

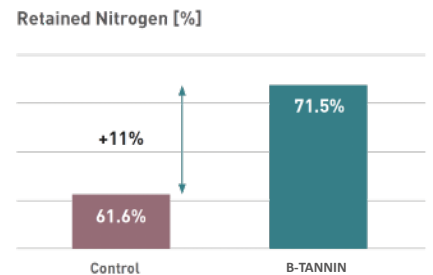


# B- TANNIN

**B-TANNIN is an additive for animal nutrition containing a natural chestnut extract, rich in hydrolysable tannin.**

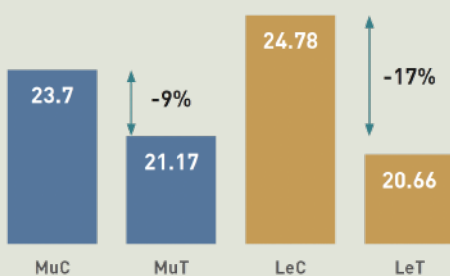
## Upgrading effect on the metabolic utilization of absorbed nitrogen

The study on digestibility and nitrogen balance has been performed with 175 female Ross 800 broilers. No difference in weight gains and nitrogen intakes but the percentages of retained nitrogen in droppings collected for one weeks result significantly different: 61.6% for the untreated group and 71.5% for tannin group. Decrease in total nitrogen in the litter and better utilization of the absorbed nitrogen have been observed.



[Antongiovanni et al., 2015. Effect of a hydrolysable tannin from Chestnut wood on digestibility and nitrogen balance in broiler chickens. 20th European Symposium on Poultry Nutrition. Prague, 24-27 August 2015].

## Cholesterol in egg yolk [g/Kg total lipids]



## Cholesterol reduction in egg yolk

B-TANNIN was administered to laying hens aged 50 weeks, at the level of 0.2% in the complete feed. In the trial, lasted 5 weeks, two breeds, Mugellese (Mu) and Leghorn (Le), and two diets, with and without B-TANNIN, were compared. Egg yolk cholesterol reduction has been significant in both breeds, more evident in the Leghorn (-17% vs -9% in Mugellese). Shell thickness, egg weight and colour were not affected by the addition of B-TANNIN.

MuC = untreated Mugellese hens, MuT = treated Mugellese hens, LeC = untreated Leghorn hens, LeT = treated Leghorn hens

## Diarrhoea control

Chestnut tannin controls diarrhoea through its antispasmodic effect (it slows the peristaltic movements of the intestine). Administration of B-TANNIN often results in firmer droppings which positively affects the litter status thus improving the overall status and welfare of chickens in intensive production system. Farm experience confirms that B-TANNIN improves litter quality and reduces footpad dermatitis.

[Budriesi et al., 2010]

### Recommended instruction for use in final feed:

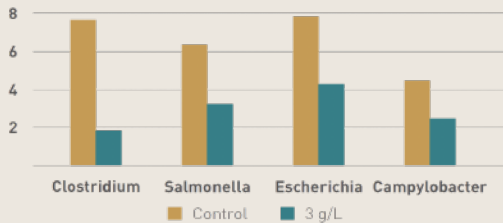
Recommended instruction for use:  
 Broilers: 0.4 – 1.0 Kg/ton  
 Laying hens: 0.35 – 1.0 Kg/ton  
 Turkeys (starter and finisher): 0.75 – 1,3 Kg/ton  
 Turkeys: 1.0 – 1.5 Kg/ton

## Intestinal microbiota control

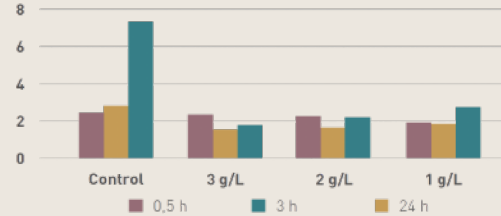
B-TANNIN interferes with the development of bacteria and parasite in gut because it complexes membrane protein altering the permeability of the cellular membrane. B-TANNIN antimicrobial activity was tested in vitro on *Salmonella typhimurium*, *Escherichia coli*, *Campylobacter jejuni* and *Clostridium perfringens*. Not all the four bacterial colonies reacted to B-TANNIN in the same way: *Escherichia coli* resulted the least sensitive and *Clostridium perfringens* the most sensitive.

