

Searching for phenotypes to improve welfare in Avileña-Negra Ibérica beef cattle breed: preliminary results

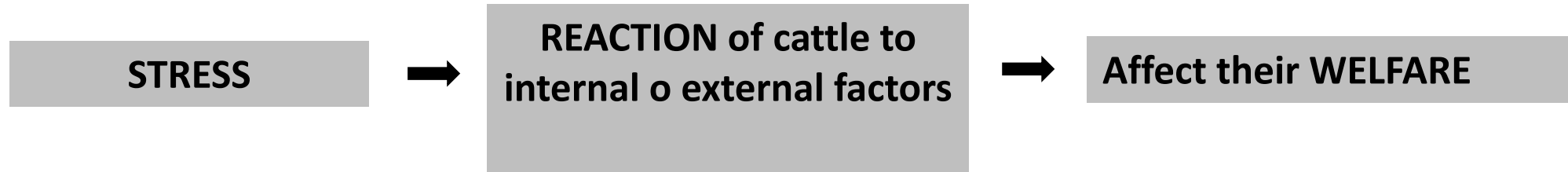
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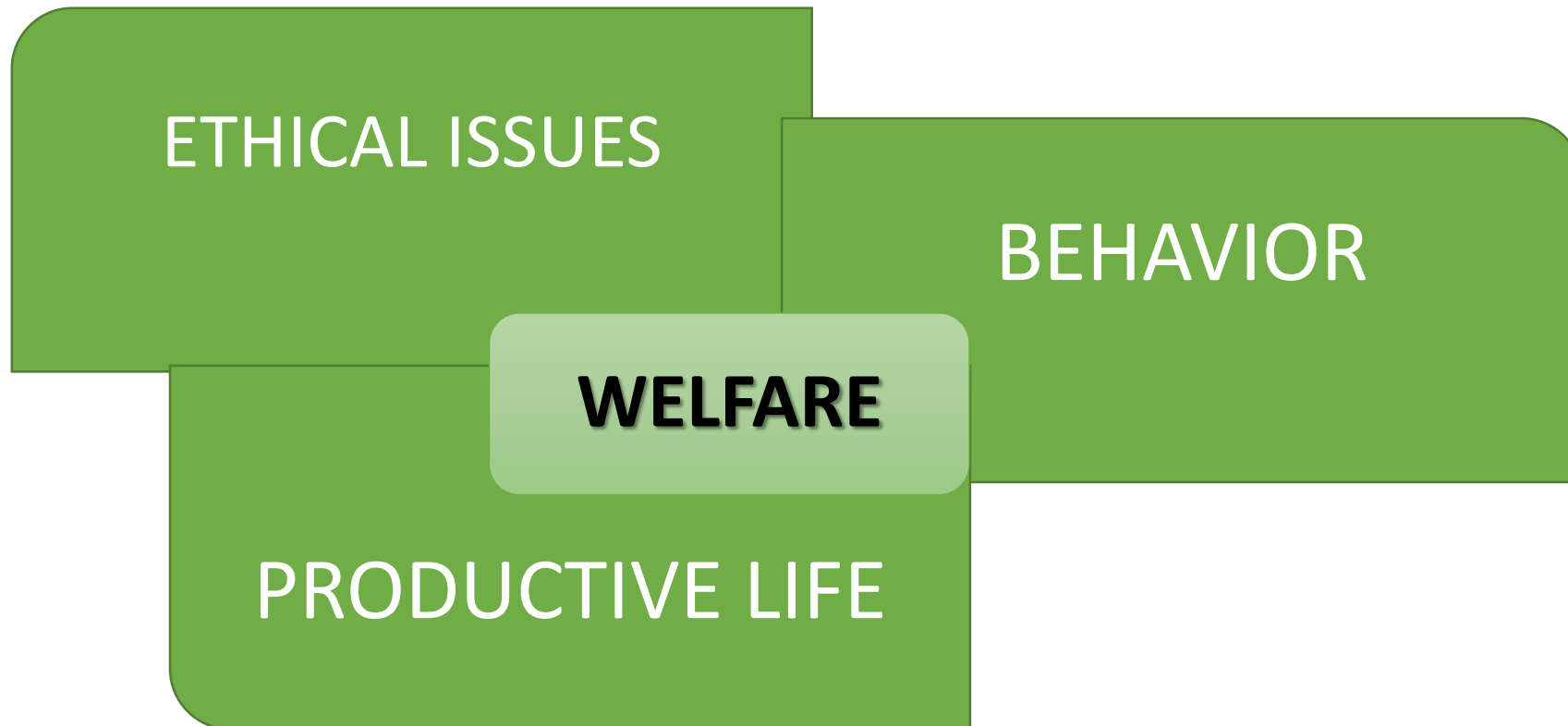
Introduction



ANIMAL UNDER STREES



ANIMAL WITH CHANGES IN ITS BEHAVIOR & ITS PRODUCTIVE LIFE



Introduction

Individual temperament is a component of the response to stress.

