

Anti - frost

Functional unit: 20 ha vineyard / year

- Anti-frost towers
- Micro-sprinklers
- Organic products

Anti-frost towers



They are steel towers around 13 meter high that have a propeller with a rotating blade that blows the air at that height, where it is warmer than in the ground, and drives it to the stocks.

These towers are designed to prevent grapes and vines from suffering the consequences of a dramatic temperature fall. However, they require high initial investment and have high fuel consumption.

ENVIRONMENTAL ASPECTS

- | | |
|--|--|
| ✓ Energy consumption | <input type="checkbox"/> Non-hazardous waste |
| <input type="checkbox"/> Water consumption | <input type="checkbox"/> Hazardous waste |
| ✓ Resources consumption | <input type="checkbox"/> Wastewater |
| ✓ Noise | ✓ Atmospheric emissions |

ECONOMIC STUDY

Functional unit: 20 ha vineyard

Initial investment:
90 000 €

Annual expenditure:
8 062.50 €

CRITICAL FACTORS

- | | |
|--|------------------------------|
| ✓ Large investment | ✓ Organisational changes |
| <input type="checkbox"/> Improvement potential | ✓ Training needs |
| ✓ Technological changes | ✓ Impact on vineyard quality |

Micro



ENVIRONMENTAL

- | |
|--|
| ✓ Energy consumption |
| ✓ Water consumption |
| <input type="checkbox"/> Resources consumption |
| ✓ Noise |

ECONOMIC

Functional unit:

Initial investment:
46 311.17 €

CRITICAL

- | |
|--|
| ✓ Large investment |
| <input type="checkbox"/> Improvement potential |
| ✓ Technological changes |

sprinklers

They are a way of frost protection by a sprinkler irrigation system in which a certain amount of water is sprayed over the plant, keeping the plant right in the freezing temperature while frosting is taking place.

A layer of water and ice is formed at the surface of the most sensitive parts of the plant, keeping its temperature at 0 °C, preventing it from reaching the critical threshold for the plant to freeze.

ASPECTS

- Non-hazardous waste
- Hazardous waste
- Wastewater
- Atmospheric emissions

STUDY

20 ha vineyard

Annual expenditure:
6 892.30 €

FACTORS

- Organisational changes
- Training needs
- Impact on vineyard quality

Organic products



Today there is an alternative to the control of frost by using organic products.

This technique employs substances that stimulate the formation of auxins in plants. This kind of plant hormones facilitates the conversion of starch (insoluble) into glucose (soluble solid) and, at the same time, brings about an increase in the soluble aminoacids, preventing the water of the intercellular spaces from freezing.

ENVIRONMENTAL ASPECTS

- | | |
|---|--|
| <input checked="" type="checkbox"/> Energy consumption | <input type="checkbox"/> Non-hazardous waste |
| <input type="checkbox"/> Water consumption | <input type="checkbox"/> Hazardous waste |
| <input checked="" type="checkbox"/> Resources consumption | <input type="checkbox"/> Wastewater |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Atmospheric emissions |

ECONOMIC STUDY

Functional unit: 20 ha vineyard

Initial investment:
No investment

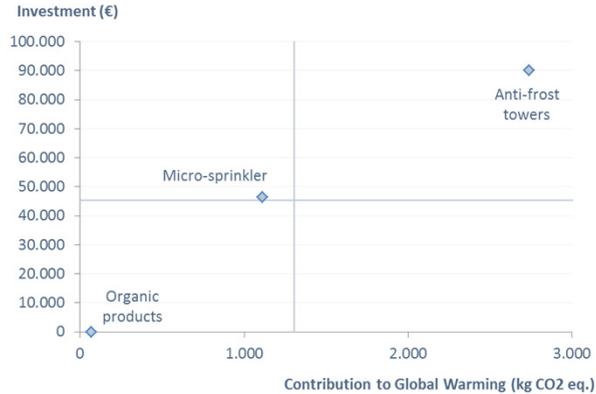
Annual expenditure:
1 985.98 €

CRITICAL FACTORS

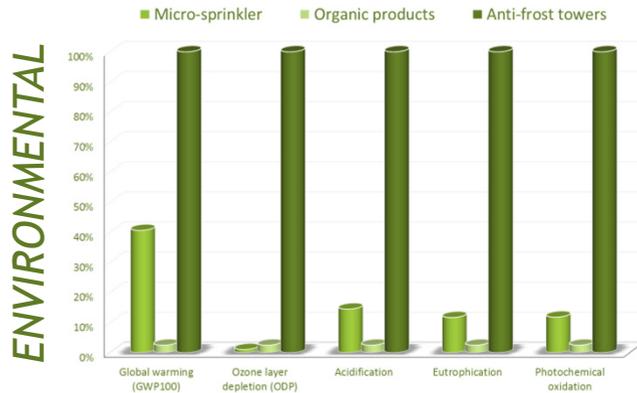
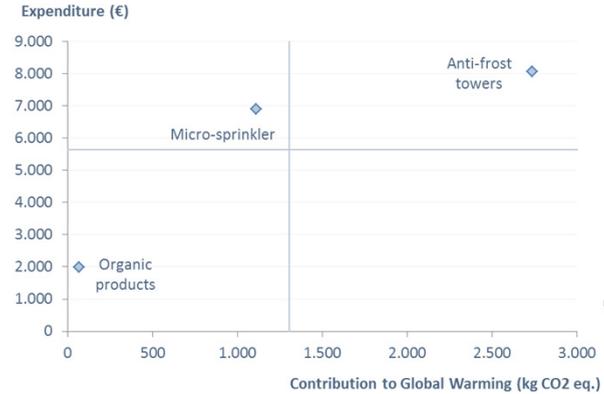
- | | |
|---|--|
| <input type="checkbox"/> Large investment | <input checked="" type="checkbox"/> Organisational changes |
| <input type="checkbox"/> Improvement potential | <input checked="" type="checkbox"/> Training needs |
| <input checked="" type="checkbox"/> Technological changes | <input checked="" type="checkbox"/> Impact on vineyard quality |

Economic – Environmental Results

INVESTMENT - ENVIRONMENTAL LOAD



EXPENDITURE - ENVIRONMENTAL LOAD



PRIORITISATION

INVESTMENT - kg CO ₂ eq.	EXPENDITURE - kg CO ₂ eq.	TOTAL	RESULTS
3	3	6	ANTI-FROST TOWERS
2	2	4	MICRO-SPRINKLER
1	1	2	ORGANIC PRODUCTS