

Management of chestnut blight in Romania

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Castanea sativa in Romania

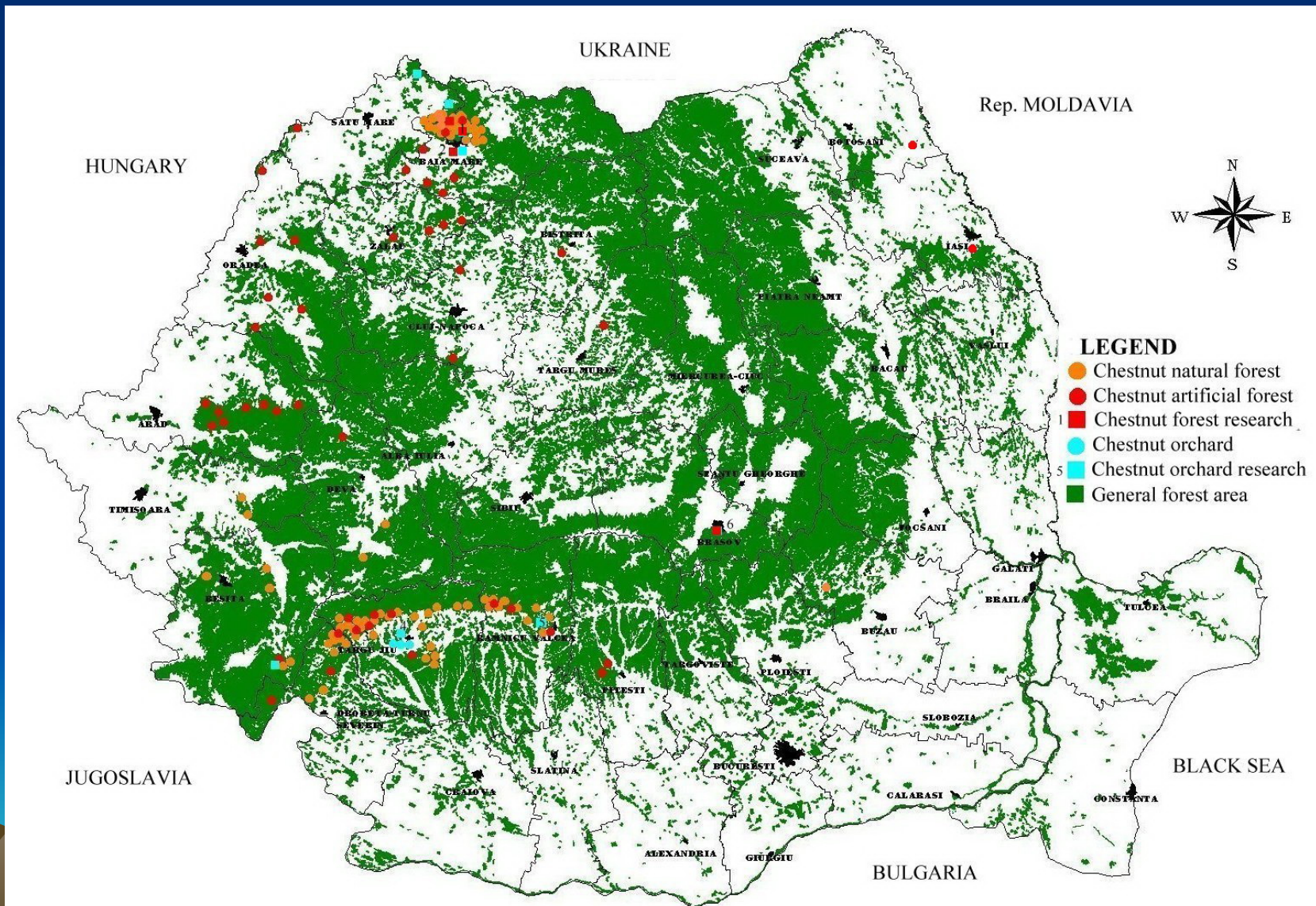


Fig.1 Chestnut distribution in Romania

Maramures

Chestnut blight – orchards & forests



- **1984**: First report *Cryphonectria parasitica*
– R&P Fruit Station Baia Mare;
- **1995**: First dying process in forest of Baia Mare and Tautii Magheraus;



- **2002**: 26.3% still healthy stands; 35.1% seriously were damaged
- **2012**: all mature trees in untreated stands were dead !

Oltenia (Gorj)

Tismana Forest District
(RNP Romsilva, Gorj
County)

2013: *C. parasitica* have
severely infected **all** the
chestnut stands;

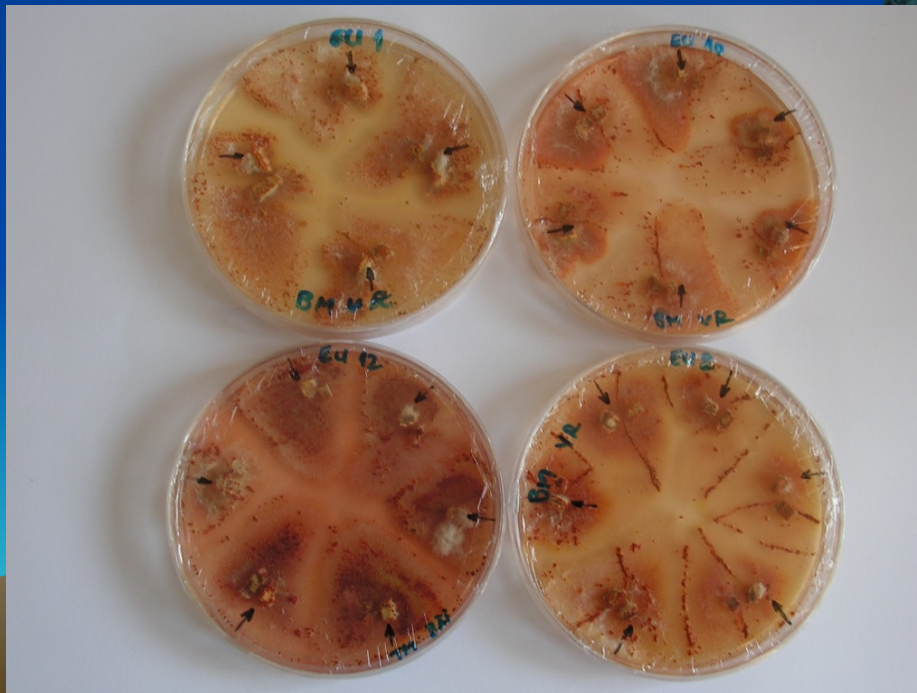
Dying process was in
rapid evolution (in the
next few years all the
mature chestnut trees
were ded).

Chestnut stands in Pocruia
– Tismana FD, still healthy
in 2004 (left) and dying in
2012 (write)



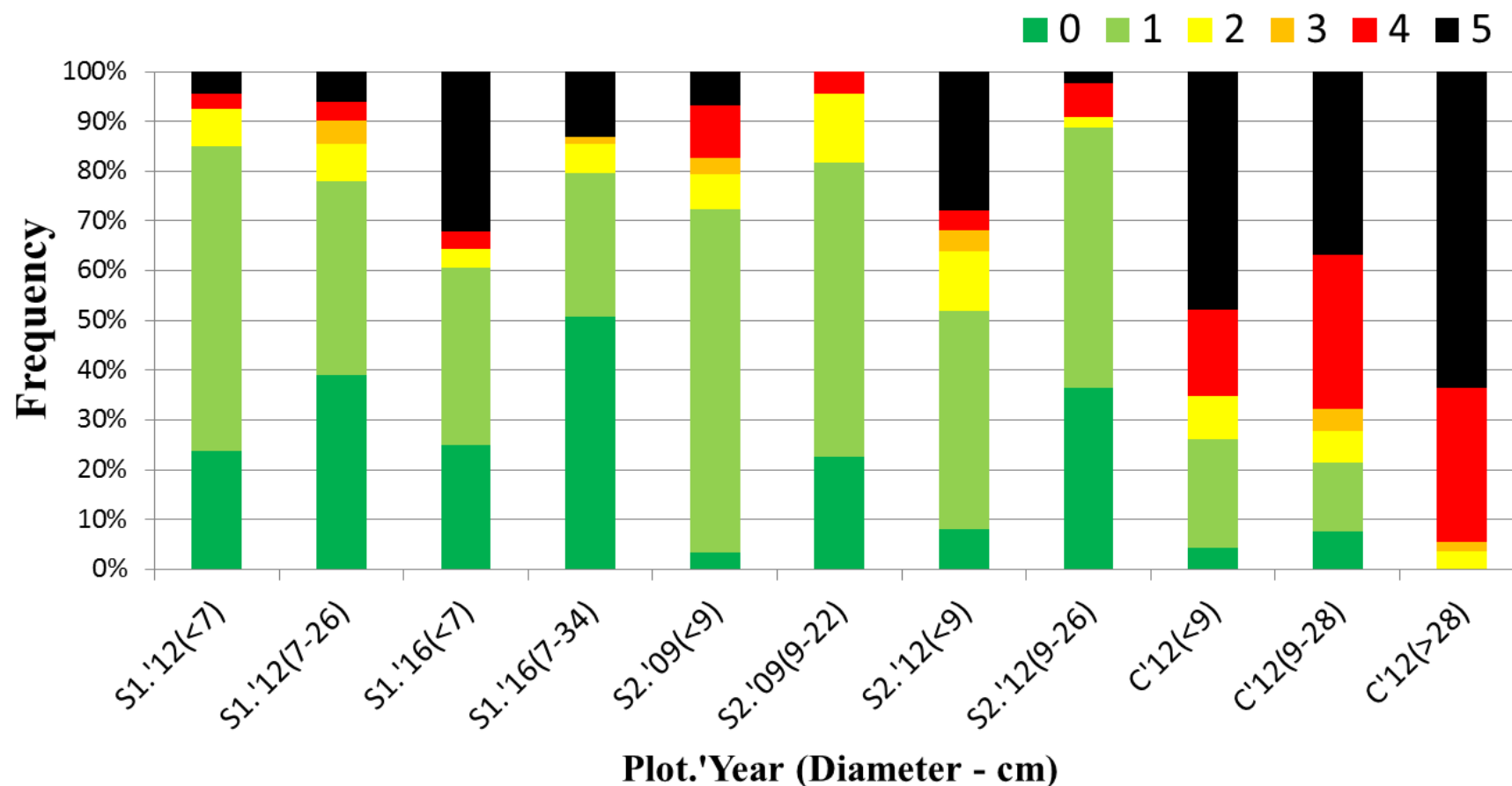
1. Biological Control of *C.parasitica*

Strain identification - vc tests



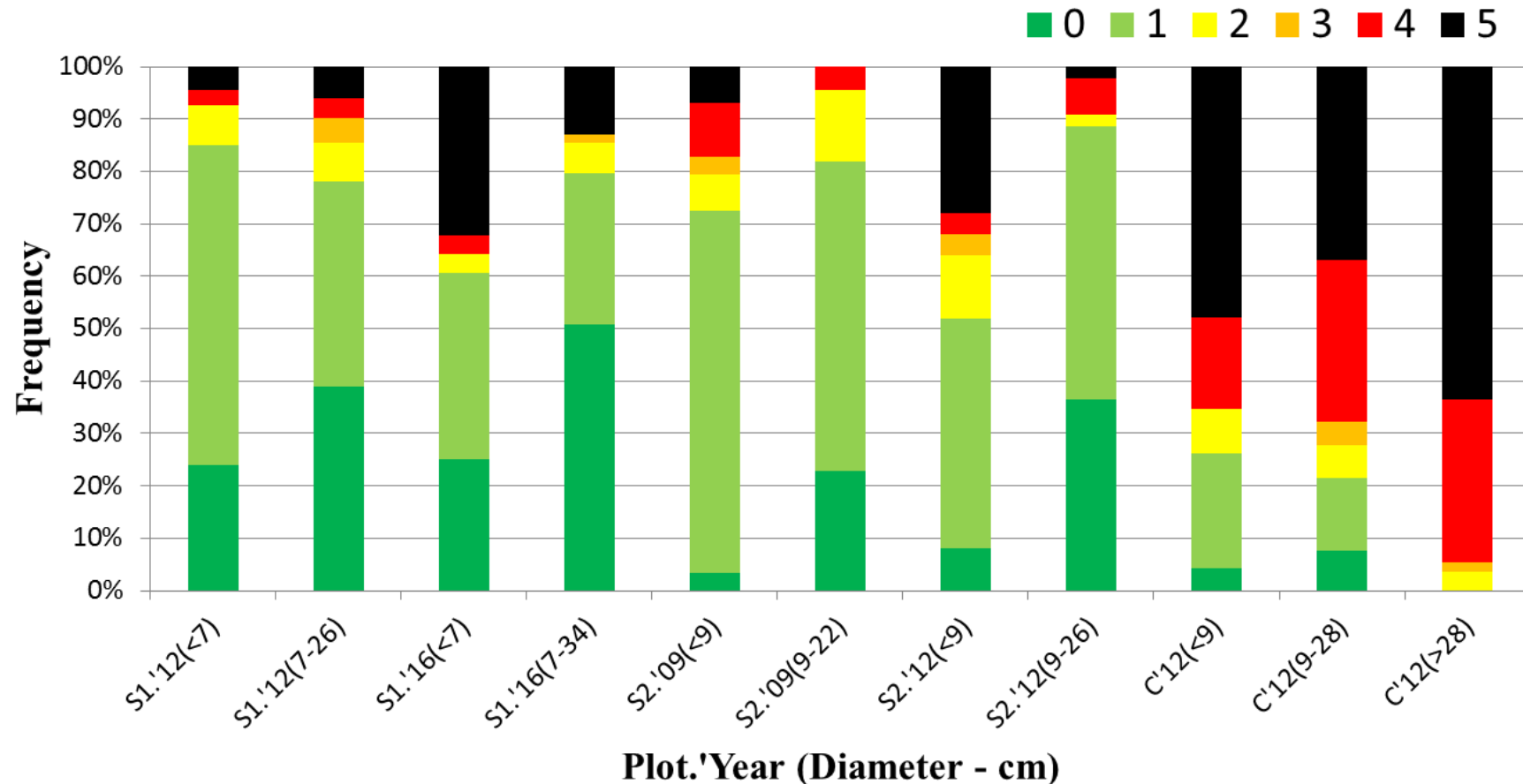
Biological Treatment efficacy in NW-RO

Chestnut blight (0-healthy ... 5-dead trees) after biological treatment of young stands (Plots: S1, S2, and Control)



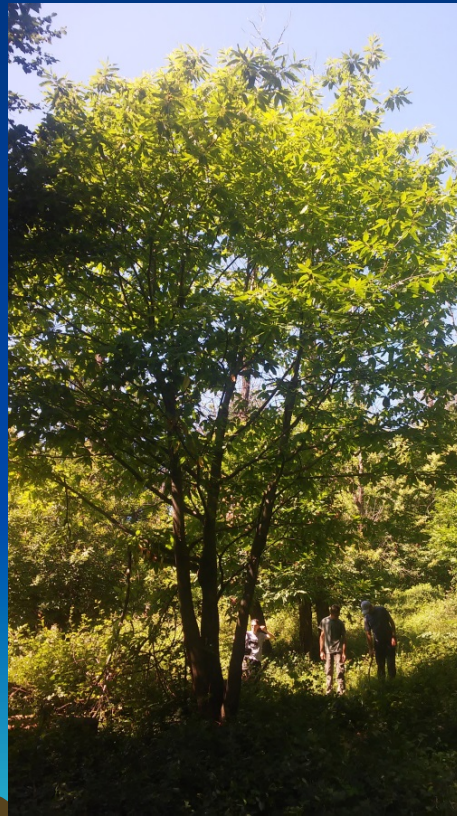
Biological Treatment efficacy in SW-RO

Distribution of infection classes (**0-healthy, ... 5-dead**) on different tree diameter in Tismana F.D., before (2012) and after (2016, plots S1 and S2) the biological treatment of *C. parasitica*

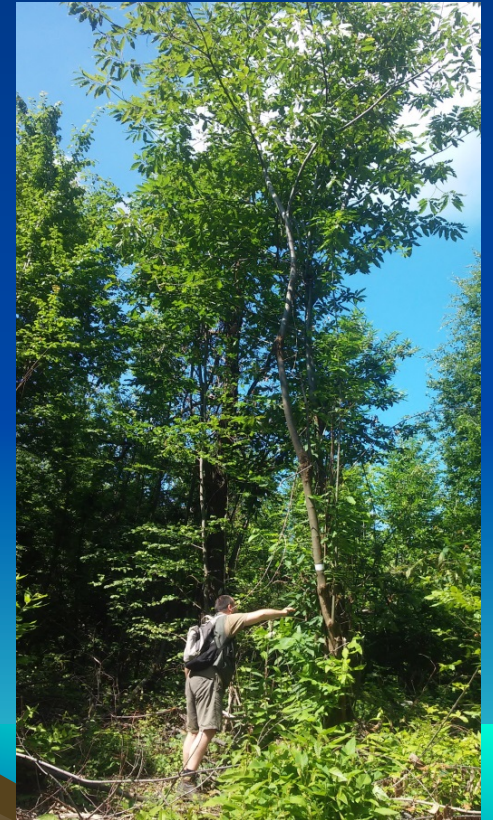


Healing process of chestnut forests

Treatments in 2013-2016: results: active healing process in young treated regenerations



before / after treatment



2. Chestnut hybrids

- **2.1. Method**

- **Place:** SCDP Valcea, Central-Southern Romania

- **Material:**

Seedlings of:

- C. sativa* x *C. crenata* x open pollination

- C. crenata* x *C. sativa* x open pollination

- C. sativa* x open pollination

- control: *C. sativa* (Tismania, Hurezi)



2. Chestnut hybrids

- Materials

No.	Genotype
H1.04	<i>C.sativa</i> x <i>C.crenata</i> x OP
H2.04	<i>C.crenata</i> x <i>C.sativa</i> x OP
H3.04	<i>C.crenata</i> x <i>C.sativa</i> x OP
H4.04	<i>C.sativa</i> x <i>C.crenata</i> x OP
H5.05	<i>C.sativa</i> x <i>C.crenata</i> x OP
H6.05	<i>C.sativa</i> x <i>C.crenata</i> x OP
H7.08	<i>C.sativa</i> x <i>C.crenata</i> x OP
H8.08	<i>C.sativa</i> x OP
H9.08	<i>C.crenata</i> x <i>C.sativa</i> x OP
H10.08	<i>C.sativa</i> x <i>C.crenata</i> x OP
H11.08	<i>C.sativa</i> x OP
H12.08	<i>C.crenata</i> x <i>C.sativa</i> x OP
Hurezi	<i>C.sativa</i> (Selection Hurezi)
Tismana	<i>C.sativa</i> (Selection Tismana)

2. Chestnut hybrids

- **Method**

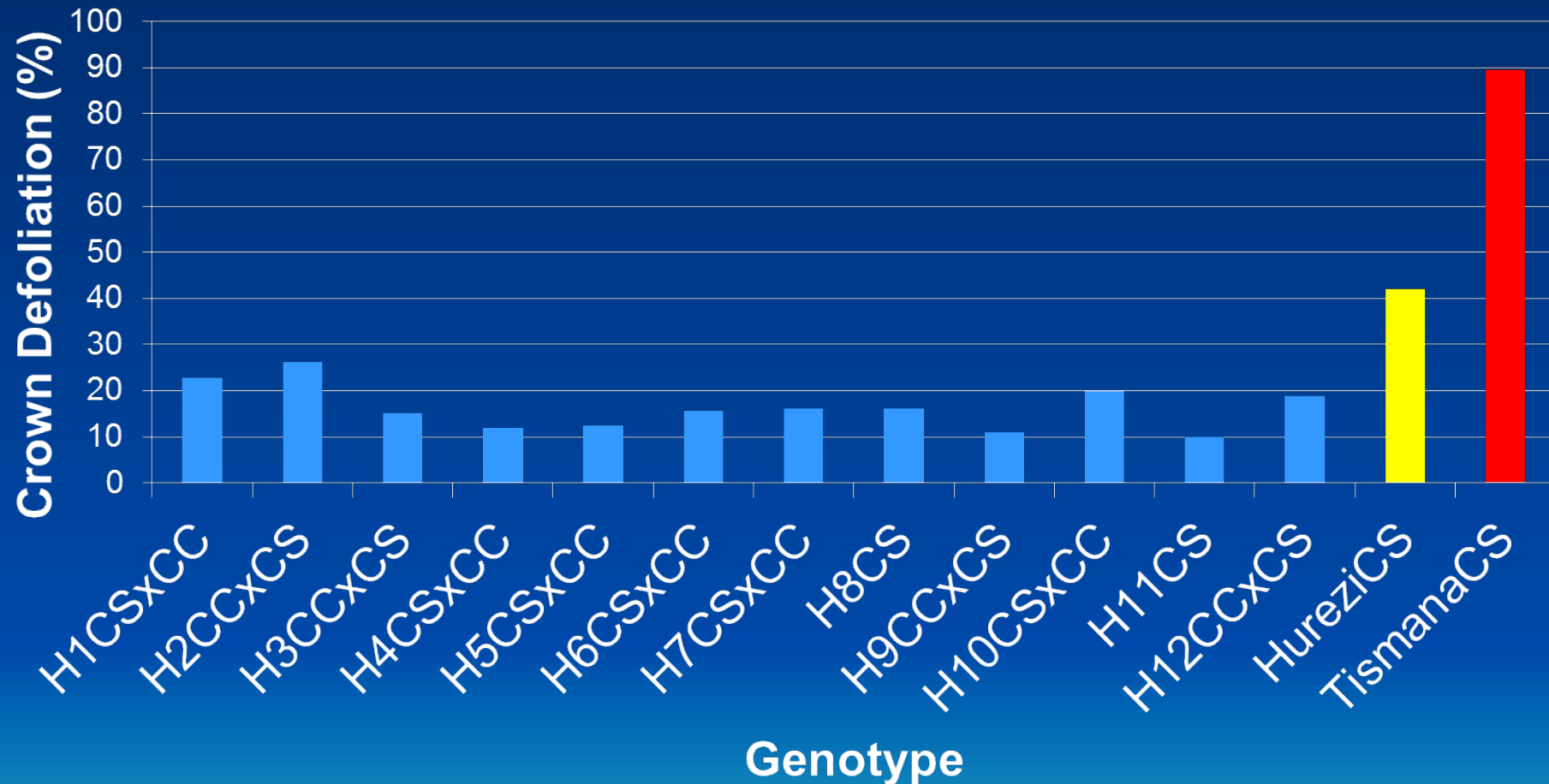
Evolution of plants in natural environment:

- natural infections of *C. parasitica* - recording of symptoms: fungus, cankers, dead stem/branch, crown evaluation);
- drought (2012 extreme drought);
- frost (2016-2017 cold winter, 2017 high late frost): leaf necrosis, crown evaluation.



2. Chestnut hybrids

- 2.3. Results



Crown defoliation of different genotypes

2. Chestnut hybrids

- 2.3. Results



Crown defoliation of different genotypes

2. Chestnut hybrids

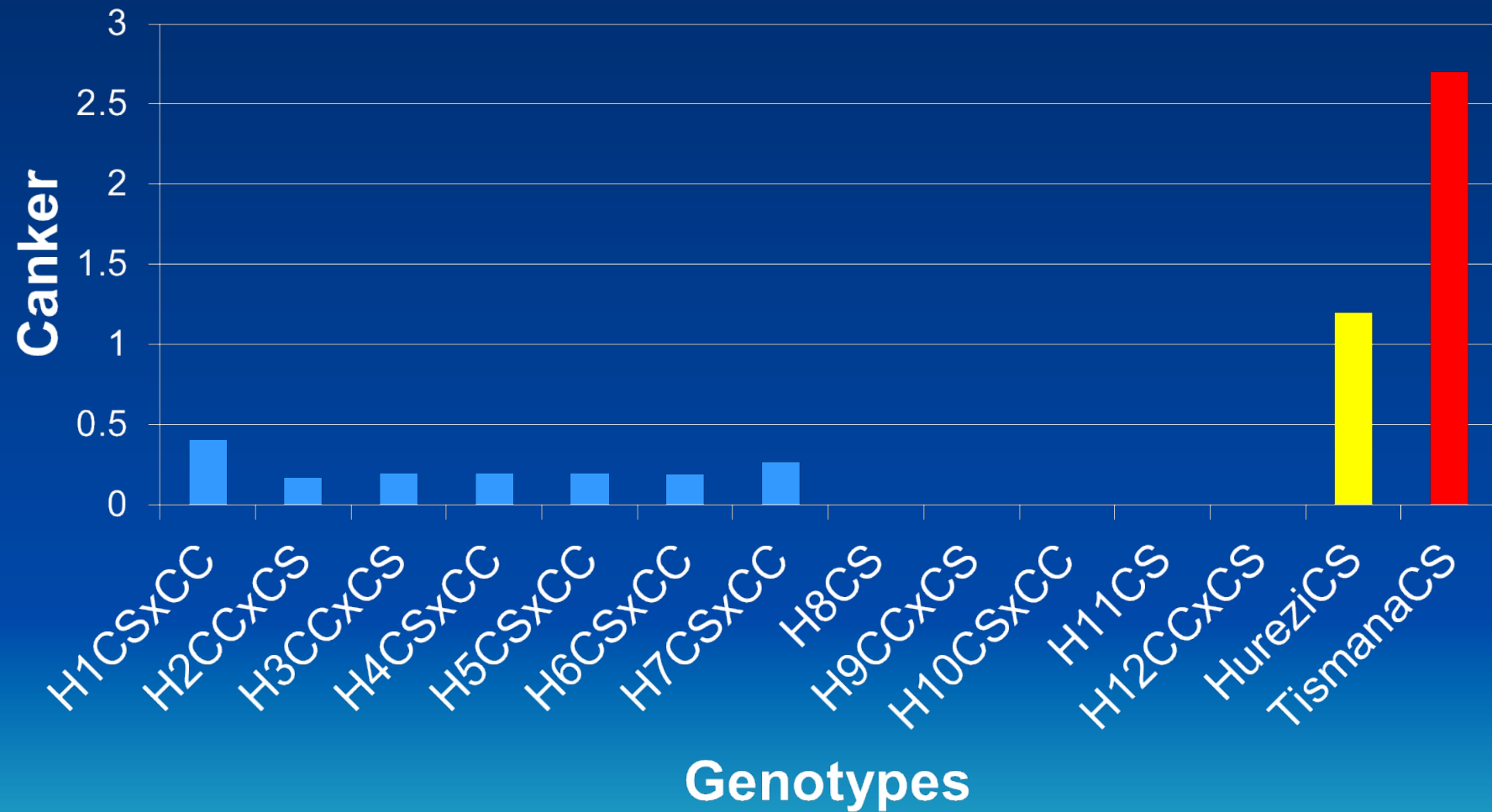
- 2.3. Results



