Why do animals decrease their feed intake and how can it be easily counteracted?

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Current farm practices, although promoting animal better-being, induce a number of inevitable feed challenges to animals: feed transitions, high plant protein content, lack of palatability of specific compounds – however necessary for a balanced diet - , change of raw material or formulations, … How do these challenges affect the animals feed intake and why? How can their negative impact be counteracted?

Feed transitions, bad tastes, changes of raw material = reduced feed intake

Each feed transition is a challenge to overcome for the animals. Indeed, feed transitions mean: new type of feed, maybe new aspect (liquid to solid feed), new feed composition.

All these feed novelties are very well sensed by animals, which are, by nature, neophobic. So how do animals react in front of feed transitions, change of formulations …? They decrease their feed intake.

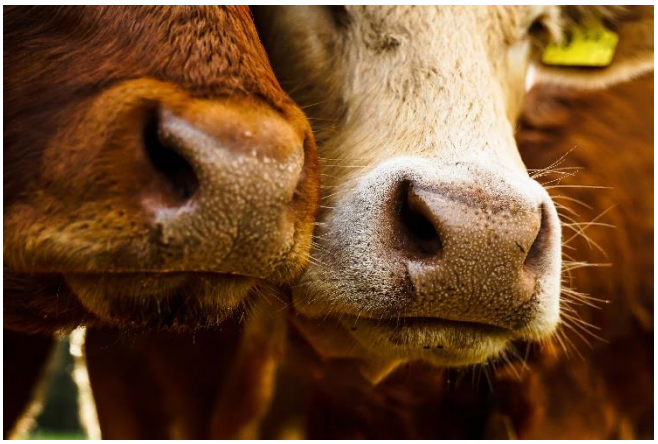
How do animals react with a new feed that does not taste as well as others, or a feed with an unpleasant taste (due to minerals, oxidation of lipids, bitter compounds…)? They decrease their feed intake, or sometimes even refuse to eat the feed.

But why?

A cow has 25 000 taste buds, when humans have only around 7 000. The olfactory epithelium, essential to smell and to taste, has a surface of around 100 cm^2 in swine and cows, and only 9 cm^2 in humans.

Animals are far more equipped than humans to smell and to taste what they eat, and to identify when a feed formulation or raw material has changed, or to detect the presence of unpalatable compounds (but necessary to incorporate in their diets…). As the animals are obviously very sensitive to their feed smell and taste, they will reduce their feed intake during feed transitions and other feed challenges.

How can a feed manufacturer limit drops of feed intake? There are three facets to work with: **the olfactory profile** of the feed, its **gustatory profile**, and its **attractant functionality**.



Feed olfactory profile: the importance of smoothing it

Smell is the first contact the animal has with its feed, with taste just behind. And considering the sensibility of animals to smells and tastes, flavourings have a role to play in animal production.

A flavouring is the key to avoid the novelty of changes of smell of a same feed, due to changes of raw materials behind for instance. The flavouring will indeed cover the changes and therefore smooth the olfactory profile of the feed. The animal will first smell the flavouring, will recognize it and will eat the feed more easily.

It is essential to make sure to use a flavoring that has a sufficient constancy and persistence.

Gustatory profile: smoothing it and boosting the palatability

Taste is the second step between an animal and its feed. Just like for the olfactory profile, the flavoring will smooth the variations of taste of the feed: no surprises for the animals.

Each time an animal (or a human being) eats something, the brain makes a memory of it. Flavourings enhance the feed palatability and therefore encourage the animals, which will have a positive memory of the feed if the flavoring activates the center of pleasure in the brain, to eat the feed again.

To go a step further, a flavoring can be associated with a sweetener to reach a higher palatability. The latter will bring the sweet taste, universally appreciated, and will also enhance the flavoring. They work in synergy on the gustatory approach, just like 1+1=3 in business.

Attractant functionality

An attractant functionality can be brought by the flavoring thanks to specific molecules that naturally attract animals. The attractant molecules are released from the feed into the air and sensed by the animals, thanks to their developed olfactory receptors. This is an additional tool to help the animals find their feed and to motivate them to eat the feed.

Conclusion

Smell is the first step before feed ingestion, followed closely by taste, and animals are very well equipped to sense them. Flavourings and sweeteners are key measures for a feed manufacturer to improve the consumption of their feed, even more in presence of unpleasant – but necessary – compounds. Also, to smooth the smell and taste of the feed - thanks to flavourings - will ease feed transition and feed intake, it will thus bring reassurance for the animal towards its feed.

Flavourings and sweeteners are a key lever to improve animal better-being through their feed, hence helping animal production.