

Agro-chemicals

Functional unit: 1 ha vineyard/ year

- Conventional fertilization
- Fertigation
- Inter-vine edger
- Cover crops
- Conventional herbicides

Fertilizers



The chemical industry has made available a wide variety of useful highly efficient and low-cost products for agriculture that have been used in vineyards for decades.

The main drawback of these substances is, in some cases, their toxicity for both farmers and the environment.

ENVIRONMENTAL ASPECTS

- | | |
|---|---|
| <input checked="" type="checkbox"/> Energy | <input type="checkbox"/> NHW |
| <input checked="" type="checkbox"/> Water | <input checked="" type="checkbox"/> HW |
| <input checked="" type="checkbox"/> Resources | <input type="checkbox"/> Wastewater |
| <input type="checkbox"/> Noise | <input checked="" type="checkbox"/> Emissions |

ECONOMIC STUDY

1 ha vineyard

<i>Initial investment:</i> 2 800 €	<i>Expenditure:</i> 142 €/year
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CRITICAL FACTORS

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Large investment | <input type="checkbox"/> Organisation |
| <input checked="" type="checkbox"/> Improvement | <input type="checkbox"/> Training |
| <input type="checkbox"/> Technology | <input type="checkbox"/> Quality |

Fertigation



Technique consisting of the application of fertilizer or required nutrients on the soil.

This technique takes advantage of the water flow delivered from the irrigation system.

There are cost savings by optimizing the consumption of fertilizers and labor, but it requires a previous installation of irrigation.

ENVIRONMENTAL ASPECTS

- | | |
|---|--|
| <input checked="" type="checkbox"/> Energy | <input type="checkbox"/> NHW |
| <input checked="" type="checkbox"/> Water | <input checked="" type="checkbox"/> HW |
| <input checked="" type="checkbox"/> Resources | <input type="checkbox"/> Wastewater |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Emissions |

ECONOMIC STUDY

1 ha vineyard

<i>Initial investment:</i> 924 €	<i>Expenditure:</i> 100 €/year
<small>Installed drip irrigation system</small>	

CRITICAL FACTORS

- | | |
|--|--|
| <input type="checkbox"/> Large investment | <input type="checkbox"/> Organisation |
| <input type="checkbox"/> Improvement | <input checked="" type="checkbox"/> Training |
| <input checked="" type="checkbox"/> Technology | <input checked="" type="checkbox"/> Quality |

Cover



It also gives vigour to the maintenance of soil, increasing moisture

ENVIRONMENTAL

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

ECONOMIC

1 ha

Initial investment:
No investment

CRITICAL

- | |
|---|
| <input type="checkbox"/> Large investment |
| <input type="checkbox"/> Improvement |
| <input type="checkbox"/> Technology |

crops

Crops (commonly leguminous) planted in the passageway between rows of stocks contribute to improve soil nutrient content, vine growing and also prevent erosion and improve moisture retention. Therefore they are recommended for sustainable viticulture.

ASPECTS

- NHW
- HW
- Wastewater
- Emissions

STUDY

vineyard

Expenditure:
60 €/year

FACTORS

- Organisation
- Training
- Quality

Inter-vine edger



Farm tool used for tilling the soil between stocks in the same row in order to remove weeds.

It consists of an arm, that prevents stock damage, and a ploughshare.

A tractor is required for its running. It avoids the use of herbicides and prevents water competitiveness as compared to cover crops.

ENVIRONMENTAL ASPECTS

- | | |
|---|---|
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| <input type="checkbox"/> Water | <input type="checkbox"/> HW |
| <input checked="" type="checkbox"/> Resources | <input type="checkbox"/> Wastewater |
| <input type="checkbox"/> Noise | <input checked="" type="checkbox"/> Emissions |

ECONOMIC STUDY

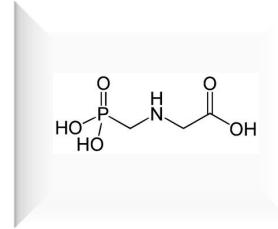
1 ha vineyard

<i>Initial investment:</i> 800 €	<i>Expenditure:</i> 90 €/year
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CRITICAL FACTORS

- | | |
|--|--|
| <input type="checkbox"/> Large investment | <input type="checkbox"/> Organisation |
| <input type="checkbox"/> Improvement | <input checked="" type="checkbox"/> Training |
| <input checked="" type="checkbox"/> Technology | <input checked="" type="checkbox"/> Quality |

Herbicides



As in the case of fertilizers, a variety of chemicals used to eliminate weeds are available in the market nowadays. There is a wide range of effective and low cost herbicides for the vineyard.

