

# Effects of immune challenge at a young age on feather pecking at adult age

Jerine van der Eijk<sup>1,2</sup>, Aart Lammers<sup>2</sup>, Bas Rodenburg<sup>1,2</sup>

<sup>1</sup>*Behavioural Ecology Group*, <sup>2</sup>*Adaptation Physiology Group*,  
*Wageningen University*



# Immune system – Behaviour (Dantzer et al., 2008)



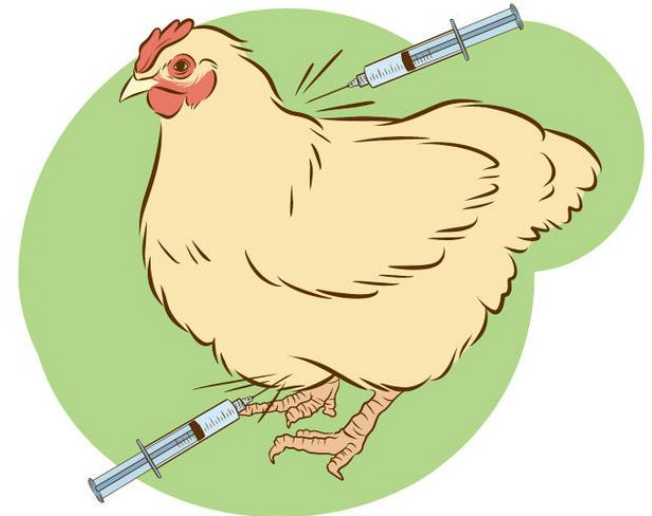
Cytokines – signalling molecules of immune system

- Sickness behaviour
  - ↓ Activity
  - ↓ Exploratory behaviour
  - ↓ Social interaction
  - ↓ Eating & drinking

# Immune system – Feather pecking

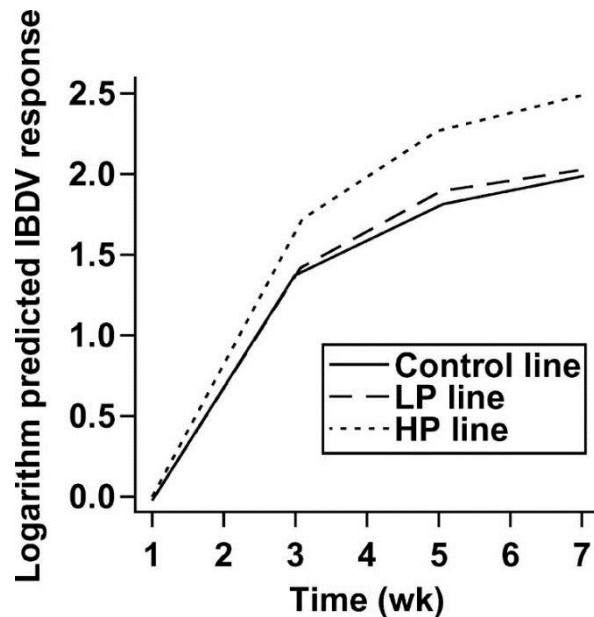
Challenge with HuSA (human serum albumin) at young age led to increased feather damage at adult age (Parmentier et al., 2009)

- HuSA: activates specific immune response
- Stimulation of specific immune response may predispose laying hens for feather pecking



# Immune system – Feather pecking

Feather pecking selection lines – reaction to IBDV  
(infectious bursal disease virus) vaccination (Buitenhuis et al.,  
2006)



- High FP line stronger response to IBDV vaccination vs. low FP and control lines
- High FP line greater levels of specific immunity

