3rd European Conference on
Xylella fastidiosa and XF-ACTORS final meeting

Pathogenicity of *Xylella fastidiosa* subsp. *multiplex* isolates from Alicante outbreak (mainland Spain) on different hosts

M.L. Domingo-Calap[1], C.M. Aure[2], I. Navarro-Herrero[2], M. Simó-Esquivel[1], E.G. Biosca[3], M. Román-Écija[4], B.B. Landa[4], M. Saponari[5], E. Marco-Noales[2]

[1]Tragsa, Empresa de Transformación Agraria, Delegación de Valencia, Spain.

[2]Centro de Protección Vegetal y Biotecnología. Instituto Valenciano de Investigaciones Agrarias (IVIA). Spain.

[3]Departamento de Microbiología y Ecología. Facultad de Ciencias Biológicas. Universitat de València. Spain.

[4]Instituto de Agricultura Sostenible, Consejo Superior de Investigaciones Científicas (IAS-CSIC), Córdoba, Spain.

[5]Instituto per la Protezione Sostenibile delle Piante, CNR, Bari, Italy.

INTRODUCTION

- *Xylella fastidiosa* outbreak in Alicante province (mainland Spain): June 2017
- Identification of *X. fastidiosa* subsp. *multiplex* ST 6
- Main host: *Prunus dulcis*
- Other hosts: *Acacia saligna*, *Asparagus acutifolius*, *Calicotome spinosa*, *Cistus albidus*, *C. salvifolius*, *Helichrysum italicum*, *H. stoechas*, *Laurus nobilis*, *Lavandula dentata*, *L. angustifolia*, *L. latifolia*, *Phagnalon saxatile*, *Polygala myrtifolia*, *Prunus armeniaca*, *Prunus domestica*, *Rhamnus alaternus*, *Rosmarinus officinalis*

OBJECTIVE

To evaluate the pathogenicity of *Xylella fastidiosa* subsp. *multiplex* isolates from Alicante outbreak (mainland Spain) on different hosts of agronomic or environmental significance in the Valencian Community and throughout Spain

MATERIALS & METHODS

Bacterial strains

Strain	Subespecie	ST	Host	Origin	Year
IVIA 5901	*multiplex*	6	Almond	Bolulla (Alicante, Spain)	2017
ESVL	*multiplex*	6	Almond	Benimantell (Alicante, Spain)	2017
De Donno *	*pauca*	53	Olive	Puglia (Italy)	2013
IVIA 5770	*fastidiosa*	1	Grape	Manacor (Mallorca, Spain)	2017

* Results of De Donno strain are not shown in this presentation

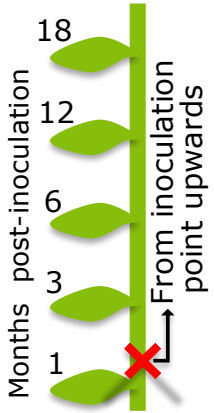
Plant species

Prunus dulcis (5 cultivars)	*Olea europea* (8 cultivars)	*Vitis vinifera* (4 cultivars)	*Quercus ilex*	*Quercus suber*
Citrus sinensis	*Citrus reticulata*	*Citrus limon*	*Diospyros kaki*	*Eriobotrya japonica*

Inoculation procedure

1) 35 plants per species/cultivar
2) 10 µl bacterial suspension for pinprick inoculation (3 points/plant)
3) 10 sticks/point with entomological needle in wood
4) Mark the inoculation point

