

**More Healthy Poultry**

**Animal-byproduct Free Feed**

# ***TOARAZE FOR POULTRY***

TOARAZE is mixed feed for poultry in which three kinds of probiotics are mixed together with digestive enzymes.

## **Advantages of TOARAZE**

- (1) TOARAZE contains three kinds of potent bacterial probiotics together with compound digestive enzymes.
- (2) Both lactic acid and butyric acid produced by these probiotics increase the acidity in the intestine and inhibit the growth of harmful bacteria potently.
- (3) Digestive enzymes help to promote the digestion and absorption of food.
- (4) When the intestinal flora is disturbed by various factors including varied stresses, livestock's physiology and drugs, this product can lead to its restoration rapidly.
- (5) Bad odor (ammonia, etc.) can be reduced in a broiler house by feeding this product.

### ***Clostridium butyricum***

*Clostridium butyricum* exhibits superior heat resistance, drought resistance and chemical resistance. It proliferates actively together with *Streptococcus faecalis*. Butyric acid produced by this bacterium is found to promote the proliferation of intestinal epithelial cells.

### ***Streptococcus faecalis***

*Streptococcus faecalis* proliferates actively in the intestine of livestock. Together with *Bacillus mesentericus* and *Clostridium butyricum*, it produces lactic acid. By lowering the intestinal pH level, *Streptococcus faecalis* can suppress the proliferation of harmful bacteria effectively.

### ***Bacillus mesentericus***

*Bacillus mesentericus* exhibits superior heat resistance, drought resistance and chemical resistance. It proliferates actively together with *Streptococcus faecalis*. The cultured solution of this bacterium has an action to promote the proliferation of bifidobacteria.

### **Digestive enzymes (cellulose, protease, peptinase)**

The proportion of vegetable ingredients in livestock feed tends to increase in recent years. Digestive enzymes contained in this product can enhance the rate of digestion of these ingredients. Feed saving and reduced treatments for excrement and urine probably due to decreased fecal amount can be expected as well.

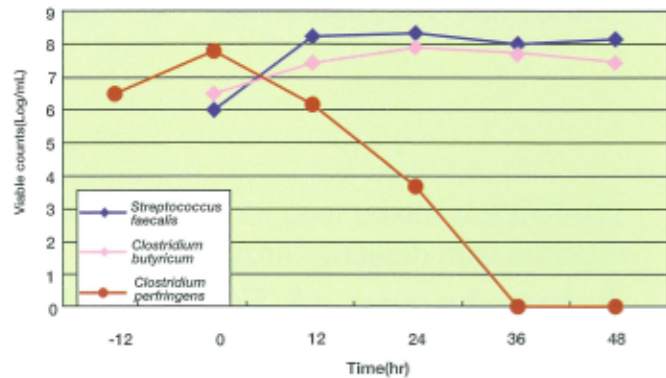
***TOA PHARMACEUTICAL CO., LTD.***

# TOARAZE FOR POULTRY

## [Experimental results with three kinds of probiotics]

Inhibition of poultry-derived *Clostridium perfringens* by mixed culture of *Streptococcus faecalis* and *Clostridium butyricum*

By using a model of digestive tract, poultry-derived *C. perfringens* was proliferated sufficiently followed by addition of *Streptococcus faecalis* and *Clostridium butyricum* and the culture was then continued. As a result, *Clostridium perfringens* was found to have decreased rapidly to below the detection limit within 36 hours after addition.



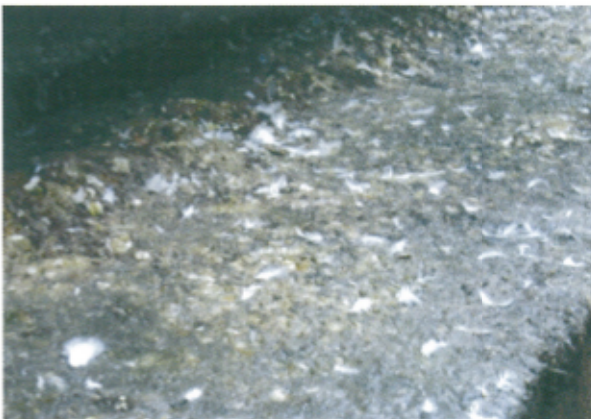
Day 0



Treatment of soft feces in laying hens

The three kinds of probiotics contained in TOARAZE were added to feed at a concentration of 600 g/ton, and the mixture was fed to laying hens. Pulpy diarrhea-like liquid feces at initiation of this experiment became normal solid feces two weeks later.

