EAAP 2010
61st Annual Meeting of the European Association for Animal Production
AUGUST 23rd-27th, 2010 - HERAKLION, CRETE ISLAND, GREECE

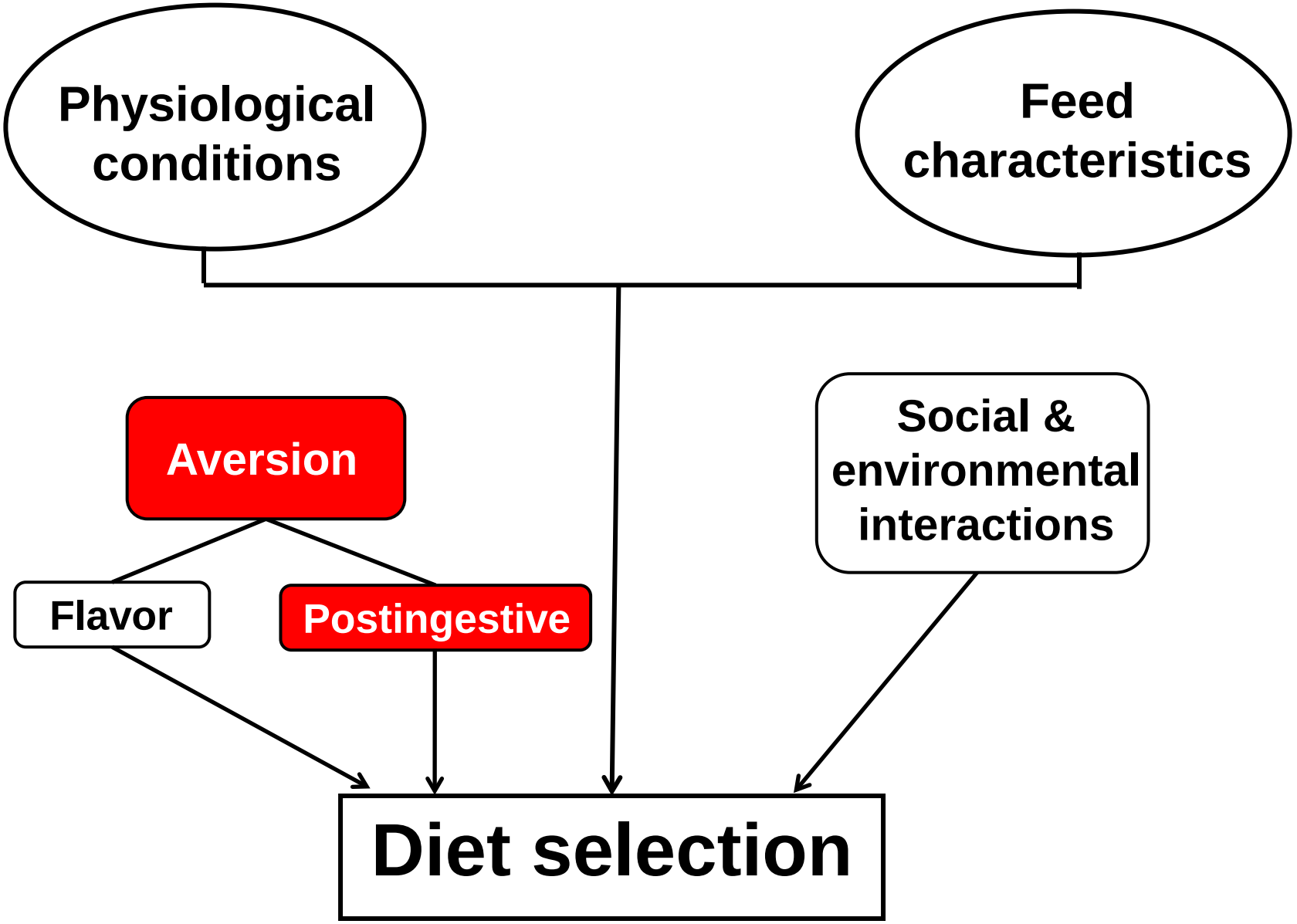
Conditioned aversion to olive tree leaves by lithium chloride in ewes and goats

C.L. Manuelian, E. Albanell, A.A.K. Salama* and G. Caja

Grup de Recerca en Remugants, Dept. Ciencia Animal i dels Aliments

Universitat Autònoma de Barcelona, Bellaterra (Spain)

