Xylella fastidiosa: state of play in Italy

COPA- COGECA ITALIAN DELEGATION

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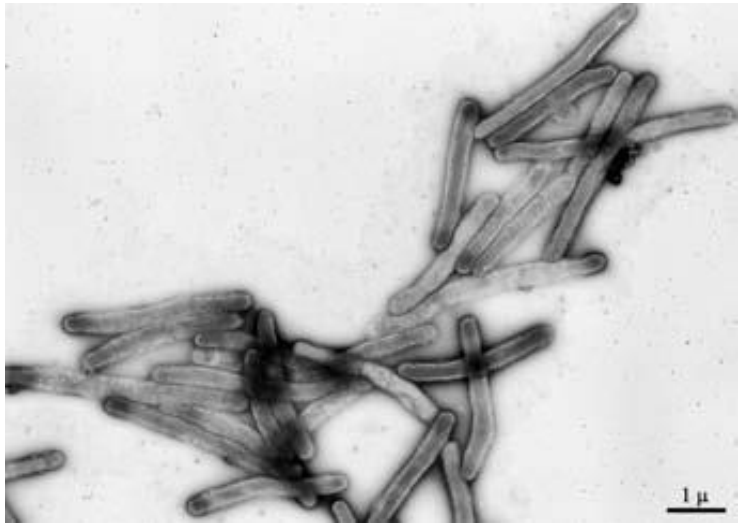


SCENARIO

Xylella fastidiosa is a pathogen (bacterium) that causes the Olive tree rapid drying complex.

The bacterium develops in the lymphatic vessels and causes the occlusion of lymphatic flow which can lead to the death of the plant.

It is transmitted by insects that survive by sucking the lymph of the xylem vessels.

In Apulia there is the *Xylella Fastidiosa* subspecies *pauca* genotype st53 pauca. To date have been identified 34 host plants among plants cultivated: olive, cherry, almond, ornamentals etc but in Apulia the most affected species is the olive tree.

SANITARY EMERGENCY

2020: about 190 thousand hectares of olive groves in the infected area between the provinces of Taranto, Brindisi and Lecce in Apulia

2017: official data referred to 65 thousand hectares and 6.5 million olive trees affected by the disease (assuming an average density of 100 trees per hectare)

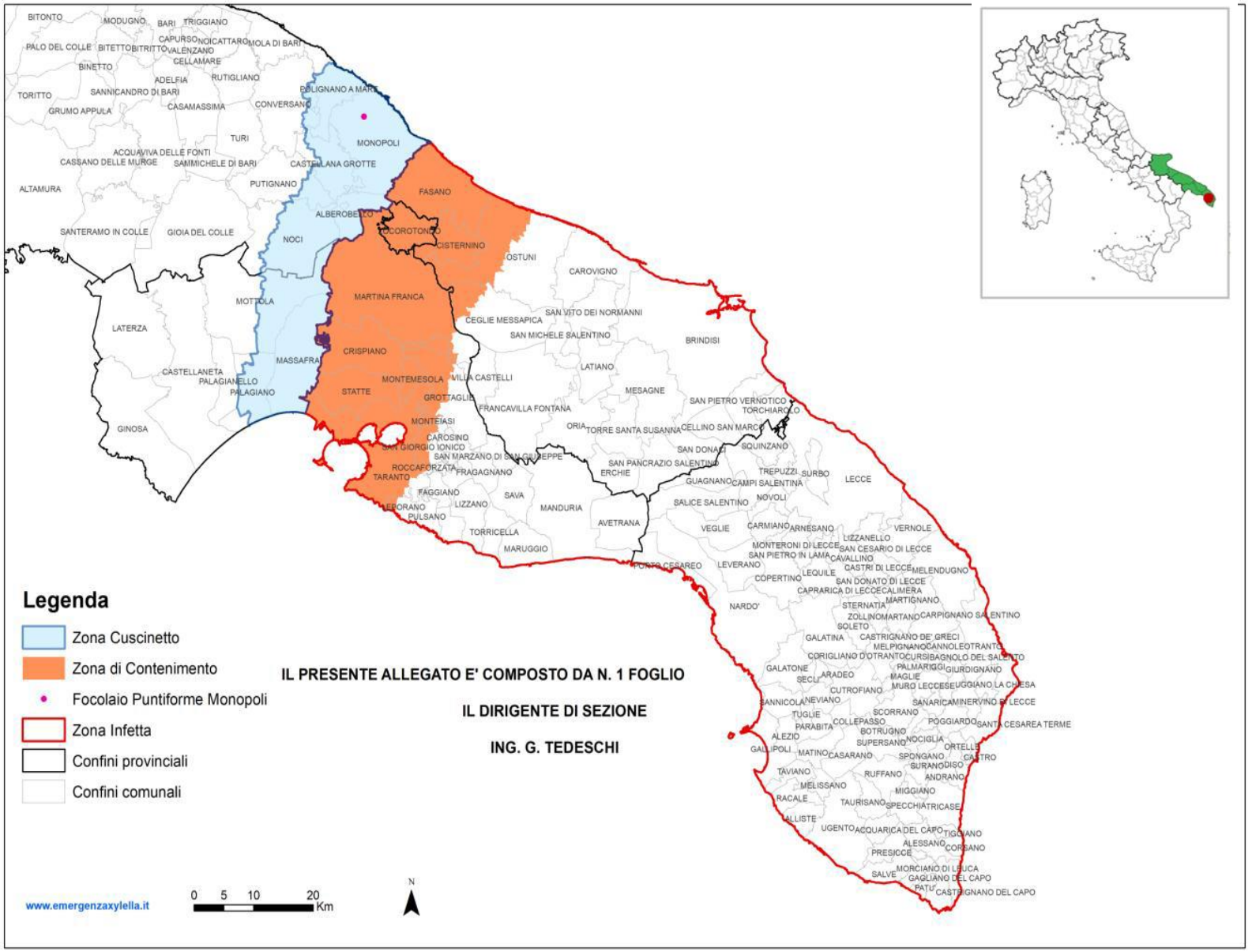
Olive groves surface in the infected area	190.000 ha
Olive groves area hit by the rapid drying complex	65.000 ha
Infected plants	6,5 milioni

