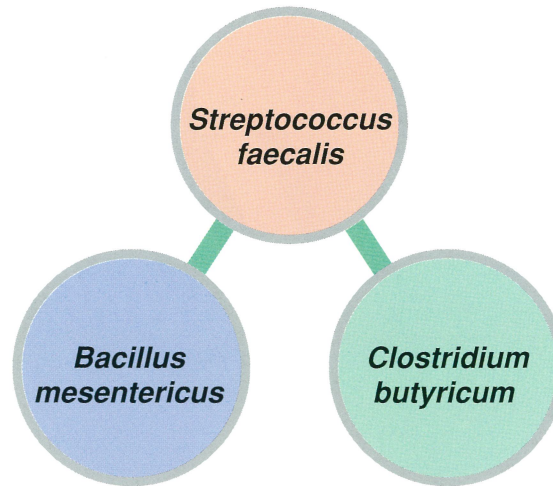


# *BioShree* FOR ANIMAL<sup>®</sup>



Containing three activated bacteria

TOA PHARMACEUTICAL CO.,LTD.



## Formulation of activated bacteria

For improved productivity and stabilized and sound operation of stock raising it is important to prevent diseases in livestock, particularly to prevent diarrhea in young pigs and calves, facilitating good absorption of nutrients to promote growth and to prevent stress of adult livestock. BIO-THREE FOR ANIMAL is a drug containing three excellent bacteria, providing good control of intestinal conditions and promoting rapid and efficient digestion. Yet, this drug has no side-effects on intestinal disturbances caused by overeating, intestinal diseases or the disappearance of beneficial intestinal bacteria.

### Characteristics

- 1 This drug excellently releases by collaborative effects of three potent and effective activated bacteria lactic acid, butyric acid and various enzymes.
- 2 Lactic acid and butyric acid elevate acidity in the intestine and potently inhibit the growth of harmful bacteria.
- 3 Various enzymes help digestion and absorption of food to facilitate effective use of fodder.
- 4 When intestinal spores, which significantly affect animal health, change due to various factors such as various forms of stress, physiology of the animals or drugs, this drug promotes a rapid recovery to a normal flora.
- 5 The three activated bacteria contained in this drug are highly safe for the animal body. They are not absorbed in the digestive tract and do not enter the blood.

### Antibacterial phenomena of *Streptococcus faecalis* T-110

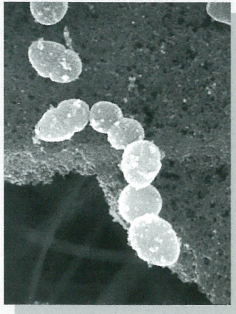


#### 《Explanation of photograph》

The colony in the center of photograph grows on lactic acid. The horizontal colonies are pathogenic bacteria including *Salmonella typhi*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus* and *Serratia marcescens* in the order from top to bottom. Close to the *Streptococcus faecalis* colony, the growth of each pathogenic bacteria is inhibited. This demonstrates the antibacterial activity of *Streptococcus faecalis*. Thus, *Streptococcus faecalis* T-110 has a potent antibacterial effect on a variety of pathogenic bacteria.

# Pharmacological actions

## Streptococcus faecalis



### (Streptococcus faecalis T-110)

*Streptococcus faecalis* T-110 among various forms of *Streptococcus faecalis* easily proliferate in the intestine of livestock. It grows at a pH ranging from between 4.0 to 9.6. This bacterium propagates actively through symbiotic action with *Clostridium butyricum* and *Bacillus mesentericus* to yield lactic acid with a resultant decrease in intestinal pH and inhibition of proliferation of harmful bacteria (Figs. 1 and 2).

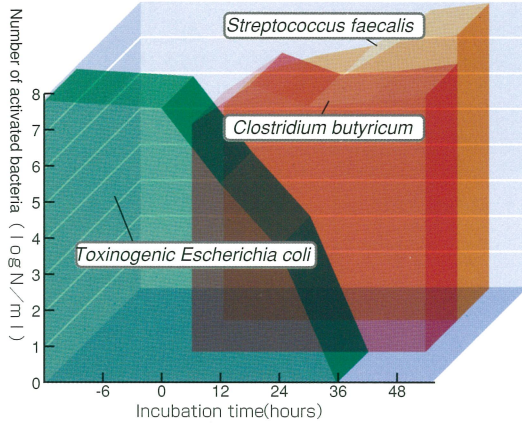


Fig. 1. Mixed culture of *Streptococcus faecalis*, *Clostridium butyricum* and toxinogenic *Escherichia coli*