1. Introduction



1. Introduction

- **Aversion induction:**

New feed ingredient

↓ **Induction agent (e.g. LiCl)**

Feeling bad

↓

Association illness with feed

↓

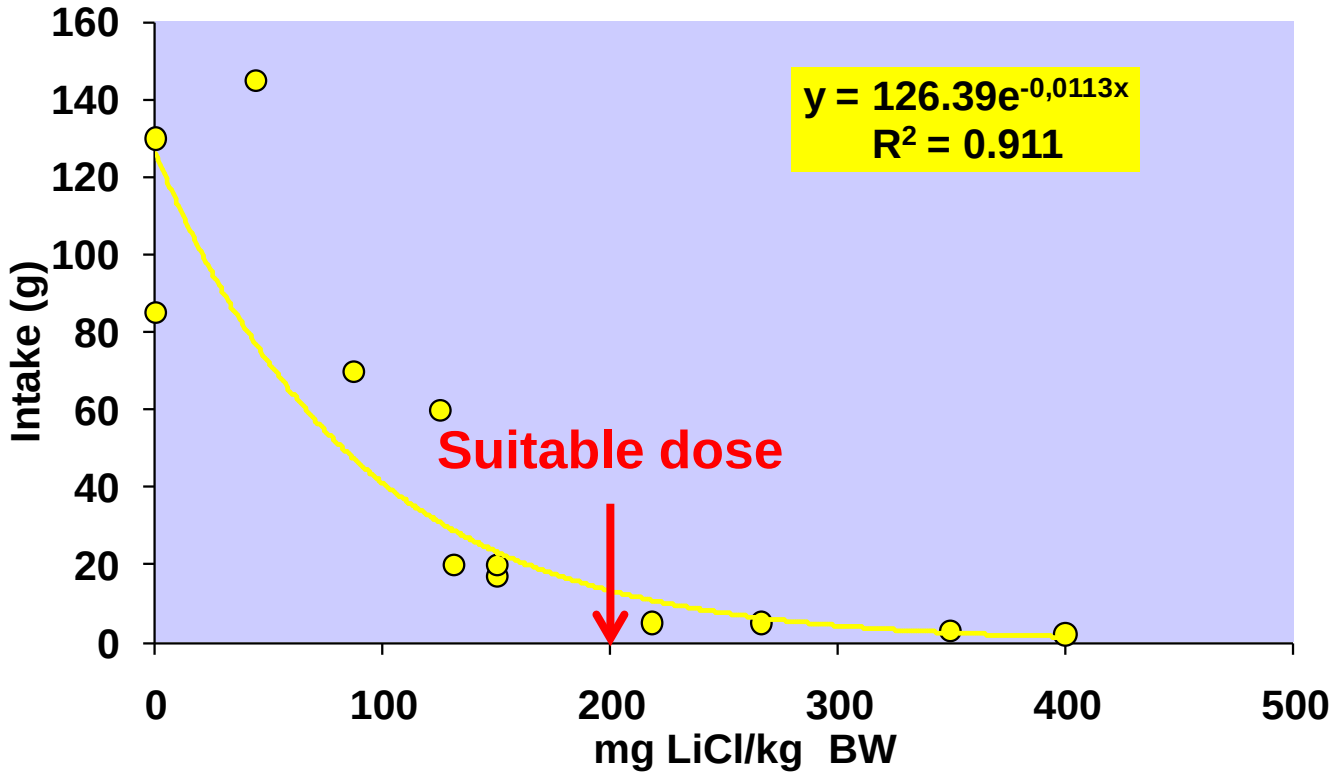
Animal becomes averted

- **Persists for 9 mo and can be reestablished with a new dose *(Burritt and Provenza, 1990; Doran et al., 2009)*.**

