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Conditioned aversion to vines for grazing sheep in vineyards




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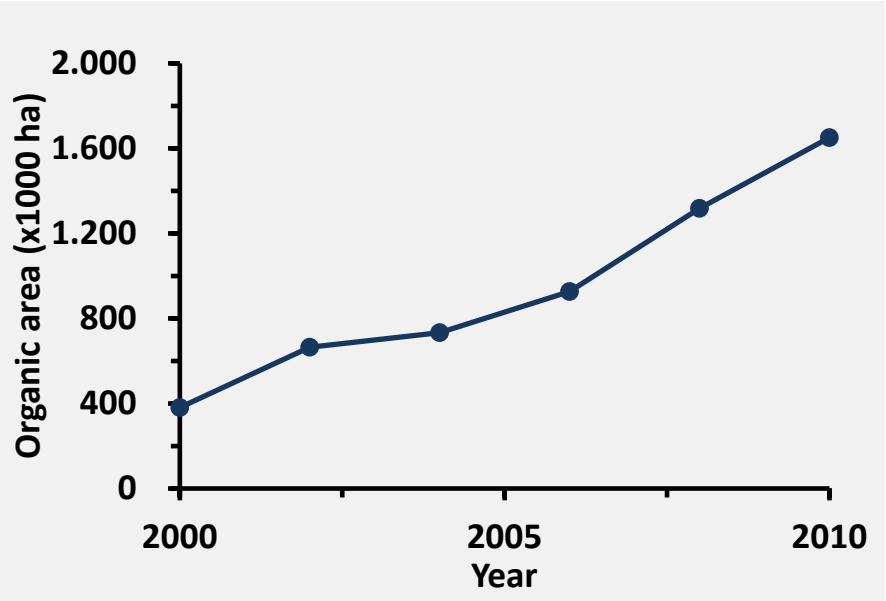
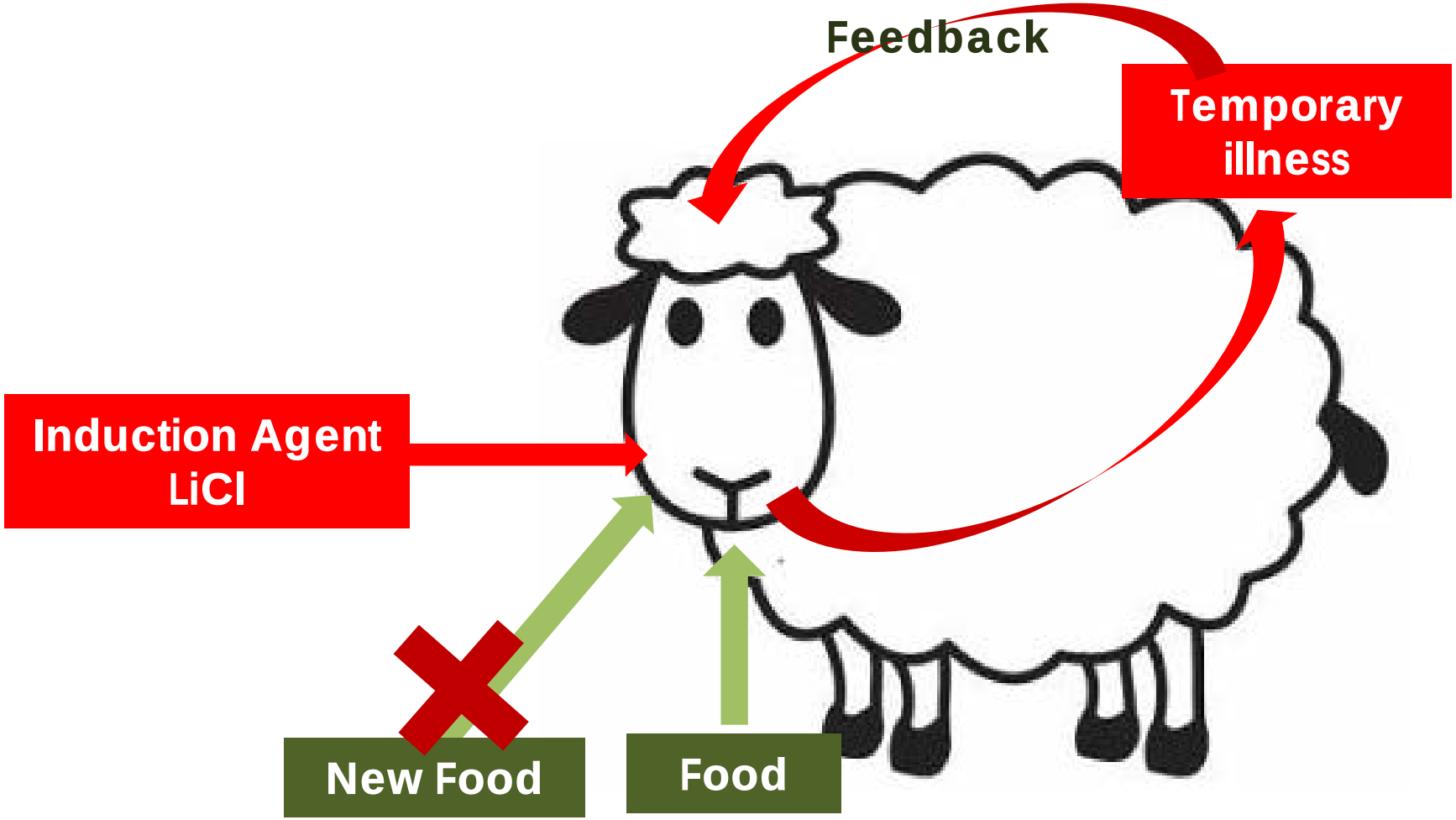
1. Introduction

