

„**Measures** identified during IMPRO were perceived as credible, relevant and tailored to the **real-world** needs and constraints.“



recovery progress and documentation of the success of therapy. While the therapeutic success is the result of the overall effort invested in improved living conditions and treatment effort, the level of envisaged cure rate determines the means and the degree of effort required to achieve the target in the context of the farm system involved.

without obtaining premium prices for a higher process quality, this unfair competition is an important impediment to any possible improvements. To reduce and prevent this, organic minimum standards should be supplemented by target values with respect to the prevalence of production diseases. In addition, regular monitoring of health data on the base of milk recording data is required. In the IMPRO project, tools have been constructed that will serve as a basis of possible monitoring approaches. Furthermore, documentation and monitoring of all treatments should be established and controlled to ensure therapeutic success and reduce ineffective treatments.

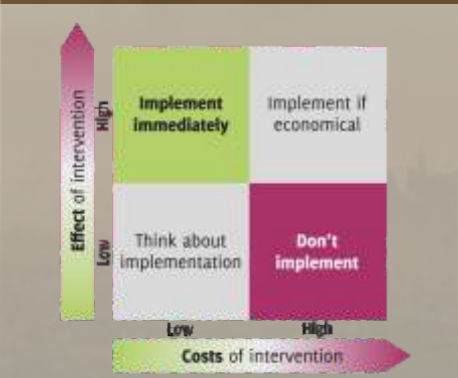


Fig.2: Decision support matrix for intervention

Exploration of policy options

Almost all study farmers carried out most, or at least some, of the Project's recommended measures to improve herd health, even by farmers who had initially shown low levels of intention to adopt. This suggests that the measures identified during the Project's on-farm intervention phase were perceived as credible, relevant and tailored to the real-world needs and constraints.

Because farmers producing milk at lower production costs by risking higher prevalence of PDs are favoured above farmers who invest money, time and effort

Animal health is very complex and thus should not be left to the self-referential estimations of single farmers. The European Commission, national Governments, dairy processors, retailers and a range of other organic dairy stakeholders should be involved in future activities to address, and improve, the current unsatisfactory situation with respect to animal health in organic dairying.

Project Profile

Funding

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Partners

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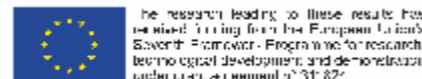
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Impact matrix analysis and cost-benefit calculations to improve management practices regarding health status in organic dairy farming

„IMPRO paves the way from an **input**
to an **output** oriented approach.“

“All roads lead to Rome - while the **equifinal** approach
paves the way towards a **targeted** level of animal health.“

Introduction

Whilst dealing with production diseases (PDs), the IMPRO project considered a crucial issue for the organic sector. Despite the EU regulation on organic farming, it has not led to acceptable levels of animal health and welfare on all organic dairy farms, although consumers are often buying organic dairy products especially for this reason. The project addressed what is needed to raise animal health in organic dairy farming much closer to the expectation of European consumers.

The research project

We developed a novel participatory farm level diagnostic approach towards improving animal health. This followed visits to, and assessments of, around 200 representative organic dairy farms in France, Germany, Spain and Sweden to investigate opportunities for improvement, based on close collaboration between farmers, their advisors and veterinarians as well as the researchers.

Amongst others, two broad classes of data were collected: first, baseline socio-demographic information and health status of the dairy herds; and, second, attitudinal and behavioural data relating to the farmers. Following the collection of data, an impact matrix was applied as a participatory tool for diagnostic work on-farm involving both farmers and

their advisor or veterinarian. Furthermore, proactive monitoring and preventive protocols have been developed to be used jointly by the farmer and the advisor.

To provide a tangible framework, a toolbox of software aids was developed and demonstrated to study farmers together with their advisors. The toolbox consisted of three core components: first, a framework for guided discussion between farmer and advisor to identify the farm-based factors influential in determining disease prevalence; second, a spreadsheet-based model providing readily interpretable indicators of herd health status; and third, a cost-benefit analysis model to facilitate exploration of the likely benefits of undertaking different health management improvement options. This approach, therefore, envisioned an enriched decision-making environment which addresses many of the weaknesses of historic knowledge transfer programmes in dairy farming.

The software toolbox was shown to farmers and their advisors, who responded with a predominantly positive and encouraging feedback. The use of alternative treatments in farm practice and the legal situation on the use of homeopathy in livestock in Europe were also addressed. A comprehensive pilot project was initiated to examine whether the use of homeopathy and phytotherapy holds potential to replace the use of antibiotics in treating bacterial

infectious diseases while keeping negative side effects that might compromise animal health and welfare to a minimum.

