

Activated silicon dioxide to achieve a synergistic effect in pigs

In the digestive system of the pig, all biochemical reactions happen through ionic exchanges between molecules. It is known that these interactions can be disturbed by such elements as stress, anti-nutritional ingredients and toxic products emitted by certain micro-organisms, thus reducing the potential effect of feed additives in diets.

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On the other hand, when all nutrients, feed additives, cells and gut flora of the animal work in harmony we see an increased global effect, also called 'synergy'. Finding the synergy within feeding formulas in animal nutrition can no longer be ignored and is becoming one of the main goals for nutritionists today.

Several experiments conducted for some years now have proved that by acting on the ionic potential of water within the gut of the animal, it is possible to enhance the digestive system making additives such as enzymes, acidifiers, antibiotics, probiotics and yeast, among others, more efficient.

Studies done in various world research centres* show that adding silicon dioxide that has been submitted to an electromagnetic treatment (thus becoming activated or 'informed') contributes to improving animal performance when added to

feed. Only a small quantity of 200ppm of the activated silicon dioxide is enough to transfer the electromagnetic frequency to an aqueous solution of the gut and improve the ionic potential of H₂O.

This contributes to achieving synergy between feed additives already present in the diet.

Role of electromagnetic frequencies

Let us take a step back in this discussion. Contrary to common knowledge, there has been a long history using electromagnetic waves to affect the biological function of a living organism.

The first discovery was made in 1891, when the famous electricity pioneer Nikola Tesla, following his invention of the 'tesla coil', carried out several experiments demonstrating the harmlessness of alternate currents on the human body.

Later in the century, George Lakhovsky used Tesla's discovery to build a Multi Wave Oscillator and documented the effect of electromagnetic fields on plant cells. His 'Geranium experiment', which lasted from 1924-1930, showed that certain frequencies were able to treat cancerous cells of a sick plant; cells were regenerated when exposed to an electromagnetic field.

In more recent times, further research was continued by Moore et al. (1979) who demonstrated that the growth of all micro-organisms can be altered by a magnetic field.

Fig. 1. Synergy effect of activated silicon dioxide with benzoic acid in piglets (Study conducted at Schothorst Feed Research).

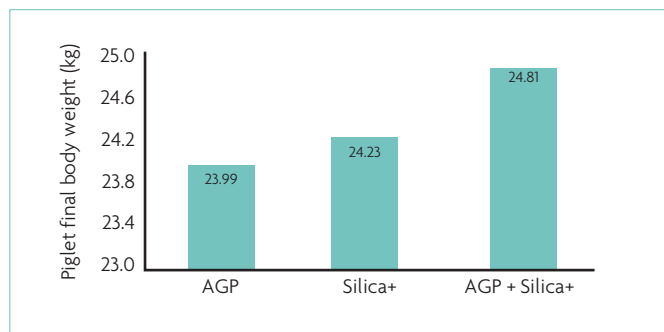
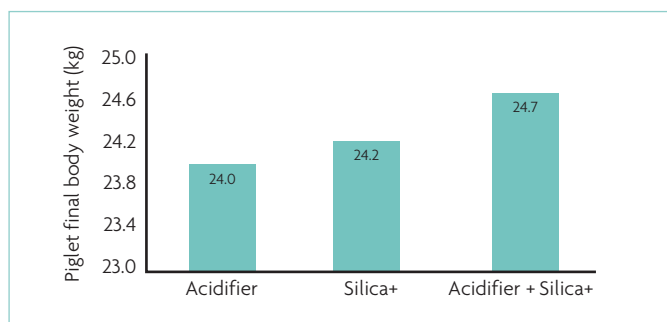


Fig. 2. Synergy effect of activated silicon dioxide with antibiotics as growth promoters (AGP) in piglets (Study conducted at CRSAD, Canada).

More revelations came in 1981 when Professor Fritz-Albert Popp demonstrated that molecules like DNA and any biological system for that matter emitted electromagnetic signals.

One disputed finding at the time was done by Jacques Benveniste (1988) showing evidence that water, being a good electricity conductor, is also highly responsive to frequencies. Benveniste discovered that signals emitted by organic substances can be transferred through water.

His study was later confirmed by Professor Luc Montagnier (Nobel Prize) in 2014 who discovered that indeed the DNA of bacteria emitted electromagnetic fields when exposed to specific electromagnetic signals. Montagnier was then able to register this signal and transfer it to water where in contact with nucleotides and enzymes it was possible to reconstruct the same DNA.

To sum up, electromagnetic fields can influence biological systems through aqueous solutions. Hence, by using electromagnetic signals with specific frequencies, it is possible, amongst other things, to increase the ionic potential of water, which is essential to guarantee synergy within a living system.

Synergy effect and animal performance

According to peer-reviewed publications that have appeared in recent years, applying activated silicon dioxide (Silica+, Ceresco

Nutrition) to swine feed has several beneficial effects on pigs. In a study conducted by CRSAD research facility (Quebec, Canada) in metabolic cages, the addition of 200ppm of activated silicon dioxide in combination with phytase was able to improve calcium and phosphorus digestibility by 62% and by 129% respectively.

In combination with acidifiers (benzoic acid) the product allowed a higher final body weight in piglets of up to 0.7kg (Schothorst Feed Research) and in combination with antibiotics as growth promoters, it has increased average daily gain of piglets by 4.9% (CRSAD).

In general, the synergy effect of the activated silicon dioxide is reported to increase the average daily gain of piglets by an average of 5.6% (based on seven scientific studies).

If continued to be administered until the end of fattening, the final weight of pigs is reported to increase by 2-3kg, while at the same time decreasing the FCR by 0.1.

It is concluded that under various trial conditions the activated silicon dioxide shows stable performance results and can offer potential economic benefits to swine producers. ■

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