[Antongiovanni, M., et al., 2018. Tannin as an antimicrobial agent. World Poultry Science Journal]

B-Tannin on the in vitro growth of the four bacteria at 24 hours



B-Tannin on the in vitro growth of *Clostridium perfringens* cultures

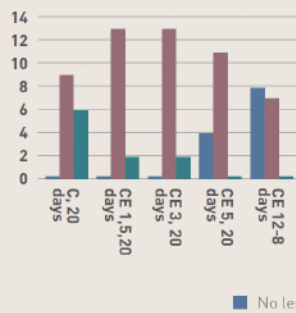


## Necrotic enteritis

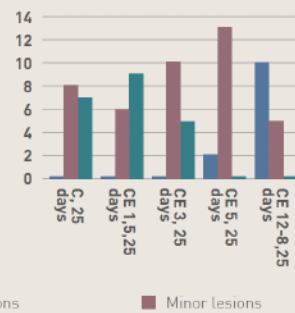
B-TANNIN was tested in vivo for its efficacy in controlling the proliferation of *Clostridium perfringens* in the gut of broiler chickens challenged with coccidia. Chickens were euthanized at 20 and 25 days and examined for the level of gut infection by countering *Clostridium perfringens* and macroscopic gut lesions. The extreme pathological conditions created in the broiler'

gut by challenging them must be considered exceptionally uncommon in practice but also in this extreme condition, the addition of B-TANNIN resulted capable of limiting the infection, even at the lowest level.

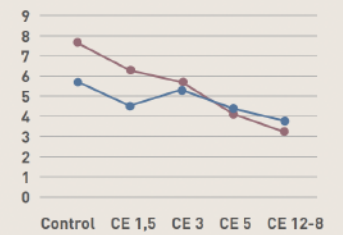
Number of broilers with more or less severe gut lesions at day 20



Number of broilers with more or less severe gut lesions at day 25



Counts of *clostridium perfringens* [log10 of CFU/g gut content]



[Tosi G., et al., 2013. Efficacy Test of a Hydrolysable Tannin Extract against Necrotic Enteritis in Challenged Broiler Chickens. Italian Journal of Animal Science].

## Antioxidant properties

B-Tannin is a polyphenol and exhibits its greater antioxidant activities than simple phenolics: the number of hydroxyl groups and the degree of polymerization of tannin are considered to be correlated with their ability to scavenge free radicals. Antioxidant activity has been evaluated in vitro by using Folin-Ciocalteu reagent. The results are expressed as total phenol content, measured as GAE (Gallic Acid Equivalents) which is considered to have an excellent correlation with the in vitro antioxidant activity.

FOLIN-CIOCALTEU (GAE equivalent, mg/g)	
B-TANNIN	57.0

[Campo et al., 2015. Hydrolysable Tannins from Sweet Chestnut Fractions Obtained by a Sustainable and Eco-friendly Industrial process. Nat. prod. Commun. 11:409-415]

## Technical data sheet

B-TANNIN is an additive for animal nutrition. It is a natural chestnut extract, rich in hydrolysable tannin. Chestnut tannin is obtained by water extraction from chestnut wood, by an environmentally sustainable unique process.

CHARACTERISTIC	METHOD OF ANALYSIS	MEASURE UNIT	SPECIFICATION
Description	Visual	/	Free flowing dark brown powder
Tannin content	ISO 14088	% w/w	Min 75
pH	Internal method n. LAB 004		3.2 ± 0.2