

 **P.59 - Classification of crop protection strategies based on pesticide use intensity and innovation**

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Under the framework of the EU-funded Network of Excellence ENDURE, an economic analysis is being conducted to ensure the implementation of sustainable crop protection strategies. This analysis focuses on: firstly, a classification of crop protection strategies based on two dimensions of pesticide use; secondly, establishing the causal relations between socio-economic factors and pesticide use in defined policy scenarios; and thirdly, formulation of recommendations for policy measures. With this classification, the cropping systems currently implemented in Europe are identified. For the classification, pesticide use intensity corresponds to the quantity of pesticides applied and pesticide use innovation represents the application of pesticide products that are less toxic, more target-oriented and less persistent in the environment. With our study we found, for both the production of cereals and fruit trees, an evolution in crop protection strategies, as the European average value of innovation is higher than the median of a transformation scale. Secondly, in Europe the most important strategies of production are eco-friendly agriculture (i.e. low intensity and high innovation in use of pesticides) in terms of area and modern farming (i.e. high intensity and high innovation in use of pesticides) in terms of tons harvested. Thirdly, higher crop yields and subsequently higher crop revenues are obtained with schemes of production characterised by high intensity in pesticide use. Fourthly, the application of more innovative pesticide products corresponds with a reduction of crop protection costs when using pesticides at low intensity levels; this fact constitutes a valid reason to promote sustainable crop protection strategies.