Botanical composition of the diet of horses in freedom of the Garraf Natural Park: Implications for wildfires prevention

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Figure 1: Miranda's Fundation horse grazing in Garraf Natural Park

INTRODUCTION:

The increase of global temperatures, land abandonment and overgrowth of vegetation are the causes of the increased risk of wildfires in the Mediterranean area. The use of extensive livestock for the reduction of vegetation cover is a very interesting low-cost tool for fire prevention, compared to other management systems.

OBJECTIVES:

The main objective of this work is to determine the botanical composition of horse's diet, in order to know what plant species are most grazed and to find out the role of these animals in pinewood undergrowth fuel reduction to guarantee the prevention of wildfires.

MATERIALS & METHODS:

- **Study area**: parcel of 10 acres located in Can Grau (Garraf Natural Park) where 10 horses of different breed were introduced.
- **Plant cover and biodiversity:** Canfield line-intercept method using 6 transects of 25 m were employed to determine the plant species and its quantity.
- **Micro-histological analysis of plant epidermis in faecal samples:** 6 faecal samples collected from 6 aleatory horses were processed with Steward method and analysed to determine and quantify the vegetal epidermis in the diet.
- **Vegetal preferences:** Ivlev's original electivity index was used to determine whether plant species were preferred, avoided, or not selected.

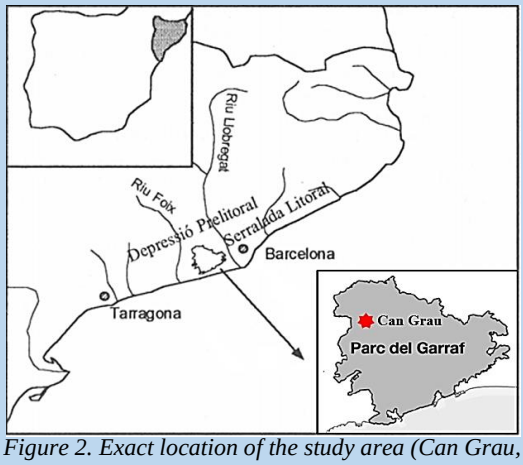

Figure 2. Exact location of the study area (Can Grau, Garraf Natural Park)

RESULTS:

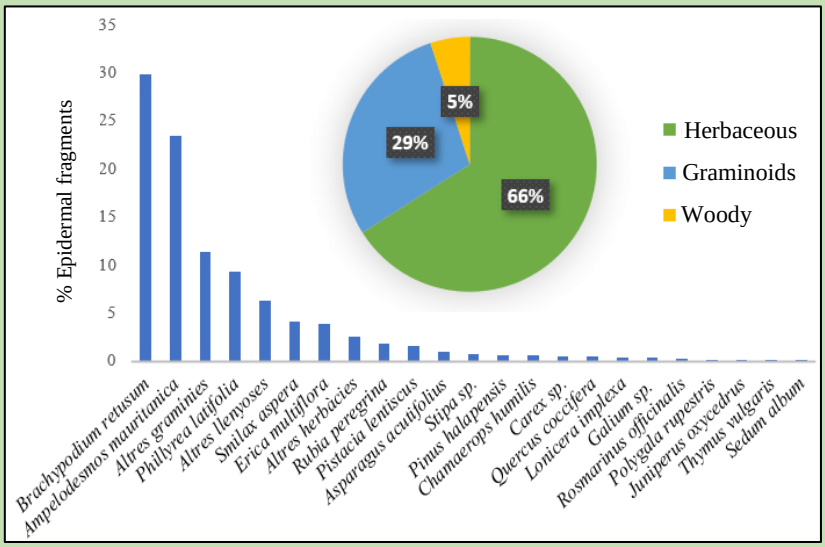

Figure 4. Botanic composition of the horse's diet (n=6)

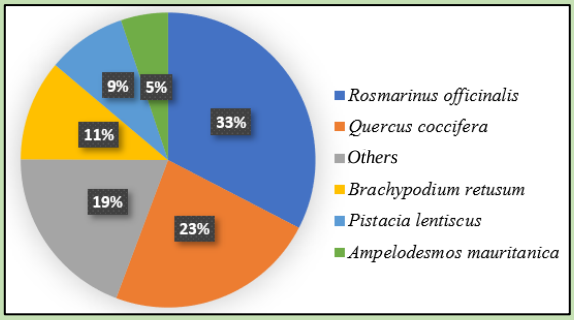

Figure 3. Percentage of relative plant cover of the main botanical species.

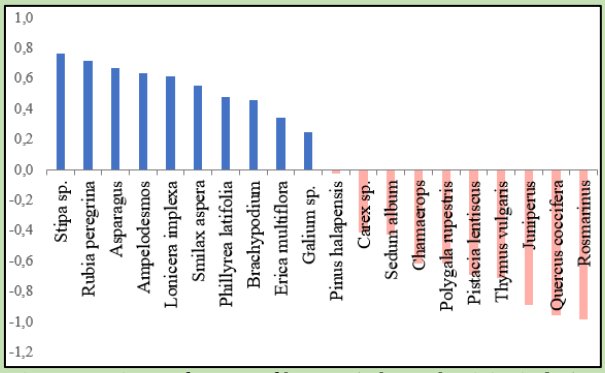

Figure 5. Diet preference of horses (Ivlev's electivity index)

CONCLUSIONS:

Horses introduced in Garraf Natural Park are a valuable tool to control the pinewood undergrowth species, especially graminoids. In spite of this, they avoid woody species that predominate in the environment, being necessary a different management for these. Therefore, it has been established that with grazing, the probability of fire generation and spread is reduced.