

THE INFLUENCE OF DIFFERING FIBRE SOURCES ON TAIL DAMAGE IN DOCKED PIGS



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Tail biting in pigs

- Tail biting involves oral manipulation of a tail by another pig.
- Results in injury, severe cannibalism, infection and euthanasia.
- Incidence is variable, affecting individuals and entire populations.
- Difficult to predict and control.
- Welfare cost to animal and staff, economic loss for producer.



Tail biting and nutrition

- Numerous examples linking dietary factors and tail biting outbreaks.
- Tail biting is thought to be a redirected foraging behaviour.
- Dietary fibre induces satiety and so should satisfy the need to forage.
- Fibre also may impact mental state of pigs via gut-brain axis.

Tail biting and fibre

- Increase in dietary fibre 50 – 70% using soybean hulls (fermentability, water holding and bulk).
- Likelihood of an outbreak did not differ between treatments, but high fibre treatment had more pigs removed (~ 1.3 pigs per pen).
- Less pigs with no damage in the high fibre treatment (~ 4%).
- Tail biting behaviour observed more frequently in the high fibre treatment.
- In rats, fermentable diets increased lactic acid concentrations in the caecum and were associated with increased anxiety.

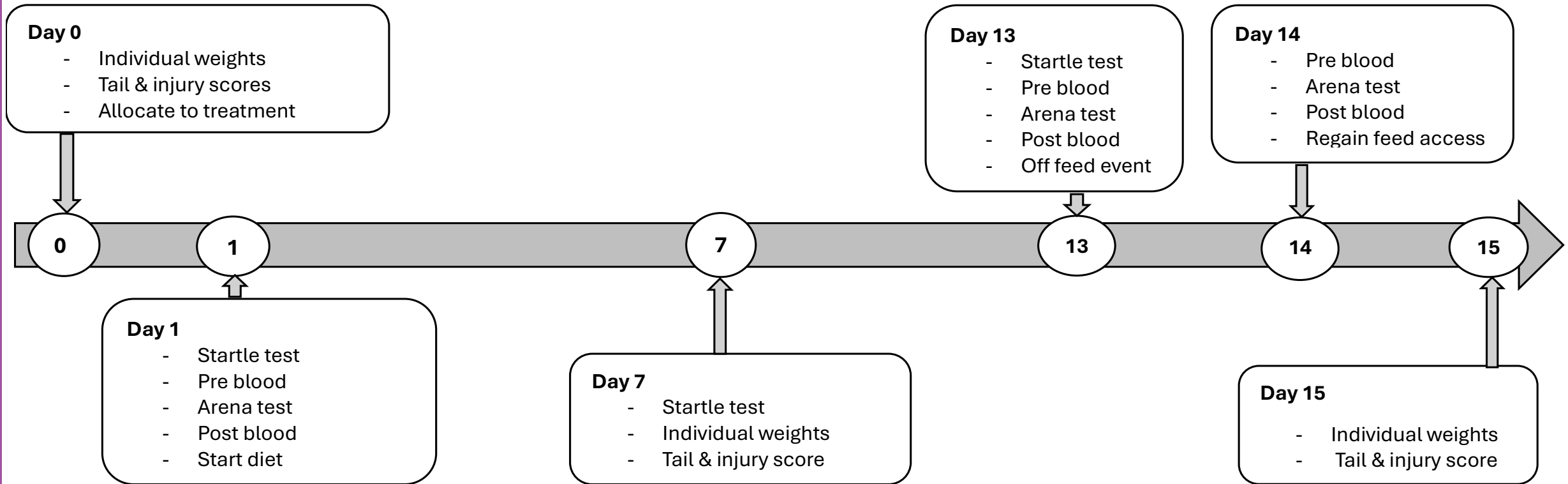
Hypothesis

- ***We hypothesised that pigs fed diets with increased soluble, fermentable non-starch polysaccharides would present with higher levels of tail damage***

Materials and methods

	Control	Soy hulls	Pulse
Wheat (%)	65	44	61
Soybean hulls (%)	0	9	0
Faba beans (%)	0	0	20
Energy (MJ/kg DE)	14	14	14
Crude fibre (%)	3.2	6.0	3.7
Neutral detergent fibre (%)	10.9	14.6	10.8
Acid detergent fibre (%)	4.0	4.6	4.9