1. Introduction

Effect of LiCl dose on intake in ewes

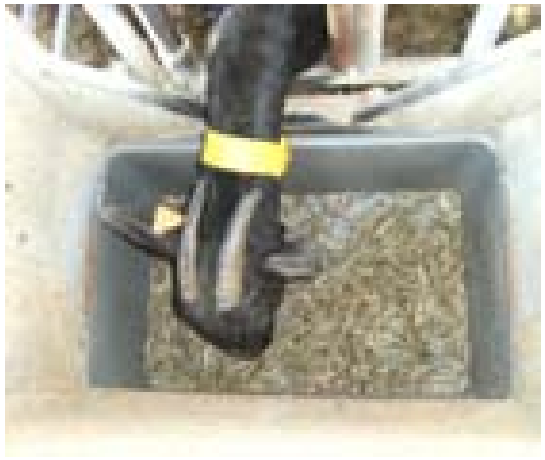
(Metanálisis: du Toit et al., 1991; Burrit y Provenza, 1996; Egber et al., 1999)



2. Objetives

Evaluation the use of Lithium chloride to induce aversion in ewes and goats

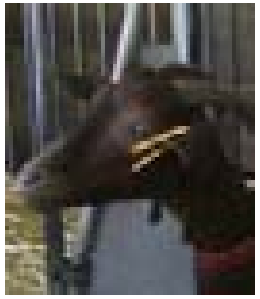
- **Manchega (MN) & Murciano-Granadina (MG)**
- **Aversion to olive leaves**
- **Temporal efficiency of aversion**



3. Materials & Methods

Animals

10 MN
+
10 MG



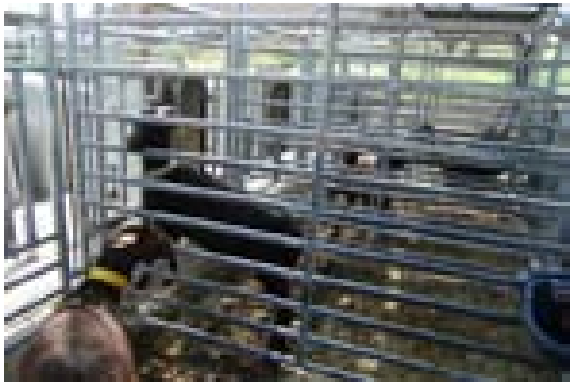
5 + 5 C

5 + 5 AV

Exp. periods

Adaptation

7 d



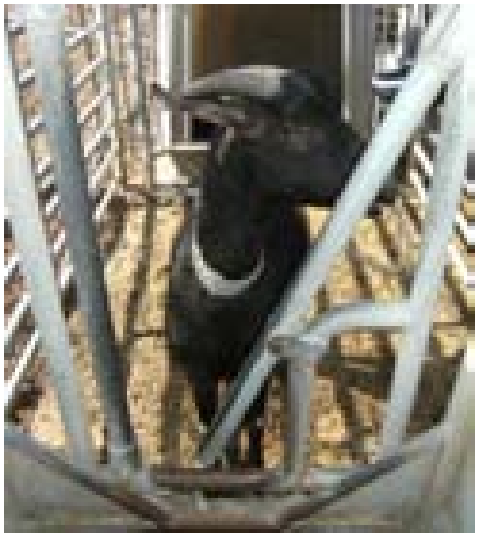
Aversion induction

6 d

Aversion memory

144 d

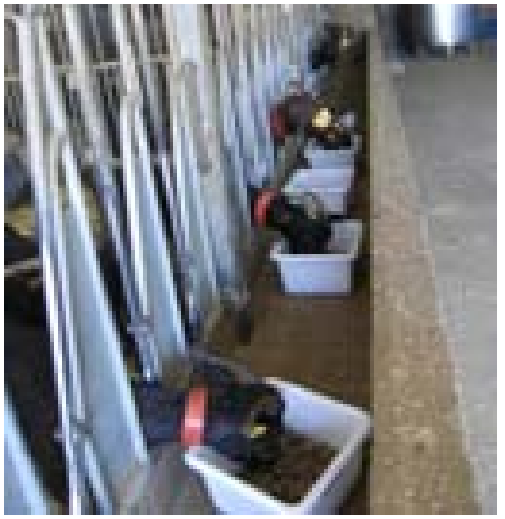
Aversion induction in cages



- Individual cages (1.10 x 2.00 m)
- NO visual contact between groups
- Offering 400 g of olive (5-10 min)
- 0.2 g LiCl/kg BW orally
- Water administration for control

Aversion memory in the shelter

- Head-lockers of the feed bunks
- Offering 400 g olive (5-10 min)
- 10 Controls (15 d)
- NO administration of LiCl