Results of the project

Despite managing dairy production on the basis of the same EU regulations, animal health status is not homogeneous, either across Europe or within countries. On-farm assessments on organic dairy farms in four European countries revealed substantial room for reducing the prevalence of production diseases. Factors affecting the emergence of production diseases in organic dairy farming systems have been shown to be very heterogeneous between farms. The failure costs due to such diseases varied considerably between farms and were broadly misjudged by farmers, veterinarians and advisors.

Also treatment with homeopathic remedies on farm leaves much room for improvement in the application of a *lege artis* treatment procedure as well as monitoring and documentation of treatment success. Literature reviews revealed that cure rates after treatment with either antibiotics, alternative treatments or a placebo varied greatly between studies. None of the scientific studies with alternative products have been reproduced. Thus, the use of homeopathic or phytotherapeutic products cannot claim to have a reliable effect and a sufficient prognostic validity.

Across the study countries, it was found that organic dairy farmers were universally positive about taking ‘new’ or additional measures to improve the health of their herds resulting from the participatory approach taken by this project. They found that the economic tool developed by the project was especially useful in evaluating which health improving measures are beneficial in terms of improving herd physical performance and cost effectiveness. The statistical modelling of farmers’ attitudes and beliefs suggested that some economic and physical parameters were almost as important as attitudes and beliefs in determining intent to adopt new health measures.

Conclusions

The results of the project clearly showed that the common rules of organic dairy farming in Europe do not result in a consistently low level of production diseases. While consumers expect animals to be healthy, farmers merely promise to follow the rules, which do not necessarily result in meeting these expectations. A way out of this dilemma may be a new agreement between consumers and producers, based on measurable aims supported by policies. A farm centric and *equifinal* approach is recommended to reduce production diseases, based on the principle that the same end (low level of PDs) can be achieved via many

different paths (Fig.1). The IMPRO project has developed tools to support farmers in identifying the most effective and efficient measures within their farm system to get there.

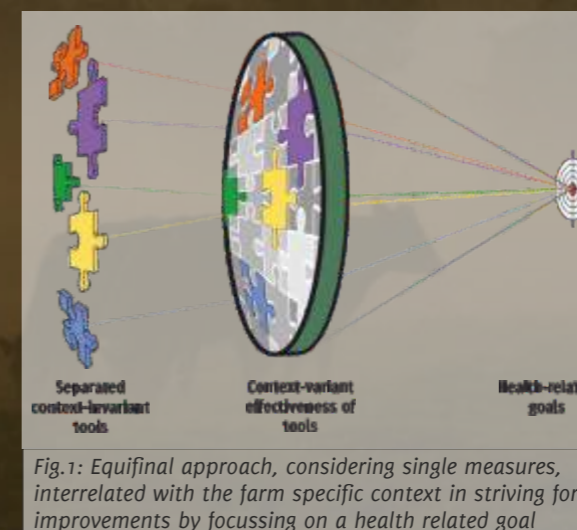


Fig.1: Equifinal approach, considering single measures, interrelated with the farm specific context in striving for improvements by focussing on a health related goal

Integral parts of the new approach are 1.) the diagnosis at farm level via a participatory approach based on impact analysis, 2.) economic assessments and 3.) improved treatment strategies. These steps are supported by tools, developed by the Project.

Diagnosis on farm level

Data from monthly milk records allows an assessment of health indicators related to production diseases in dairy herds and enables benchmarking between farms. Diagnosis at farm level cannot be restricted to general data but has to include an assessment of the interaction of health related variables by means of an impact matrix analysis to

identify effective strategies. The structured assessment of influences by the farmer, veterinarian and an advisor fosters shared perspectives and enhanced understanding of the farm system. A monitoring protocol adapted to the farm’s needs allows a regular surveillance of health domains.

Economic assessments

An essential precondition for the transfer of expertise into practice is knowledge about the effectiveness and costs of measures under farm specific conditions (Fig.2). While estimates on effective strategies are supported by the participatory assessment of impacts on animal health, the economic assessment is based on the calculation of failure costs from the current level of production diseases on farm. The cost-benefit tool supports the calculation of costs for specific preventive measures and allows farm specific modifications.

Treatment strategies

The effectiveness of alternative treatments in farm practice is highly context-dependent and is doubtful without the consistent implementation of *lege artis* procedure, including early registration of symptoms, detailed diagnostic procedure, removal of the main causes, selection of the appropriate remedies, follow-up check of the