



Do trees and hedges help control pests and diseases in vineyards? Agroforestry to improve vineyard management and image.

www.eurafagroforestry.eu/afinet/

The grapevine moth causes important losses to vineyard owners: the larvae perforate the grapes and help spread diseases (such as *Lobesia botrana* spreading *Botrytis* or spreading *flavescence dorée*). Farmers then need to frequently apply pesticides to control the moths and mould, which impacts the profitability and the environment. Bats can play a relevant action in the protection of economically important crops against lepidopteran pests.

Although they are present in intensive vineyards, bats still prefer hunting in more natural environments such as tree hedgerows. On pilot plantations involving the plantation of tree alignments in vineyards in the South-West area of France, a reduction of occurrence of grapevine moth has already been reported along with an increased presence of bats at dusk. Other pilot plantations with bushy hedges in vineyards rely on the screen effect of hedges to isolate plots from each other, contributing to slow down the spread of pathogens and diseases like grey mould.

With the economic value of timber and hedge wood, the owner of the vineyard can compensate the slight loss of wine production resulting from these optimisations of the biological control of the plots. Among positive side effects, the presence of trees and hedges can help control the level of shade and moisture of vineyards exposed to increasingly extreme weather events.

Research is now ongoing to understand the influence of tree species on the presence of bats and birds and their control potential.

For more information:

Thiéry, D., Louâpre, P., Muneret, L. et al., Biological protection against grape berry moths. A review, *Agron. Sustain. Dev.* (2018) 38: 15.

Tietje, William D.; Weller, Theodore J.; Yim, Christopher C. 2015. Bat activity at remnant oak trees in California Central Coast vineyards. In: Standiford, Richard B.; Purcell, Kathryn L., tech. cords. Proceedings of the seventh California oak symposium: managing oak woodlands in a dynamic world. Gen. Tech. Rep. PSW-GTR-251. Berkeley, CA: U.S.

Department of Agriculture, Forest Service, Pacific Southwest Research Station: 97-106.

<https://www.fs.usda.gov/treesearch/pubs/49974>

Habitat diversity promotes bat activity in a vineyard landscape, Rochelle Marie Kellya,b,, Justin Kitzesc, Houston Wilsona, Adina Merenlendera, *Agriculture, Ecosystems & Environment*, Volume 223, 1 May 2016, Pages 175-181



Figure 1. Lagardère EARL vineyard in Lagardère (32310), France, Association Française d'Agroforesterie, www.agroforesterie.fr

Léo Godard

Association Française d'Agroforesterie (AFAF)