Sampling and analysis



DNA extraction by CTAB procedure

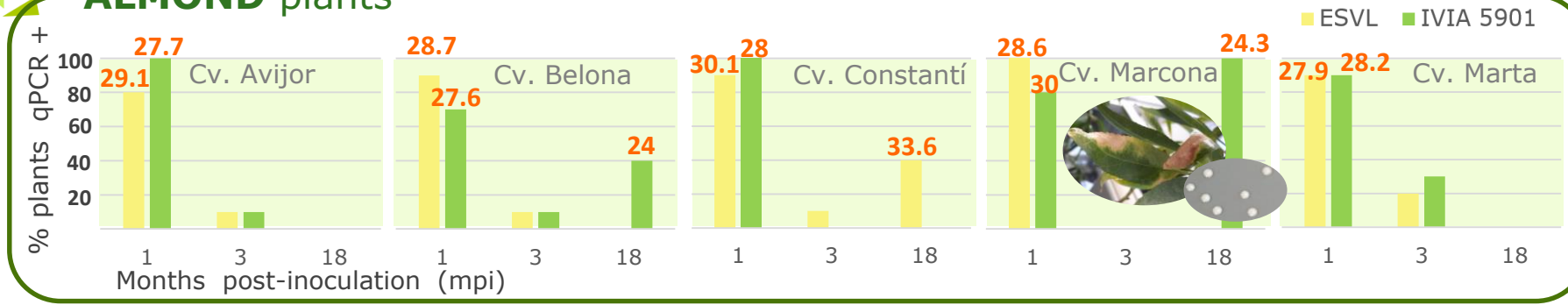
&

Real-time PCR (Harper *et al.*, 2010, *erratum* 2013)

