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Performance of sampling strategies for delimiting *Xylella fastidiosa* infection: in Alicante.

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Xylella fastidiosa is a phytopathogenic bacterium whose presence has been confirmed in several countries in the European Union (EU). At that regard, EU has implemented multiple protective and emergency measures against its introduction and its further spread. These legal measures consider among other actions, the implementation of a delimiting survey whether the presence of the bacterium had been confirmed. The objective of a delimiting survey consists on demarcating the geographic extent of the disease as well as the application of the eradication or containment measures, depending on the case. One of the affected regions in the UE is Alicante, for this reason it is currently subjected to an intensive surveillance program. Since the first detection was confirmed, more than 100.000 has. have been demarcated and surveyed with around 20000 samples have been analyzed. Under this framework, the aim of this work is to propose an alternative delimiting survey strategy to improve the effectiveness of the current one. Based on surveillance data collected during the 2018 several sampling strategies have been simulated to find an optimum sampling intensity. The effectiveness of the sampling strategies has been assessed by means of a comparison of the reference data in terms of delimitation efficacy and disease prevalence estimates.

Keywords: Delimiting surveys, spatial sampling, simulation-optimization.