

Final degree project - June 2024 / Bruna Peñas Carbonell

INTRODUCTION

One of the main causes of forest fires is the presence of a large number of combustible tree species and high levels of biomass, mainly due to rural depopulation and land abandonment. In response to this problem, there is a social need to find alternatives that reduce the risk of fires and facilitate their prevention. Forest Horses Association is a non-profit organization that aims to carry out forest restoration and fire prevention projects with the support of horse herding.

OBJECTIVE

Conduct a behavioral study on four horses of Forest Horses Association to understand their role in fire prevention and analyze their behavior in free range conditions.

MATERIALS & METHODS



Figures 1-4: horses of the Forest Horses Association and its natural enclosure



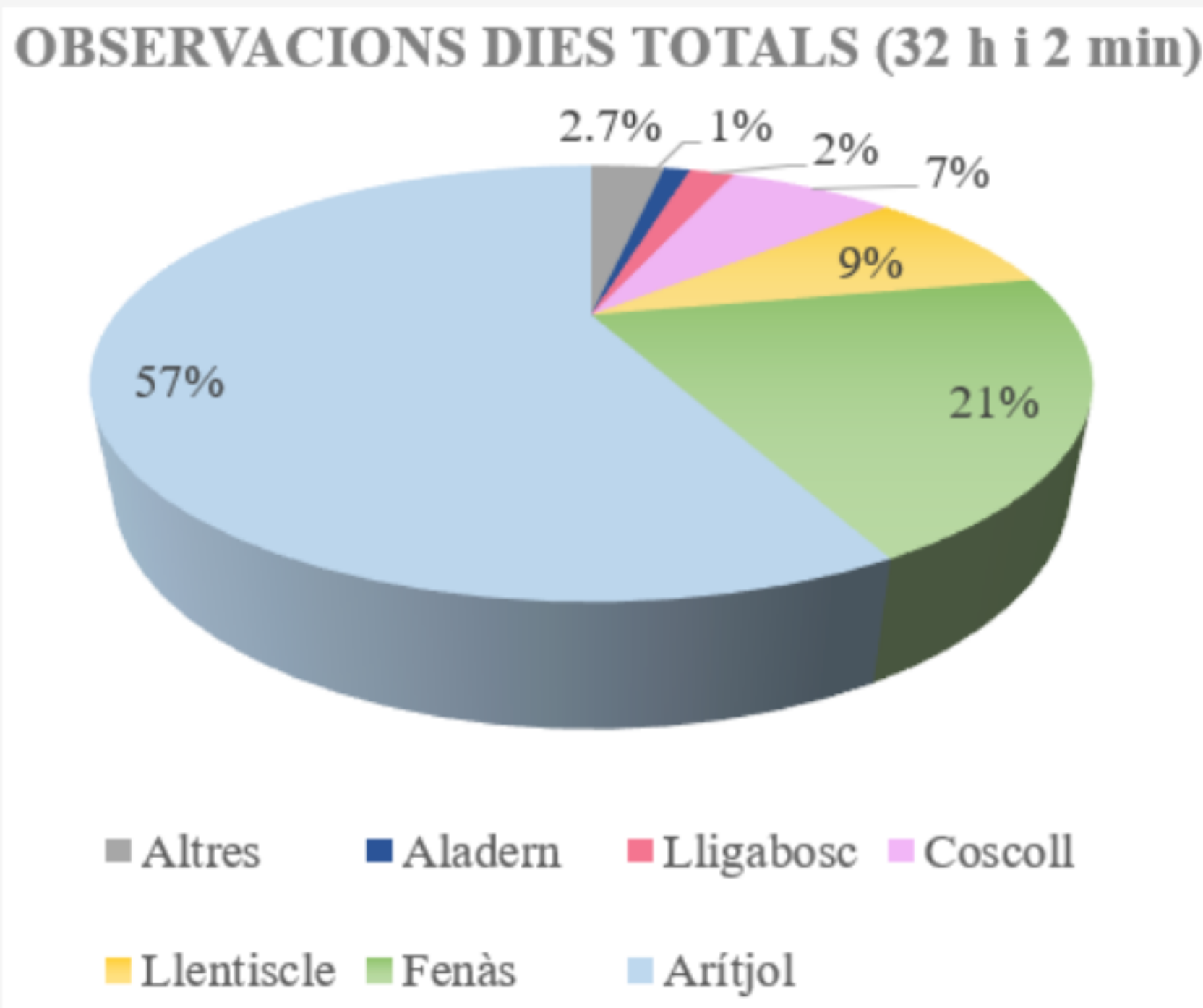
Figure 5: *Smilax aspera*

The study was carried out in a wooded area near Sant Joan de Mediona, in a private enclosure of 16 hectares where there are 4 horses. During five days, the behavior of the horses was observed in 10-minute intervals, recording in detail every action they performed. A table was made that divided the actions into 7 categories: "interacting with natural objects", "fighting", "sexual behavior", "locomotor", "drinking water", "resting" and "eating". This table was used to record observations in the field, which were then transferred to the Excel program for analysis.

