

Practice SQ n° 9

IOCONCIV INTRODUCTION AND OPTIMIZATION OF TECHNIQUES AND SYSTEMS FOR CONTROL OF VINEYARD WEED FLORA

Introduction

Category: Good Practice (GP)

Practice identity card

#Reduce herbicides, cover crops

#SQ, food, oil, industrial, Good Practice (GP), Italy



Short description

- ➔ The general objective is to reduce the use of herbicides in Tuscan vineyards (glyphosate in particular) and improve the fertility of vineyard soils. The proposed innovation involves the use of cover crops under the vine rows in order to reduce the use of herbicides or soil tillage with consequent economic and environmental benefits.

Implementation process

Which practice is considered as the standard in this region? In the Region, practices are different, it depends on area and knowledge of the farmers.

What was the on-farm issue/challenge/opportunity that led to the implementation of the practice?

Weed control in the sub-row, the decrease in soil fertility, the loss of biodiversity, soil erosion and the increase in the use of chemicals represent the weak points of most of the Tuscan winemaking system.

The project tested eco-friendly techniques in 4 farms with different soil characteristics and management systems (conventional and organic). Each farm tested 3 soil and weed management systems in the vineyard during a period of 3 years. The management systems tested were: (TA) conventional system based on soil tillage under and between the rows + application of herbicide under the row (for conventional agriculture); (PI) grassing of the sub-row with *Trifolium subterraneum* + inter-row managed conventionally; (TI) grassing of the sub-row with *Trifolium subterraneum* + grassing of the inter-row with a mixture of different species. Grassing significantly improved the carbon balance by increasing carbon sequestration in soil and biomass and reducing emissions.

How long did it take to implement the practice and which are the measures needed to monitor: It Took 44 months

Logistics

- **Logistic aspects to consider:** The project needed and developed a prototype to work under-row and/or inter-row cultivation.
- **Skill/education level required:** rather low

Agronomical traits

- **Can the practice be applied to a multitude of cultivation techniques?** yes for trees
- **Targeted crop categories:** food, oil, industrial
- **Soil types suitable for the practice:** peaty, sandy, clay, loamy, chalky, silty
- **Expected effect on crop yield:** similar
- **Expected effect on crop yield variation:** increase
- **Expected effect on crop quality:** increase
- **Expected effect on crop quality variation:** increase
- **Which costs may increase due to the practice?** equipment
- **Which costs may decrease due to the practice?** fertilizers, herbicides, fuel, land, energy
- **Expected long-term/indirect economic benefits of the practice:** Yes
- **Expected effect on the leaching of nutrients:** There is any leaching
- **Specific materials applicated through the practice:** biochar

Administrative context

- **Does the practice qualify for subsidies?** yes, from CAP
- **Status of the legal framework that regulates the practice:** well-developed
- **Are there any policy barriers complicating the practice's application?** No
- **Does the practice involve the use of hazardous substances?** No
- **Is the practice compliant with EU organic farming practices?** Yes
- **Is the practice supported by Eco-schemes?** We do not use eco-scheme for these intervention
- **Are there any gaseous emissions to be considered upon application of the practice?** No

- **Expected effects from the practice on the time occupation of the farmer?** time-saving
- **May the practice contribute to a better public image of agriculture?** Yes
- **May the practice improve the farmer's self-image?** Yes,
 - The innovative techniques tested proved to be economically and environmentally sustainable.
 - The grassing significantly improved the carbon balance by increasing its sequestration in the soil and biomass and reducing emissions.
 - and it is the case since it contributes to soil quality improvement, water use improvement.

Contact

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Find out more

Source of information Data base of RDP projects in particular Operational Group

Additional info/links: IOCONCIV <https://www.ioconciv.it/>