Introduction

Selection for resilience and resistance to parasites in Creole goats

Comparison of selection responses

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Introduction

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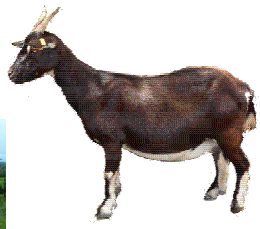
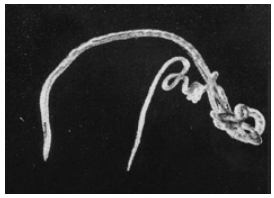
Introduction

Caribbean Islands



- Guadeloupe:
  - French island in the Caribbean
  - tropical humid climate
- Creole goat:
  - meat breed
  - 30 000 does
  - farming system : 30 does herd, pasture

Introduction



- High prevalence of gastro-intestinal nematodes (*Haemonchus*):
  - ⇒ 75% of pre-weaning mortality
  - ⇒ 30% productivity loss in kids at slaughter age
  - ↘ health, ↘ production
  - ↗ Parasites resistant to anthelmintics
- Importance of selection of goats against parasites

Materials and methods

Materials and methods

Purpose

What happens if we add a resistance or a resilience trait in the breeding objective?

- Resistance / resilience?
- Varying the economic values ?

Method

Comparison of selection response

- SelAction software
- In a closed nucleus : 300 does, 20 bucks

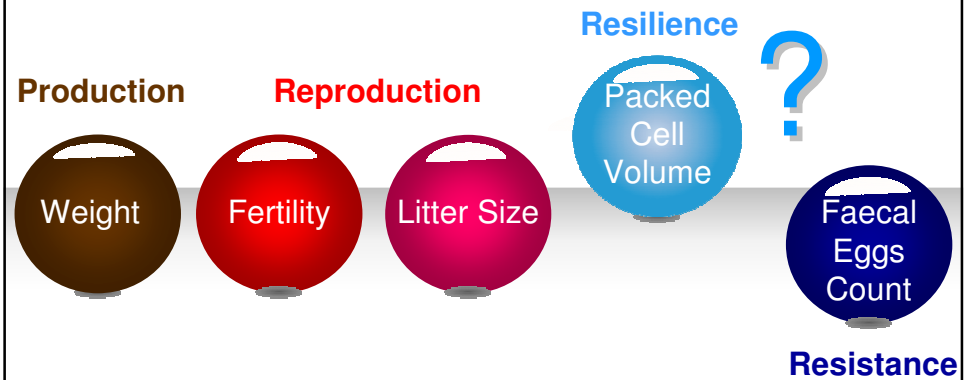
Materials and methods

Resistance vs resilience

Resistance		Resilience
↘	parasite infestation	→
↘	parasite burden	→
→	production	↗
↘	anthelmintics	↘

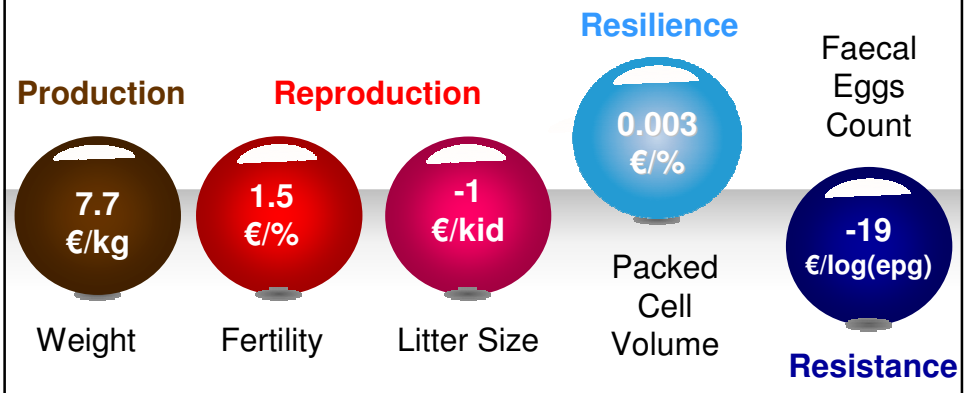
Materials and methods

Breeding objective for Creole goat



Materials and methods

Breeding objective for Creole goat



Results

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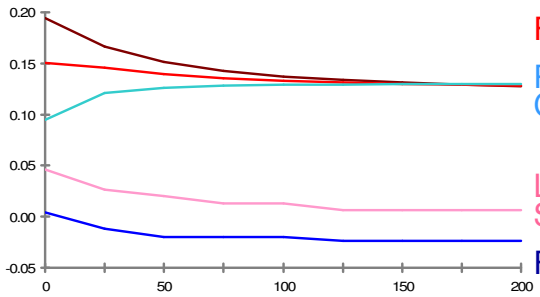
Results

Selection response with increasing economic value of PCV

Genetic standard deviation



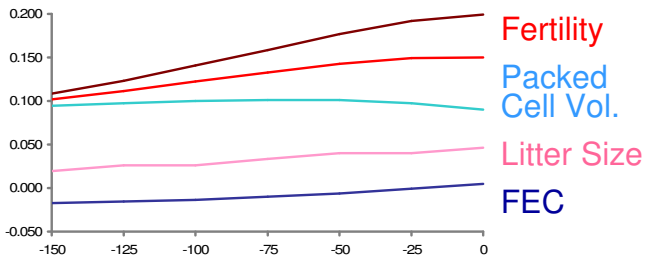
☹ weight and reproduction

☺ FEC

Results

Selection response with decreasing economic value of FEC

Genetic standard deviation



☹ weight, reproduction

☺ PCV

Economic value of -25 for FEC => stabilisation of this trait

Results

Selection response for alternative breeding objectives

Selection response (trait unit / year)	Base	Resilience	Resistance	Resilience + Resistance
Weight (g)	374	377	368	369
Fertility (%)	1.46	1.60	1.45	1.60
Litter Size (kids)			0.01	
Packed Cell Vol. (%)	-	0.14	-	0.15
FEC (log eggs per g)	-	-	0.003	0.002

Conclusion

Conclusion

1. Cost to select on resistance or resilience
2. Increasing EV of FEC?
3. Importance of selection on resistance **and** resilience => complementary