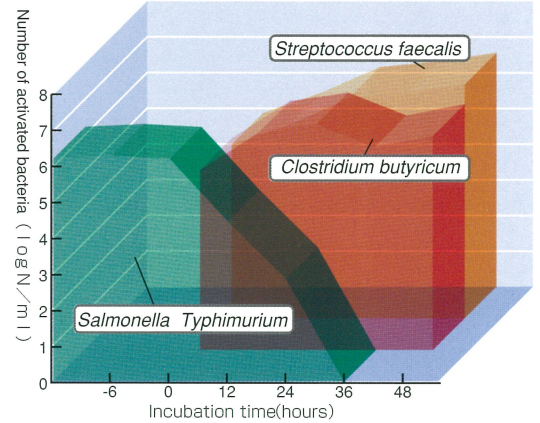
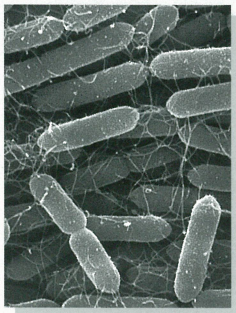


Fig. 2. Mixed culture of *Streptococcus faecalis*, *Clostridium butyricum* and *Salmonella Typhimurium*

## Clostridium butyricum



### (Clostridium butyricum TO-A)

This bacterium forms spores, has an excellent heat, drying and drug-resistance, and can prevent the growth of harmful bacteria by producing butyric acid after fission and propagation. In addition, it generates carbon dioxide to promote intestinal peristalsis. This bacterium produces a variety of enzymes including amylase, protease and lactase. Furthermore, it has a symbiotic action with intestinal *Streptococcus faecalis* resulting a markedly increased proliferation compared with other conditions (Fig. 3).

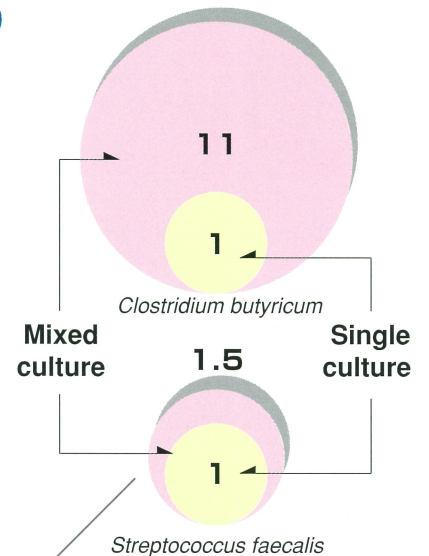
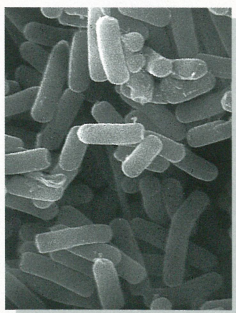


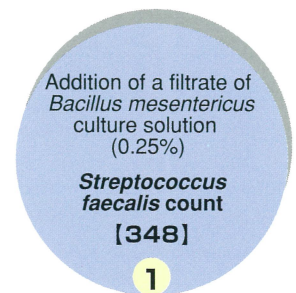
Fig. 3. Comparison of bacterial counts between single culture and mixed culture of *Streptococcus faecalis* and *Clostridium butyricum*

## Bacillus mesentericus



### (Bacillus mesentericus TO-A)

*Bacillus mesentericus*, a spore forming species of *Bacillus subtilis*, has an excellent acid, heat and drug-resistance and can produce a high amylase concentration after fission and proliferation. In addition, it also produces protease and pectinase. This shows that this bacterium is an essential energy source for proliferation of intestinal *Streptococcus faecalis*. *Streptococcus faecalis* proliferates after addition of a filtrate of *Bacillus mesentericus* culture solution about 10 times more rapidly than in single culture (Fig. 4).



### Streptococcus faecalis

*Streptococcus faecalis* count at the time of inoculation is set at 1.

