

Identification of QTL associated with gastrointestinal nematode resistance in Creole goat

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The Creole goat

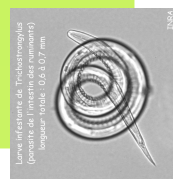


- Local meat breed
- Mainly reared at pasture
- Under a humid tropical climate

Haemonchus contortus

Trichostrongylus colubriformis

Oesophagostomum columbianum



Severe anemia
30 % production loss

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Genetic parameters

Heritabilities of traits at 11 months

Traits	h^2 (S.E)
FEC	0.22 (0.04)
Eosinophilia	0.17 (0.03)
PCV	0.23 (0.04)

Creole goat QTL design



378 offspring genotyped (~ 31 kids per sire)



104 microsatellite markers on 29 chromosomes

FEC, PCV, Eosinophilia and Weight at 7 and 11 months
IgA, IgE, IgG anti-ESP and anti-L3 at 11 months

Results

10 QTL detected on resistant traits

Traits	Chromosomes
FEC	22, 26
Eosinophilia	7, 8, 14
PCV	5, 9, 21
Weight	6
IgA anti-ESP	12

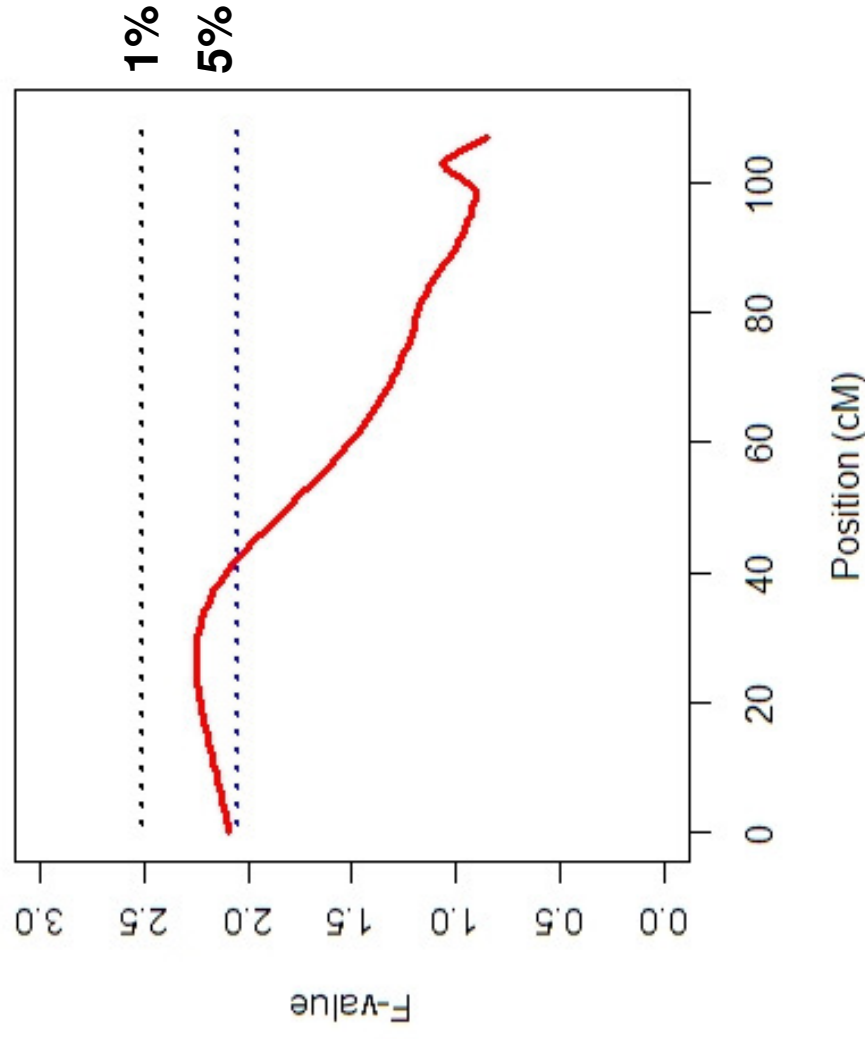


Results

Chr.	Traits	Position (cM)	Mean QTL effect	
3	PCV ₇	27	1.88	* IFNG
6	Weight _{210d}	3	0.95	* IL-3
5	Eosinophilia ₁₁	0	4.60	*
8	Eosinophilia ₇	81	1.34	**
9	PCV ₁₁	76	1.56	*
12	IgA a-ESP ₁₁	12	1.04	*
14	Eosinophils ₇	67	1.36	*
18	PCV ₁₁	0	1.24	* IgE
22	FEC ₇	0	1.17	**
26	FEC ₁₁	3	1.07	**

* : $P < 0,05$; ** : $P < 0,01$

PCV at 7 months - Chromosome 5



PCV at 7 months - Chromosome 5

2 families out of 12 segregating for the QTL

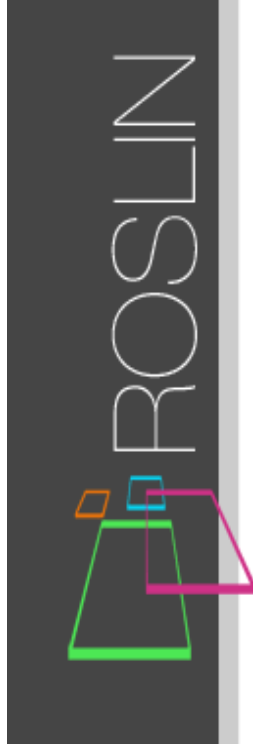
Trait mean (PCV) =25.3 s.d = 5.3

Sire	QTL effect	SE	Nb of offspring
3	2.03	0.87	31
7	1.72	0.59	24

More to come...

- Results for IgE, IgG
- New markers in significant regions
- More genotyped animals in these regions

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