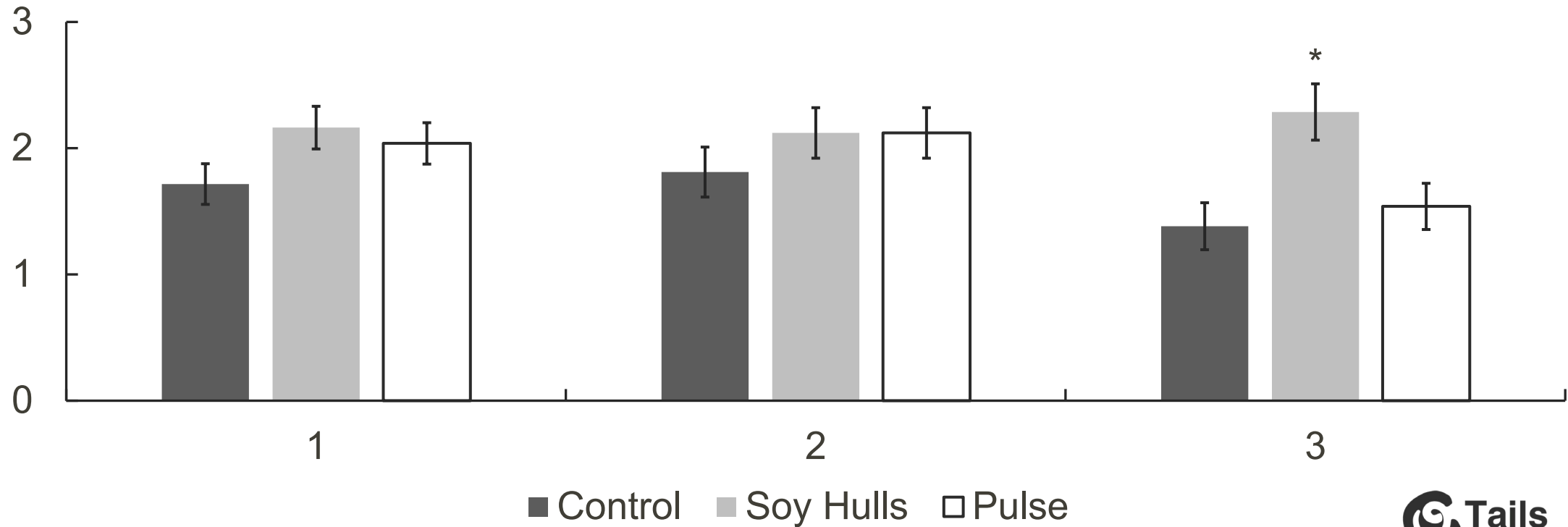
Materials and methods



Results

- Soy hull pigs had the highest third startle score after 13 days of dietary treatment.

