

## TRAINING COURSE

Innovation to enhance the sustainability of sheep and goat production systems

# INNOVATION AND PARTICIPATORY RESEARCH IN SHEEP AND GOAT FARMING



Meknes 21-22 of October 2019

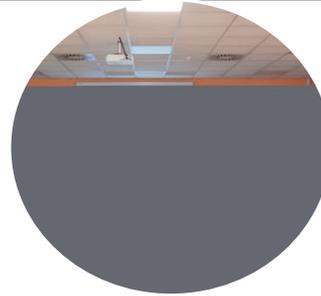
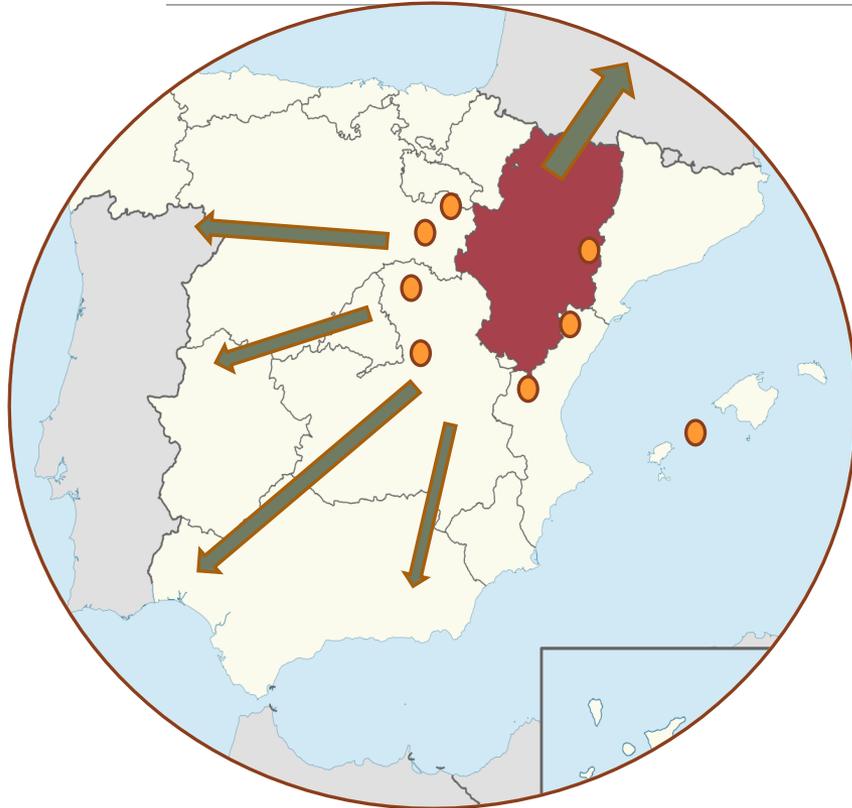
**pastores**   
grupo cooperativo  
*carácter noble*

***Oviaragón***



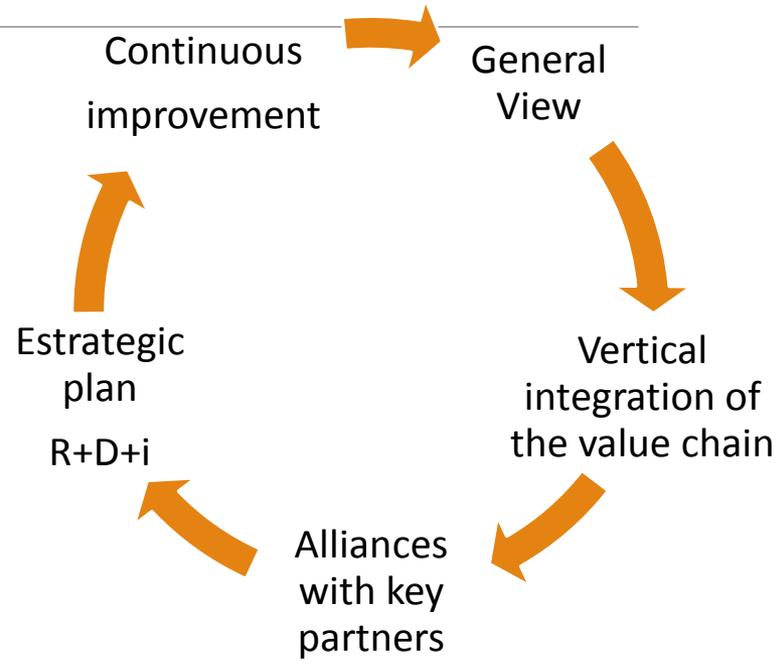
**800 pastores que dan vida  
a 400 pueblos  
y 1.000.000 de hectáreas**

