

# Poggio Torselli

## Tuscany (Italy)

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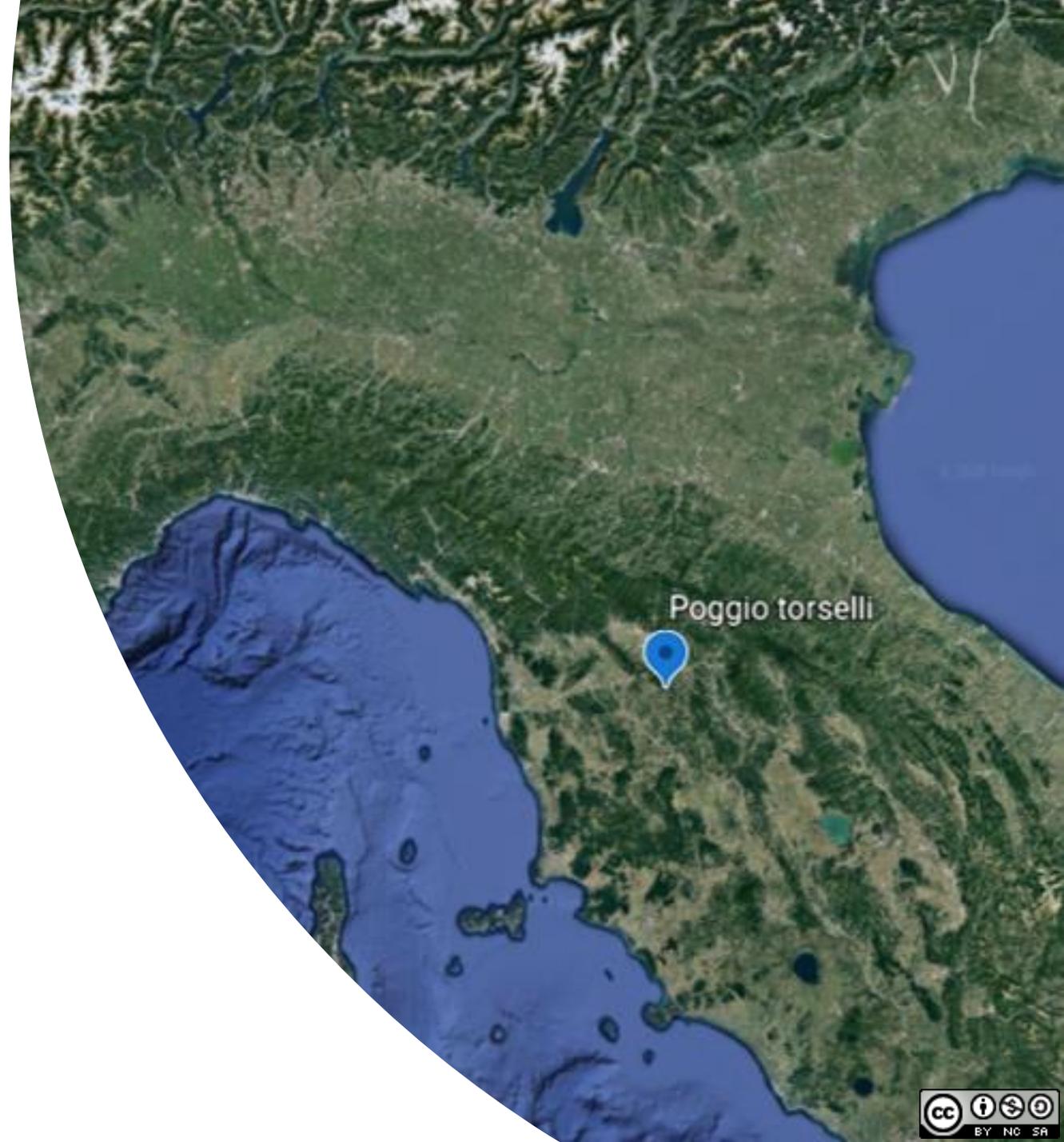
### EXPERIMENT GOALS

To assess in a long-term perspective the effectiveness of the biochar soil amendment in an **olive grove**, in terms of:

- soil carbon sequestration and soil fertility;
- increasing soil water retention;
- olive grove productivity.

### DURATION OF THE EXPERIMENT

Started on 2019 - ongoing



## SITE DESCRIPTION

The field experiment was done in an olive grove at the “Poggio Torselli Estate” (Lat. 43°40′15″N; Long. 11°12′ 33″E; 230 m a.s.l.), planted in 1980 (cv. Frantoio). The olive grove has plant density of 400 trees ha<sup>-1</sup> (5 x 5 m) with a rows orientation is East–West. The olive grove is not irrigated. The soil is a clay loam with a pH of 7.5 (USDA). Two treatments were applied selecting 14 plants of the same age for each treatments. Biochar treatment: we distributed 15 kg (dry weight) of biochar per plant in the crown tree projection and after biochar application by hand, the biochar was incorporated into the soil using a chisel plow tiller at 0.3 m depth. The 14 Control plant were identified and the same soil and the same tillage was of the biochar plants has been done.

## BIOCHAR AND ITS APPLICATION IN THE FIELD

The biochar applied was a commercial charcoal obtained wood through a pyrolysis process. The biochar at the end of the pyrolysis was crushed into particles smaller than 5 cm of diameter before the soil application. Chemical and physical characteristics have been determined.



## **MEASURED PARAMETERS**

**Field conditions:** meteorological data,

**Soil analysis and interactions with biochar:** periodic soil analysis, pH, water retention, soil biological index.

**Biochar dynamics and matrices:** soil carbon content.

**Production data:** quality and quantity of olive.

## **PLANNED ACTIVITIES OR POTENTIAL EXPERIMENTAL ACTIVITIES**

The long-term field experiment of Poggio Torselli will be designed to represent an opportunity for the scientific community to test and verify the long-term effects of adding biochar to soil.



## PRESENTATION OF THE WORKING GROUP

The Poggio Torselli field experiment was planned and done by the Biochar Group of the IBE-CNR in collaboration with the Universities of Firenze, Insubria and Padova with a participation of the Poggio Torselli Estate

## CONTACTS

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## LOGOS

