for expanding organic research while maintaining its organic identity, similar to, and beyond Organic 3.0. One of these strategies will be the provision of free breathing space for organic researchers outside existing pressures on research, to promote sustainable innovations for and within the organic sector.

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