

Decision support tool for dairy farm management

Following long-term cooperation between dairy farms and researchers in Slovakia, a new user-friendly decision support tool for dairy farm management has been developed. The application is a handy way for the farmer to improve decision-making regarding the dynamics of the dairy herd structure and market volatility.



A handy app to face a volatile market

The development of this tool *EkonMOD milk* was led by researcher Miroslav Záhradník from the National Agricultural and Food Centre (Slovakia). He says "Market volatility means that 'optimal decisions' for an individual dairy farm are constantly changing. Even the on-farm conditions change rapidly." The competitiveness and sustainability of dairy farms depends on the ability to follow global trends, adapt to best practices, calculate price volatility of inputs and outputs and reach the full production potential of animals with respect to the welfare standards. In order to ensure productivity, dairy farmers need to be constantly aware of useful adjustments which can be made, this is exactly what this tool can help out with.

EkonMOD milk is a web-based decision support tool for dairy farm management. It assists dairy farm managers to better understand the dynamics of the dairy herd structure and to improve economically sensible decision-making.

The free, downloadable, user-friendly and interactive PDF files can be used for decision making on aspects such as: heifer replacement management, evaluation of feeding strategies and it also has a farm-focused calculator for the calculation of greenhouse gas (GHG) emissions. It takes into account several indicators such as financial market indicators, feed costs, labor costs, reproductive rates, etc., as well as the farm's specific characteristics, limitations and weaknesses. For each of these indicators, the farmer has to input the data using sliding bars and filters. EkonMOD milk then generates alternative scenarios for the farm and supports dairy farmers in calculating the potential production and economic impact of different scenarios at the farm.

There is documentation and short tutorial video for each module. It is an easy to use app, once downloaded, no internet connection is needed to use the PDF files. The type of data required is, as Miroslav explains, "typical farm data" which most farmers will have access too.

Continuous development

The idea of creating this tool came from a detailed and long running cooperation with 30 dairy farms in Slovakia. Miroslav has collected economic and production data from these farms since 2006. He has also worked in cooperation with Madison University, Wisconsin US in order to improve the modules.

The application is currently being developed further. It now allows farms to use their own data as a benchmarking tool, the next step is to integrate the possibility of data sharing with other farms so that the benchmarking can be based on a wider spread of information. Miroslav is continuously working in

collaboration with dairy farmers in Slovakia: "500 dairy farms are now testing the tool and first responses from the farmers are positive. New modules are being continuously tailored according to their feedback." Miroslav is also considering the possible adaptation of the tool for use in the pig, sheep and goat sector. In fact, EkonMOD pigs is currently being tested. This tool would also provide scenarios for improving economic aspects, productivity and reducing GHG emissions.

Dealing with data

The development of ICT and sensor based technologies, procedures and software have enormously increased the amount of data collected, and available, in agricultural sectors and through the whole supply chain from farm to fork. This tool, amongst others, was presented at the recent [EIP-AGRI seminar on 'Data revolution'](#) as an example of how this data is being used to improve the sustainability and productivity of Europe's farms.

Miroslav says involving farmers throughout the process is essential "The Idea is to make farmers aware of what can be done with their farm data and not to put them to one side when talking about data management." When addressing the issue of data use – who is using the data for what and where is the data going - Miroslav insisted on the importance of "building farmers trust first."

Further information

In 2015, EkonMOD milk won a Golden Sickle award from the Ministry of Agriculture and Rural Development of the Slovak Republic in the category 'Scientific and technological development'.

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