Vineyard system in Spain:

- **Vineyards in Spain included 1×10^6 ha** (MAGRAMA, 2011)
- **Herbicides and machines to control ground cover**
- **Increase of the organic production** (MAGRAMA, 2011)
- **ALTERNATIVE organic crops → Use of grazing**



- **Problem → vines are very palatable for sheep**
- **Solution → CONDITIONED FOOD AVERSION?**



2. Objectives

- **Create a conditioned averted sheep group (AV) to grape leaves and sprouts.**
- **Evaluate the AV effects and persistency in a simulated vineyard.**
- **Describe the AV sheep effects in a commercial vineyard.**

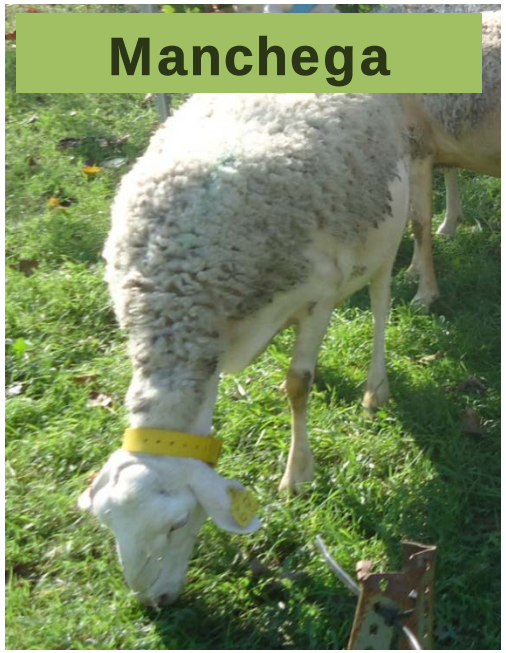
3. Material & Methods

2 breeds
2 groups by breed

6 × C
(Water blank)

6 × AV
(225 mg LiCl/kg BW)

(54.7 ± 1.3 kg BW)