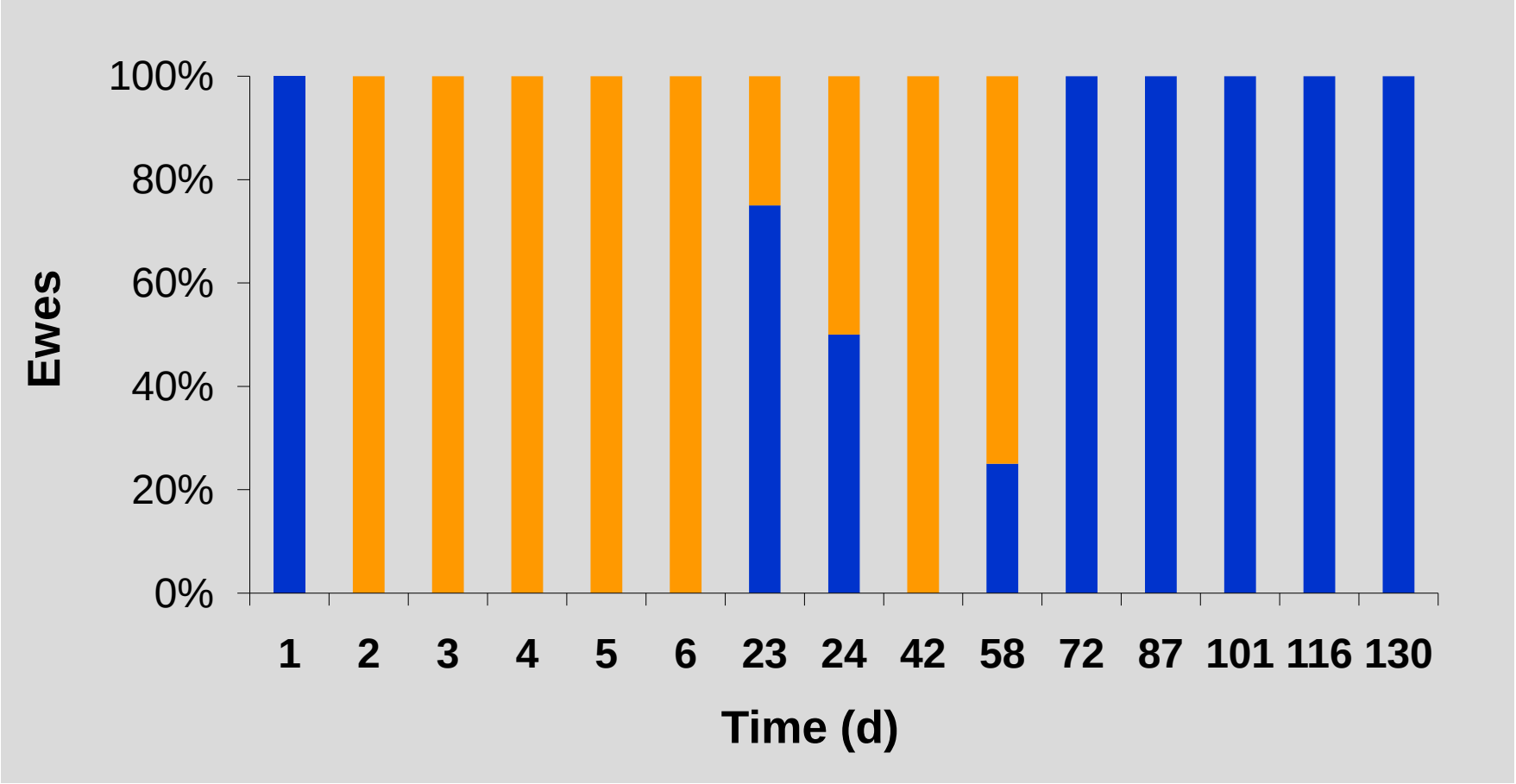
4. Results

Intake of olive leaves during the aversion induction period ($P < 0.001$)

