**Introduction**

- In recent years, there has been a growing interest in enhancing the concentration of healthy fatty acids in ewe milk, being dietary inclusion of PUFA-rich lipids the most commonly nutritional strategy.
- Dietary PUFA intake appear to affect the rumen environment and thus the biohydrogenation pathway of α-linolenic acid.
- Studies have indicated a possible role of high doses of vitamin E in preventing shifts in PUFA biohydrogenation pathways.

**Objective**

The objective of this study was to evaluate the effects of dietary linseed oil and vitamin E, synthetic or natural, on milk performance and fatty acid (FA) profile in early lactating ewes.

**Material and Methods**

- Two days after lambing, forty-eight Churra ewes were selected and assigned to one of the four dietary treatments (12 ewes per treatment).
- The experimental diets consisted of a total mixed ration (TMR) that varied according to the inclusion of linseed oil (LO) and the type of vitamin E, synthetic (LO+Syn E) or natural (LO+Nat E).
- Milk production was recorded once a week during the first month of lactation by the oxtocine technique.
- Milk chemical composition was analysed by MilkoScan-400 analyser and fatty acid profile of milk fat was determined by Gas Cromatography.
- Milk yield and composition were analysed by repeated measurements analyses and fatty acid profile of milk fat by general linear model of SAS.

**Results**

**Milk production and chemical composition of milk**

<table>
<thead>
<tr>
<th>Diets</th>
<th>Yield, g/day</th>
<th>Composition %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>LO</td>
</tr>
<tr>
<td></td>
<td>2174</td>
<td>2203</td>
</tr>
<tr>
<td>Fat</td>
<td>5.67a</td>
<td>6.16ab</td>
</tr>
<tr>
<td>Protein</td>
<td>4.54ab</td>
<td>4.56ab</td>
</tr>
</tbody>
</table>

SED: standard error of difference; *Effects caused by experimental diet (D), time on diet (T), and their interaction (D x T)

**Milk fatty acid composition (g/100 g FAME)**

![Milk fatty acid composition](image)

**Conclusions**

Feeding linseed oil to lactating ewes could be a way to increase vaccenic acid, rumenic acid and PUFA n-3 in milk, whereas the type of vitamin E (natural or synthetic) added to the linseed oil diet could influence the content of some conjugated C18:2 isomers in milk.

**Acknowledgements**

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