



The effect of introduction of *Lupinus* spp. seeds in diets on lamb eating behaviour

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Introduction

Legumes of the genus *Lupinus* spp.



Well-adapted to soil and climatic conditions of the Mediterranean region.



Good sources of protein (~ 20% - 45%) and energy.



Alternatives to imported protein sources for animal feed (soybean meal)?



Behaviour?

Objective

Evaluate the partial replacement of soybean meal by *Lupinus albus* or *Lupinus luteus* grains on eating behaviour of *Churra da Terra Quente* lambs.



Material and Methods

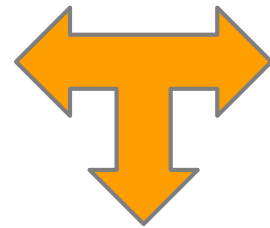
Twelve male lambs

- Ages between 92 and 110 days
- Initial mean live weight of 18 ± 2.8 kg



 3 groups of 4 animals

Control diet (CTR): meadow hay, wheat grain and soybean meal



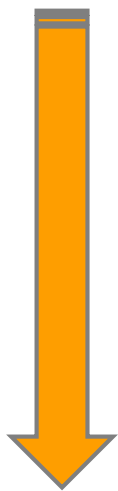
L. albus replacing soybean meal (26%, LA)

L. luteus replacing soybean meal (33%, LL)

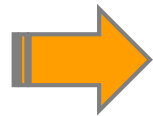


Material and Methods

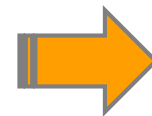
Frequency of lambs eating hay and time spent eating the concentrate feeds (~35 days) – video analysis



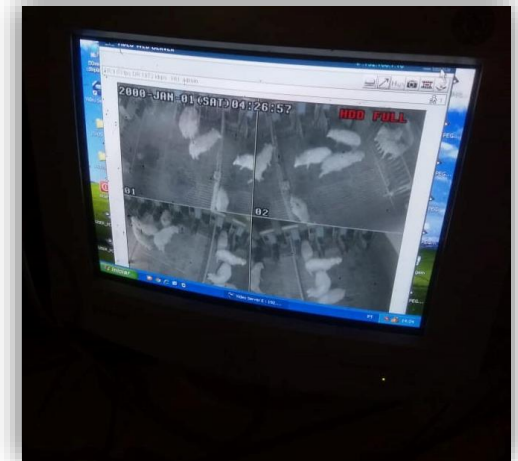
Before introducing
Lupinus seeds (BI)



Day of
introduction (DI)



30 days after
introduction (AI)



Material and Methods

Eating hay (H) behaviour was recorded every 10 minutes, between 8 am and 8 pm, using a scan sampling.



Results

Eating hay:

Time had no effect hay eating for CTR and LA diets:

- CTR: $\chi^2 = 8.58$, $df = 8$, $P = 0.379$
- LA: $\chi^2 = 7.97$, $df = 8$, $P = 0.437$

LL diet: increased over time



Adaptation?



Results

Time spent eating concentrate:

Time (min)	LSM (min.)
BI	3.458 ^b
DI	7.166 ^a
AI	8.583 ^a

- Adaptation?
- Increase in food quantity?



Groups	LSM (min.)
CTR	6.958 ^a
LL	6.625 ^a
LA	5.625 ^a

Conclusions

- ~30% substitution of soybean meal by *Lupinus* had no effect on eating behaviour
- Higher incorporations?



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- Project I&D Interact - Integrative Research in Environment, AgroChain and Technology, nº NORTE-01-0145-FEDER-000017, in the research line: Innovation for Sustainable Agro-food Chains - ISAC, co-financed by Fundo Europeu de Desenvolvimento Regional (FEDER) through NORTE 2020 (Programa Operacional Regional do Norte 2014/2020).
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Any questions?

Thank you for
your attention.

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