However, they require careful and accurate application, since misuse can damage the plant. Besides, their toxicity must not be forgotten.

ENVIRONMENTAL ASPECTS

- | | |
|---|---|
| <input checked="" type="checkbox"/> Energy | <input type="checkbox"/> NHW |
| <input checked="" type="checkbox"/> Water | <input checked="" type="checkbox"/> HW |
| <input checked="" type="checkbox"/> Resources | <input type="checkbox"/> Wastewater |
| <input type="checkbox"/> Noise | <input checked="" type="checkbox"/> Emissions |

ECONOMIC STUDY

1 ha vineyard

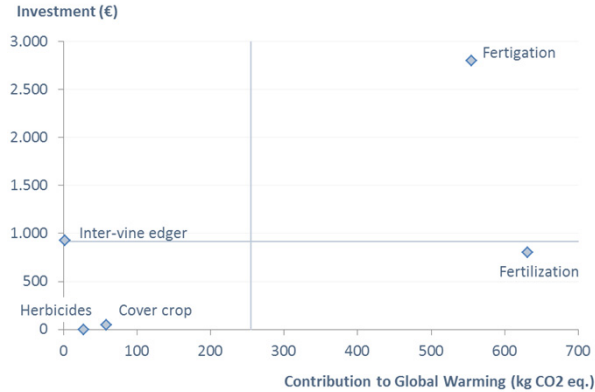
<i>Initial investment:</i> 45.75 €	<i>Expenditure:</i> 20 €/year
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CRITICAL FACTORS

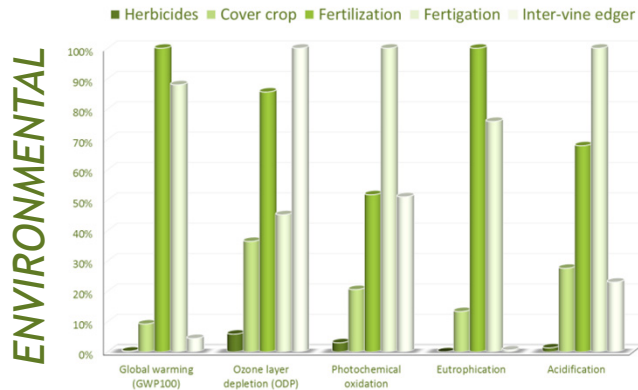
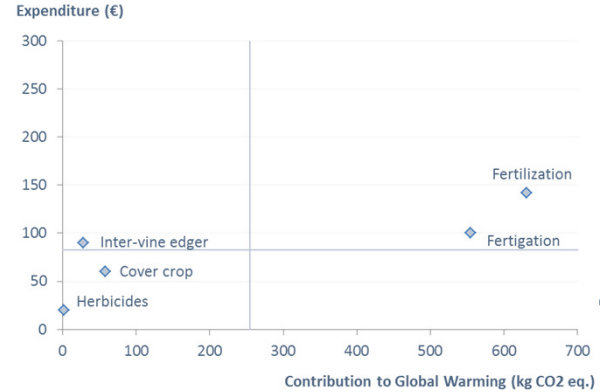
- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Large investment | <input type="checkbox"/> Organisation |
| <input checked="" type="checkbox"/> Improvement | <input type="checkbox"/> Training |
| <input type="checkbox"/> Technology | <input type="checkbox"/> Quality |

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	FERTIGATION
2	3	5	FERTILIZATION
2	2	4	INTER-VINE EDGER
1	1	2	COVER CROP
1	1	2	HERBICIDES