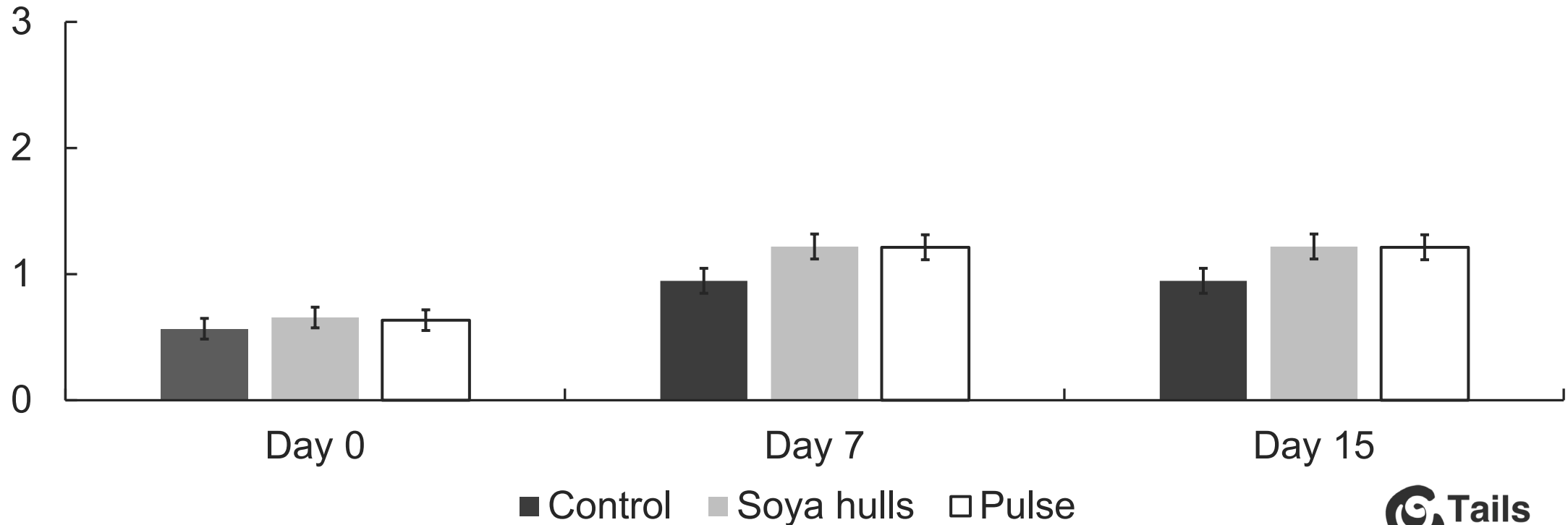
Startle score d13



Results

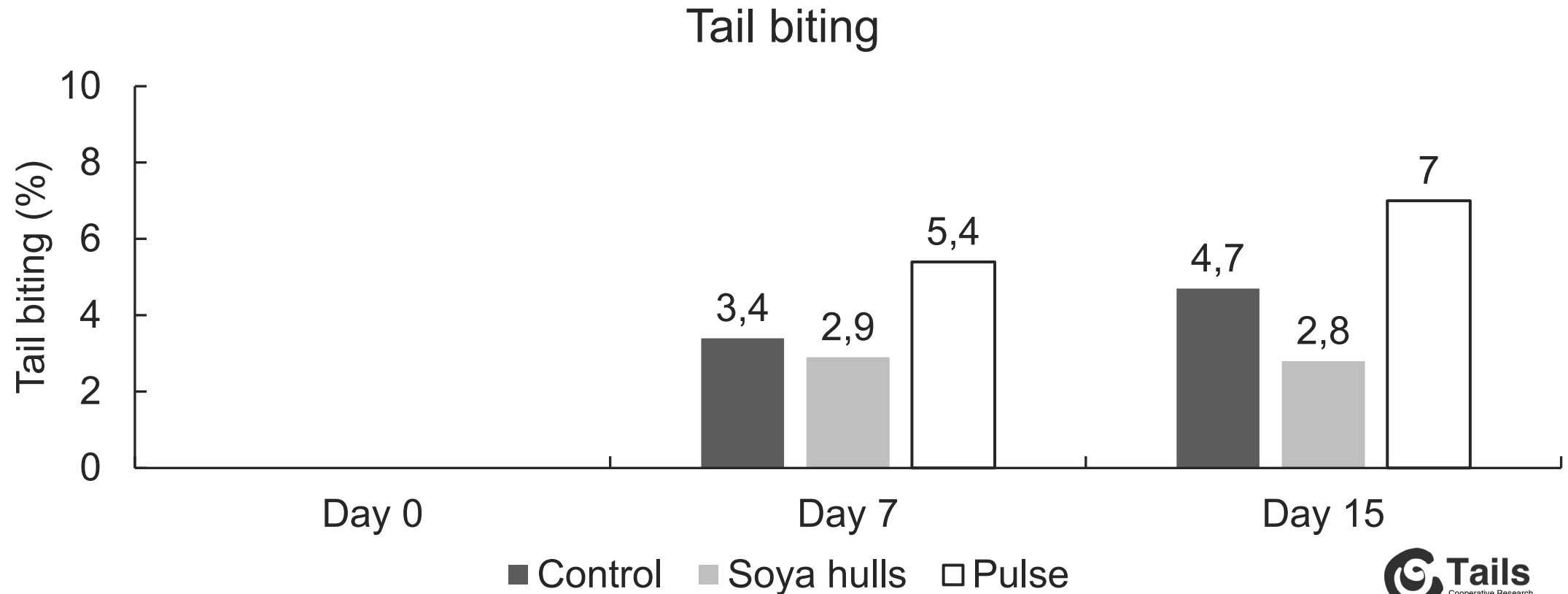
- Soy hull and pulse pigs tended ($P = 0.09$) to have higher injury scores 15 days after dietary treatment.

Injury Score



Results

- No significant effect of treatment on incidence of tail bitten pigs.





Conclusions and implications



- Faecal and blood samples will determine treatment effects on lactic acid concentrations.
- Pigs fed high fibre (soy hulls) were more anxious as measured by startle reflex.
- Both soy hull and pulse treatments tended to display higher indirect measures of aggression.
- No difference in tail damage or tail biting, but sample size was low.
- High fibre diets may have negative, unintended consequences.