# Aim

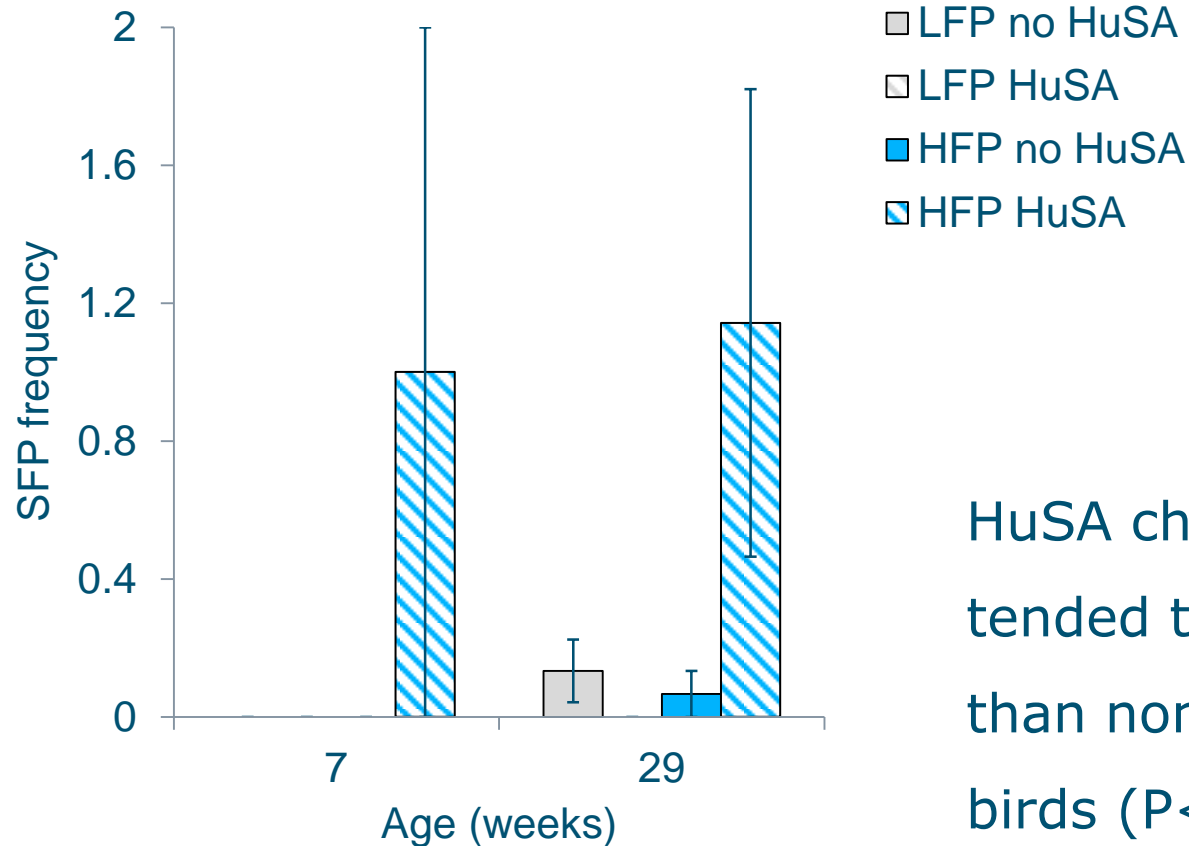
- 1) Identify whether HuSA challenge at a young age increases feather pecking at adult age
- 2) Identify whether feather pecking selection lines respond differently to HuSA challenge with regard to feather pecking behaviour

# Material & Methods

- Feather pecking selection lines (high = HFP & low = LFP)
- HuSA challenge at 8 weeks of age (15 birds per line per treatment)
- Feather pecking observations at 7 and 29 weeks of age



# Preliminary Results



HuSA challenged HFP birds tended to show more SFP than non challenged HFP birds ( $P < 0.1$ )



# Discussion

- Feather pecking already high in HuSA challenged HFP birds before challenge
- Feather pecking in general was low
  - 7 weeks: LFP birds and non challenged HFP birds showed no FP
  - 29 weeks: HuSA challenged LFP birds showed no FP
- HFP birds showed more feather pecking than LFP birds at 29 weeks of age ( $P < 0.05$ )



# Conclusion

- HuSA challenge did seem to increase feather pecking in HFP birds
- However, difficult to draw conclusions based on our current findings

