

# P61: Impact of feeding levels on nutrient digestibility and concentrations of plasma metabolites in transition sows



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## BACKGROUND

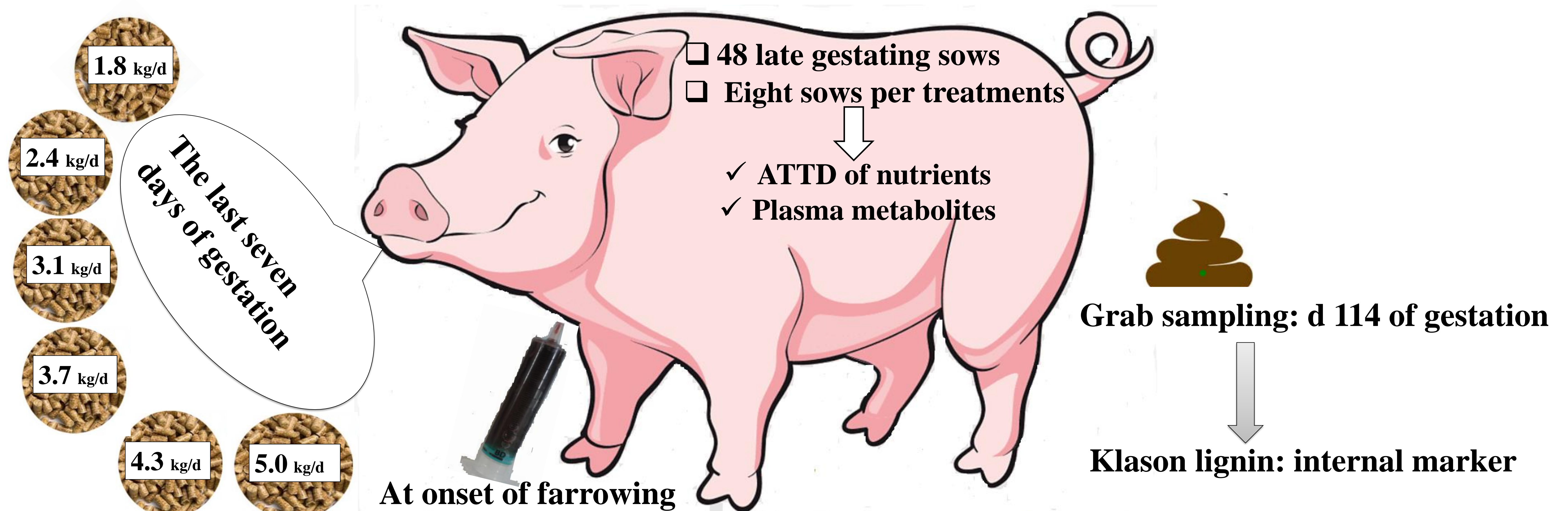
Feed intake (FI) can affect the passage rate, and thus alter the apparent total tract digestibility (ATTD) of nutrients and concentrations of energy metabolites in the plasma. It was hypothesized that the ATTD of nutrients decline & concentrations of energy metabolites in the plasma altered with increasing FI.

## OBJECTIVES

To investigate the impact of FI on the ATTD of gross energy (GE) and nutrients, and concentrations of energy metabolites in the plasma in late gestating sows fed the experimental diets during the last week of gestation.

