

# In-Farm Research - a Swiss Perspective

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Swiss dairy farms are currently under financial pressure, particularly in these times of decreasing milk prices. They need help from science, but not just with ready-made solutions such as new products against diseases. And the farmers are also under pressure in respect to their motives. Should they drop animal husbandry? What is the value of their livestock beyond the economic return?

But can a question like “Why have animals on farms?” be addressed by scientists at all? This is not an issue that can be answered through analytical analysis.

In agricultural sciences, especially in organic farming, interdisciplinary and transdisciplinary approaches are prescribed as the method of choice (Vogtmann et al. 2002). Application-oriented research acknowledges that problems on farms are very individual and that the price of renunciation of high quality data may be compensated by improved solutions for the farmers (Schmidt 2007).

Attempts to bridge the gap between laboratory research and practical farming is often through on-farm research. On-farm research brings the experiment onto the farm. Farmers can observe the research process in their own fields and eventually obtain solutions that fit their situation. However, the setting of the experiment re-

mains an artificial situation, even though it is on the farm. The transfer of knowledge is shortened dramatically, but a distance between science and farm still exists.

According to Lockeretz (2000) in some cases science should be practiced within the farm organization itself. At the same time Stimmer (2007) concluded that “both holistic and reductionistic approaches are needed to advance the efficiency of organic farming.”

## In-farm research approach

Questions like “Why have animals on farms” require a deep look into the farm’s intrinsic features. Such values can hardly be explored by standard methodologies, and very likely, they have to be identified in their real context. Considering a farm as a single organism or even as an individual – a common approach in biodynamics (Steiner 1924) – brings the question right to the farmer, the farm’s decision center. As a consequence, it is pertinent to support and acknowledge the farmer as the expert of his own farm – which is the core principle of “in-farm research.” This approach allows farmers to reflect on issues that may go unnoticed in their daily working life (Fry 2001, Baars 2007). Interviews help farmers acknowledge their experiences, thoughts, ideas and philosophy. But if the farm is viewed as an organism, every single organ within it must be





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fully scrutinized (Fuchs 2003). The scientist is compelled to become fully involved in the farm as an organism. Their impressions and observations complement the farmers' views. Whereas "on-farm" approaches are based on objectiveness or third-person perspective, "in-farm" approaches enter the organism itself and becomes part of it.

To investigate the question concerning the role of animals on the farm, in-farm research was conducted on four farms for about ten days. Working data, the farm profile, and farm records were examined to establish a clear view of the farm and its history. To examine the daily routine, the farm animals and the interaction between farmers and their cows more closely the researcher worked along side the farmer on the farm. Besides formal interviews with the farmers, "barn-conversations," conversations that took place while working, (e.g. while milking) allowed the researcher access detailed information in a natural setting. When working the farmers tend to talk more openly about impressions, ideas, visions and problems. Farm observations were made on different days and at varied times. The observations included personal "body sense experiences" (Schmitz 2007) as a tool to experience life processes (Jonas 1994, Brenner 2006). Personal experiences and impressions were synthesized into

a "farm portrait" that, combined with information from the interviews, provided the basis for answers to pertinent questions. Six months after the first visits, the farms were visited again and follow up interviews conducted.

In addition to the well known reasons for keeping animals, such as financial gain and enhancing soil fertility, all farmers talked of personal motives for keeping cows. For example they said they like "the feelings that they have with animals on the farm" or "cows are an important part of the farm individuality." Other answers were more individualistic, including: "Cows are an important component to develop a farm," "the farm would be a dead place without animals," "cows radiate ease and comfort," "animals influence the expression of a farm," "cows have a positive effect on humans," and "cows enliven the landscape." In addition, barn-conversations revealed a very strong relationship between the farmer and the cows, demonstrated by the treatment of and the behaviour towards the animals. And finally, it was clear that the milking and feeding hours set the rhythm of the daily work of the farm.

The scientist's observations, including body sense experiences, revealed "pictures" and moods of the individual farms. The mood on one farm was as if it was an "oasis," whereas another felt more like



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a “stronghold.” Interestingly, these observations made by the scientist corresponded to the cattle breed kept on the farm. Whether consciously or unconsciously, the farmers had selected breeds that suited the atmosphere of the farm: While the “oasis” farm chose “Rotbunte,” a gentle breed of cattle, the “stronghold” farm opted for “Salers,” a more tough breed from the southern mountains of France.

The overall conclusion was that animals on the farm represent the soul of each individual farm. They are not a supplement, but an essential ingredient of farm life.

### Discussion

Undoubtedly, the question will arise as to what extent in-farm research methodology meets scientific standards. Agricultural research on organic farming is always in conflict between the reductionistic character of analytical sciences and the holistic character of their object. Several strategies are commonly used to deal with this tension. Suggestions that research should specialize and information integrated by the farmers themselves (Rümker (1906) have been countered by the argument that to improve the “holistic” quality of science research performed already should be extensively embraced (Lockeretz 2000). Leiber and Fuchs 2008 coined the term “cognitive holism” where all details are put into context by farmers themselves within their own minds.

Asked what the biggest mistake in agricultural science was, Monkombu Sambasivan Swaminathan, the father of the Green Revolution in India, answered that it was the discrepancy between economic and social realities and the laboratory in which technologies are developed, and that this gap had been underestimated for too long: “the gap between the know-how and the

do-how on the field is big” (DIE ZEIT 2008). The International Agrar Assessment IAASTD concludes that world food shortages would be overcome best through a combination of indigenous knowledge and science (Bongert and Albrecht 2009). Some good examples have been documented (Hoffmann, Probst and Christinck 2007), but this approach is far from receiving general recognition and is underrepresented in mainstream research.

The German Research Society DFG stated in its memorandum on agricultural sciences that “agricultural sciences are different to other sciences by including mankind in its methodology” (DFG 2005). Likewise, Daston and Galison (2007) in their book about objectivity elaborated on the association of the scientist with his research topic, a prerequisite to becoming an expert in trained judgement in this field of research. The involvement of the researcher in the research process itself needs reflection on the underlying world-views, values and goals (Alroe and Kristensen 2002). In this light, in-farm research can be accepted as a science, in fact, a “life science” in the best sense of the meaning.

### Conclusions

The examination of the question, “why animals on farms” demonstrates the potential of “in-farm research” to gaining in-depth knowledge of the farm. The scientist’s observations and co-working on the farm are a method of choices that allows an accurate evaluation of the current situation of the farm, its atmosphere and the inner perspective of the farmers. It also lets the scientist contrast impressions from a personal point of view and to challenge statements made by the farmers. In addition, farmers were grateful for the “non-economic” assessments of the farm. As a con-

sequence of this work, the reasons farmers give for keeping cows has become more conscious, and their decisions may strengthen their motives while also helping with public relations.

Interestingly enough, looking at the farm as an individual organism, and trying to understand its intrinsic values the research methodology increasingly resembles that of social science, e.g. participative research.

The researcher has to be trained in “objectivity” and precision in observational skills, and professional experience in agriculture is mandatory. Curricula in agri-science should include training programs to develop them.

In-farm research cannot, and will not, be an alternative to other scientific endeavors. Rather, it is a complementary approach, especially for developing sustainable farming practices.

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