

On the Adoption of Green Technology as a Signal of Quality

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This Version: February 2009

Extended Abstract

In today's wine markets, more and more wines are marketed and specially designated as organically or biodynamically produced. In many instances, the ability for a winery to carry such a reserved designation on their label comes from the certification of an independent body such as Demeter or Biodyvin. Since such specially designated wines often carry with it a price premium, there are incentives for producers to adopt such a designation to capture this price advantage. On the assumption that wine consumers have preferences only over the final qualitative features of the wine, the adoption of the costlier green viticultural technology must convince consumers of its qualitative superiority. This paper is, therefore, a theoretical examination of this observation by studying the conditions under which the adoption of green viticultural practices could act as a signal of final good quality in the wine market.

More specifically, we consider a standard signalling framework whereby wineries are differentiated by the quality of their wines. We assume that the quality is known to the winery but unobservable to the consumer. The timing of the problem is as follows; in the first period, wineries must choose the viticultural technology for production. In the context of this paper, this is a choice between the status quo of standard industry practices or a green technology. We assume that adoption of the green technology will comply with the certification requirements of an independent third party.

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This, in essence, allows the firm to label their wines as green which will, in turn, inform consumers of their viticultural practices. After the choice of the viticultural technology, prices are determined by the wineries and made available to consumers. Consumers then make their consumption decisions.

We find that in this framework, the choice of the green technology by wineries can act as a signal only if two conditions are simultaneously satisfied; i) Consumers must be willing to pay a premium for a wine labeled as green and ii) the cost of the green technology, while higher than the status quo, must be sufficiently low. While the interpretation of each of the conditions independently are rather intuitive and straightforward, jointly, they imply that the cost of the adoption of the green technology cannot be monotonically increasing in the quality dimension. Naturally, the results allow us to characterize the feasible cost structures which will make possible the choice of viticultural technology as a signal of quality in the wine market.