	Ewes		Goats	
Day	**Control**	**Averted**	**Control**	**Averted**
1	**9.6^{a}** ± 3.6	**24.0^{a}** ± 11.0	**28.0^{a}** ± 11.0	**16.0^{a}** ± 2.0
2	**8.4^{a}** ± 9.4	**0.0^{b}** ± 0.0	**48.0^{a}** ± 22.0	**0.0^{b}** ± 0.0
3	**8.0^{a}** ± 4.7	**0.0^{b}** ± 0.0	**47.0^{a}** ± 21.0	**2.0^{b}** ± 0.0
4	**33.6^{a}** ± 17.9	**0.0^{b}** ± 0.0	**54.0^{a}** ± 25.0	**0.0^{b}** ± 0.0
5	**101.2^{a}** ± 36.6	**0.0^{b}** ± 0.0	**50.0^{a}** ± 18.0	**0.0^{b}** ± 0.0
6	**165.6^{a}** ± 23.2	**0.0^{b}** ± 0.0	**48.0^{a}** ± 14.0	**0.0^{b}** ± 0.0

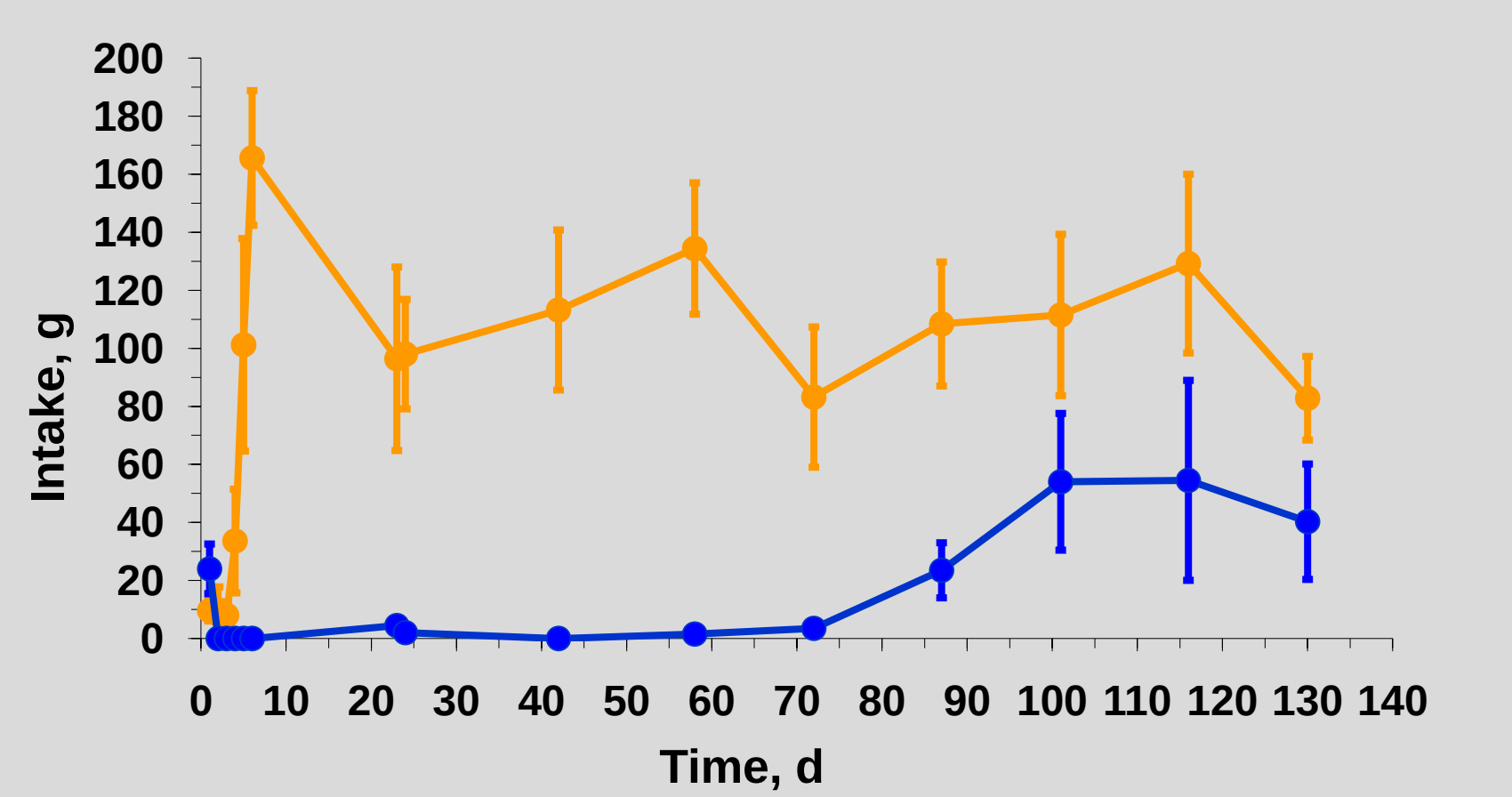
4. Results

Averted ewes eating olive leaves (■, ewes that did not eat; ■, ewes eating)



