

PROJECT: Controlled germination and inoculation of *Quercus ilex* with two species from *Tuber* genus

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PROJECT IDEA

To develop **INOCULATION PROTOCOLS** for:

- Reforestation and recuperation of degraded forest sites
- Seedling production for truffle plantations

POSSIBILITIES

1. Adaptation of Croatian laws to:

- EU legislation on primary agricultural production and on
- Production, gathering and usage of NWFP's

2. Development of extension services for rural economies

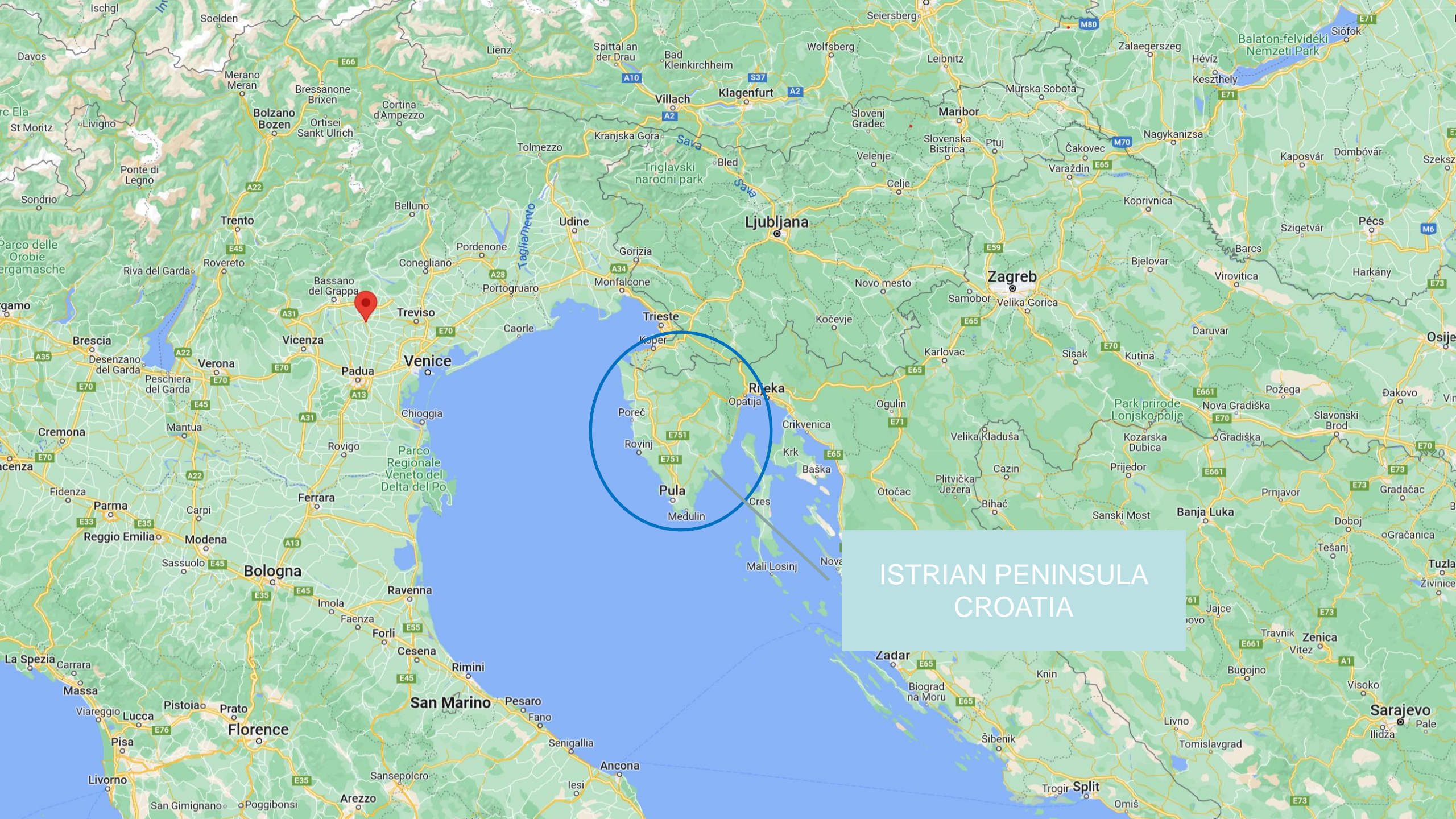
**FORESTRY AND
AGRICULTURE**

**LEGISLATION
INCENTIVES
EDUCATION**

PROJECT BACKGROUND

PROJECT START: October 2021

PROJECT PARTNERS: Croatian Forest Research Institute, Croatian Forests Ltd, Istrian Region



ISTRIAN PENINSULA
CROATIA

HYPOTHESIS 1: PRODUCTION OF MYCORRHIZED SEEDLINGS

Does it even pay off?

