

DAILY FEED INTAKE – A PARAMETER FOR ASSESSING THE PIG HEALTH STATUS?

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INTRODUCTION

The majority of today's food safety concerns have their origin in the production stages prior to slaughter and processing the so-called "pre-harvest" stages, i.e. mainly the agricultural primary production (Blaha 2005). The inclusion of the primary production (feed and animal production) into the food safety system is the so-called "stable-to-table concept" as issued in the basic directives "EG 178/2002" and "EG 183/2005" of the EU Commission. The initiation of such a system needs valid parameters which reflect the health status of the pigs during life time. An approach to measure the health status of fattening pigs is the animal treatment index (ATI). This benchmarking of pig herd health is based on the number of treated animals and the number of treatment days per group and on the duration of the fattening period (Blaha et al. 2006). Enormous variation of ATI (Blaha et al. 2006) requires further parameters to assess the health status.

The objective of this study was to evaluate whether the daily feed intake is a valid parameter to assess health status of penned pigs.

MATERIAL AND METHODS

In a fattening herd keeping 680 pigs in 3 units with a sensor processing feeding technique the daily feed intake of the pigs was documented for each valve separately (tab. 1).

Table 1. Housing of pigs in different units

Unit	Fattening period	Pigs (n)	Valves (n)	Pigs per valve (n)
1	02. May 06 – 23. Sept. 06	198	4	50
2	17. May 06 – 21. Sept. 06	300	4	75
3	17. May 06 – 23. Sept. 06	176	8	22

The lack of memory capacity in feeding computers for the storage of data sets from the whole fattening period required a handwritten documentation. The documentation also included information about clinical signs, antibiotic treatment (individual and/or group) and mortality. The association between daily feed intake and clinical signs, antibiotic treatment and mortality was investigated using statistical standard procedures (SAS® 9.1, SAS Inc., Cary, NC, USA).

RESULTS

The information of one batch per unit, which has been investigated up today, is presented in tab. 2. Differences in health parameters like treatment days and mortality are negatively correlated with average daily gain and the maximum duration of fattening period.

Table 2. Production parameters for the first batches in unit 1 to 3

Unit	Average daily gain (g/day)	Maximum duration of fattening (days)	Extended fattening period* (%)	Group treatments (days)	Mortality (%)
1	718.4	130	19.2	30	3.0
2	695.3	142	15.4	37	3.3
3	717.0	130	10.2	21	1.7

* Light weighted pigs were kept for an extended period in a separate unit

The daily feed intake for each batch is highly variable and influenced by the feeding scheme as well as the health status (fig. 1 to 3). During the first weeks of the fattening period, pigs were fed *ad libitum* and feed intake was above 100%. A decrease of feed intake for one day was observed in unit 1 and 3 as a result of technical failure. Feed was restricted at least after 10 weeks to avoid excessive fat content in the carcass. One day of decrease in feed intake in the end of fattening was due to the first shipping of slaughter pigs. Further periods of reduced feed intake could be correlated with clinical disease, e.g. coughing from day 109 to 118 in unit 3.

