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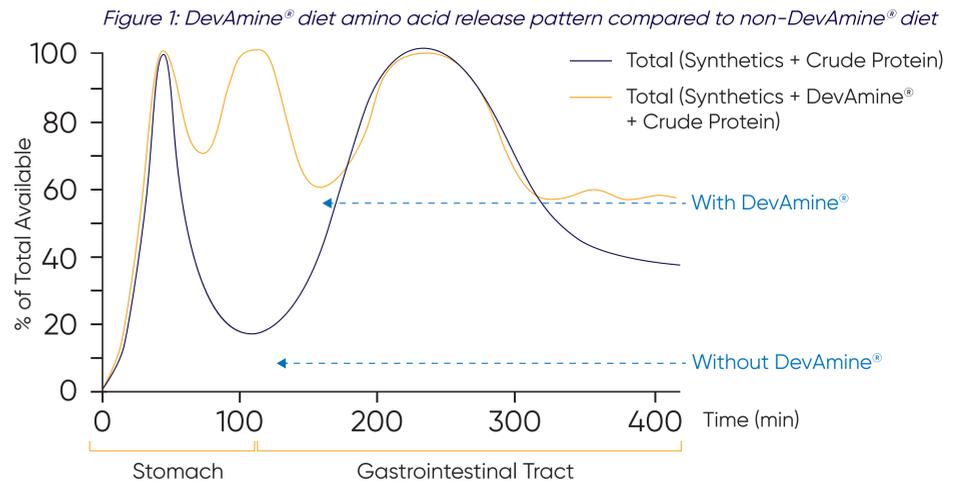


Introduction

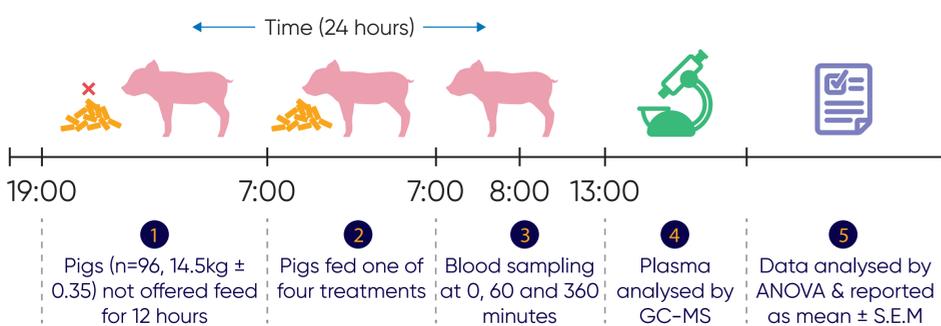
Differences in protein and absorption kinetics influence protein efficiency and balance.

DevAmine® allows amino acids and sugars to be linked under specified proprietary mixing conditions. Amino acids are therefore digested slower than synthetic amino acids. The resulting final product behaves more like a highly digestible protein than an amino acid or protein from a vegetable source.

(Figure 1)



Methodology



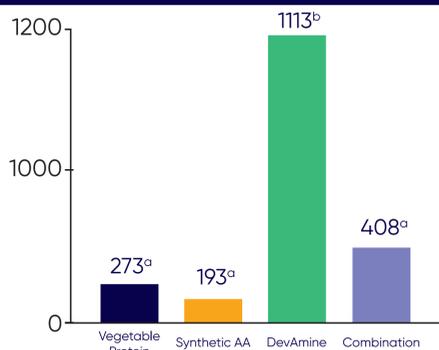
Treatments

Four treatment diets were formulated to focus on:

- Vegetable protein
- DevAmine®
- Synthetic amino acids
- Combination of
 - Vegetable protein
 - Synthetic amino acids
 - DevAmine®

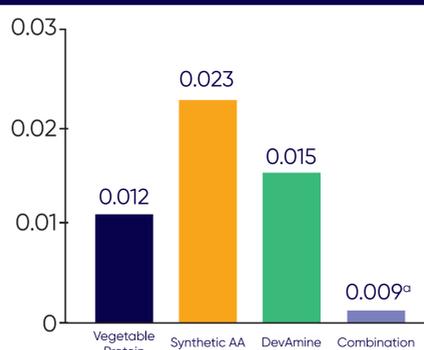
Results

Total AAs (nmol/ml) at 360 mins



DevAmine® significantly increased total plasma amino acids at 360 minutes (S.E.M 222, P-Value <0.05)

Urea/AA (umol/nmol) at 360 mins



DevAmine® had a tendency to reduce urea per nmol of amino acid absorbed (S.E.M 0.005, P-Value <0.1)

At 360 minutes:

- DevAmine® significantly increased the plasma concentration of total amino acids
- Compared to Synthetic AA, DevAmine® tended to decrease the umol of urea per nmol of amino acid absorbed

Discussion

The significant increase in plasma amino acid levels observed from pigs fed DevAmine® indicate increased absorption. There was no significant increase in urea concentration, indicated by the lower urea to amino acid ratio. This suggests that the higher concentration of amino acids is not being catabolised and excreted as urea. Whereas, the synthetic AA diet provided the highest urea to amino acid ratio which suggests increased catabolism.

Conclusions

DevAmine® can aid protein efficiency by increasing plasma amino acid levels without increasing catabolism. Synthetic amino acids appear to increase catabolism, in turn reducing protein efficiency.



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