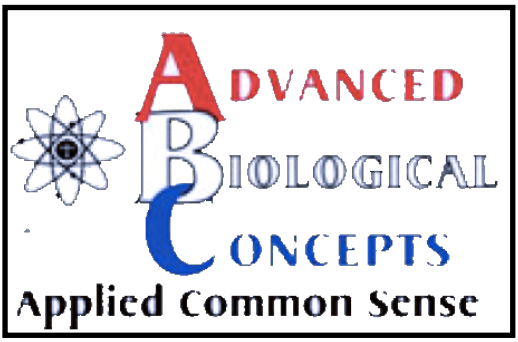
Advanced Biological Concepts®

Technical Bulletin

"Do Animals Eat Minerals Because They Need Them or Because They Taste Good?"



"If you want to reduce human or veterinary medicine to a common denominator, you have to remember that when the animal's physiology is deranged, it doesn't make much difference what you call the problem - but it is very probably a mistake in nutrition often founded on the attempt to be economical."

William A. Albrecht, PhD

Do Animals Eat Minerals Because They Need Them or Because They Taste Good?

Animals eat minerals because they taste good, but they only taste good when they are needed. I know that sounds like gibberish, but consider this: Appetite for any given mineral is governed by a biological feedback loop that involves taste buds, the cellular tissue concentration of the mineral, and the solubility of that mineral in the feed. When the taste buds are triggered by deficiencies of nutrients in the tissues they are able to recognize the needed nutrients. In this case, solubility equates to palatability - it tastes good if you need it. When the animal reaches satiety for that mineral, it no longer "tastes good" and they quit eating it.

This is the innate physiological ability of animals that allows them to pick and choose the elements they need from a properly presented, cafeteria-style mineral program. It is this same trait that allows grazing herbivores to balance their ration for energy, protein, and minerals in one 6 to 8 hour grazing cycle — if the proper nutrients are available in the pasture and if the forage is properly prepared,

CARRIERS, FLAVORINGS, AND PALATABILITY.

Formulation of our products requires the use of some plant products and salt as carriers or bulk extenders. We do not add flavor enhancers or consumption inhibitors.

As a simplified example, consider our Cu-Mix product. Animals need only relatively small amounts of copper. If we provided an undiluted source of copper, one lick would provide excessive amounts. Since there is a universal need for salt (NaCl) in animal nutrition, we dilute the Cu with salt - Cu Mix is 90-95% salt.

It would be inadvisable to supply Cu Mix as the only mineral as that would negate the animal's opportunity to self regulate their Cu or salt needs. If they needed copper they would have to eat excess salt — if they needed salt they would get excess copper. To compensate for this, we also supply plain white salt – thus giving them a choice. Apply this basic concept to all our minerals and you

can see how complex the formulation can be. It's not only about palatability, but also about choice.

In the example above salt is a nutrient carrier, in that it adds bulk, but is also a required nutrient. Other carriers, plant products and by-products from plant milling, are also used in some products whose ingredients are not compatible with salt. These are not chosen for nutrient value but are chosen to be of neutral palatability so the animal neither 'likes' nor 'dislikes' the product. This enables the animals to exercise their nutritional wisdom.

APPARENT EXCESS CONSUMPTION

When beginning an individual, self regulated mineral program, it is not uncommon for some animals to consume considerable amounts of certain items. In addition to filling their immediate requirements, animals will also eat to compensate for previous deficiencies; e.g. to replace bone mineral loss or liver reserves. It may take up to 6 months for this apparent excess consumption to taper off. If it does not taper off, one needs to check other issues as described below. Do not confuse this higher than anticipated consumption with overeating. Animals rarely over-consume. - they are eating it because they need it.

- **Animals may be forced to consume more minerals than needed when subjected to improperly formulated rations or mineral supplements. For example, if there is too much Calcium in a TMR (Total Mixed Ration), animals will eat extra Phosphorus from a cafeteria-style mineral program, to balance the Ca/P ratio. Consumption of P will go down if some Ca is removed from the force-fed ration. If feeding a TMR along with a cafeteria-style mineral program, it is best to add only about 50 to 75% of the computed amounts of minerals to the TMR. This allows the animals to fine tune their mineral balance without having to eat excess minerals to compensate for a force-fed, unbalanced minerals in the ration.**
- **Feeding other mineral products in addition to the cafeteria style mineral program may alter the consumption of self select minerals.**

- **ADE consumption goes up if there are high nitrates, mold mycotoxins, excess protein or basic deficiencies in the feeds or ration. Consumption goes up as hay and forages age and deplete in vitamin content.**
- **BVC and Vitamin C intake increases with stress. Stress can be caused by many situations; including bad weather, extreme high production or performance, relocation, stray electrical currents, geothermal events. and stressful herd dynamics.**
- **Iodine consumption increases if nitrates are high in the feed or water, if subjected to stray voltage or geo-magnetic fields, or if they are fed moldy feed.**
- **Animals will often adjust their mineral consumption overnight in response to ration changes or impending changes in the weather.**
- **Consumption changes after having stabilizing on the free choice system could be caused by differences in seasonal needs, e.g animals frequently take more sulfur when the are building a new hair coat in spring and fall.**
- **High Total Dissolved Solids (TDS) in the drinking water may cause compensatory changes in self regulated mineral consumption.**
- **There is the possibility that some animals may possess or develop a taste for a particular ingredient. Little weight should be given to that opinion unless and until the other factors listed above are investigated and eliminated.**

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An analysis of this flawed University research can be viewed at:
http://www.dochollidaysblog.com/article-index/an-analysis-of-a-flawed.html

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