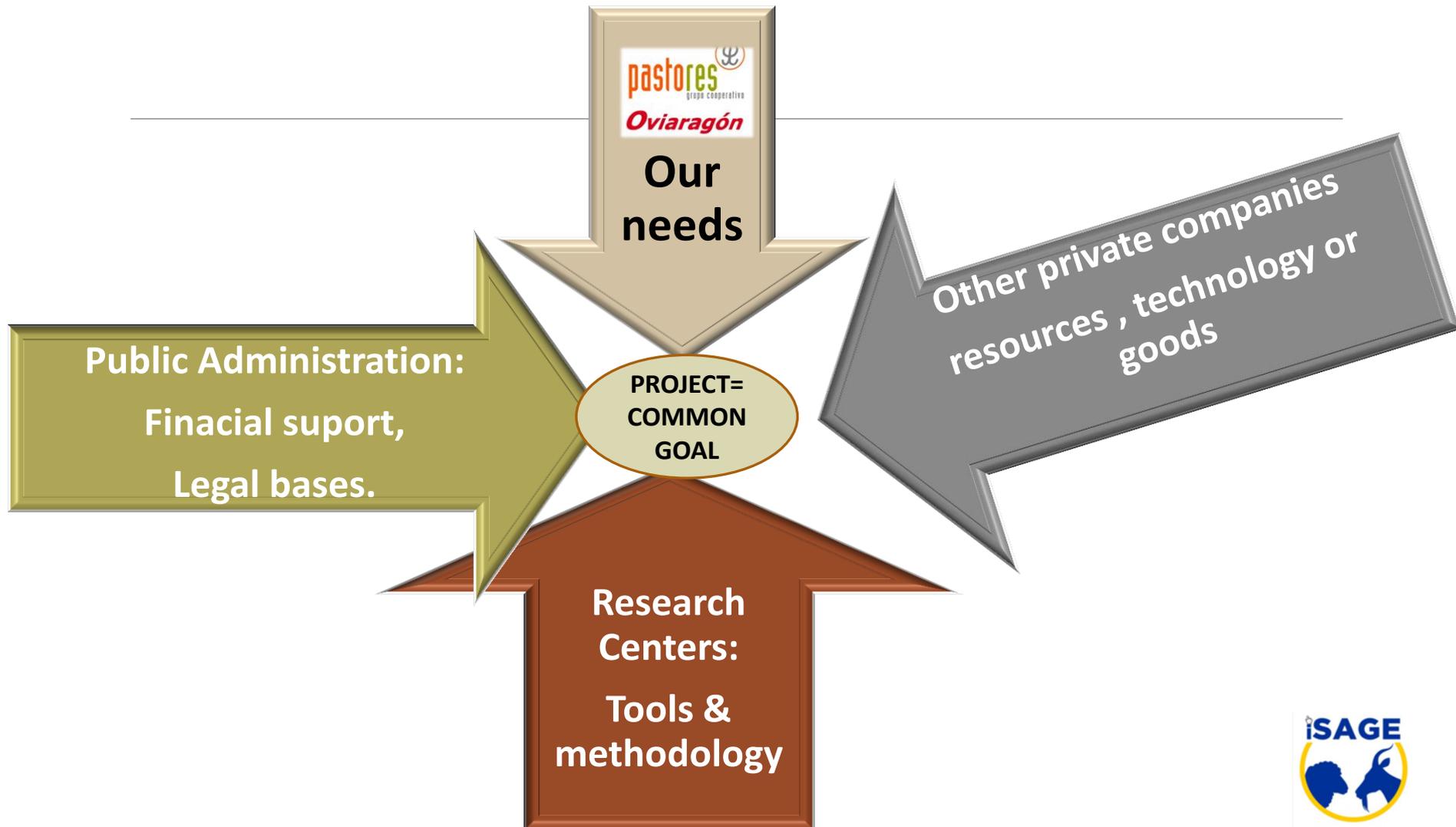




**The main goal of the cooperative is to increase the profitability of farms and improve farmers quality of life, providing the best products in terms of quality and safety for the final consumer.**

# Innovation projects: areas and methodology





# Current research projects

Marketing: NEW CUTS, PRODUCTS & RECIPES

NO ANTIBIOTICS & NEW FEED FOR LAMBS

SHEEP FEED CROPS

NEW GENETICS VARIANTS/ MALES/ EARLIEST GESTATIONAL AGE

MILK SHEEP PRODUCTION & CHEESE

COLOSTRUM

H 2020  
Isage:  
2016-  
2020

Interreg  
poctefa:  
PIRINNOVI:  
2016-2019



# Rasa Aragonesa Breed

.... Rasa Aragonesa is a local meat sheep breed raised in extensive systems in Aragón

