period, the impact of *X. fastidiosa* and an update on risk reduction options, accounting for the different subspecies and Sequence Types of *X. fastidiosa* during the risk assessment where data availability allowed. Here we summarise the main conclusions of the updated PRA, the uncertainties associated with the conclusions, and recommended future directions for research and data collection to reduce these uncertainties. The quantitative PRA provided new insights on containing existing outbreaks and preventing further spread in the EU. For example, it was demonstrated that most of the EU has potential climatic suitability for Xylella but that the southern EU is most at risk; however, *X. fastidiosa* subsp. *multiplex* demonstrated areas of potential establishment further north in Europe compared with other subspecies. Modelling was also used to assess data from a wide range of studies on the length of the asymptomatic period, as well as to simulate the spread of the disease and management measures aimed at eradicating or containing the pathogen. The assessment showed the importance of disease control measures, including the use of buffer zones and plant removal, but also the need to couple these measures with effective vector control, rapid implementation of management measures following disease discovery, and early detection of new positive cases. The latter issue is a particular challenge for *Xylella* given the length of the asymptomatic period, particularly for some host and subspecies combinations. In a separate mandate EFSA is developing new surveillance guidelines for *Xylella* to enable for more effective and targeted detection surveys for the disease.

Potential impact of *Xylella fastidiosa* subsp. *pauca* in European olives: a bio-economic analysis

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Abstract: *Xylella fastidiosa* is the causal agent of plant diseases which cause massive economic damage (Almeida, 2016; Chatterjee et al., 2008). In 2013, a strain of *X. fastidiosa* subsp. *pauca* was for the first time detected in Italian olives (European Food Safety Authority, 2015; Saponari et al., 2016). Here, we simulate future spread of the bacteria based on climatic suitability modelling and an assumption of radial range expansion. An economic model computes impacts by accounting for discounted foregone profits and losses in investment. The model computes impacts for Italy, Greece and Spain as these countries account for around 95 per cent of the European production (Eurostat, 2016). Climatic suitability modelling indicates that, depending on the suitability threshold, 92.5 to 95.4, 88.6 to 89.5 and 85.8 to 98.5 per cent of the national areas of production fall into suitable territory in Italy, Greece and Spain, respectively. Across the elicited rates of radial range expansion (Bragard et al., 2019), the potential economic impact over 50 years ranges from 3.58 to 8.69 billion euro if replanting with resistant varieties is not feasible. If replanting is feasible, the impact ranges from 2.00 to 4.13 billion euro. Depending on whether or not replanting is feasible, between 0.67 and 1.64 billion euro can be saved over the course of 50 years if the spread is reduced from 5.18 km to 1.1 km per year (50% and 5% percentile of elicited spread rate). The analysis highlights the major economic benefits of replanting with resistant olive cultivars and spread control. This stresses the necessity of strengthening the ongoing research on resistance traits and vector control.

Estimating the economic, socialand environmental impacts of European priority pests: a joint project for EFSA and JRC and the case study of *Xylella fastidiosa*