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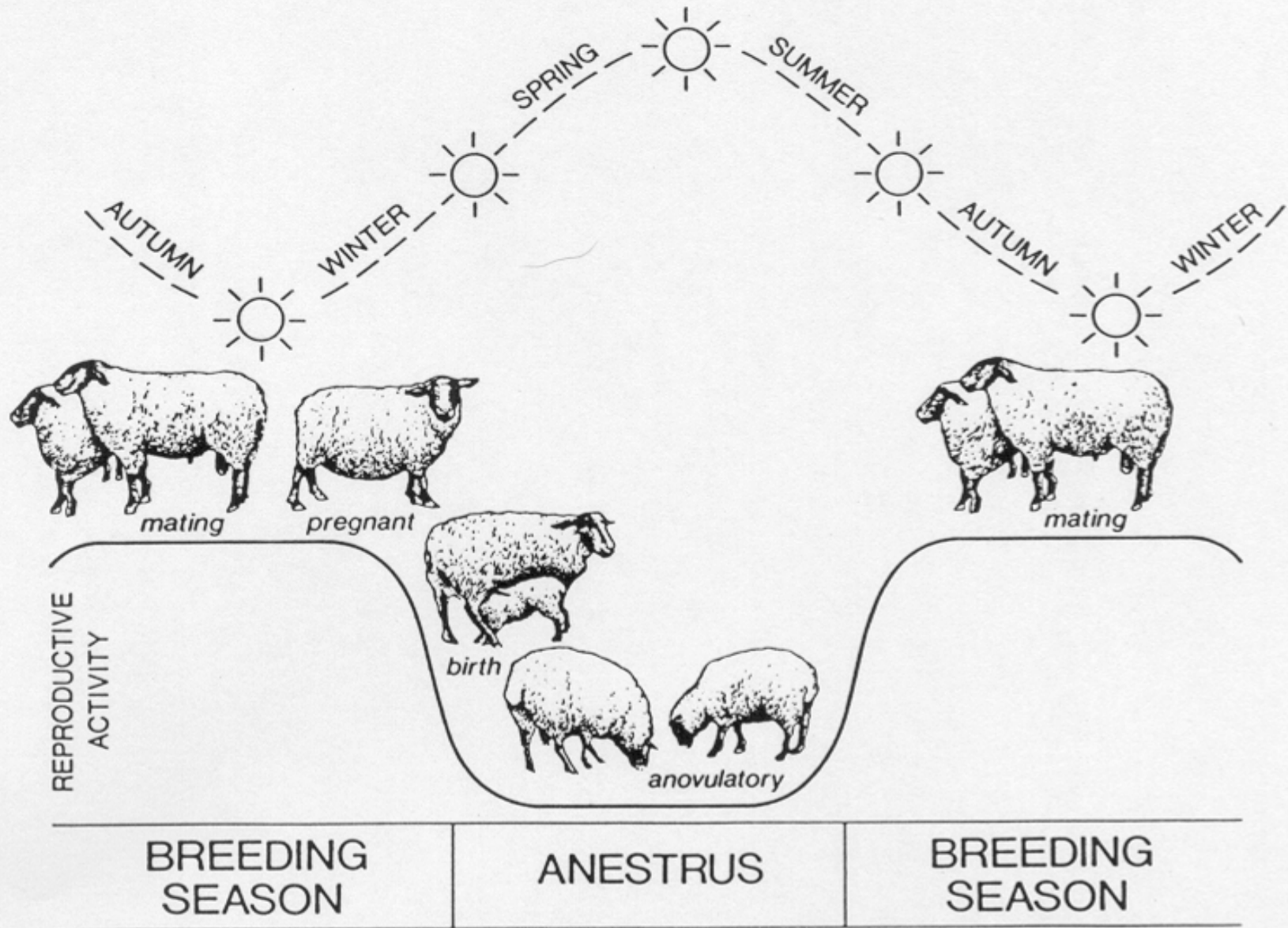


# Effect of different hormonal treatments on reproductive activity of Sarda ewes

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# Reproductive activity in sheep



# Sheep breeding in Sardinia

- **Spring lambing**

The lactation lasts about four months: from spring to early summer when the natural pasture is still available.

- **Autumn lambing**

The lactation lasts about seven months: from autumn to early summer.

# Oestrus synchronization

It is necessary to anticipate the onset of oestrus in summer to obtain autumn lambing.

Oestrus synchronization is possible by means of:

- Natural methods
- Pharmacological methods

# Natural methods

- Genetic selection
- Artificial light exposure
- Flushing ration
- Ram effect

# Pharmacological methods

- Progestagen (FGA) intravaginal sponges  
+ PMSG
- Exogenous Melatonin

# FGA sponges + PMSG

## advantages

**oestrus  
synchronization**

**useful for AI**

## disadvantages

**serial interventions  
on the ewe**

**immunization  
against PMSG**

**single oestrus**

**milk loss for  
waiting period**

# Melatonin implants

## advantages



**single intervention  
on the ewe**

**no waiting period**

## disadvantages



**absence of a real  
synchronization**

**not useful for AI**

# Aim

The aim was to evaluate the effect of some hormonal treatments with melatonin, progestinic drugs, PMSG and their association on reproductive activity of Sarda ewes.

# Animals and management

- Commercial flock in Sardinia
- 200 pluriparous ewes
- All in the same lactation stage
- Fed at pasture
  - + concentrate supplementation
- Semi-extensive breeding

# Groups and treatments

GROUPS	TREATMENT
A (n=50)	18 mg Melatonin subcutaneous implant
B (n=50)	40 mg FGA sponges and 400 IU PMSG
C (n=50)	18 mg Melatonin subcutaneous implant + 40 mg FGA sponges and 400 IU PMSG
D (n=50)	None (control group)



# Chronology

DAY	INTERVENTION
March 26 <sup>th</sup>	Melatonin implantation in groups A and C
April 16 <sup>th</sup>	FGA sponges insertion in groups B and C
May 1 <sup>st</sup>	Sponge removal and PMSG injection
May 1 <sup>st</sup>	rams introduction 3 rams/group

During treatments and after mating the groups were managed together as one group

# Samples and analysis

- from May 1<sup>st</sup> to June 30<sup>th</sup> every week blood samples from the jugular vein of each ewe (lithium heparin 10 mL tubes)
- blood centrifugation (3000 rpm/20 min/5° C)
- plasma conservation -20° C
- progesterone dosage by means of RIA

# Cut-off value and statistics

- Ewes pregnant  
progesterone  $> 1,0$  ng/mL  
in two consecutive samples
- Pregnancy rate was compared by  $\chi^2$ -test

# Results

Pregnancy rate		Groups			
		A n=50	B n=50	C n=50	D n=50
May 30 <sup>th</sup>	n	25	30	33	20
	$\chi^2$ -test value P<0.01				
June 30 <sup>th</sup>	n	43	35	45	34
	$\chi^2$ -test value P<0.05				

# Conclusions

- At the end of the trial, on June 30<sup>th</sup>, pregnancy rate of ewes treated with melatonin was higher in comparison to those treated with FGA+PMSG
- Melatonin implants, alone or in association, had a positive influence on reproductive activity

# Final comments

## Melatonin implants

- Single intervention

 time saving  
improvement of animal welfare

- Satisfactory for breeders

Absence of waiting time

Economic advantage

 cost of the treatment