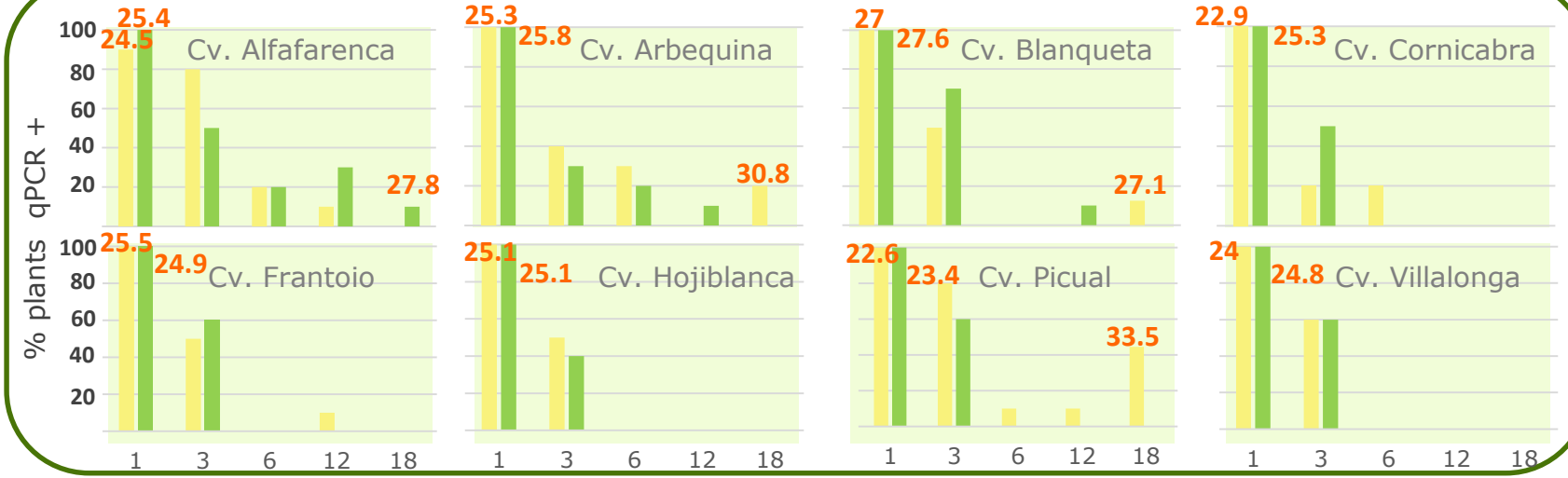
RESULTS

Percentage of inoculated plants positive for qPCR and Cq mean values

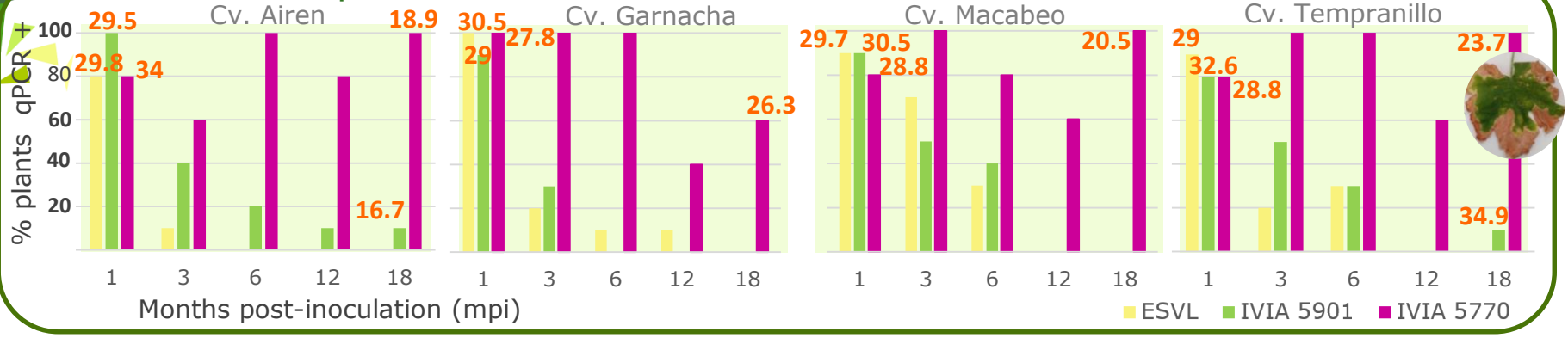
ALMOND plants



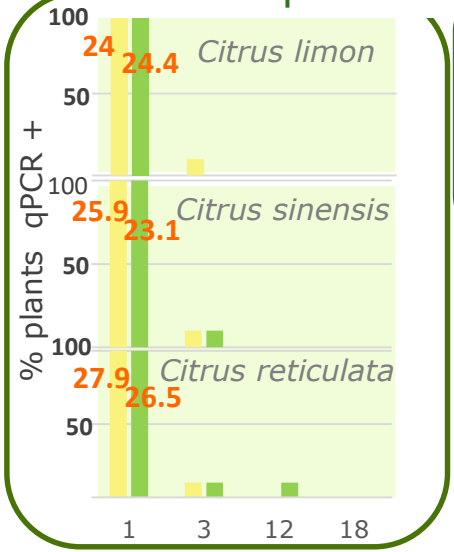
OLIVE plants



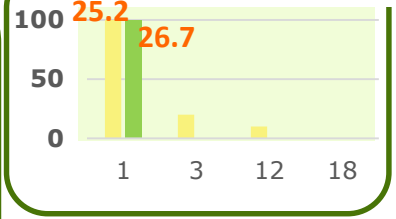
GRAPEVINE plants



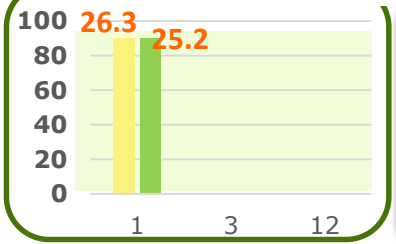
CITRUS plants



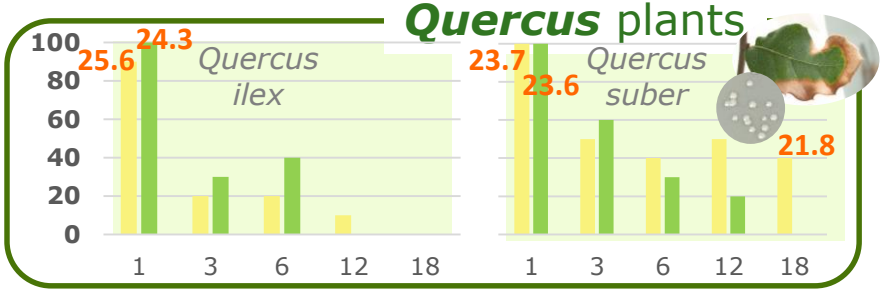
LOQUAT plants



KAKI plants



Quercus plants



CONCLUSIONS

- **Inoculation was successful in all cases: Alicante *Xf* strains were detected in inoculation point at 1 mpi.**
- **Alicante *Xf* strains only colonized almond and *Quercus suber* plants, with symptom development.**
- **After 18 mpi Alicante *Xf* strains were not able to colonize olive, grapevine, citrus, loquat or kaki plants; and no symptoms were observed.**

FUNDING

727987 XF-ACTORS (H2020-UE), EFRTA2017-00004-C06-01/02 AEI-INIA, Spanish olive oil Interprofesional, Plant Health Service Generalitat Valenciana