1 week later



2 weeks later



# TOARAZE FOR POULTRY

## [Field experiment: Effect of three kinds of probiotics on the productivity]

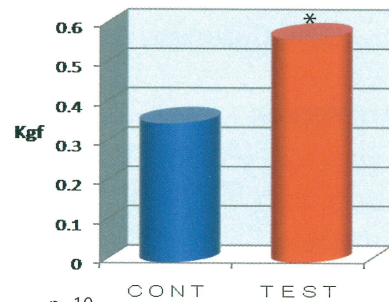
	Control	Test	Difference from control (%)
Number of broilers	32,846	32,596	
Weight	92,049	91,134	
BW	2.802	2.796	
Growth rate	99.84	99.38	
Feed Conversion	2.102	2.063	98.14
Production Score	252.71	266.14	105.31

TOARAZE FOR POULTRY was added to feed at a concentration of 0.2% and fed to broilers at fledgling to Day 40. When the shipping results at Day 50 was compared between control and test, it was found that the feed conversion was improved about 2% and the production score was increased about 5%.



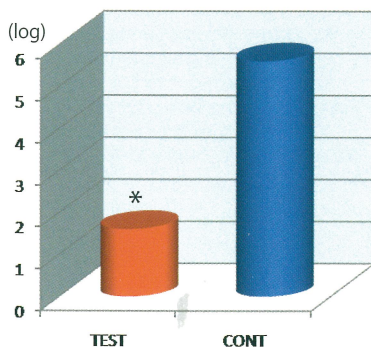
Intestinal congestion and bleeding were observed in the control but not in the test.

Intestinal tensile strength (cocks of Day 50)

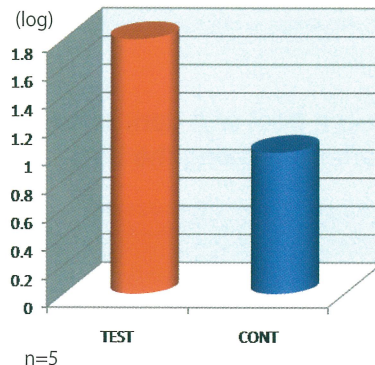


When the intestinal tensile-strength was compared, it was suggested that the strength was significantly potent in the test.

*Clostridium perfringens* in feces



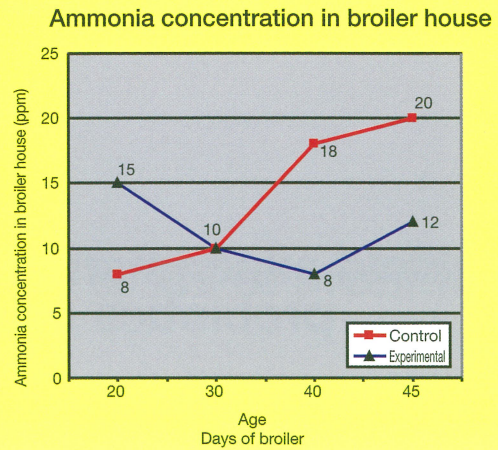
*Coccidium* oocyst in feces



Fecal samples from broilers at Day 50 were examined. A significant decrease in the number of *Clostridium perfringens* was observed in the test. There was no difference in the number of *Coccidium* oocyst between control and test.

## Improvement of environment in broiler house

In general, the concentration of ammonia in a broiler house will be higher with the postpartum course (see the control in the right graph). However, the ammonia concentration in a broiler house could be maintained at a lower level even before shipping by feeding this product added at a concentration of 2 kg per ton of feed.



Feed category:

Mixed feed for poultry

Feed additives:

Cellulase, protease, pectinase, compound enzyme

Raw materials:

*Streptococcus faecalis* 1x10<sup>8</sup>/g

*Clostridium butyricum* 1x10<sup>7</sup>/g

*Bacillus mesentericus* 1x10<sup>7</sup>/g

Rice bran, oil lees

Target livestock:

Poultry

Dosage:

This product is added at a concentration of 0.05 to 0.2% to poultry feed.

Package:

20 kg kraft bag

Storage:

Keep this product in a cool and dark place.  
Use immediately after unsealing the bag.

Manufacturer



**TOA Pharmaceutical Co., Ltd.**

2-1-11, Sasazuka, Shibuya-ku, Tokyo 151-0073, Japan

TEL 03(3375)0511 FAX 03(3375)0539

URL : <http://www.toabio.co.jp/>