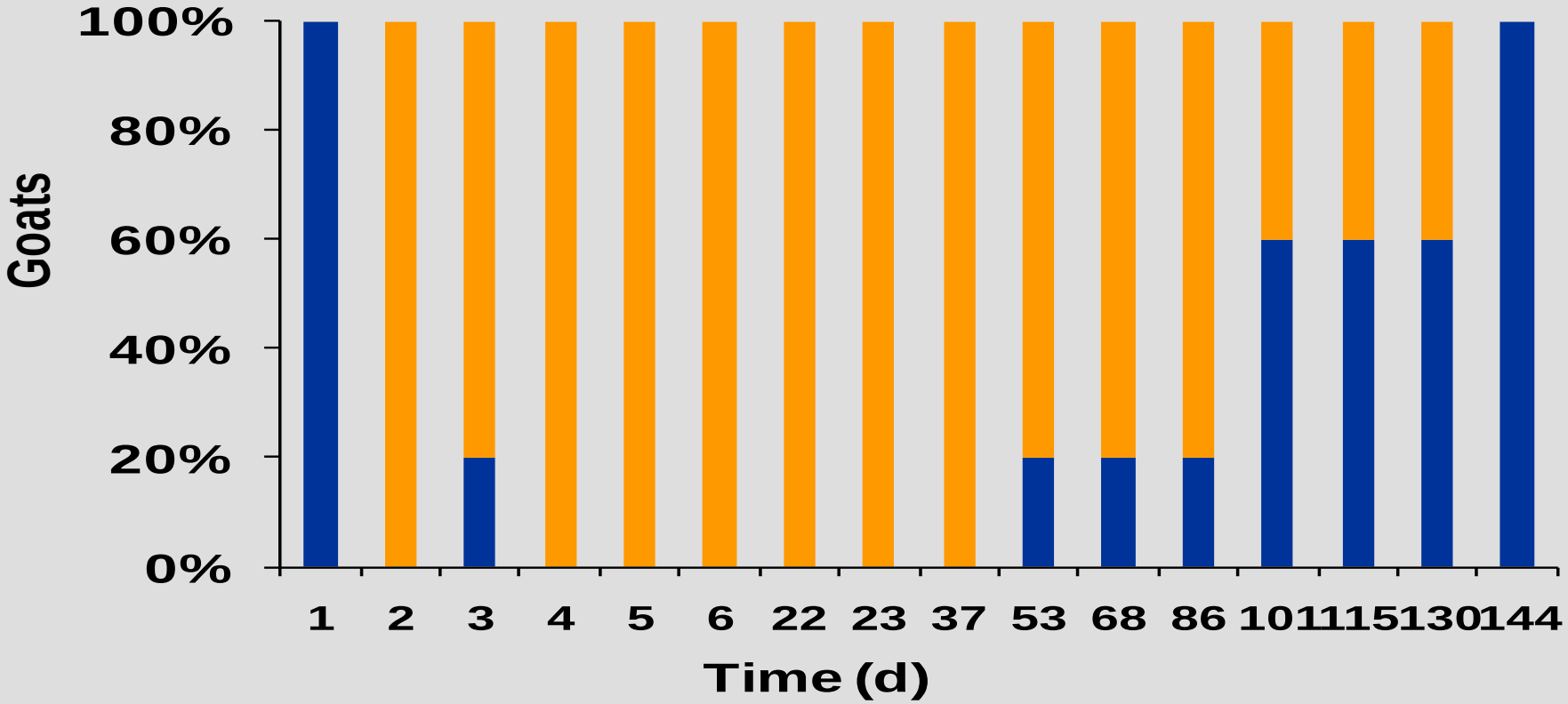
4. Results

Olive leaves intake of ewes (●, control; ●, averted)