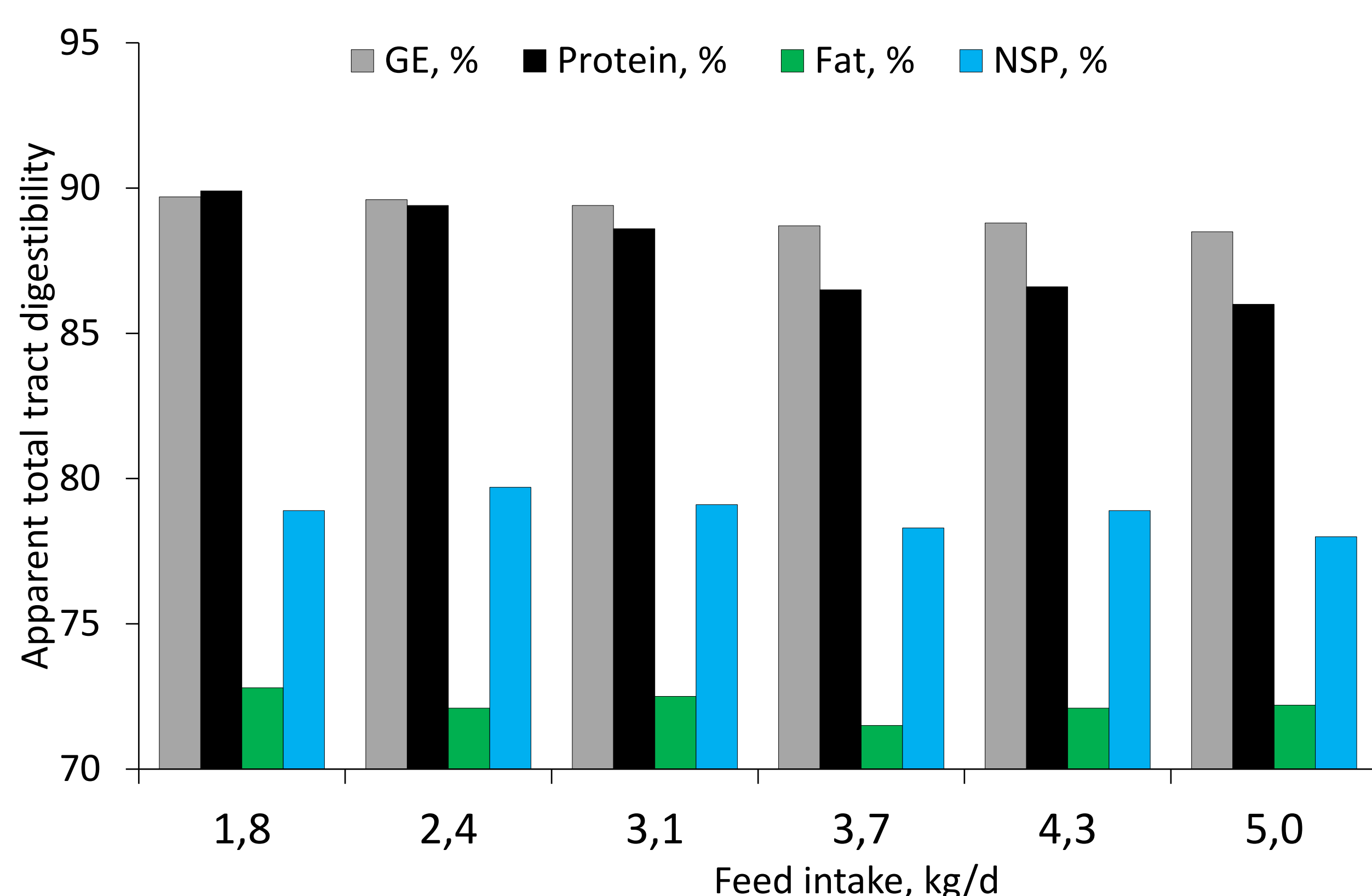
## MATERIALS AND METHODS

A dose-response experimental design was used to investigate the impact of increased FI during the last week of gestation on the ATTD of nutrients and concentrations of plasma metabolites. Fecal and plasma samples were collected for respective analyses.



