

★ **Newly Combined** ★

Active Bacterial Probiotics  
added together with Oligosaccharide

Animal-byproduct Free Feed

Useful for Health of Your Livestock

Mixed Feed

# BIO-THREE<sup>®</sup> ACE



Are you worried about  
diarrhea of livestock?



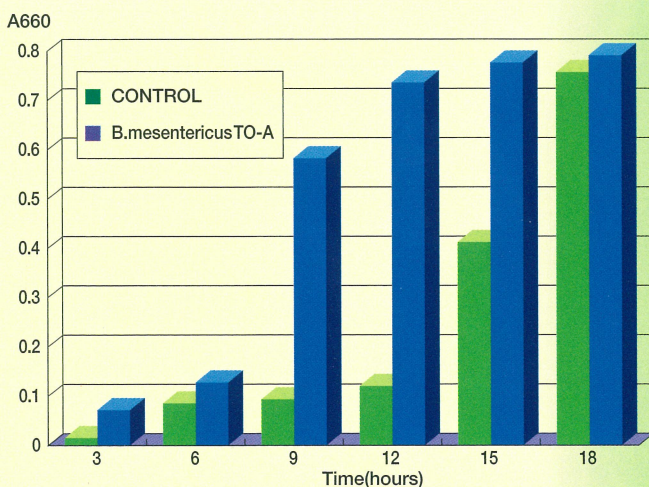
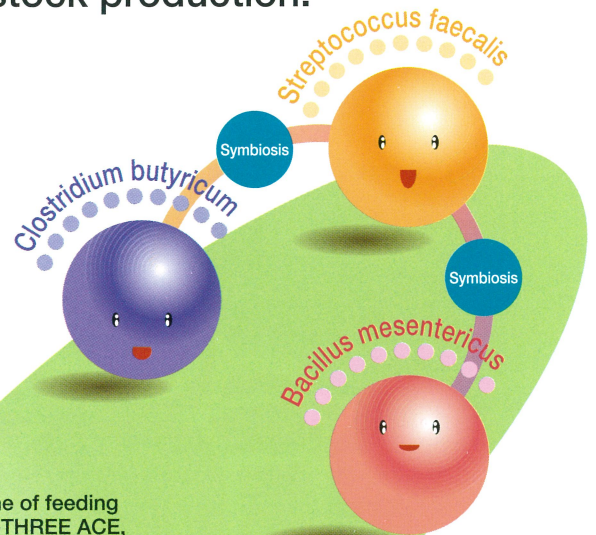
**TOA PHARMACEUTICAL CO., LTD.**



BIO-THREE ACE is mixed feed for livestock in which three kinds of beneficial bacterial probiotics (*Streptococcus faecalis*, *Clostridium butyricum* and *Bacillus mesentericus*) are mixed in a well-balanced manner. This product is best-suited to livestock production.

## Advantages of BIO-THREE ACE

- The three kinds of active bacterial probiotics can maintain the well-balanced intestinal flora of livestock.  
The intestinal flora changes easily in response to some stress (time of feeding substitution, transportation, heating etc.) or drug. By feeding BIO-THREE ACE, your livestock's abdominal movement can be maintained in a healthy condition.
- All the three kinds of active bacterial probiotics proliferate actively from the upper to the lower parts of the digestive tract while living symbiotically each other.
- BIO-THREE ACE is easily dispersed (suspended) in milk or tepid water, so the feeding to infantile animals can be easily performed.
- The three kinds of active bacterial probiotics proliferate actively and produce organic acids such as lactic acid and butyric acid as well as various enzymes.
- Through the combined action of these probiotics, the fecal nature is maintained healthy and the livestock environment is expected to be well-arranged constantly.
- BIO-THREE ACE is mixed with oligosaccharide to promote the proliferation of beneficial bacteria.



### Promoted proliferation of bifidobacteria by *Bacillus mesentericus*

*Bacillus mesentericus* mixed in BIO-THREE ACE was confirmed to promote the proliferation of beneficial bacteria such as Bifidobacterium and others.



## Symbiotical action of *Streptococcus faecalis* and *Clostridium butyricum* on pathogenic bacteria

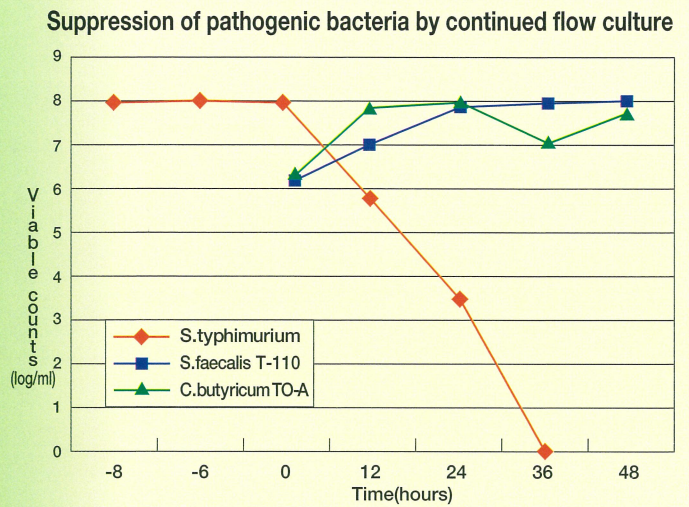
By using a model of digestive tract, *Streptococcus faecalis*, *Clostridium butyricum* and varied pathogenic bacteria were mixed and cultured.

