

# From Discovery to Development

Proceedings of the 16th International Symposium  
on Digestive Physiology of Pigs (DPP2025)

Lake Geneva, WI, USA  
20–23 May 2025



These proceedings comprise review papers related to keynote presentations and abstracts related to short oral and poster presentations, presented at the 16th International Symposium on Digestive Physiology of Pigs held in Lake Geneva, WI, USA, 20–23 May 2025

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animal



**98. Standardized ileal amino acid digestibility of faba bean, dehulled faba bean, peas, rapeseed meal, sunflower meal and three batches of soybean meal fed to growing pigs**

K. Blaabjerg\*, S.K. Boldsen, P. Tybirk, N.M. Sloth, U.P. Krogh

Seges Innovation, Aarhus N, Denmark

\* Corresponding author: K. Blaabjerg.

Standardized ileal digestibilities (SID) of amino acids (AA) in three batches of soybean meal and alternatives to soybean meal were determined, to enable inclusion of locally grown protein in pig diets without compromising accurate supply of digestible AA. Two experiments (Exp) were conducted. In each Exp, eleven pigs were ileal cannulated at a body weight (BW) of 33 kg. After a recovery period, the pigs were used in a Youden square design with five dietary groups and 8 periods. In Exp-I, pigs were fed a nitrogen-free diet (NF-1,  $n = 18$ ) or one of four cornstarch-based diets with 32 % standard soybean meal (SBM-1,  $n = 15$ ), 64 % faba bean (FB,  $n = 15$ ), 43 % rape seed meal (RSM,  $n = 16$ ) or 78 % peas (PEA,  $n = 15$ ) as the sole AA source. In Exp-II, pigs were fed a nitrogen-free diet (NF-2,  $n = 20$ ) or one of four cornstarch-based diets with 35 % standard soybean meal (SBM-2,  $n = 16$ ), 34 % high protein soybean meal (SBM-3,  $n = 15$ ), 60 % dehulled faba bean (DFB,  $n = 13$ ) or 46 % sunflower meal (SFM,  $n = 15$ ) as the sole AA source. Pigs were fed 43 g/kg BW and Yttrium was used as indigestible marker (0.4 g/kg). In each period, pigs were adapted to the diets for 5 days followed by two days of continuously ileal digesta collection for 9 h per day. The SID of AA was calculated using average basal endogenous losses across experiments conducted with the same protocol and in the same facilities (average: 16.2 g AA/kg DM intake). Statistical analysis was conducted including dietary group and BW within dietary group as fixed effects and the pig and period as random effects. In Exp-I, SID of total AA was greatest ( $P < 0.05$ ) for SBM-1 (82 %), intermediate for PEA (77 %) and FB (77 %) and lowest for RSM (72 %). In Exp-II, SID of total AA was greater in SBM-2 (90 %) than in the remaining ingredients ( $P < 0.05$ ), where SID of total AA was 86 % for SBM-3, 83 % for DFB, and 83 % for SFM. In conclusion, SID of total AA of the three studied batches of SBM varied from 82 % to 90 %. SID of total AA of FB was 77 % and 83 % in DFB.

**Keywords:** Ileal amino acid digestibility, Protein sources, Pigs.

doi: [10.1016/j.anscip.2025.07.099](https://doi.org/10.1016/j.anscip.2025.07.099)