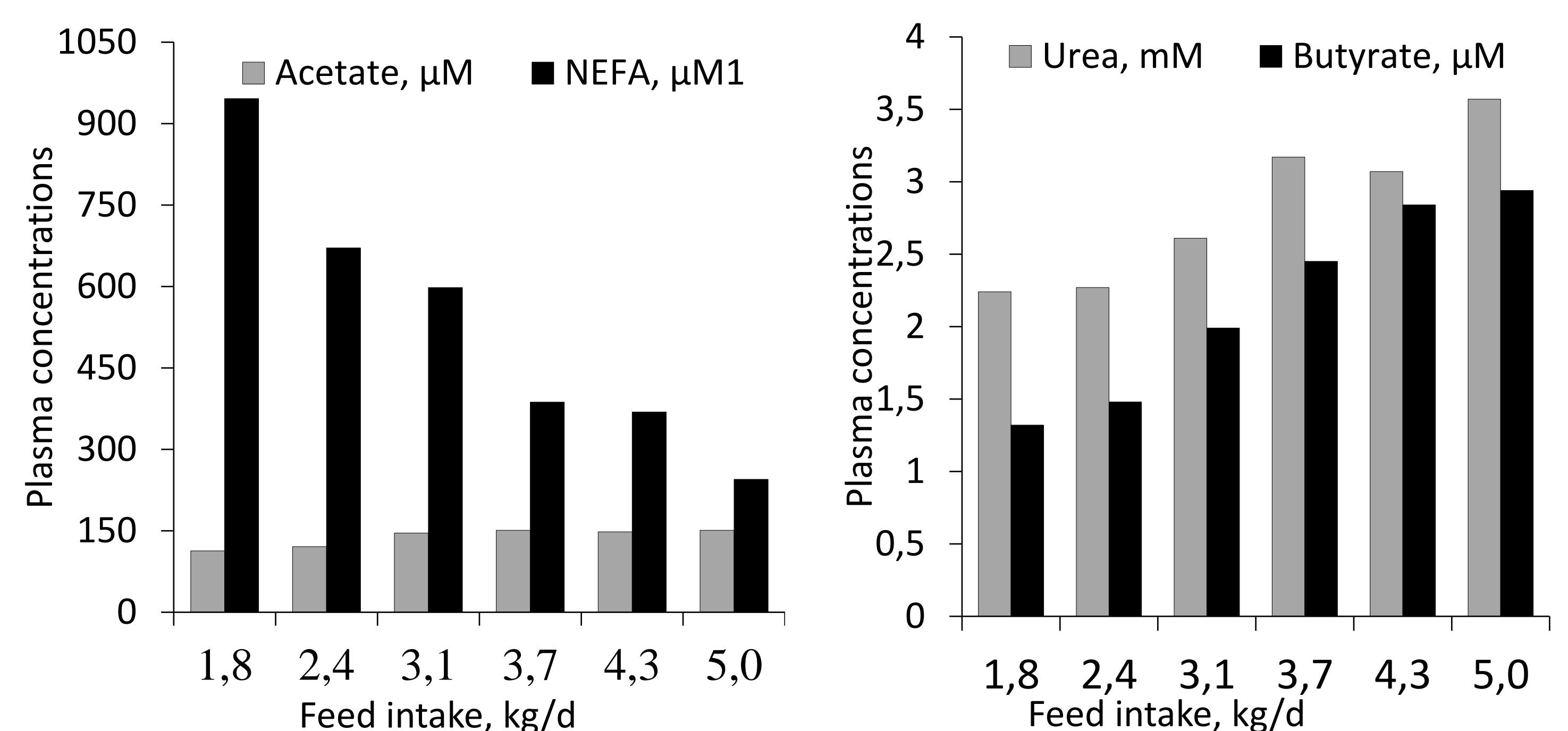
## RESULTS AND DISCUSSION

- ❖ The ATTD of nutrients declined as FI increased, but to different extents.
- ❖ The ATTD of GE, protein & non-starch polysaccharides (NSP) linearly decreased ( $P < 0.001$ ) with increased FI, while the ATTD of fat was not affected.



- ❖ The ATTD of GE and NSP were decreased by a maximum of 2% at the highest FI.
- ❖ The ATTD of protein decreased by 5% at the highest FI.

- ❖ Concentrations of plasma acetate, butyrate & urea increased ( $P < 0.001$ ), while plasma non-esterified fatty acids (NEFA) decreased ( $P < 0.001$ ) linearly with increased FI.
- ❖ Plasma propionate ( $P = 0.49$ ) was not affected by FI.



- ❖ The increased concentrations of acetate & butyrate with increased FI indicated increased fermentation due to more fiber supply in the diet.
- ❖ The increased concentration of urea showed that increased FI subsequently increased protein oxidation.
- ❖ The decreased concentration of NEFA with increased FI reflects improved energy balance of the sow.

## CONCLUSION

Plasma concentrations of acetate, butyrate & urea increased, whereas plasma concentration of NEFA decreased with increased FI. The ATTD of nutrients declined to different extents as FI increased, with the greatest impact on the ATTD of protein.