As a result, it was found that *Salmonella Typhimurium* was suppressed.

In addition, its suppressive effect on several kinds of pathogenic bacteria including pathogenic *E. coli* O-157 and *E. coli* O-139 from Edema Disease in pig was also confirmed.

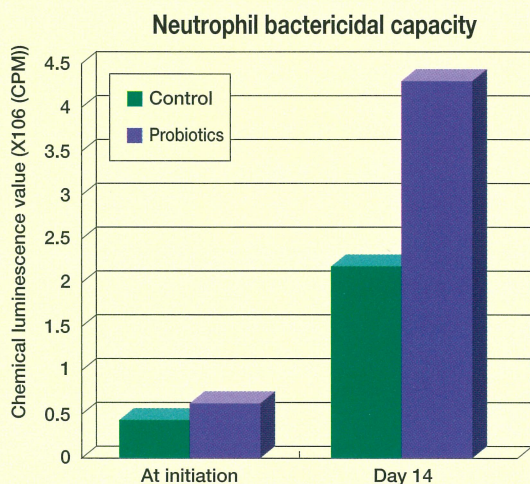
Gen'ichiro Seo et al.: MICROBIOS LETTERS 40 151-160 1989

●Toa Pharm. (In-house data)



## Efficacy of probiotics on the growth and immunity capacity of early weaned piglets

The probiotics were fed to early weaned piglets. In consequence, the average daily gain in piglets at Day 21-35 increased significantly with a superior trend to improve the feed conversion rate. Furthermore, it was also found that the neutrophil bactericidal capacity tended to increase.



|                           | Control | BIO-THREE |
|---------------------------|---------|-----------|
| Average daily gain        | 175     | 233       |
| Average daily food intake | 362     | 404       |
| Feed conversion rate      | 2.07    | 1.73      |

●Yamamoto Eiji et al.: Fukushima Prefectural Agricultural Research Center 17 158 - 161 (1998)

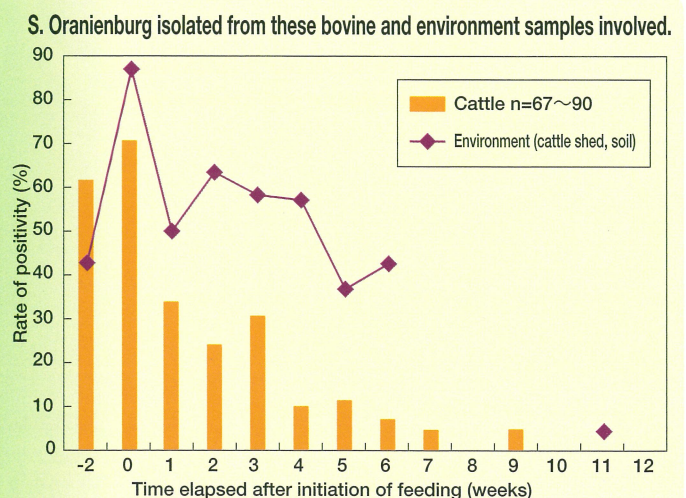
## Efficacy of BIO-THREE ACE-mixed feeding on *Salmonella Oranienburg*

*Salmonella Oranienburg* (SO) is one of pathogenic bacteria causing food poisoning in human beings.

Because SO had invaded into a dairy farm of 85 animals breeding scale, BIO-THREE ACE mixed in feed was administered to examine its possible influence. At initiation of this feeding, SO was detected in 70.1% of bovine fecal samples and in 85.7% of the environmental ones. Eleven weeks later, however, no trace of SO was detected in any fecal specimens and minimally isolated as low as 4.7% of the environment. In the subsequent experiments, no SO was detected, suggesting that the farm was cleaned comprehensively.

●A. Kamijo, et. al.:

Juchiku Shinpo JVM, Vol.56 No.3 191-194 (2003)





**Safety**

The three kinds of active bacterial probiotics mixed in BIO-THREE ACE are all of high safety. The probiotics are not absorbed from the digestive tract, so that BIO-THREE ACE is never delivered into the blood.

Starch content in this product is prepared by using non-genetically modified corn and non-genetically modified potato.

**Ingredients (per gm)**

|                                     |                              |
|-------------------------------------|------------------------------|
| <i>Streptococcus faecalis</i> ..... | 1x10 <sup>8</sup> /g         |
| <i>Clostridium butyricum</i> .....  | 1x10 <sup>6</sup> /g         |
| <i>Bacillus mesentericus</i> .....  | 1x10 <sup>6</sup> /g         |
| Galacto-oligosaccharide             | Natural aluminum silicate    |
| Glucose                             | Corn starch                  |
| Zeolite                             | Potato starch                |
| Beer yeast                          | Calcium carbonate            |
|                                     | Light anhydrous silicic acid |

**Dosage**

Cattle:  
 Matured cattle:  
 20 g to 50 g of the product per animal is fed.  
 Growing cattle/calves:  
 10 g to 30 g of the product per animal is fed.

Swine:  
 The product is added to food at proportion of 0.1% to 0.5%.

Poultry:  
 The product is added to food at proportion of 0.05% to 0.2%.

**Package**

20 kg kraft bag

**Precaution on storage**

Avoid high temperature and humidity.  
 Use immediately after unsealing the bag.

Manufacturer



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