

6A-101: Peripheral chemosensing and feed intake in pigs

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Project Participants - Not Applicable

Aims and Objectives

The main objective of the project has been to identify potential feed ingredients/additives with high preference and high appetite stimulation that may enhance post-weaning feed intake in piglets.

Key Findings

- 1-The four non-bitter primary tastes (sweet, umami, sour and salty) were found to have preference thresholds in pigs a bit lower (sucrose and citric acid) or slightly higher (MSG and NaCl) than the equivalent identification threshold in humans.
- 2- Glucose polymers such as maltodextrin, were found to be highly preferred in pigs but only at higher concentrations than classical primary tastes.
- 3- In addition, the project has identified other highly taste-active compounds including organic acids (different from citric acid), L-amino acids (different from glutamic acid) and high intensity sweeteners (other than Na-saccharin). These results are worth further investigation.
- 4-Our project has also outlined the need of looking beyond the preference concept and pays particular attention to the concept of sensory-motivated intake. In addition to a good preference value, compounds need to show a high consumption significantly in excess of the water consumed during the double choice.
- 5- Where our research project shows the highest potential in both sensory-motivated intake and preference is in some of the binary combinations of different taste enhancers tested such as MSG with acids or even sugar. As a result there is a commercialization project (Pork CRC 8C-002) already ongoing.
- 6- Equally relevant for the pig industry are other compounds (see key finding 3) that have just been reported with preliminary results here which should warrant further investigation before entering into a commercialization project.

Application to Industry Development of appetite enhancers for piglets

The results have identified one binary taste combination which is already in a product development phase under the commercialization scheme of Pork CRC with code number 8C-002.

A novel application for industry would come with further development of taste-active L-Amino acid binary combinations. The development will take a 1 year research project before entering into a commercialization scheme.

A third product development should be a result of further developing some of the high intensity sweetener data of the current project. Similar than the previous application, a one year research project should be sufficient to lead to a fast commercialization scheme.