Alternative to herbicide use: functional traits characterization of promising plants for vine row sowing

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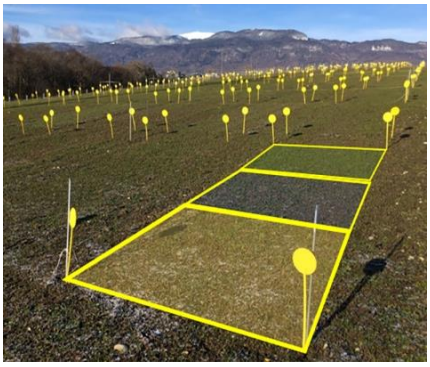
Objectives

Demonstrate that the choice of a green cover made by selected, low competitive, allelopathic species maximizes the ecosystem services if compared to other weeds management strategies (herbicides, mechanical weeding, spontaneous flora).

Methods | Experiences | Results

Different management systems were compared, simulating the alternatives a winegrower has to manage its vineyard: chemical weeding, mechanical weeding, spontaneous flora, sown flora. Five species for the vine row cover were tested alone and in a mix: *Bromus tectorum, Medicago lupulina, Clinopodium vulgare, Origanum vulgare, Prunella vulgaris.* Different ecotypes were studied. Two sowings were realized and compared: one in the autumn 2018, one in the spring 2019. The effect of the mowing intensity was also investigated.
The performances of the sown crop were evaluated in terms of composition of the cover, height, density, number of specimens, effect on the biodiversity, richness of species, biomass production.
Bromus tectorum and *Medicago lupulina* resulted as the most promising, assuring a good performance but also a good continuity during the time. An autumnal mix of different, low competitive, allelopathic species is suggested, to enhance the synergistic effects between different varieties and the ecosystem services that they provide. A mowing before the harvest resulted as an easy solution to assure the control of the weeds, but also the continuity of the sown species in the following year.

Field where the experience was realized, in Changins, Nyon (VD). The repartition of the trial in different parcels can be clearly seen.



Repartition of each parcel of 6mx2m in 3 sub-parcels of 2mx2m, to investigate the effect of 3 different mowing intensities.

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Degree programme
Viticulture and Enology

Field of application
Viticulture, Weed management

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