

NATURA® BETAINES L

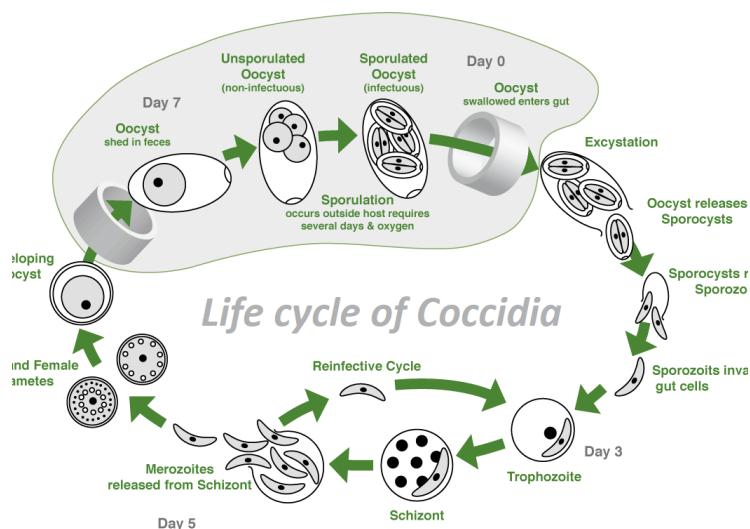
Protection against coccidiosis and production stress

Subclinical coccidiosis has become the major cause of animal performance loss due to the intestinal damage and reduced nutrient digestibility. When coccidia infection is combined with an environmental challenge (such as heat stress) the animal performance is further worsened.

Natura Betaine L can help alleviate the adverse effects of coccidia infection and other stressors by improving intestinal integrity and increasing the nutrient utilization of the animals.

Relation between Coccidiosis and Necrotic Enteritis

Coccidiosis has become a major disease in commercial livestock production that affects many species including cattle, sheep, goats, pigs and poultry. Even though the rate of clinical coccidiosis remains to be low in commercial livestock, **the actual infection rate is high**. Subclinical coccidiosis is the major cause of reduced animal performance nowadays. Furthermore, the **coccidial infection provides a growth advantage to *C. perfringens***, which is the causative agent of Necrotic enteritis.



Natura Betaine provides two Unique Functions

1. Methyl donor

- Acts as a methyl donor via transmethylation
- More effective donor than methionine and choline

2. Osmoregulator

- Supports the maintenance of water and ion balance in animal cells and tissues



For more information, please visit www.naturafeed.com

How Natura Betaine L helps to reduce severity of Coccidiosis infection

1. Via Methyl donor function

- Helps with increased methyl group demand caused by damaged tissues

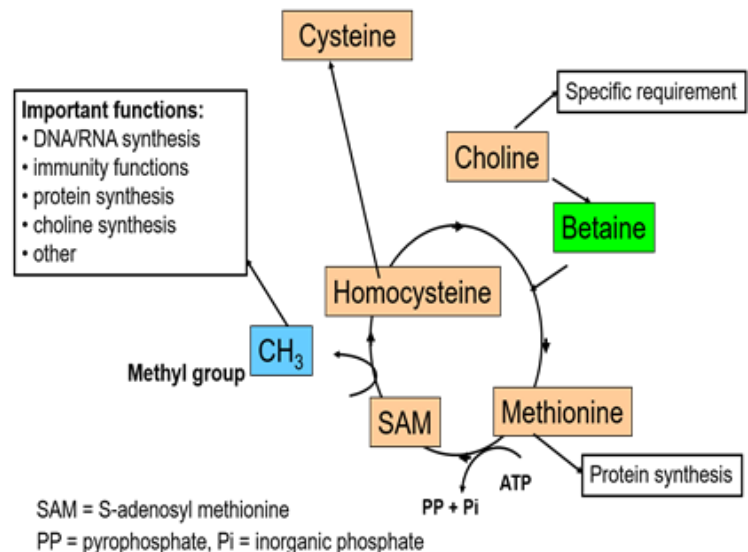
2. Via Osmoregulator function

- Increases the villus height to crypt depth ratio
- Reduces the intestinal lesion scores
- Reduces the intestinal intracellular invasion caused by *E. tenella* or *E. aversana*

Ionophore anticoccidials are commonly used to control coccidiosis by disturbing the osmotic regulation of the coccidia. When the ionic balance in the gut is affected, it causes reduced nutrient digestibility and poor animal performance. **Natura Betaine L can help reduce the severity of the Coccidiosis infection, especially when combined with coccidiostats.** By improving the gut conditions, **Natura Betaine L** has a positive effect on nutrient digestibility, and essentially on animal performance and feed efficiency.

True Cost of Natura Betaine L

While **Natura Betaine L** helps to alleviate the negative effects of Coccidiosis infection in the animal, it still serves as a methyl donor. Most importantly, methyl donor effectiveness is not impacted by its other functions and benefits. The most of **Natura Betaine L** cost can be recovered in feed formulation by sparing Choline and/or Methionine.



Benefits of Natura Betaine L

- ◆ Natural product with no toxic and corrosive residues
- ◆ Reducing impact of coccidia challenge
- ◆ Fighting against all stress (such as heat stress)
- ◆ Improving weight gain and feed efficiency
- ◆ Increasing breast meat yield in broilers
- ◆ Improving egg quality in laying hens
- ◆ Increasing hatchability in broiler breeders
- ◆ Minimal extra cost with replacing Choline and/or Methionine



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