

# Frescobaldi

## Firenze, Tuscany (Italy)

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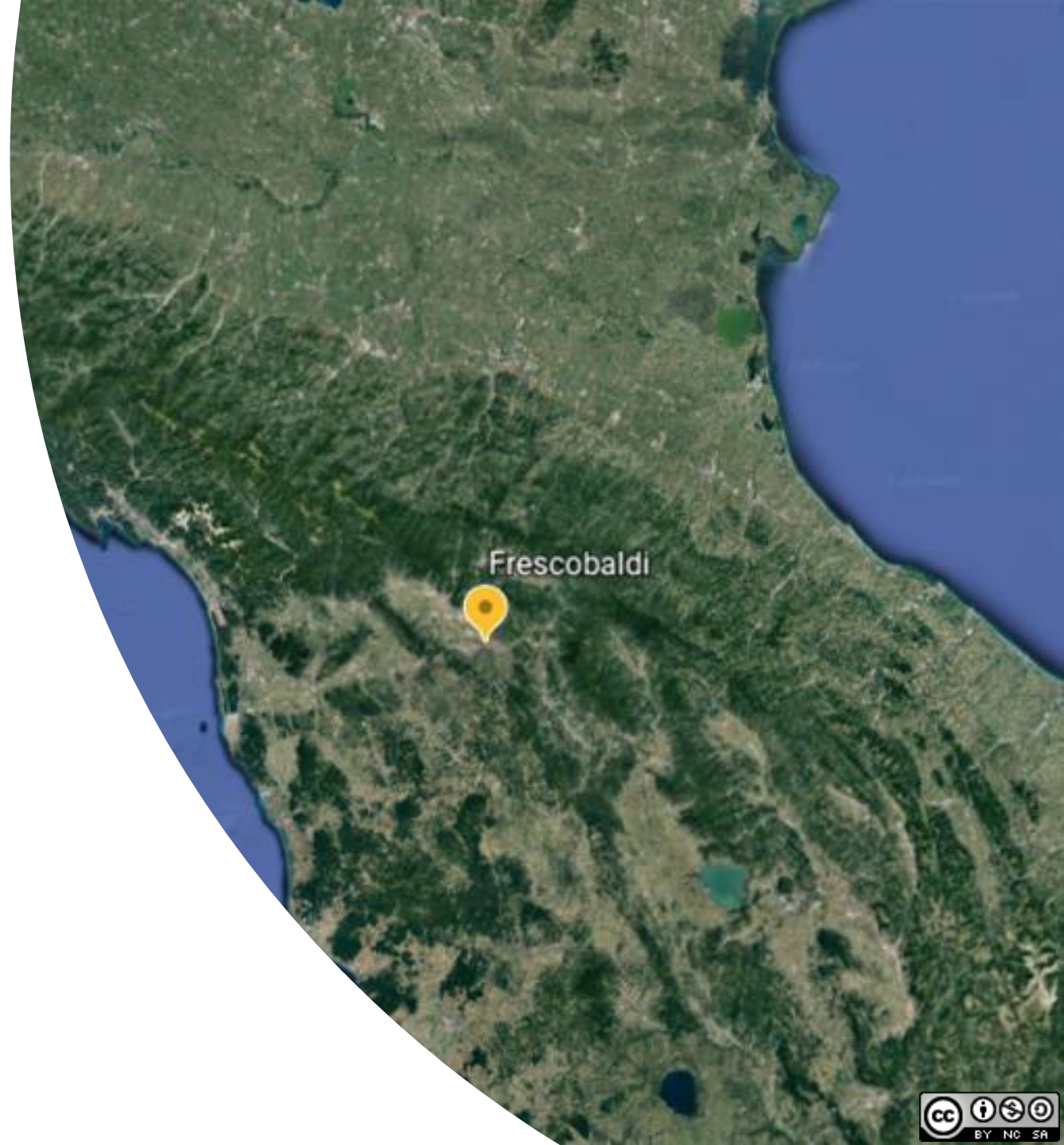
### EXPERIMENT GOALS

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 “Caldine” at the “Marchesi Frescobaldi – Sieci Estate” (Lat. 43°47'59"N; Long. 11°24' 02"E; 240 m a.s.l.). The olive grove has plant density of 140 trees ha<sup>-1</sup> (6 x 6 m); the rows' orientation is East–West. The olive grove is not irrigated. A strip plot experiment, with two treatments and four replicates was setup in 2019. Each plot had a surface area of 864 m<sup>2</sup> (12 m in width and 72 m in length) including 3 olive rows and 2 inter-rows. The treatments were: a single biochar application at a rate of 30 ton ha<sup>-1</sup> in 2019 and a control. Biochar was applied in the inter-row space of the olive grove using a spreader and it was incorporated into the soil using a chisel plow tiller to 0.3 m depth.

## BIOCHAR AND ITS APPLICATION IN THE FIELD

The biochar applied was a produced by Frescobaldi using wood, through a gassification process at temperature of 900°C. The biochar complies with Italian legislation on biochar.



## 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 olives.

## PLANNED ACTIVITIES OR POTENTIAL EXPERIMENTAL ACTIVITIES

Frescobaldi's long-term field experiment 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 Frescobaldi field experiment was planned and done by the Biochar Group of the IBE-CNR in collaboration with Frescobaldi and the University of Florence.

## BIBLIOGRAPHY

[https://www.frescobaldi.com/wp-content/uploads/2019/02/IT\\_Ecosostenibilita.pdf](https://www.frescobaldi.com/wp-content/uploads/2019/02/IT_Ecosostenibilita.pdf)

## CONTACTS

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## LOGOS