a Monitoring the impact of Xylella on Apulia's olive orchards using Sentinel 2 satellite data and aerial photographs. Second European conference on Xylella fastidiosa,30 October 2019

September 2020 → 59 infected olive tree in the area of Monopoli

(150 km away from the first outbreaks of 2013).

The epidemic is advancing at a speed of approximately 20 km per year. Concerns for the northern Apulia's production.



SANITARY EMERGENCY – MONUMENTAL OLIVE TREES

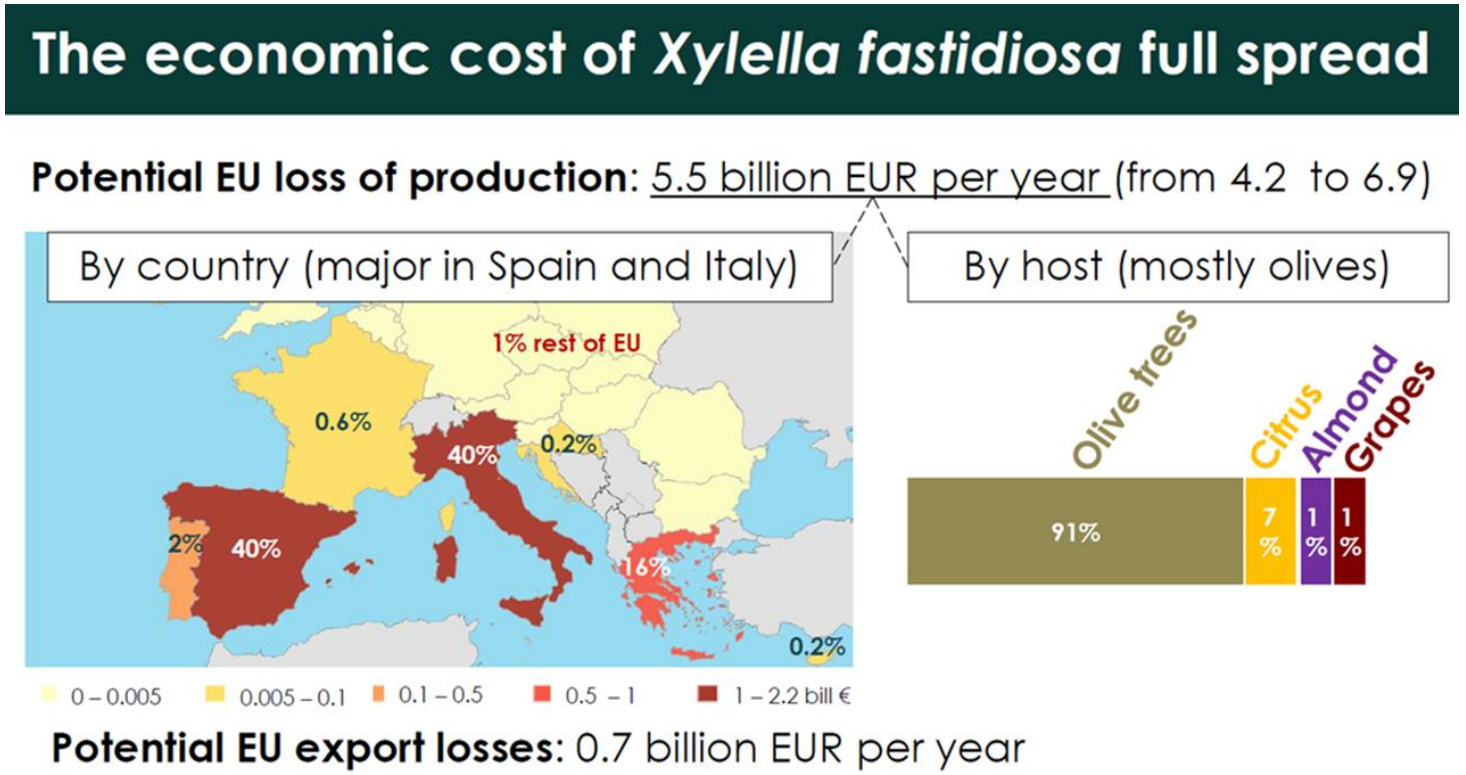
- A unique heritage in the world. **About 250 thousand olive trees up to over 2,000 years old**
- Features: ecological and hydrogeological defense of soils; landscaping, touristic, historical, environmental, economic value
- Estimates: 1/3 of monumental olive trees already affected by the bacterium, an irrecoverable loss
- Negative repercussions also on oil tourism, an important activity for many companies in Apulia
- Foreseen funding of interventions to safeguard the monumental olive trees.

SANITARY EMERGENCY – WHAT TO DO

- Correct use of agronomic practices to counteract the vector
- Fast detection and reporting of infected trees
- Avoid lengthy administration which hamper the rapid contrast to the progress of the epidemic
- Proceed "immediately" to the removal, in the containment area, of all infected plants
- Correct monitoring with accurate inspections of apparently healthy olive trees

ECONOMIC EMERGENCY

2 billion euros/year damage estimated on the basis of EFSA and JRC analysis taking into account economic, social and environmental indicators, plus the costs of surveillance



Estimating the economic, social and environmental impacts of EU priority pests: a joint EFSA and JRC project with a focus on Xylella fastidiosa, 2nd European conference on Xylella fastidiosa 29th– 30th Oct 2019

ECONOMIC EMERGENCY

Data 2013/2019 province of Lecce, with a strong olive-growing vocation

Decrease in number of farms hiring workers - 1,500 (-24.46%)

Reduction in the number of working days - 60 thousand working days (-3.54%)

Strong contraction in the number of agricultural workers -5 thousand (-16%)

	2013	2019	diff.	diff. %
NUMBER OF FARMS HIRING WORKERS	6.141	4.639	-1.502	-24,46
DAYS	1.665.421	1.606.476	-58.945	-3,54
WORKERS	32.582	27.365	-5.217	-16,01
AVERAGE WORK DAYS	271	346	75	27,69
AVERAGES EMPLOYED WORKERS	5	6	1	11,18
INDEPENDENT WORKERS	2.585	2.854	269	10,41

Fonte: Dati INPS- Istituto Nazionale di previdenza sociale

In the infected area there has been a drop in working days.

NATIONAL COUNTERMEASURES

Plan for the recovery of Apulia's olive groves

Interministerial Decree 06.03.2020

The plan allocates 300 million for 5 types of intervention 2020/2021

	AZIONI	Milioni di €		MISURE	2020	2021	TOTALE
1	Contrasto alla diffusione della Xylella	5,00	A.	Contrasto al vettore ed eliminazione delle fonti di inoculo	2,00	3,00	5,00
	Ripristino potenzialità produttiva	250,00	A.	Rimozione piante disseccate a seguito di Xylella nella zona infetta	5,00	15,00	20,00
			B.	Reimpianti e riconversioni tramite cultivar di olivo resistenti	14,00	26,00	40,00
			C.	Riconversioni verso altre colture	10,00	15,00	25,00
			D.	Salvaguardia olivi secolari o monumentali	1,00	4,00	5,00
			E.	Sostegno al reddito: interventi compensativi imprese agricole	85,00	35,00	120,00
			F.	Interventi compensativi in favore dei frantoi oleari	20,00	15,00	35,00
			G.	Sostegno alle imprese vivaistiche	2,00	3,00	5,00
3	Rilancio economia rurale aree danneggiate	10,00	A.	Contratti di filiera e di distretto	-	5,00	5,00
			B.	Diversificazione dell'economia rurale e accorpamento fondiario	-	5,00	5,00
4	Azioni orizzontali	25,00	A.	Comunicazione e informazione	2,00	3,00	5,00
			B.	Ricerca e sperimentazione	5,00	15,00	20,00
5	Monitoraggio e rete laboratori	10,00	A.	Potenziamento rete laboratori pubblici	2,00	3,00	5,00
			B.	Monitoraggio e diagnostica	2,00	3,00	5,00
	TOTALE AZIONI	300,00		TOTALE MISURE	150,00	150,00	300,00

The funds allocated - 40 million on Measure 2 B - are sufficient to restore about 8% of the 65 thousand hectares of olive groves affected in the infected area.

RESEARCH (TOLERANT AND RESILIENT VARIETIES)

- **Genetic resistance** is the only effective tool to fight the bacterium Xylella fastidiosa subsp. pauca strain st53
- To date there is no cure capable of restoring an infected plant.

- "leccino" and "fs-17" first two varieties of olives whose traits of resistance to xylella infections have been documented by various laboratory tests, field observations and experimental tests

RESEARCH (TOLERANT AND RESILIENT VARIETIES)

3 lines of research in progress

1 - Field investigations in olive groves located in the infected area

2 - Evaluation of cultivars in two experimental fields in an area with high inoculum pressure

- EFSA research project field implanted in 2015 with 8 cultivar
- Field of the POnTE research project implanted in 2016 with 19 cultivar

3 - Evaluation of cultivars in greenhouses with potted plants artificially inoculated with the bacterium

RESEARCH (TOLERANT AND RESILIENT VARIETIES)

- To date none of the 27 cultivars exposed in the open field at 3/4 years of natural inoculum pressure have resulted immune
- Some varieties show interesting resistance/tolerance characteristics, but none show better results than Leccino

Studies on the identification of species / varieties resistant or tolerant to Xylella are continuing (Horizon 2020 Bridge and Xf-actors projects)

Further tolerant or resistant varieties could be identified in the future.

THE ROLE OF AGRICULTURAL ORGANIZATIONS AND COOPERATIVES AT THE TERRITORIAL LEVEL

- Comprehensive information activities on disease prevention and management
- Coordination of requests to territorial authorities
- Collaboration with phytosanitary services
- Relationship with the scientific and research community
- Support and guidance for farmers and cooperatives on compensation and recovery investments

NEEDS

- Rapid implementation of containment measures to stop the bacterium (especially removal of infected plants)
- Economic recovery of the area south of Puglia, where Xylella fastidiosa is no longer eradicable. Olive tree replanting / reconversions
- Extraordinary recovery plan with particular attention to infrastructure and training
- Close surveillance in disease-free areas

NEEDS

- Possibility of investment and wider trials for companies in damaged areas
- Greater support for the protection of the monumental trees
- Incentives in the implementation of good agricultural practices (only recommended in the southern area)
- Monitoring within the appropriate timeframe (monitoring by the EU Commission)

FUTURE PROSPECTS

- High expectations from the research community on resistant varieties, early detection methods, integrated management of bacteria and vector
- Multi-actor involvement and active role of stakeholders on the strategy of productive and economic revival. EU co-leading support is necessary
- Increase resources and expertise on plant health research and phytosanitary prevention in the EU