

Individual variation in growing-finishing pig feeding patterns



Jacinta D. Bus¹, Iris J.M.M. Boumans¹, Laura E. Webb¹, Eddie A.M. Bokkers¹

¹ Animal Production Systems group

Background

Variation in feeding patterns (Fig 1) could potentially be used to monitor the welfare of individual growing-finishing pigs. For example, severe reductions in feed intake and feeding duration could indicate illness¹. However, a large variation in feeding patterns at group level² implies that individual pigs may vary widely in their basal feeding patterns. These basal patterns must be well-understood before effective monitoring systems can be developed at the individual level.

Objective

To gain insight into the variation in feeding patterns of growing-finishing pigs:

- Between individual pigs
- Within an individual pig, over time

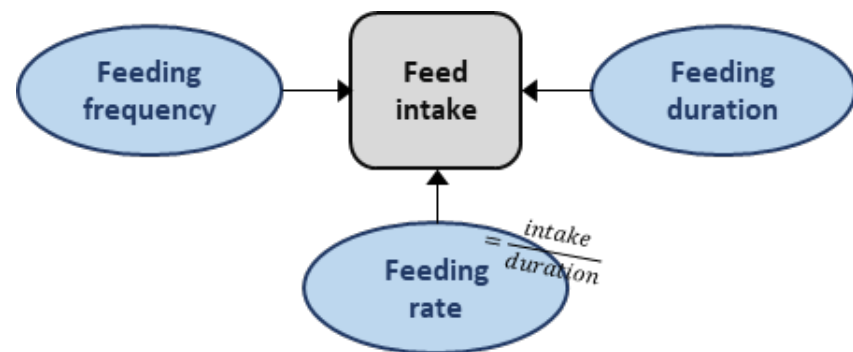


Fig 1 The parameters constituting feeding patterns. These can be expressed per unit of time (e.g. per hour or day) or per feeding visit.

Materials & Methods

- We followed 110 growing-finishing pigs from arrival to slaughter (3-4months)
- Feeding patterns were continuously recorded with an IVOG[®] electronic feeding station
- Feeding patterns were visualised at group and individual level, for the whole experiment, per day and per hour



Results

At group level, feeding patterns developed with age and had two diurnal peaks. At individual level, different patterns appeared. Individuals varied in their diurnal patterns (Fig 2) and in their feeding strategy (nibbling or meal eating, Fig 3). If present, the timing of the feeding peak became more stable with age (Fig 3).

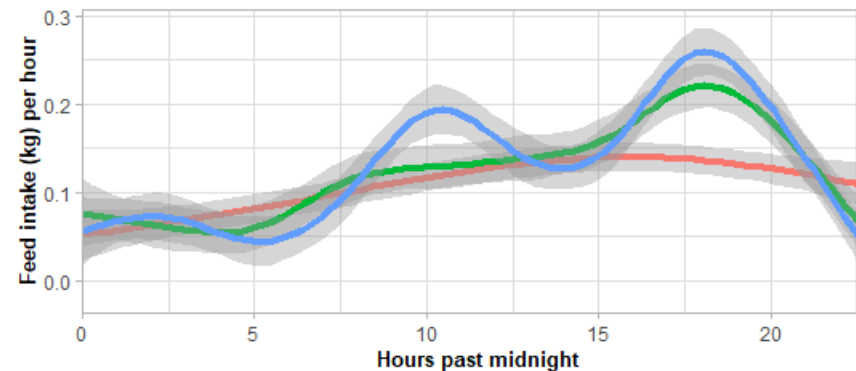


Fig 2 An example of three pigs with different diurnal patterns in feed intake. Blue shows an intake pattern pig with two peaks, green with one afternoon peak and orange reflects a pig eating across day and night.

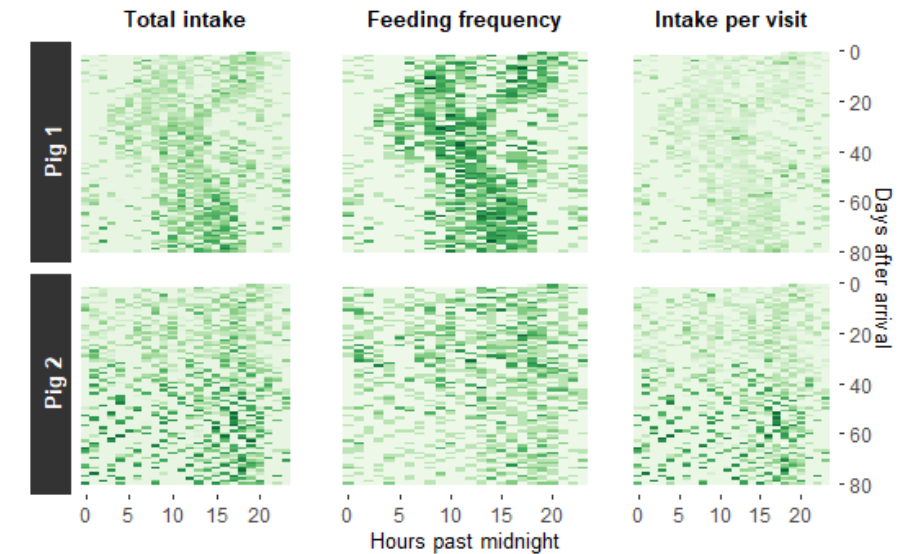


Fig 3 Total intake, feeding frequency and intake per visit (scaled values from 0 (light green) to 1 (dark green)) for each hour of the growing-finishing phase. Pig 1 develops a single-peak nibbler pattern, while pig 2 eats in larger meals throughout day and night.

Conclusion

Preliminary results suggest that pigs show individual basal feeding patterns, which are consistent across days and, in case of diurnal peak activity, become more distinct with age.

Next steps

- Quantify and explain basal feeding patterns of individual pigs
- Find relations between individual feeding patterns and welfare

References:

- ¹ Munsterhjelm et al., 2015, *Livestock Science* 181: 210-219
- ² Reyer et al., 2017, *Mol Genet Genomics* 292:1001-1011

Contact:

Jacinta.bus@wur.nl