

MAXACTIVAT/Zn

ENERGIZING THE
ZINC OXIDE MOLECULE



MAXACTIVAT/Zn is a novel, activated zinc oxide (ZnO) source produced with a patented production process. MAXACTIVAT/Zn can be included in lower dosages in the diet than feed-grade ZnO and supports gut integrity. The activated product results in lower heavy metal excretions supporting sustainable feeding strategies.

ACTIVATED ZINC OXIDE

MAXACTIVAT/Zn is a modified type of ZnO which is a more effective alternative to regular ZnO. Using an innovative production process, MAXACTIVAT/Zn has modified physiochemical properties with a smaller particle size, increased surface area, and additional energy stored inside the molecule (see F1). Therefore, it is more reactive throughout the digestive tract.



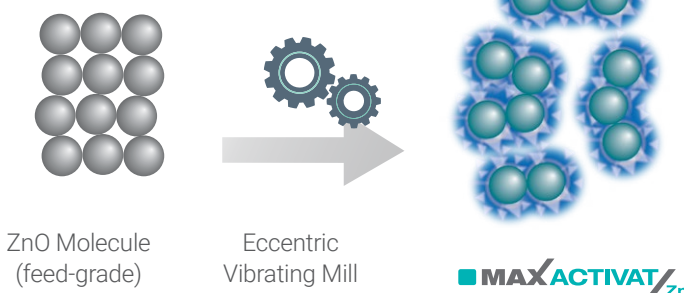
CHARACTERISTICS

- Improved gut integrity
- Affects diarrhea in young animals
- Environmental friendly

APPLICATION BENEFITS

- Greater reactivity
- Lower dosage than feed grade ZnO
- Improved feed conversion

F1: Principle of mechanical activation.



MAXACTIVAT/Zn – ALTERNATIVE TO HIGH-DOSE Zn SUPPLEMENTATION

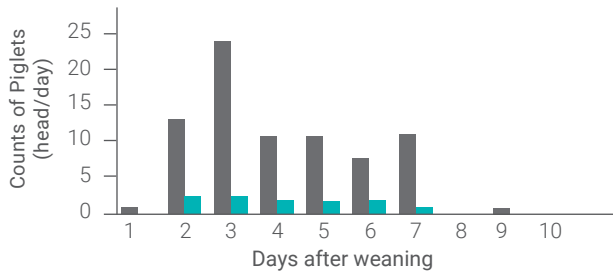
High doses of feed-grade ZnO can help to prevent diarrhea, but the resulting risk of environmental accumulation and associated development of antimicrobial resistance led to a ban on high-dose dietary ZnO in piglet feed in the European Union. Because of its activation, MAXACTIVAT/Zn has been proven to be an alternative to high-dose ZnO. In weaned piglets, the number of *E. coli* gene copies was reduced with MAXACTIVAT/Zn compared to feed-grade ZnO. In calves, the use of MAXACTIVAT/Zn resulted in a lower number of therapeutic treatments and greater performance.

INNOVATIVE FEED ADDITIVE TO SUPPORT GUT INTEGRITY

Animals: Piglets, weaned at 25 days of age
Treatments: (1) Control (160 ppm feed-grade ZnO); (2) MAXACTIVAT/Zn (160 ppm MAXACTIVAT/Zn)
Methods: Experiment 1: Fecal consistency (n=100)
 Experiment 2: Quantitative PCR (7 days after weaning, fecal samples; n=8)



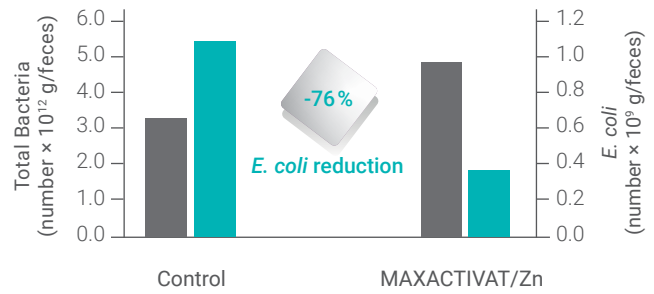
F2: Effect of ZnO source on diarrhea incidence of piglets on d 1–10 after weaning.



Source: ISF, 2017. ■ ZnO (feed-grade) ■ MAXACTIVAT/Zn



F3: Effect of ZnO source on total bacteria and *E. coli* counts in piglet feces.



Source: ISF, 2021. ■ Total bacteria ■ *E. coli*

By feeding MAXACTIVAT/Zn, the total number of bacteria is numerically greater, while the *E. coli* number is numerically lower (76% respectively) compared to feed-grade ZnO (F2). In addition, the diarrhea incidence was lower for MAXACTIVAT/Zn after weaning (F3). **MAXACTIVAT/Zn can replace standard feed-grade ZnO and lowers the diarrhea incidence in weaned piglets, probably by reducing the number of *E. coli*.**

IMPROVED PERFORMANCE IN SUCKLING CALVES

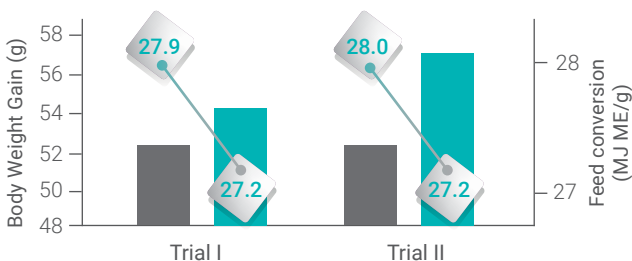
Animals: Calves, suckling phase (d 1-56)
Treatments: Milk replacer added with:
Trial 1: (1) Control (100 ppm feed-grade ZnO); (2) MAXACTIVAT/Zn (100 ppm MAXACTIVAT/Zn)
Trial 2: (1) Control (135 ppm feed-grade ZnO); (2) MAXACTIVAT/Zn (135 ppm MAXACTIVAT/Zn)
Methods: Therapeutic treatments (n=40); performance (n=40)

In both trials, the number of animals that received therapeutic treatments was numerically lower for MAXACTIVAT/Zn compared to feed-grade ZnO (F4). In addition, body weight gain was numerically greater, while feed conversion was numerically lower for MAXACTIVAT/Zn compared to feed-grade ZnO (F5).

MAXACTIVAT/Zn as an innovative Zn source can be used efficiently in calf raising feeding regimes.



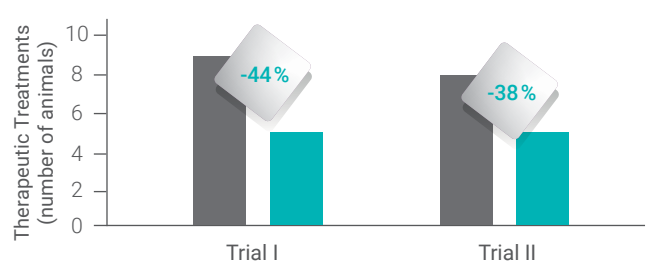
F4: Body weight gain and feed conversion of calves.



Source: ISF 2018. ■ Control ■ MAXACTIVAT/Zn



F5: Number of therapeutic treatments of calves.



Source: ISF 2018. ■ Control ■ MAXACTIVAT/Zn