Phenotypic Prolificacy =  
1,37 lamb/birth  
(17th catálogo selección  
Upra)

Heritability = 0,034  
(Jurado et al.,2008)



## Prolificacy improving is a Good way to increase the Gross Margin

Increase of 1% in:	Gross Margin Change for sheep	Gross Margin change for UTA
N° births for sheeo and year= $X_2$	+ 3,0%	+ 3,0%
<b>Prolificacy</b> = $X_3$	<b>+ 3,4%</b>	<b>+ 3,4%</b>
% Lambs mortality= $X_4$	- 0,6%	- 0,8%
Average prize of the sold lamb= $X_5$	+ 3,6%	+ 4,3%
€ for feeding for sheep and year= $X_6$	- 2,6%	- 2,7%
Total laboral cos = $X_7$	- 1,2%	



**Starts**  
In 1994 with the aim of increasing prolificacy

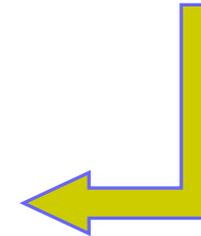


## ALLIANCES

- **INIA:** Genetic values. Annuar rams catalogue.
- **Regional Government:**
  - **Regional Animal Breeding Centre** – Rams selection nucleus. AI doses.
  - **CITA** – Ram production by MOET.

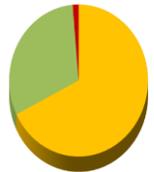
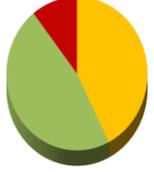
## Methodology

- **BLUP**
- **AI to connect herds to connect herds and spread the genetic improvement**
- **Herds with data: 348**
- **Connected herds in 2017: 150**
- **Nº ewes: 519.733**
- **Nº births: 2.270.934**



# Effects of ROA Allele



	 <b>No ROA</b>	 <b>ROA</b>
<b>Sin tratamiento</b>	 <b>1,34</b>	 <b>1,71</b>
	 <ul style="list-style-type: none"> <li>■ Simplets</li> <li>■ Dobles</li> <li>■ Triples</li> </ul>	 <ul style="list-style-type: none"> <li>■ Simplets</li> <li>■ Dobles</li> <li>■ Triples</li> </ul>