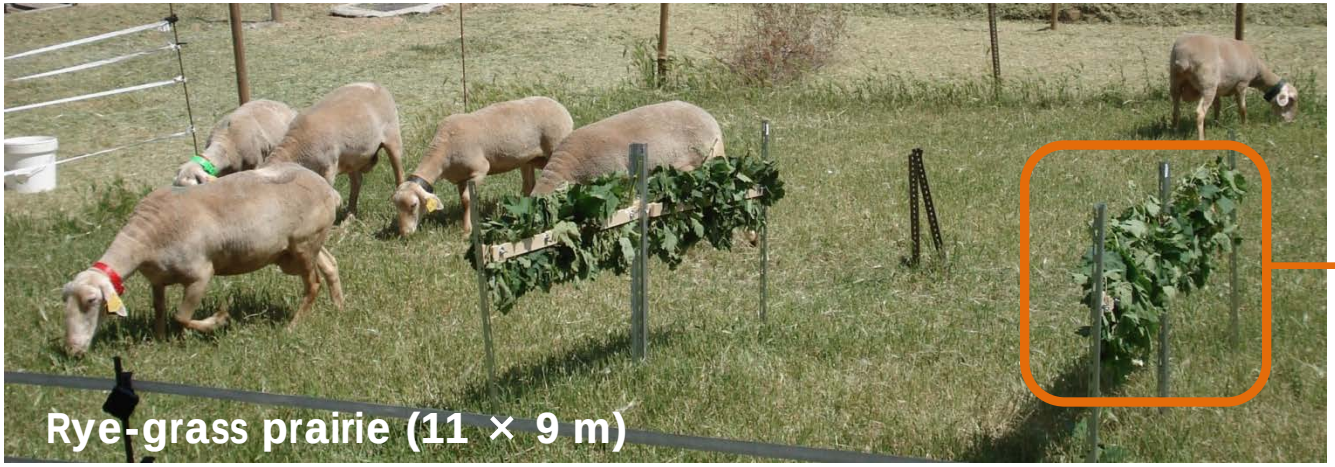
(43.5 ± 0.9 kg BW)

- **Exp. 1 Aversion induction to grape leaves and persistence evaluation under simulated grazing conditions**
- **Exp. 2 Persistence validation in a commercial vineyard**

Exp. 1 Aversion induction (d 0 to 3; barn)

1 LiCl dose
3 validation days

Exp. 1 Aversion persistence (d 5 to 375; simulated vineyard)