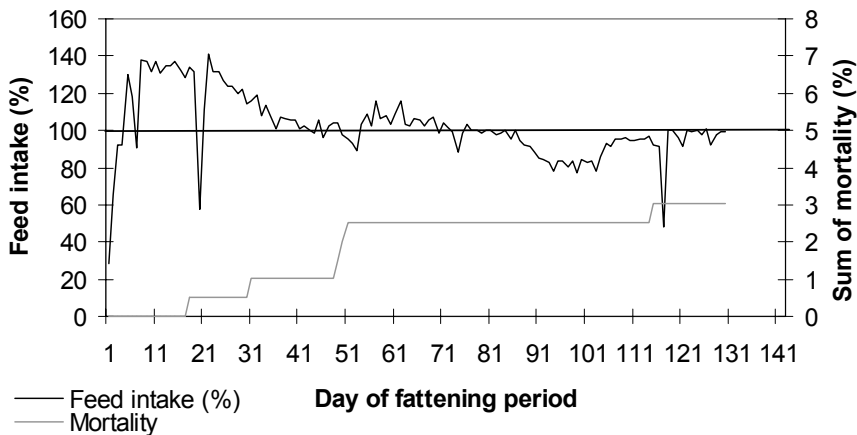


Figure 1. Daily feed intake and mortality for the first batch in unit 1

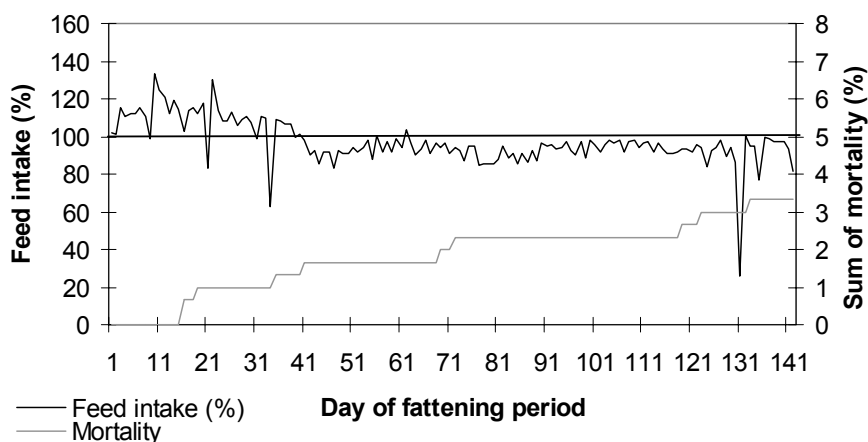


Figure 2. Daily feed intake and mortality for the first batch in unit 2

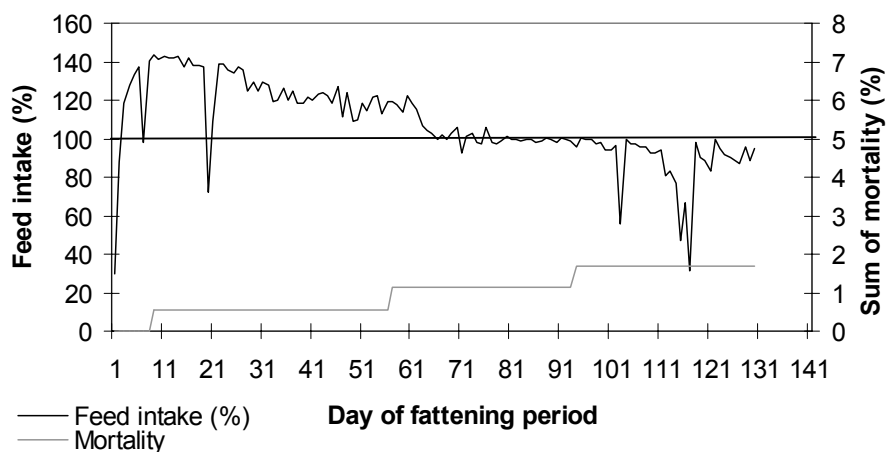


Figure 3. Daily feed intake and mortality for the first batch in unit 3

The study is not completed with this data and further batches to be kept during the winter period will be presented.

CONCLUSION

The cautious interpretation of the results of these three batches of the daily feed intake may be a suitable and reliable tool for measuring the health status of penned pigs. Combined with further parameters like ATI, average daily gain and mortality, the daily feed intake might be an additional type of information to complete the assessment of the pig health status during primary production.

Furthermore, the daily feed intake serves as valuable information for the attending veterinarian to follow up the course of several infectious diseases and control the efficiency of group treatments. In both cases it should be taken into account that feed intake might be influenced by other factors. Reduction in feed intake could also be caused by undesirable compounds, feed deterioration as well as environmental factors (Kamphues 2002).

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