

Climate control

Functional unit: 3 000 barrels ~ 675 000 l wine

- Natural (winery design)
- Forced (fan coil)

Natural (winery design)



Natural climate control is used for those wineries that do not require any installation for the control of temperature and humidity, particularly in the aging areas, both in the barrel and the bottle rooms.

These wineries have underground rooms, as they are built in caves, or under the ground level.

They also have an entrance tunnel that ends in an outer wall. This entry is usually oriented to the north to promote ventilation.

Currently, wineries can be designed estimating beforehand indoor temperatures depending on the soil type. It is also possible to choose the most appropriate location and orientation.



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 type="checkbox"/> Resources consumption | <input type="checkbox"/> Wastewater |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Atmospheric emissions |

ECONOMIC STUDY

Functional unit: 3 000 barrels ~ 6 750 000 l wine

Initial investment:
According construction budget

Annual expenditure:
No planned expenditure

CRITICAL FACTORS

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

Forced (fan coil)

Forced air conditioning requires controlling the climatic conditions using an item of equipment.

Fan-coils are usually employed both in the barrel room and at the offices of the facility.

The basic elements of a fan-coil are finned tube coils and a fan section. The fan blows air continuously through the coil which is supplied with either hot or chilled water coming from the heat pumps. In this way the room air is heated or cooled accordingly.

Recirculated air is filtered so as to remove dust, etc.

Hot or chilled water coming into the fan-coil is distributed through pipes from a collector.



ENVIRONMENTAL ASPECTS

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

ECONOMIC STUDY

Functional unit: 3 000 barrels ~ 6 750 000 l wine

Initial investment:
3 375 €

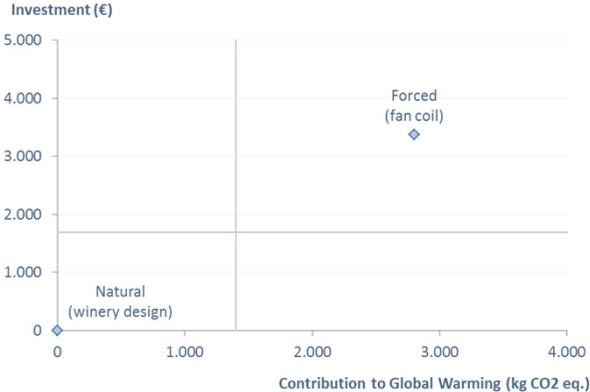
Annual expenditure:
1 623 €

CRITICAL FACTORS

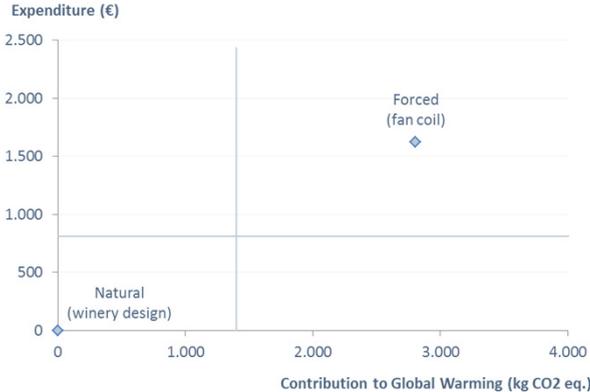
- | | |
|--|---|
| <input type="checkbox"/> Large investment | <input type="checkbox"/> Organisational changes |
| ✓ Improvement potential | <input type="checkbox"/> Training needs |
| <input type="checkbox"/> Technological changes | ✓ Impact on wine quality |

Economic – Environmental Results

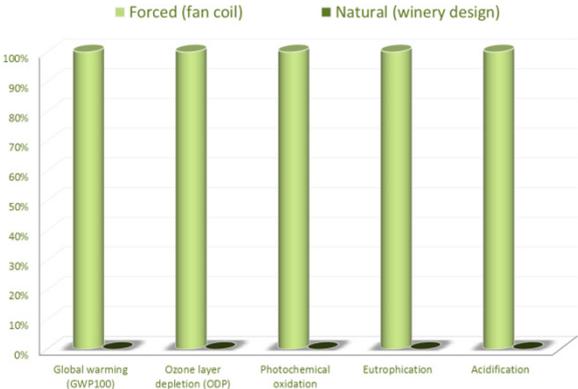
INVESTMENT - ENVIRONMENTAL LOAD



EXPENDITURE - ENVIRONMENTAL LOAD



ENVIRONMENTAL



PRIORITISATION

INVESTMENT - kg CO ₂ eq.	EXPENDITURE - kg CO ₂ eq.	TOTAL	RESULTS
3	3	6	FORCED (FAN-COIL)
1	1	2	MANUAL (WINERY DESIGN)