



## FEEDING VALUE OF DIFFERENT PLANT FUNCTIONAL TYPES OF OAK MEDITERRANEAN ECOSYSTEMS

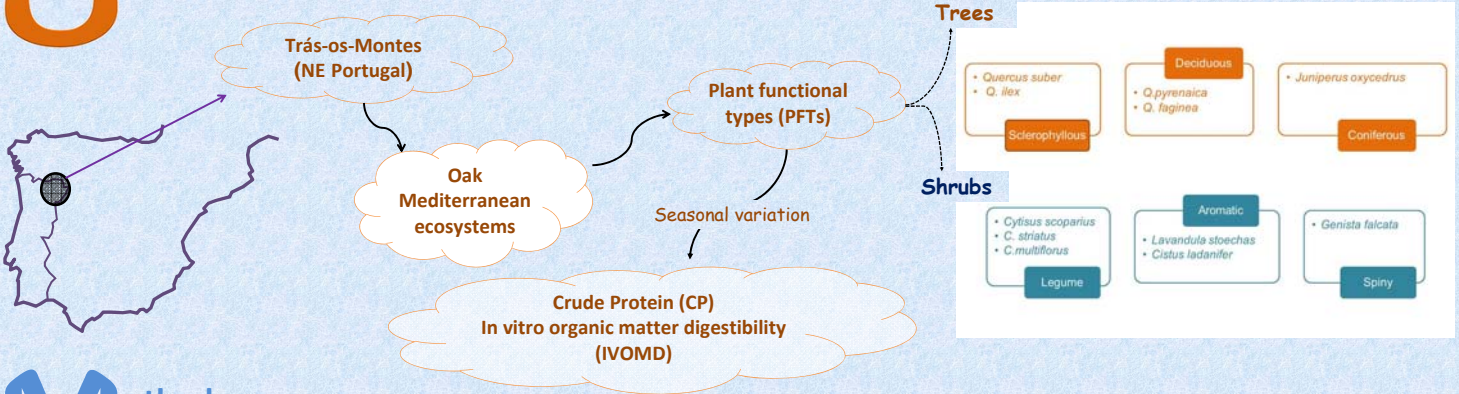
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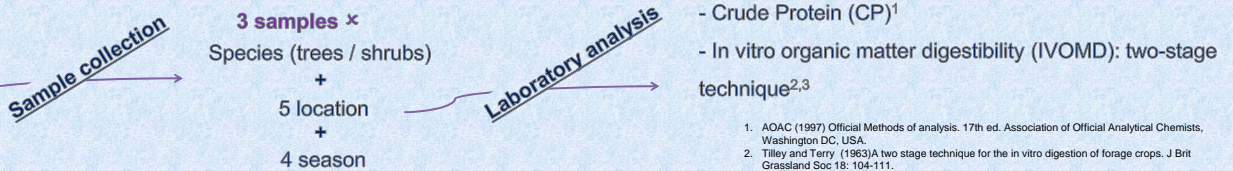
Trees and shrubs are useful sources of cheap feed for ruminant animals, especially during dry or cool seasons when conventional forages are scarce and of low quality. Further, conventional livestock farmers experience risks in feed provision due to climate change, while tree fodders and shrubs can increase the system's resilience to weather variability and extreme events.

However, amongst ligneous species there is a great variability on, their feeding value since the proportion between contents (protein, sugars, starch) and cell walls (cellulose, hemicellulose, lignin), the production of secondary metabolites (phenols, tannins) and other defence mechanisms (thorns) against herbivory depends on the ecological strategy of the plant which influences their chemical composition.

### Objective



### Methods



1. AOAC (1997) Official Methods of analysis, 17th ed. Association of Official Analytical Chemists, Washington DC, USA.
2. Tilley and Terry (1963) A two stage technique for the in vitro digestion of forage crops. J Brit Grassland Soc 18: 104-111.
3. Marten and Barnes (1980) Prediction of energy digestibility of forages with in vitro rumen fermentation and fungal enzyme systems. In: Pigden WC, Balch CC and Graham M (eds) Standardization of analytical methodology of feeds, pp 61-71. IDRC, Ottawa.

### Results

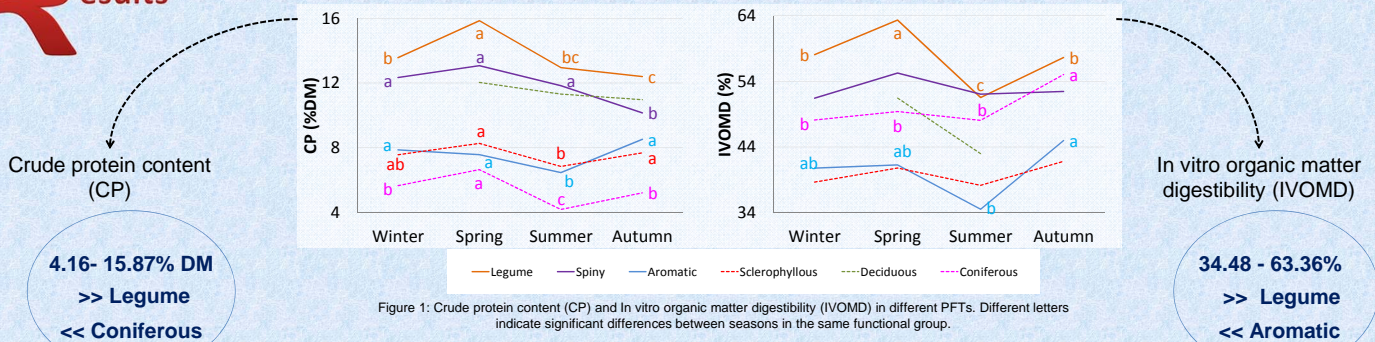


Figure 1: Crude protein content (CP) and In vitro organic matter digestibility (IVOMD) in different PFTs. Different letters indicate significant differences between seasons in the same functional group.

4.16- 15.87% DM  
>> Legume  
<< Coniferous

34.48 - 63.36%  
>> Legume  
<< Aromatic

**Seasonal variation**  
CP and IVOMD >> in spring  
**except**  
Coniferous >> IVOMD in autumn

**Groups**

CP  
Legume > Deciduous ≈ Spiny > Aromatic ≈ Sclerophyllous > Coniferous  
IVOMD  
Legume > Spiny ≈ Coniferous > Deciduous > Aromatic ≈ Sclerophyllous

### Conclusions

In terms of the capacity of these PFTs to suppress the protein needs of livestock animals considering for instance goats of 45 Kg body weight in dry periods (summer and autumn): Coniferous group alone can't cover the needs for maintenance.

In the case of late pregnancy, only legume and deciduous and spiny can cover it.