O.34 - FEMEE: a new evaluation method for the environmental and economic impact of farming strategies

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How to identify actions that reduce the negative environmental impact at arable and vegetable farms to the greatest degree and minimize the costs for the farmer? The environmental impact of crop protection has decreased. Developed methods are being implemented more and more to further decrease the adverse environmental impact. However, studies show that the maximum residue values (MRL) for water quality are often exceeded. Improvement of the crop protection strategies is needed to reach the desired environmental quality. Also we need more understanding of the effect of the strategies on the environment and the financial results at crop and farm level. A method has been developed to evaluate environmental and economic sustainability of different strategies. This method is based on an existing farm economic model which was extended with environmental indicators (FEMEE, Farm Evaluation Model for Environment and Economics). The method gives the opportunity to evaluate integrated crop protection strategies at crop level and at farm level. The model can work with with real as well as virtual farm setups and uses normative crop inputs or real farm data. The model: quantifies the environmental effects of the integrated pest strategies; quantifies the costs of the strategies (chemicals, operational costs, labour, mechanization and contract work) in combination with effect on gross margin; identifies the most effective strategies. In 2007 the method has been successfully tested. Real farm data was used to evaluate good and best practices. This paper describes the model and shows the results of the test.