♀  $X X^R$  **+0,36 lambs/birth**

♀  $X^R X^R$  **STERILITY**

♂  $Y X^R$  **MALE R®**

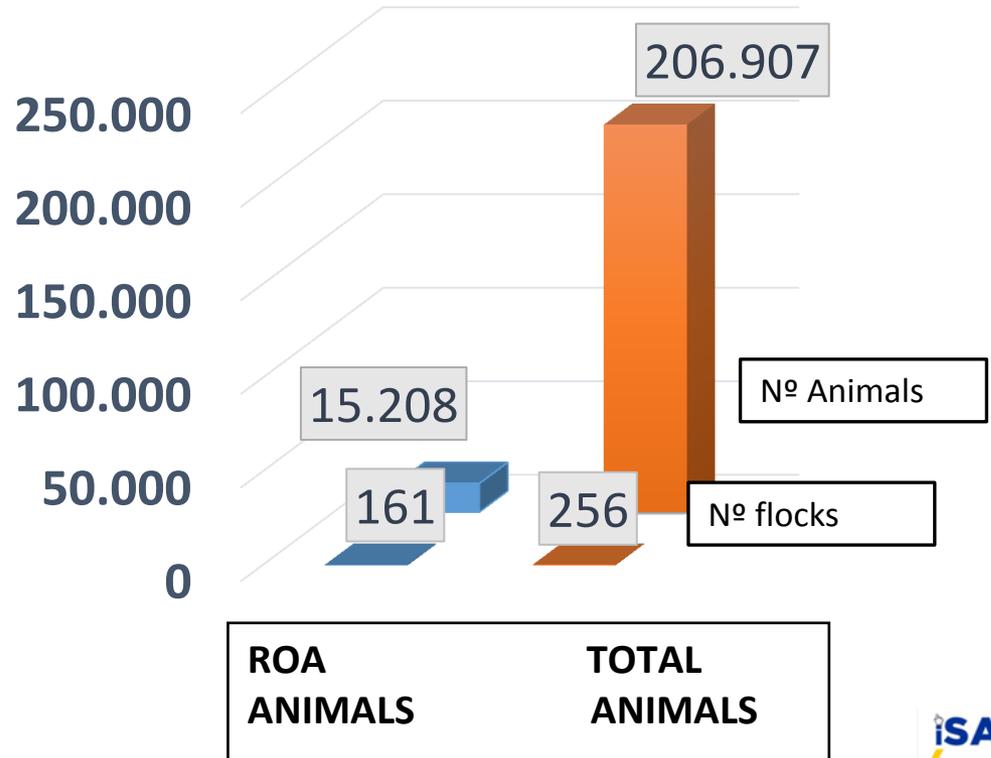


# Disseminate the allele across interested farms

AI



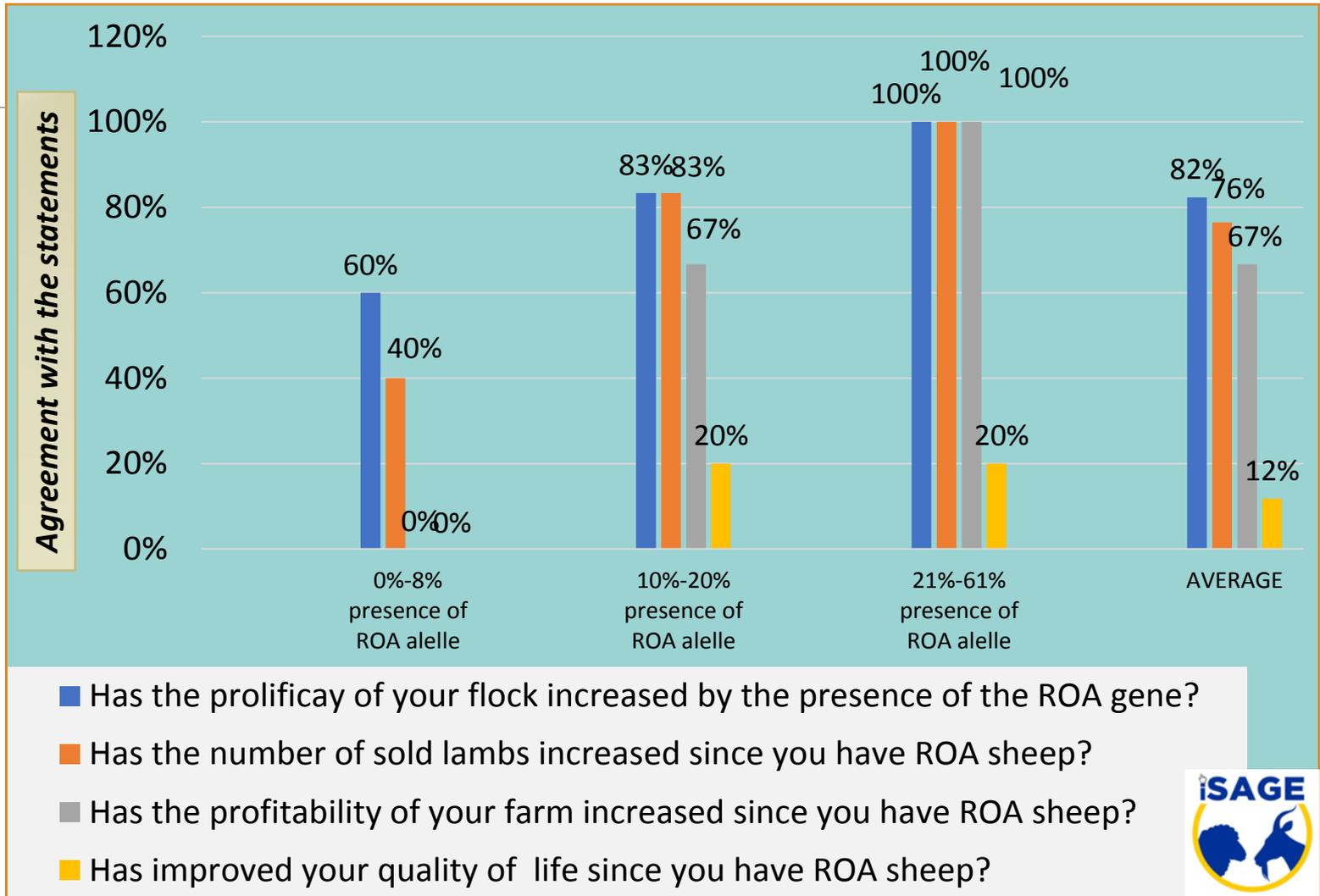
RAMS





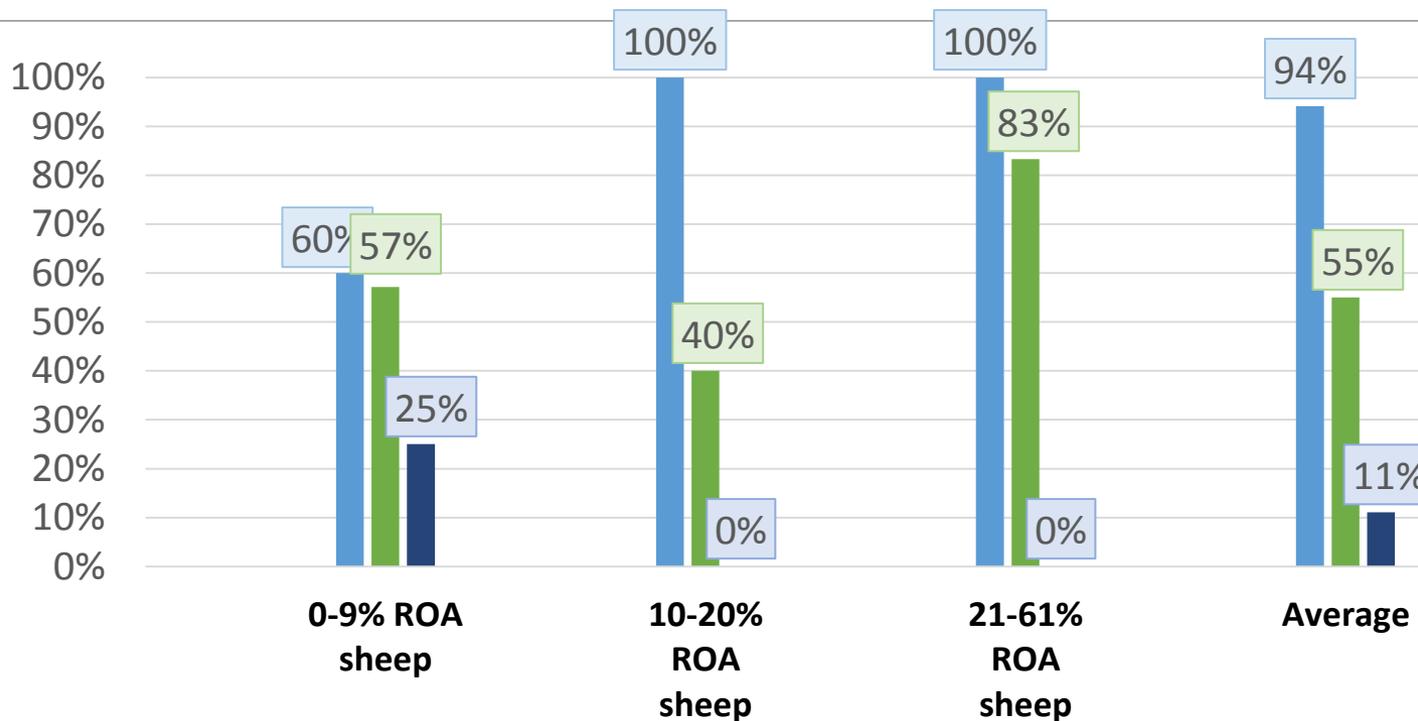
## Perception of the effect of the ROA allele across farms with different proportions of ROA sheep

ISAGE  
FARM  
ANALYSIS



## Perception of the effect of the ROA allele across farms with different proportions of ROA sheep

Agreement with the statements



- I'm happy to have ROA sheep
- I'm going to increase the number of ROA sheep
- There is more mammary disease since I have ROA sheep



A GOOD GENETIC MANAGEMENT IS CRITICAL BECAUSE HOMOZYGOSITY RESULTS IN STERILITY.

KEY FACTORS ARE:

- 1-THE IDENTIFICATION OF ANIMALS CARRYING THE ALLELE
- 2-STRICT CONTROL OF PROGENY
- 3-RECORDING OF PRODUCTION DATA
- 4-WELL-ESTABLISHED HERD BOOK
- 5-GENETIC ANALYSIS OF ALL MALES



## Prolificacy genes increase farm profitability without increasing flock size or intensifying production

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The ROA allele has been successfully spread across the Rasa Aragonesa sheep population, increasing to those farmers willing and technically prepared to increase prolificacy.



Joining the best  
of each one



The successful implementation of innovations needs of the active participation of every actors joined in one only goal



Thanks for  
your  
attention !!

