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Effect of tannin on diarrhea of newborn calves

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When it comes to diarrhea of newborn calves, it is usually caused by infectious sources, and it is a common disease in cattle production, especially in calves less than one month old. Calf diarrhea has caused huge economic losses to dairy industry.

Tannic acid is a kind of polyphenol compound extracted from chestnut, Chinese gall and other plants, which exists in many plants as a secondary metabolite. It has astringent and anti-inflammatory effects in gastrointestinal tract. Tannin can combine with dietary protein, regulate the activity of rumen microorganisms and reduce the growth of bacterial population, which has a good effect on prevention and control of diarrhea.

Today, I share an article about the application of chestnut tannin in calves. This article shows that chestnut tannic acid has certain effect in preventing diarrhea of newborn calves.


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Oral administration of chestnut tannins to reduce the duration of neonatal calf diarrhea

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惠嘉大动保

01

Experimental design

The experiment was conducted in the dairy farm of Pisa University. Forty Italian Friesian calves aged 1-60 days were selected for the experiment. The criteria of selected experimental animals are: calves under three weeks old, with diarrhea and stool score ≥1.

Fecal score	Score representation	Assessment of fecal fluidity
0	normal	Formed but not hard, its original form fell on the floor and slightly deformed after settlement.
1	Soft	It cannot keep its shape, but accumulates and diffuses slightly. (e.g. soft ice cream)
2	flowing	It can easily spread to a width of 6mm. (such as pancake batter)
3	water	Keep the liquid uniform and easy to splash. (e.g. orange juice)

Twenty-four calves were selected from 40 calves and assigned to control group (C) and experimental group (T, tannic acid feeding group), each group consisted of 12 calves. The control group (C) was fed with 2L warm water containing 2.34 g sodium chloride, 1.12 g potassium chloride, 6.72 g sodium bicarbonate, 3.84 g citric acid anhydrous, 32.44 g lactose monohydrate

and 2.25 g glycine, and the experimental group (T) was fed with 2L warm water added with 10g chestnut tannin extract powder (750g/kg tannin dry matter equivalent) every 24h

From the first day of diarrhea (T0), the stool score (FS) and the duration of diarrhea (DDE) were recorded by the same professional operator every day until diarrhea recovered completely. The duration of diarrhea onset refers to the number of days from the first diarrhea (stool score ≥1) to returning to normal (stool score =0).

After the experiment, the recorded DDE data and fecal score data recorded during the whole DDE period were analyzed.

02

experimental result

Table 1 Effect of tannic acid on duration of diarrhea (DDE) in calves

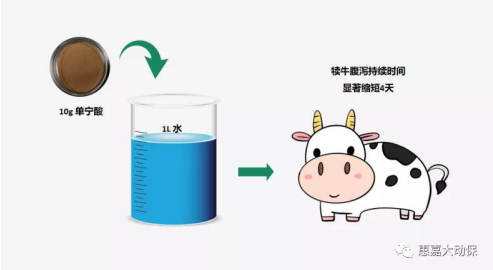
	Group C (X±DS)	Group T (X±DS)
DDE（days）	10.3±3.5	6.4±3.9
Fecal score recoeded throughout the DDE	1.6±0.5	1.4±0.8

The results showed that the duration of diarrhea in tannic acid group was 3.9 days shorter than that in control group, and the difference was significant (p=0.02). During the whole diarrhea episode, the average fecal score of control group was significantly higher than that of experimental group (P=0.03).

03

Experimental conclusion

Treatment of diarrhea calves with tannic acid shortened the duration of diarrhea attack by nearly 4 days compared with the control group, which indicated that chestnut tannic acid had a significant effect in preventing diarrhea of newborn calves, and was an effective and low negative effect method to prevent diarrhea of newborn calves.



Youdanning is a 75% tannic acid preparation developed and produced by Huijia Dadongbao. Its raw material is high-quality hydrolyzed chestnut tannin from Italy. The product has multiple effects of astringing intestinal tract, preventing diarrhea, inhibiting bacteria, resisting oxidation, improving immunity, etc., and is the optimal substitute for modern green intensive culture.