Fruitbodies of *Cryphonectria parasitica* on *C. sativa*
(Hurezi and Tismana)

2. Chestnut hybrids

- 2.3. Results



Cankers' presence on different genotypes

2. Chestnut hybrids

- 2.3. Results

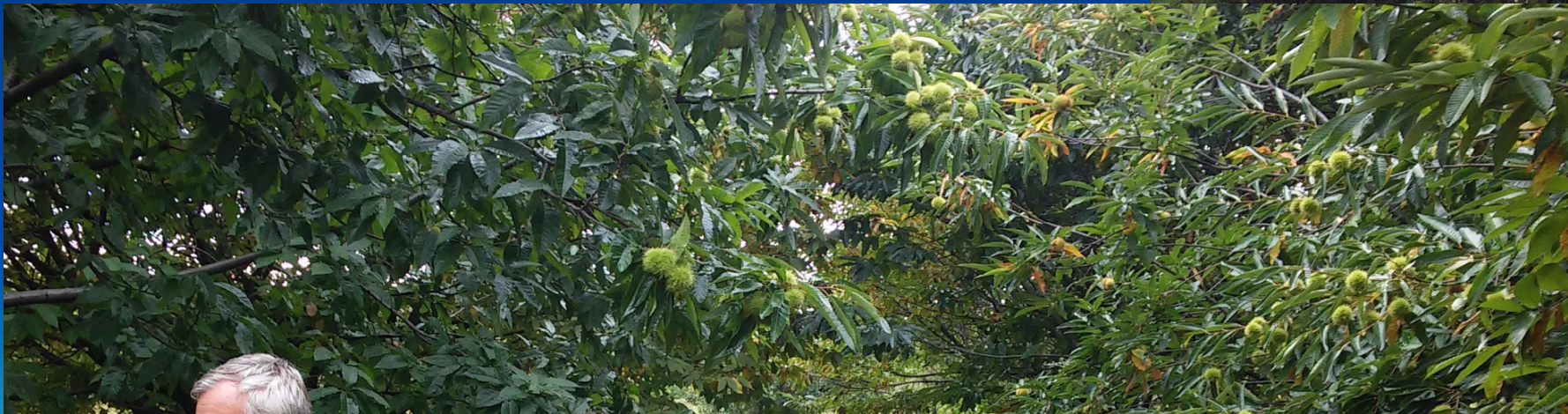


Hybrids of *C. sativa* and *C. crenata* are healthy

2. Chestnut hybrids

- 2.3. Results

All chestnut genotypes were affected by the late frost of 2017, but individual tolerance has been observed.



Late frost necrosis

Acknowledgments

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Thank you!