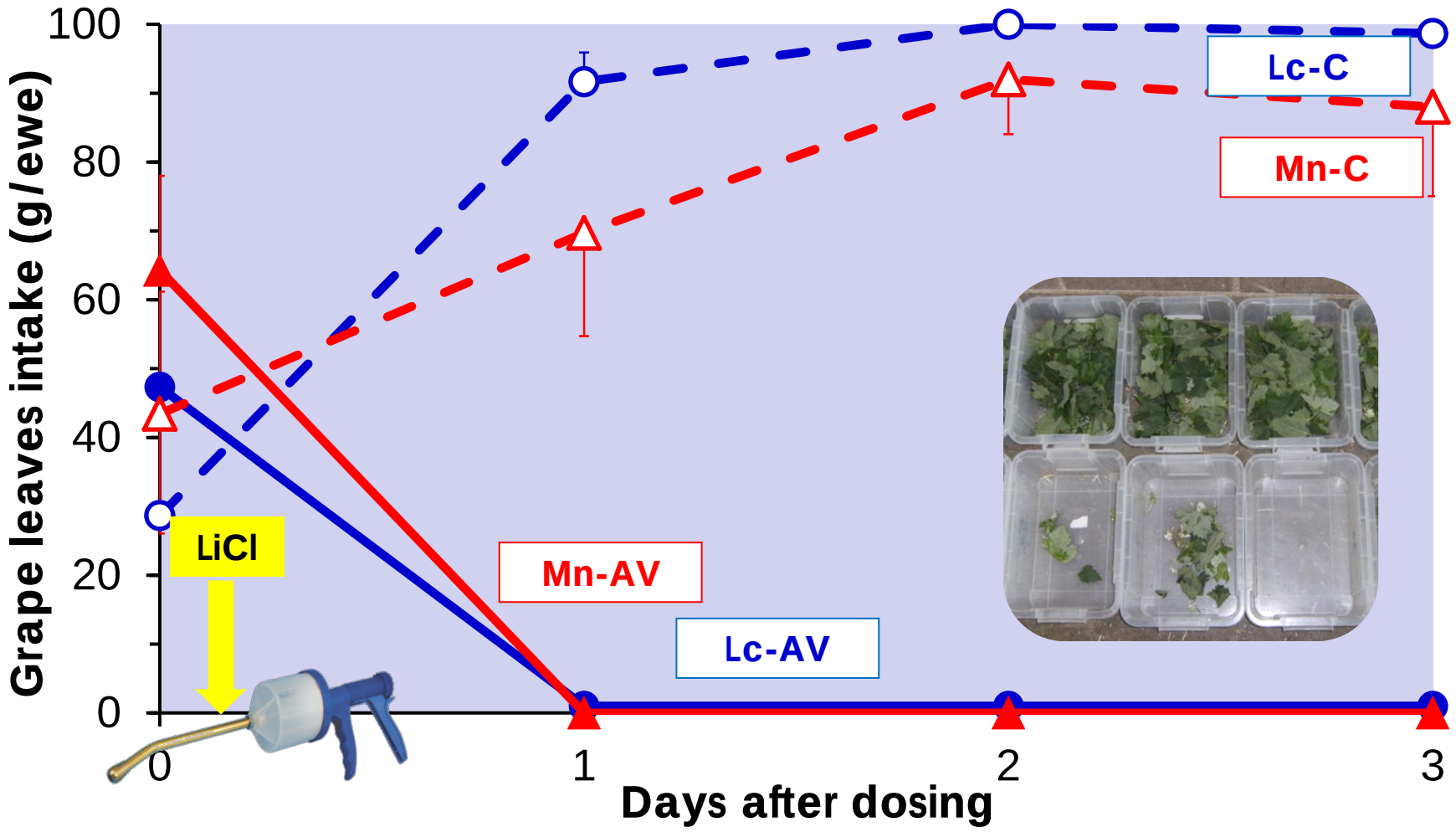
11 test days

Exp. 2 Persistence commercial vineyard (d 401 to 411)