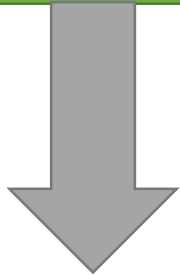


***Cortisol vs.
Exit velocity / Flight speed
Exit score
Response to move
Restraint in a crush
Isolation in a pen with a human***

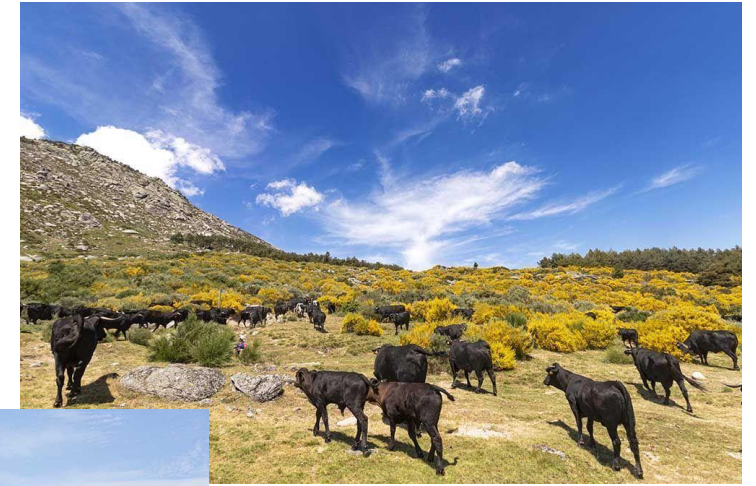
Introduction

Avileña-Negra Ibérica

- Local beef cattle
- Extensive production
- Meat production in feedlot



Large variability in their reactivity at the same stress event



Feedlot



Heifer scenter

Introduction

- Temperament is a risk factor for stress.
- Temperament is a component of the “coping style” of an animal
- How could genetics contribute to improve welfare and favour its impact on health, production and reproduction?.
- How do we evaluate temperament?

Our objectives

1. To establish a procedure to evaluate temperament in ANI calves at the Control Center for the post-weaning phase
2. To estimate the repeatability of temperament indicators

The Final end is to characterize “Coping styles”

Experimental setup

- **29** Avileña-Negra Ibérica **male calves** in a Control Centre under commercial conditions divided in **3 groups**
- **From 1 to 4 controls**
- **Two observers** by categorical traits

Group		G1	G2	G3	Total
Nº animals		4	14	11	
Control	C1	4	14	11	29
	C2		14	11	25
	C3		14	8	22
	C4			8	8
Total		4	42	38	84

Material & methods

- **Behavior protocole**

- **FT flight time** (time in second to cover 1,83 m, Burrow, et al. 1988)

- Chronometer (C1 & C2)



- Infrared sensors (FarmTek,North Welie,TX) / C3 & C4



- FS flight score
- RS restraint score

Material & methods

- **Behaviour protocole**

- FT flight time (time in second to cover 1,83 m, (Burrow, et al. 1988))

- **FS flight score** in 4 categories:

1:walk 2:trot

3:canter 4:run

- **RS restraint score:** At the weighting chute in 5 categories

1:quiet

2:slow movements

3:frequent movements with vocalization

4:constant movements, lateral displacements and volalization.

5: violent movements, and continuos intention to leave



	Flight exit (1,83m)				In a crush					
	Tpo (s)	Flight score				Witho ut move.	With movement			
		1	2	3	4		1	2	3	4
	0,856	x					x			

Model of analysis

Mixed model using remlf90 (Miształ, et al., 2009)

- Model:

$$FT / \underline{FS} / \underline{RS} = \textit{Type_timer} + \underline{\textit{Observer}} + \textit{Age} + \textit{Group} + \textit{Animal} + e$$

