

Is it possible to enhance natural regeneration and establishment of valonia oak using soil covers? We are working on it!

Anastasia Pantera¹, Andreas Papadopoulos¹, Panagiotis Kalaitzis², Lisa Radinovsky²

¹ Agricultural University of Athens, School of Plant Science, Department of Forestry and Natural Environment Management, Greece

² Mediterranean Agronomic Institute of Chania (MAICH), Department of Horticultural Genetics and Biotechnology, Chania, Greece

The valonia oak forests in Greece are traditional silvopastoral systems used for livestock grazing and acorn collection (for feed and tanneries). During the past decades, these systems have faced some challenges from human and natural factors that result, among other things, in low natural regeneration (Figure 1). Grazing has been pin-pointed as the primary cause for this. To test this hypothesis, we established permanent experimental plots in 2014 which enabled us to test a number of possible factors (Figure 2). After almost 8 years of grazing exclusion, the natural regeneration is still low. So, motivated by the LIVINGAGRO project, we looked at other possible causes of this poor natural vegetation, with drought being one of them. For this, we established a field trial in May 2021 to test the effect of soil covers on soil moisture and properties, and the valonia oak's natural vegetation. We evaluated seedlings' survival and growth in July 2021, October 2021 and April 2022 (Figure 3).



Figure 1: Land use change to agriculture confined the forest to the hillside and less fertile areas



Figure 2: One of the experimental plots

After almost a year, the results are promising, but long-term monitoring is



Figure 3: Seedlings survived the hot 2021 summer (picture taken in April 2022)

needed to evaluate the regeneration and to draw environmentally sound conclusions. The trial will continue this year with more focused and confined protection on already established seedlings.