
**Cattle and Esperia pony grazing sustains floristic diversity in Thermo-Mediterranean garrigues**

Primi R.[1], Filibeck G.[1], Salerno G.[2], Azzella M.M.[3], Cancellieri L.[1], Di Giovannantonio C.[4], Macciocchi A.[4], Danieli P.P. [1] Ronchi B. [1]

[1]*Dip. di Scienze Agrarie e Forestali, Università della Tuscia, Via S.C. de Lellis snc, 01100 Viterbo, Italy*

[2]*Dip. di Scienze - Università di Roma Tre, Viale G. Marconi 446, 00146 Roma, Italy*

[3]*Dip. di Pianificazione, Design e Tecnologia dell'Architettura, Sapienza Università di Roma, Via Gianturco 2, 00152 Roma, Italy*

[4]*Agenzia Regionale per lo Sviluppo e l'Innovazione dell'Agricoltura nel Lazio, Via R. Lanciani 38, 00162 Roma, Italy*

*Presenting and corresponding author: Bruno Ronchi, ronchi@unitus.it*

*Theatre presentation accepted and scheduled for session 73 "Equine nutrition – joint session with Animal Nutrition"*

Horses act as grazers or browsers according to feed availability, and several studies have shown their important role in maintaining biodiversity in agroecosystems. The objective of this study was to compare, in a mountain region of Central Italy, the effect on a Habitat of Community Interest (EU Directive 92/43 - Habitat Type 5330 - sub-type "32.23 Garigues dominated by *Ampelodesmos mauritanicus*") of *i*) successional grazing for 3 years of beef cattle and Pony di Esperia horses; *ii*) no grazing for more than 10 years and *iii*) burning followed by 3 years of spontaneous evolution. In the grazed area the cattle had access from mid-April to the end of June of 2021, followed by the Esperia ponies which grazed throughout the month of July; the average livestock load was established at 0.4 LU $ha^{-1}$ for bovine and 0.2 LU $ha^{-1}$ for equines. In May 2021, structure and diversity of the grassland

were assessed using 25 $m^2$ vegetation plots (N=17), randomly selected within the 3 treatments. Based on the abundance data, the vegetation types were identified and analysed through Cluster Analysis and PCA. Plant species richness (S) per plot (α-diversity) was compared through ANOVA. The α-diversity of the grazed plots (S=37±4) was significantly higher ($p$<0.05) than the burned (S=25±2) and non-grazed (S=24±3) ones. In the grazed area, all the plant species diagnostic of the habitat sub-type 32.23 were found. Thus, successional grazing of cattle and Esperia ponies had no negative influence on the conservation of the habitat. The driver that mainly determined richness was *A. mauritanicus* cover: mean value in grazed plots was 33%, vs. 45% (burned areas) and 69% (abandoned areas), thus releasing competition and allowing a higher species density.

**Funding**: This research was funded by the Italy - 2014-2020 Rural Development Programme (Regional) - Lazio, Agro-environmental Measure, T.O. 10.2.1 supporting the "conservation of plants and animals' genetic resources in agriculture" (CUP F85B18003830009, ARSIAL – UNITUS DAFNE project "Studio del comportamento alimentare del Pony di Esperia nelle comunità vegetali ad *Ampelodesmos mauritanicus*") European Union FEASR.