

# Improving feed intake and palatability



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**Taste and smell are senses associated with feed intake. CLÉMENTINE OGUÉY and JOËLLE FAUGERON explain that flavors are versatile sensory additives that can enhance the taste and smell of feed to improve palatability and encourage greater feed intake.**

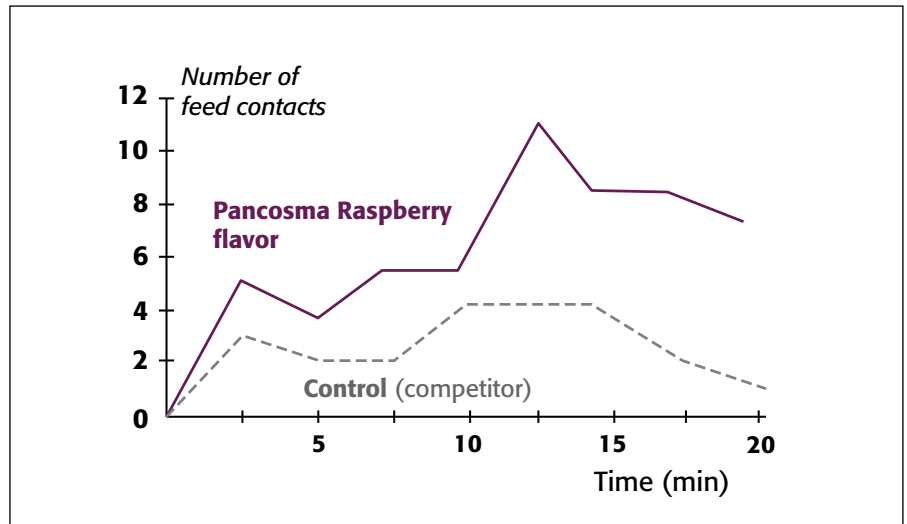
## Introduction

Flavors are essential tools to use to improve feeds. It is a powerful asset provided one knows why and how to use them. There are different reasons for using a flavor. In any case, it is key to remind that application tests should be performed to select the most appropriate products to fulfill the customer's needs and find the right dose for his specific product and process.

## Mask or substitute

Some raw materials used in feed are excellent from a nutritional point of view but may present some undesired olfactory notes (i.e. soapy, butyric, rancid, etc.) that may be detrimental to feed intake and therefore have to be avoided. Aside from the aversion the animal may have due to the bad smell, it may also be a reason for the farmer not to use the feed if he judges it inappropriate or does not like it. In addition, some materials (e.g. molasses) have highly fluctuating price and quality so there might be some interest to substitute them at least partially. Substitution of an expensive material by a flavor with similar aromatic profile, eventually combined to a

**Figure 1: Effect of a well selected flavor on feed attractivity for piglets.**



sweetener, will then allow keeping the same smell while saving costs. Doses have to be adjusted to find the right balance between savings and sensory perception.

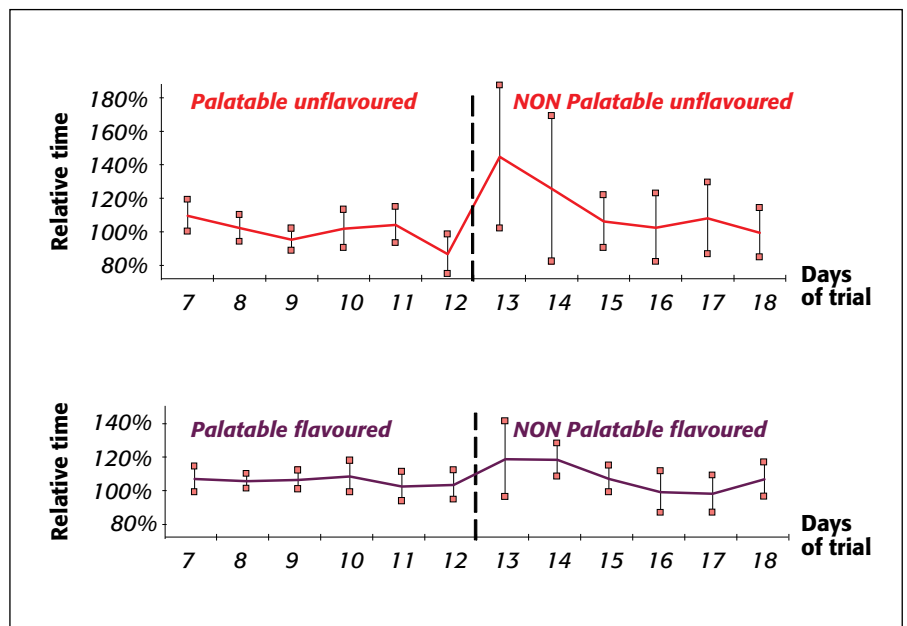
In such a case the use of flavors helps to cover the off-notes or to promote a constant aromatic profile of the feed or the premix, and comfort both the animal and the farmer.

### Attract and stimulate

Improvement of feed attraction is one of the first reasons for using flavors. Smell is indeed recognized as one of the most important of the five senses, for both humans and animals. And there is a strong odor-emotional connection: an odor can bring back old memories one had totally forgotten. In animals, memory for environmental odors plays a vital role because it regulates many behaviors that are crucial for survival. Humans and animals all have preferences for specific tonalities. Preference for certain smells may be inherited from evolution but also conditioned by the animals' own experience. Adding a flavor to a feed is a good way to stimulate exploratory behavior and feed intake: the smell, provided it is well chosen, will attract the animal and motivate consumption. Flavor selection may rely on general knowledge on animals' preferences. A series of trials highlighted the effect of flavors on the stimulation of the exploratory behavior in piglets (Figure 1), resulting in an increased feed intake and improved performance.

Animals are extremely sensitive to odors, sometimes much more than humans. As a consequence, animals are responsive and picky with their feeds. Any change, however subtle it may be, is noticed and may lead to feed refusal. Nevertheless feed formulation is changing all the time depending on raw material availability, quality and prices. Furthermore, even

**Figure 2: Use of a flavor to limit the negative effect of a non-palatable raw material in dairy cows.**



from one crop to the other the profile may change.

To alleviate such variations, the use of a flavor will reduce batch to batch discrepancies (Figure 2), allowing more flexibility to formulators and securing feed acceptance by farm animals.

### Stand out

Last but not least, flavors may be a way to differentiate one's feed on the market with a distinctive smell signature. For this type of request, one should check the customer's ideas and preference, as well as what is present on the market.

### Summary

Feeding pigs with a well-balanced diet that is highly palatable is essential for optimal growth performance and production efficiency. The use of flavors are useful tools to improve palatability and feed intake. **Ap**

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