Understanding olive growers’ intention to participate in *Xylella fastidiosa* control in Apulia, Italy

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Environmental System Analysis
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Background

- Successful control of an epiphytotic requires full commitment of stakeholders involved.
- Research primarily aims at improving epiphytotic management.

The assumption is that...it is based on rigorous scientific evaluations when individual growers make decisions...

But studies have shown how their decisions are biased by heuristics (social and physical environment)!

...it is based on rigorous scientific evaluations.
Aim

- Evaluating the role of farmers’ behaviour in the management of epiphytotics

- Case: olive growers uptake of *Xylella fastidiosa* control measures in southern Italy

- Focus: situation in Lecce region summer 2016
Theoretical framework

Theory of Planned Behaviour by Ajzen (1991)

Intention

- Attitude
- Subjective norm
- Perceived behavioural control

Socio-demographic characteristics

Psychological variables

A precursor to behaviour
Intention to..

1. Ordinary pruning of all non-infected trees
2. Extraordinary pruning of infected trees
3. Uprooting infected trees and neighbouring hosts within 100 meters
4. *Phytosanitary measures to reduce vector population*
5. *Superficial tillage and weeding to reduce vector population*
Methodology

- Face to face questionnaires, July 2016
- Statements using a 5-point Likert scale to measure intentions and psychological variables
  - E.g. *this year, I will prune my olive trees as a preventive measure against OQDS*
- Elicit information on 18 farmers’ sociodemographic characteristics (age, sex, income, ...)
- Logit regression analysis; influence of psychological and sociodemographic variables on behavioural intentions
- 96 respondents
Results - *Ordinary pruning* -

Majority in favour of ordinary pruning → 84% positive

Ordinary Pruning

I have money and time to carry out ordinary pruning (OR 1.19)

No high degree of collinearity detected

- Education level:
  - University (OR 2.61)

- Average Income (in €):
  - < 15’000 (OR 1.30)
  - 15’000 – 25’000 (OR 2.15)
  - 25’000 – 35’000 (OR 2.70)
  - 35’000 – 45’000 (OR 2.72)

Sociodemographic significantly associated

OR = Odds ratio
Results - Extraordinary pruning -

Majority in favour of extraordinary pruning → 86% positive

Extraordinary Pruning

Extraordinary pruning is useful to control OQDS (OR 6.67)

I have the money to carry out extraordinary pruning (OR 2.34)

Average Income (in €):
- < 15’000 (OR 2.03)
- 35’000 – 45’000 (OR 2.70)

Agrotourism activity connected with the orchard (OR 0.70)

Education level:
- University (OR 2.71)

OR = Odds ratio
Results - Uprooting -

Without compensation 30% positive; with compensation 37% positive

**Uprooting**

**Uprooting is useful to control OQDS**

**X. Fastidiosa is a threat to the provincial olive growers**

No sociodemographic variable significantly associated!

Education level:
- University (OR 2.05)
- Distance from closest locus of infection
  - > 7 Km (OR 1.90)
  - Unaware (OR 2.61)
- Intercrop susceptible to *X. fastidiosa* (OR 7.46)

OR = Odds ratio
Conclusion

TPB approach useful to:

- Understand farm level management → Emphasis on the actors and their evaluation of disease management
- Design targeted intervention → information on the applicability of suitable strategies

E.g. Information campaigning and incentives for low income farmers to foster uptake of control measures