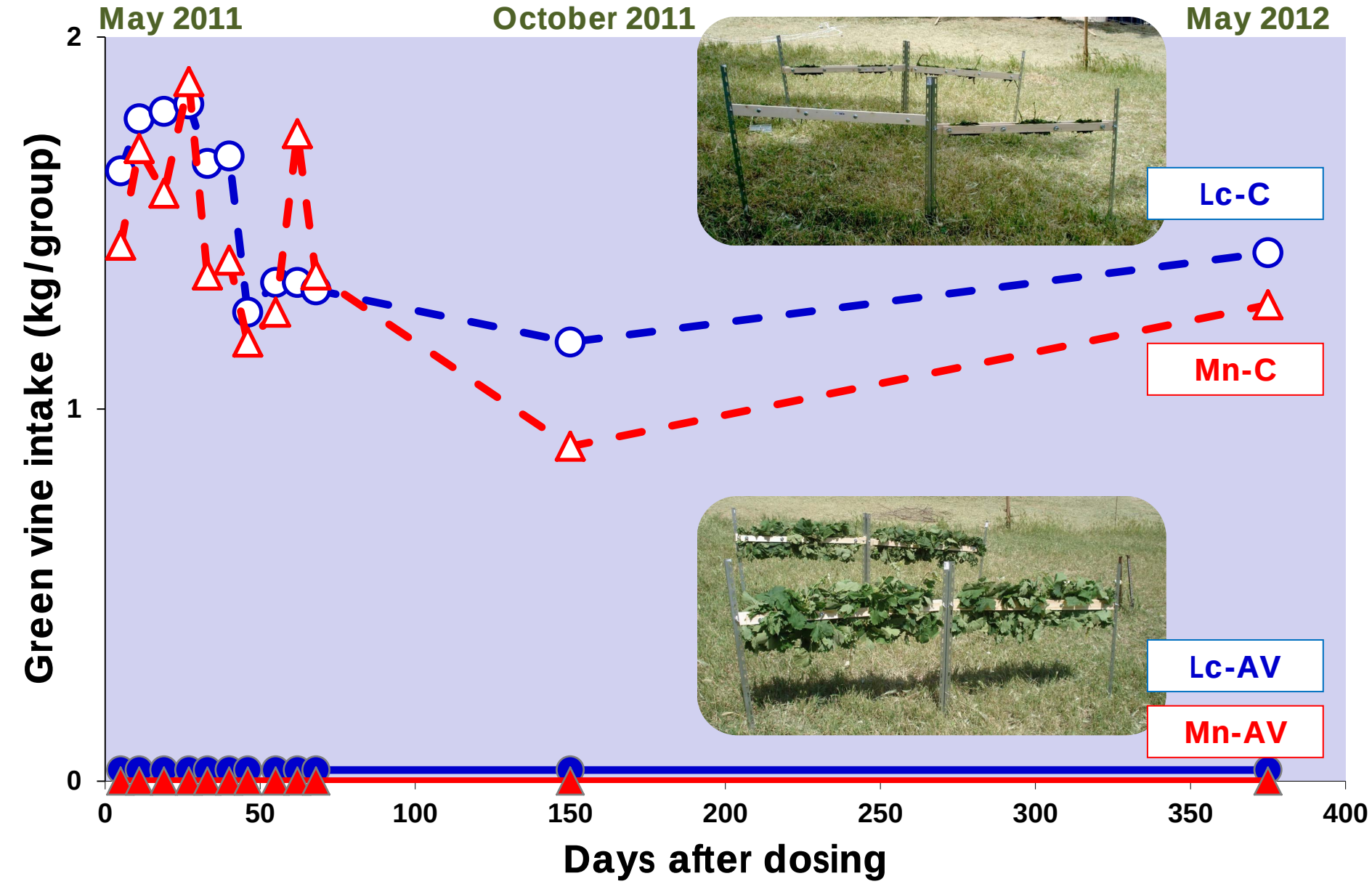
- Descriptive study with spontaneous weed cover.
- Rotationally graze, according to available grass.
- 3 h/d during 10 d.
- 11 ewes in a surface of 560 m².

4. Results

Exp. 1 Aversion induction (d 0 to 3; in the barn)



Exp. 1 Aversion persistence (d 5 to 375; simulated vineyard)



Exp. 1 Simulated vineyard animal behavior

Control ewes

- Control ewes avidly ate the grape leaves (1.6 ± 0.1 kg/group)

Aversion ewes

- On the contrary, AV ewes fully rejected the leaves and sprouts

Exp. 2 Commercial vineyard (d 401 to 410)

Before	Grazing	After

- AV ewes reduced 70% grass cover between vine lines.
- The ewes started to bite leaves and sprouts when grass was scarce
- No significant damage in the vine was appreciated

5. Conclusions

- Conditioned aversion to green vines was effectively induced in adult ewes by a single oral dose of LiCl (225 mg/kg BW).
- Aversion to green vines persisted for 1 yr in the ewes, but the use of a reinforced LiCl dose after this time is recommended in practice.
- Aversion conducted under experimental settings was successfully transferred to commercial vineyard conditions.

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