



“The use of organic wastes for soil-covering of vineyards”

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In: Acta Horticulturae. 652: 191-197. 2004

- *Prevention of erosion, and water conservation* are two important considerations in dry vineyard ecosystems, such as the beautiful Balaton Lake grapegrowing region, Hungary, which is home to 4 of the 22 wine regions in the country.
- Every year around the Balaton Lake large amounts of plant waste (*Phragmites sp.*, *Carex sp.*, *Solidago canadensis*) are produced from nearby pastures and meadows (in fact, 8,000 potential tons annually!). Not having a place to go, this waste is eliminated through burning, an environmental problem, when not left unmowed and un-maintained.
- Could this waste have a beneficial use in the vineyard? If the answer is yes, how long would it be able to keep the soil weed-free? What effect would it have on the soil characteristics, particularly moisture? How would it affect the grapes themselves (yield, grape quality, plant nutrient status)? Finally, would it lead to unexpected problems, like rodents or the introduction of foreign aggressive seeds?
- To find the answers, the authors compared the 3 following treatments at the experimental vineyard of the Research Institute for Viticulture and “Enology” of Badacsony (Hungary): 1) **organic waste mulch**, spread at 1 kg/m², 2) **cover crop**, which consisted of leaving the native grass (authors don’t mention species), regularly mowed, and 3) **mechanical cultivation**, using a cultivator followed by a disc. All treatments received 50 kg/ha N fertilizer annually. The grape varieties were *Pinot gris* and *Zenit*, spaced at 1 x 2 meters (3.3 x 6.6 ft). The trial ran from 2000 to 2002.
- **Duration of mulching effect.** The mulch ensured control of both mono- and dicotyledon weeds for 2 years. The only requirement was the specific elimination of *Convolvulus*, which was able to grow through the mulch. By the third year, the mulch wore thin, and patches of weeds showed up, which could be controlled with localized application of herbicide. After the third year, the mulch had to be replaced.
- **Effect on soil moisture and compactness.** Mulching gave the best results (highest moisture, lowest compactness), and the grass cover crop the least favorable.
- **Effect on plant nutrient status.** Of the three main macronutrients (N, K, P), mulching had a positive effect mainly on N supply (additional N was mineralized in the soil from the organic matter).
- **Effect on harvest.** Quoting the authors, “the effect of the mulch could be observed in the larger size and quantity of bunches, the must acquired a more acid character, and, in the case of drought, the sugar content tended to increase”.

The authors conclude that the use of waste matter for use in vineyard floors in the Balaton area is ready for introduction, as the mechanical spread of the mulch is also solved. The danger of introducing aggressive weed species present in the mulch is eliminated by collecting the mulch before seed ripening. The grower only needs to pay greater attention to a thorough fungal disease prevention, as the canopies under mulch tend to be more humid.

Author: Bibiana Guerra, Editor: Kay Bogart. This summary series funded by J. Lohr Vineyards & Wines.