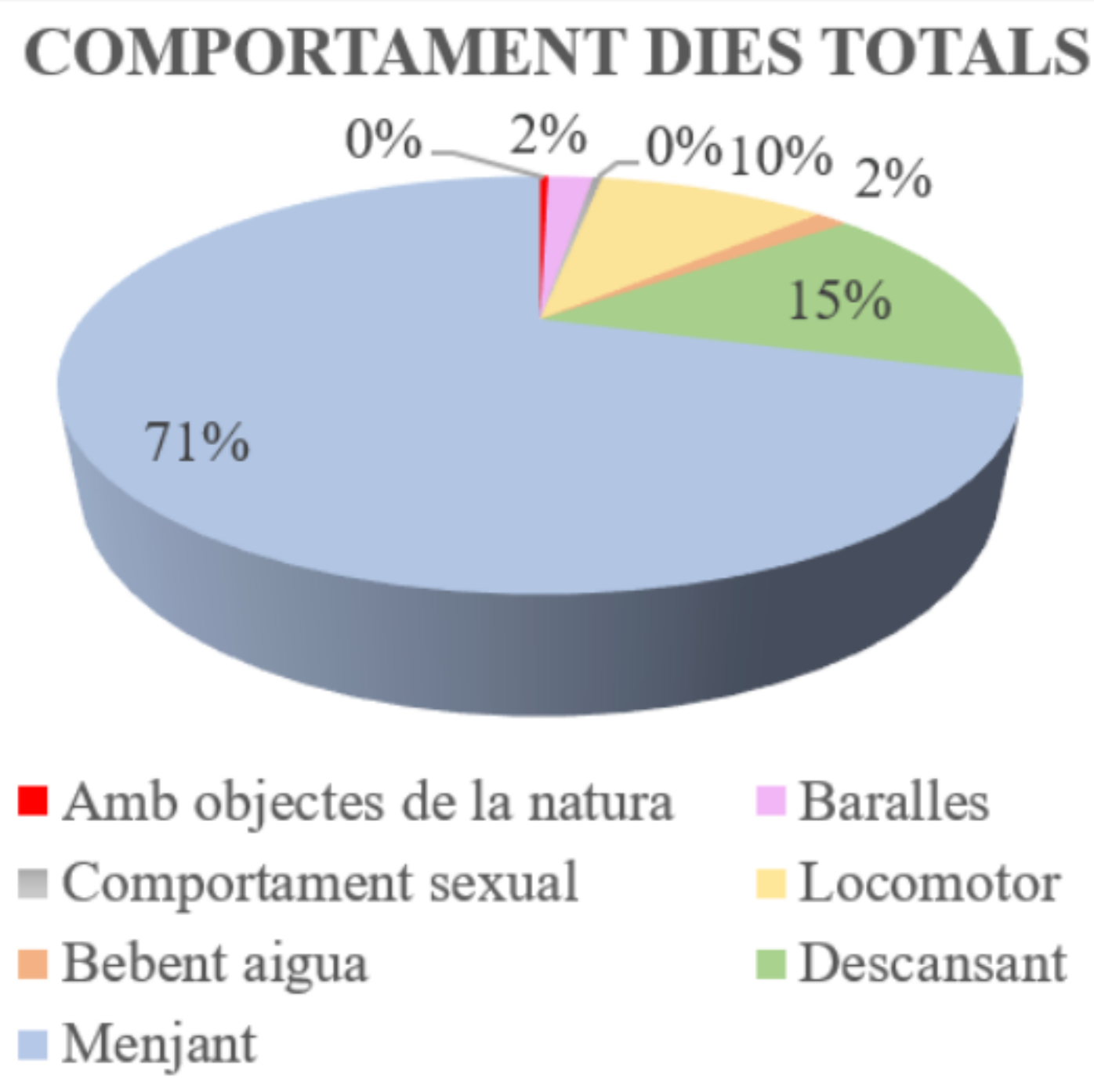
RESULTS

During the 5 days of the study (**graphic 1**), *Smilax aspera* (57%) was the plant most consumed by the horses, followed by *Brachypodium retusum* (21%), while *Pistacia lentiscus* (9%) and *Quercus coccifera* (7%) occupied later positions with respect to the amount of time dedicated to ingestion.

In **graphic 2**, the horses spent 71% of the time eating, 15% resting and 10% moving around (locomotion). These data show the needs of the horses and their behavior in free conditions.



Graphic 1



Graphic 2

CONCLUSIONS

Horses, in their dietary selection, consume vegetation with woody characteristics that facilitate ignition. In this way, they help to reduce combustible plant matter in the undergrowth, thus collaborating in preventive measures against forest fires. They are herbivores that spend more than 70% of their time eating and the effect of their grazing and trampling creates open spaces that act as natural firebreaks. Even so, scientific field research on the effects of horses on biodiversity as well as on their relationship with local vegetation is scarce and needed.