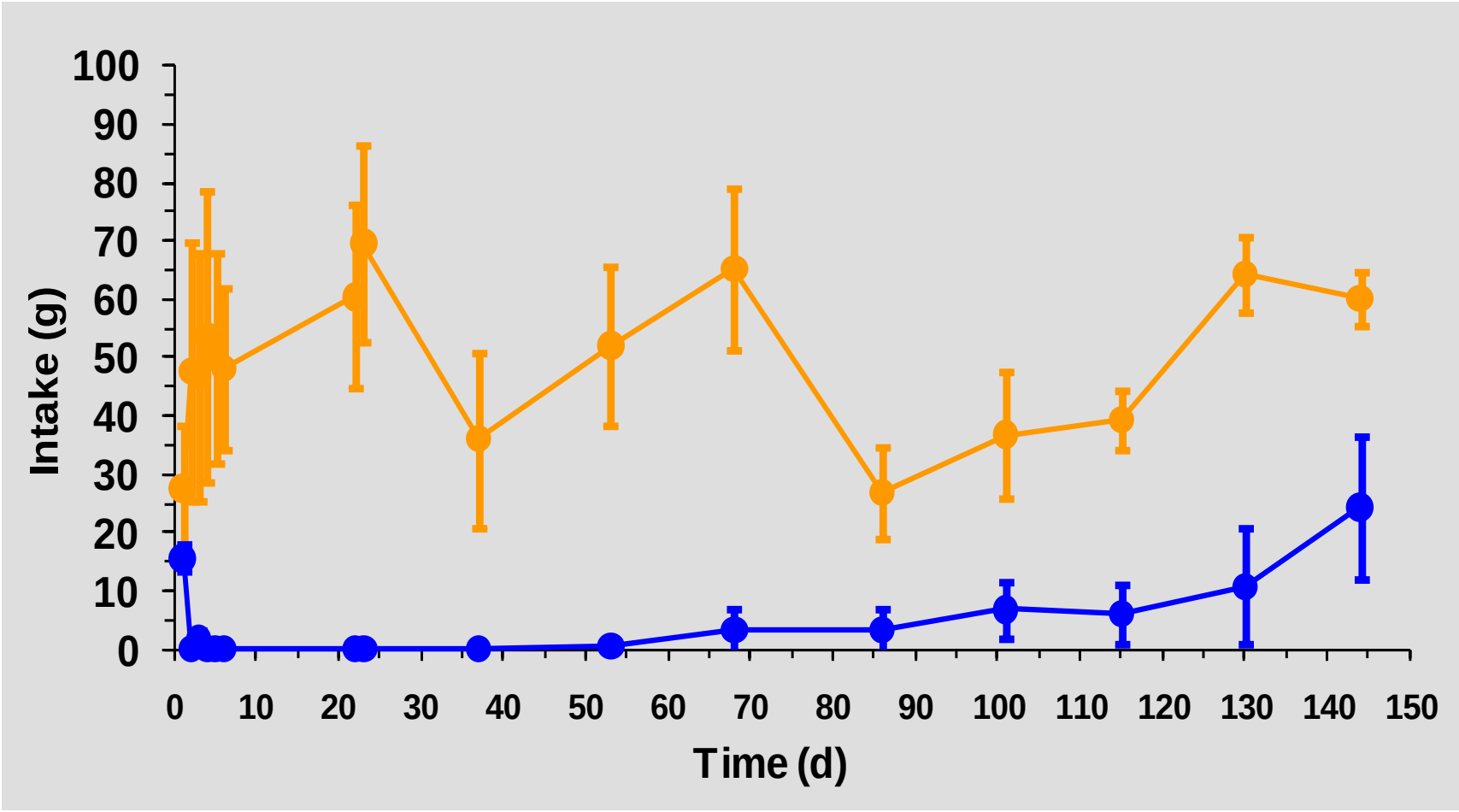
4. Results

Averted goats eating olive leaves (■, goats that did not eat; ■, goats eating)



4. Results

Olive leaves intake of goats (●, control; ●, averted)



4. Results

Behavior

Control

Averted

5. Conclusions

- **Feeding behavior can be manipulated using LiCl to induce feed aversion.**
- **At the same dose of LiCl, aversion persisted for longer period in goats than ewes.**

Implications

- **Selective grazing.**
- **Alternative to the use of herbicides.**
- **Ecological and sustainable agriculture.**

... Thanks for your attention