Case of single culture



### Streptococcus faecalis

Fig. 3. Proliferation of *Streptococcus faecalis* after addition of a filtrate of *Bacillus mesentericus* culture solution (Starch medium)

# Effects of BIO-THREE FOR ANIMAL on simple diarrhea in young suckled pigs

For simple diarrhea in young suckled pigs, raised in Gunma prefecture, BIO-THREE FOR ANIMAL was administered with the following therapeutic and preventive effects in two cases:



## ●Case 1. July 1995, eight farms

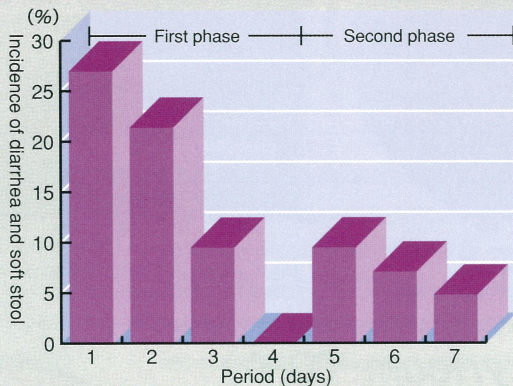
Irrespective of occurrence of diarrhea in young suckled pigs [42 young pigs (10 days old) derived from 4 litters], in which diarrhea may have been induced by a change in the quality of milk of maternal pigs due to fierce heat, BIO-THREE FOR ANIMAL was administered and the following results obtained:

### 《Regimen》

BIO-THREE FOR ANIMAL	3g/3 times/day/animal	Suspend in artificial milk or drinking water	7 days
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### 《Results》

Period (days)	Incidence of diarrhea and soft stool (%)
1	11 (26.2)
2	9 (21.4)
3	4 (9.5)
4	0 (0)
5	4 (9.5)
6	3 (7.1)
7	2 (4.8)



Although severe diarrhea was improved by administration of BIO-THREE FOR ANIMAL for 3 days (first phase), recurrence was observed after 5 days of administration (second phase). By increasing the administration period to 7 days, diarrhea recovered to almost normal stool, and new occurrences of diarrhea were not observed.

## ●Case 2. August 1995, K farm

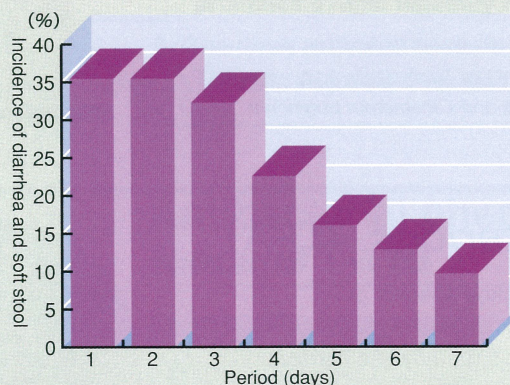
BIO-THREE FOR ANIMAL was administered to young suckled pigs (31 young pigs derived from 3 litters) in which diarrhea may be induced by cooling of abdomen due to dripped waterpooled on a concrete floor, to obtain the following results:

### 《Regimen》

BIO-THREE FOR ANIMAL	3g/3 times/day/animal	Suspend in artificial milk	7 days
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### 《Results》

Period (days)	Incidence of diarrhea and soft stool (%)
1	11 (35.5)
2	11 (35.5)
3	10 (32.3)
4	7 (22.6)
5	5 (16.1)
6	4 (12.9)
7	3 (9.7)



Soft stool changed to a condition close to normal stool by 7-days administration of BIO-THREE FOR ANIMAL, and new occurrences of diarrhea were not observed.

<Quoted from Hisashi Kanai and Tomoe Watanabe:Livestock Raising Work, Vol. 50, 1, 83-87 (1996)>

## Ingredients

1g of BIO-THREE FOR ANIMAL contain :  
 Active principle of Streptococcus faecalis T-110 : 20mg (more than  $7 \times 10^6$  bacteria)  
 Active principle of Bacillus mesentericus TO-A : 20mg (more than  $3 \times 10^5$  bacteria)  
 Active principle of Clostridium butyricum TO-A : 20mg (more than  $2 \times 10^5$  bacteria)

## Dosage and administration

Adult cattle and adult horses: 50 to 200g once  
 Young calves, foals, growing pigs: 20 to 50g once  
 Young pig, dogs, cats and chickens: 1 to 3g once  
 Administer the above amount 3 or 4 times a day.

## Efficacy and effect

Prevention and treatment of simple diarrhea

## Packaging

100×10 pouches (polyethylene bag, fancy box)  
 1kg×20 pouches (aluminum bag)  
 20kg (craft bag)

## Cooperative drug price listing

## ※Precautions for use

Store the drug in a dry place and avoid high temperature and direct exposure to sunlight.  
 Avoid combination with antibacterial substance.

Manufactured and marketed by:



**TOA PHARMACEUTICAL CO. LTD.**  
 1-11, Sasazuka 2-shome, Shibuya-ku, Tokyo  
 Telephone 03(3375)0511 (key number)

Distributed by: