Economical Success Factors of Pesticide Reduction in Grape Growing
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With the rise of the sustainability concept, there are high societal expectations on economic, environmental and societal impacts of human activities (Brundtland, 1987). Agriculture is no exception (Griffin, 2006). It has to maintain productivity levels while respecting the environment. And the French Grenelle objectives are to halve pesticides used by 2018 (Paillotin, 2008).

These new targets, sometimes experienced as constraints, are a real challenge for the French agriculture. Indeed, France is the third consumer of pesticides in the world and the first in Europe, significant ant positions in regard of its agricultural area (which is approximately 30 million hectares). Fungicides represent the half of the pesticides used (in volume). Viticulture is one of the most consuming crop, with 20% of the total consumption of pesticides for only 3% of the UAA French (Aubertot et al., 2005), which is primarily due to a high number of treatments (Agreste, 2009). Moreover, if we focus on the evolution of the consumption of these products, it tends to remain constant (2009 data, UIPP) given the technological lock-in of the sector (Alonso Ugaglia, 2011).

Therefore, the pesticides reduction in viticulture requires studying new methods of crop protection practices in viticulture. Economic and environmental performances are often put in opposition and growers have a double problem: they must both meet the regulatory and societal pressure and stay competitive (Belis-Bergouignan and Saint-Ges, 2009). This is even more significant that France is the second largest wine producer in volume.

The objective of this paper is to understand determinants of change in plant protection practices in viticulture. In this aim, we analyze the economic factors influencing pesticides reduction based on a survey of growers regarding their acceptability of practices to significantly reduce pesticide use.

The article is structured into four sections, Section 1 presents a literature review to understand practice changes in viticulture. We recall the assumptions underlying this problem and discuss the results. Section 2 presents data mobilized and their limits. We then develop a logistic model designed to highlight the main determinants of the reduction of pesticides in viticulture. Section 3 presents and discusses the results of the econometric model. The supporting role of extension services is particularly evident in the decision and success of the change. Section 4 concludes and suggests some relevant extensions.

REFERENCES