

In partnership with Marlborough Grapegrowers Cooperative, NZ Biochar, Rothay Vineyard and Nelson Marlborough Institute of Technology, a trial has been established on a newly re-developed (2022/2023 season) Sauvignon blanc vineyard in Marlborough.

This study is investigating the potential benefits of varying biochar application rates, applied at a rate of 0, 0.5, 2, 5, and 10 tonnes per hectare (trial plan below). The biochar was sourced from two local NZ producers using forestry waste materials.

To evaluate the impact of various biochar application rates, vine growth, yield and fruit quality parameters will be measured. Furthermore, soil samples will be collected to determine changes in soil properties such as nutrient availability and soil microbial health. An economic analysis will be conducted to evaluate the economic feasibility of biochar application in a vineyard with the cost of biochar application compared to the potential benefits of increased yield, fruit quality and/or soil health.

Johnny and Dennis applying the biochar along the vineyard rows



## Project objectives:

The main objective of this research is to evaluate the effects of biochar application on soil health, grapevine growth, and fruit quality in a Marlborough vineyard. Specifically, the study will aim to:

- 1, Determine the effects of various biochar application rates on soil properties, such as nutrient availability and microbial diversity
- 2, Evaluate the impact of various biochar application rates on the growth, yield, and fruit quality of Sauvignon blanc grapevines
- 3, Assess the economic feasibility of biochar application in a Marlborough vineyard context

## Biochar Trial setup

Replicated block design, Treatment replicate plots are 3 bays long, Experimental area 0.27 ha

Seven Treatments:

- Control
- Soil pro biochar 0.5 t/ha, 2 t/ha, 5 t/ha, 10 t/ha
- Kaituna sawmill biochar 2 t/ha, 5 t/ha

Rep	Row 3	Row 4	Row 5	Row 6	Row 7	Row 8	Row 9
1	Soil pro 5	Control	Kaituna 2	Soil pro 2	Soil pro 0.5	Soil pro 10	Kaituna 5
2	Kaituna 5	Soil pro 0.5	Control	Soil pro 5	Soil pro 2	Kaituna 2	Soil pro 10
3	Kaituna 2	Soil pro 5	Soil pro 2	Soil pro 10	Kaituna 5	Soil pro 0.5	Control
4	Soil pro 0.5	Kaituna 2	Soil pro 10	Kaituna 5	Soil pro 5	Control	Soil pro 2
5	Soil pro 2	Soil pro 10	Soil pro 5	Control	Kaituna 2	Kaituna 5	Soil pro 0.5
6	Control	Kaituna 5	Soil pro 0.5	Kaituna 2	Soil pro 10	Soil pro 2	Soil pro 5