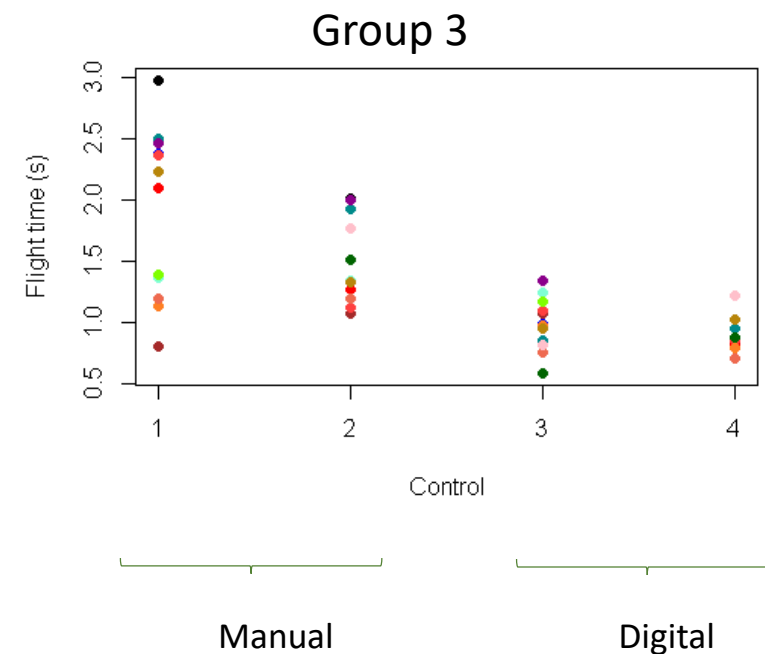
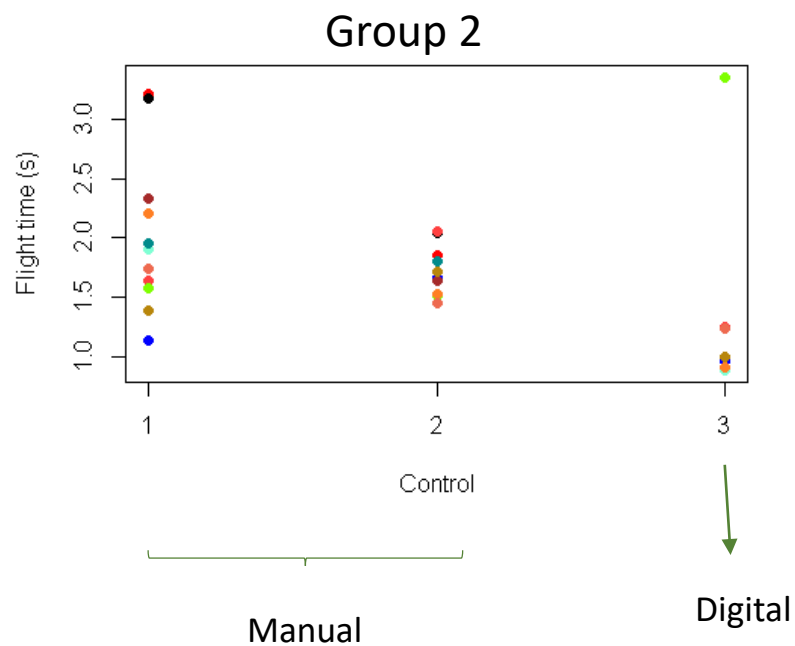
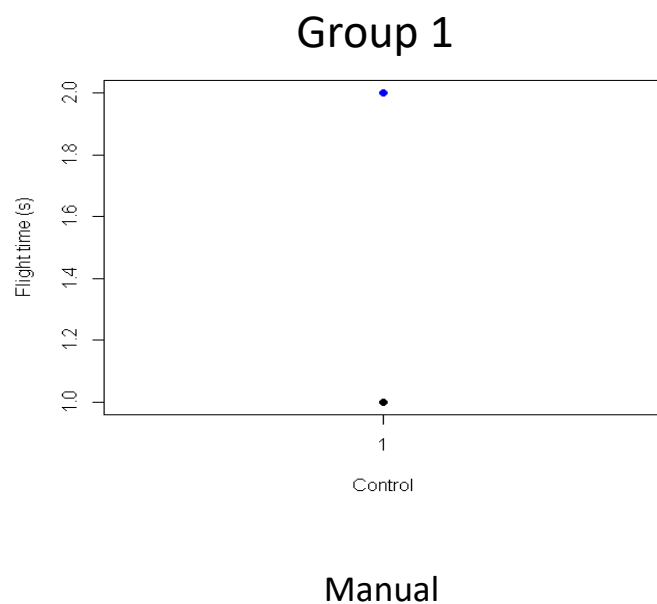
Repeatability
correlation

	FT	FS	RS
FT	0,20	-0,975	-0,643
FS		0,30	0,553
RS			0,31

Solutions

		Fixed effect	Solution
FT	Age		-0,001
	Type_Reference	Digital	0,469
	Group_Reference	G1	0,608
		G2	0,246

Manual system tend to increase flight time



Solutions

		Fixed effect		Solution
FS	Age			-0,005
	Observer_Reference	Obs_1	Obs_2	0,060
	Group_Reference	G1	G2	0,737
			G3	0,564

Contingency matrix

		Cat Observer 2					Total
		1	1,5	2	3	4	
Cat Observer 1	1	26		2			28
	1,5			2	1		3
	2	2		34	3		39
	3				12		12
	4				1	1	2
Total		28	0	38	17	1	84

Solutions

		Fixed effect		Solution
RS	Age			0,000
	Observer_Reference	Obs_1	Obs_2	-0,017
	Group_Reference	G1	G2	0,028
			G3	-0,188

		Cat Observer 2								Total
		1	1.5	2	2.5	3	3.5	4	5	
Cat Observer 1	1	18		2						20
	1,5			2						2
	2	2		23		1				26
	2,5	1				4				5
	3			2		16				18
	3,5					1				1
	4					3		8		11
	5							1		1
Total		21	0	29	0	25	0	9	0	84

Conclusions

- We do not know if low repeatabilities are due to the procedure in itself or caused by changes in the process of dealing with stress of the animals when they are exposed several times to the same management/stressor.
- Now, we are recording additional information to assess the value of these indicator traits as proxies of temperament.

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**BUSQUEDA DE NUEVOS ASPECTOS QUE AFECTAN LA FERTILIDAD EN LAS
GANADERIAS DE RAZA AVILEÑA-NEGRA IBERICA**





Thank you for your attention