INVESTMENT COSTS

1. Laboratory + lab equipment
2. Greenhouse
3. Storage building

PRODUCTION COSTS

Calculation made for production of 18.000 seedlings/year

EXPENDITURE	€/year
2 skilled workers	37.333,33
Material	8.332,50
Overheads 25%	10.415,62
TOTAL	56.081,45

PRODUCTION COST FOR 1 SEEDLING: 3,11 €

HYPOTHESIS 2: REFORESTATION

Reforestation cost for 1 ha of forest surface with non-mycorrhized broadleaved seedlings, planting material price 0,90 €/pc, age 2+0

EXPENDITURE	QTY	€/ha
Manual work	15 days/ha	695,73
Machinery work	2,5 days/ha	1.083,33
Planting material	1.500 pcs/ha	1.350,00
Protection tubes	1.500 pcs/ha	2.100,00
Wooden stakes	1.500 pcs/ha	1.350,00
Transportation		281,60
Planting	1.500 pcs/ha	1.374,93
TOTAL		8.235,62

**Standard costs of reforestation with broadleaved species in coastal Croatia – pricelist developed by the Ministry of Agriculture of Republic of Croatia*

Reforestation cost for 1 ha of forest surface with mycorrhized broadleaved seedlings, planting material price 3,11 €/pc, age 2+0

EXPENDITURE	QTY	€/ha
Manual work	15 days/ha	695,73
Machinery work	2,5 days/ha	1.083,33
Planting material	816 pcs/ha	2.541,57
Protection tubes	816 pcs/ha	1.142,40
Wooden stakes	816 pcs/ha	734,40
Transportation		281,60
Planting	816 pcs/ha	747,86
TOTAL		7.226,89

POSSIBLE USE: REFORESTATION AFTER FOREST FIRES
On Istrian peninsula in period from 2013 – 2022
70 registered forest fires on 828 ha

HYPOTHESIS 3: INCREASE IN ECOSYSTEM SERVICES

G.J. "Dubrava" (2012.-2021.), 41b, 39,91 ha

ECOSYSTEM SERVICE	CURRENT SCORE	POSSIBLE SCORE
Protection of soil, roads and other facilities from erosion, torrents and floods (1-3)	1	1
Impact on water regime and hydropower system (1-4)	3	3
Impact on soil fertility and agricultural production (1-4)	3	3
Climate impact (1-4)	3	3
Protection and improvement of the human environment (0-3)	3	3
Oxygen formation and purification of the atmosphere (1-4)	2	2
Recreational, tourist and health function (1-4)	2	3
Impact on fauna and hunting (1-3)	2	3
Protective forests and special purpose forests (3,8,9,10)	8	8
TOTAL	27	29

WHAT HAS BEEN DONE SO FAR?

- ✓ 1320 inoculated seedlings (*Q. ilex* + *Tuber aestivum*, *T. melanosporum*)
- ✓ 19 different tests
- ✓ 3 acorn storage tests
- ✓ 2 acorn germination containers tests
- ✓ 2 methods of inoculation



PROJECT FUTURE (this and next year)

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To continue the research and expand the research to:

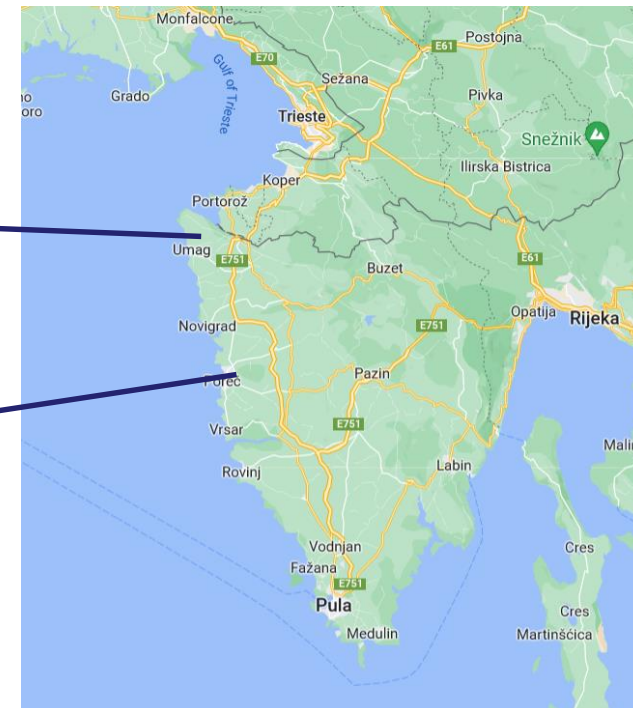
- *Quercus pubescens*
- *Quercus cerris*
- *Carpinus betulus*
- *Carpinus orientalis*
- *Tilia cordata*
- *Pinus halepensis*

CROATIAN FORESTS

- To establish 2 truffle plantations (3 and 1 ha) in Istria
- Reforestation experiment
- To build a dedicated lab + greenhouse

1 ha,
Savudrija

3 ha,
Poreč



THANK YOU FOR YOUR ATTENTION!



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