HOW MUCH DO TOXIN BINDERS COST?

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SUMMARY

- Toxin Binders + Deactivators cost between $4-8/MT or 6-10c/cow per day to use.
- The benefits from using such products come from improved fertility, animal performance and feed security.
- The Net benefit from using Toxin Binders + Deactivators is between $10-40/MT or 20-40c/cow/day in appropriate circumstances.
- Elitox is an effective product against a range of toxins.

As a user or potential user of toxin binders one of the first questions you ask is how much it will cost. While most people will say it depends. I'll do my best to answer this question.

The application of Toxin Binders does require some knowledge and details. You can't compare apples with oranges, but we can help you can get a sense of the cost and value creation in using a Toxin Binder (or deactivator). So here goes.

The actual type of product you buy and will have unique features and how you use those features will influence the cost per MT.

Mycotoxin control products are commonly grouped together as "toxin binders", which is an oversimplification of this product group. A sub-group of products have a dual action that takes management of toxins beyond the basics of "binding" … and moves to a mode of action that includes "Binding+ Deactivation". Elitox is one of this product group to offer the important dual action.

At this point you'll be asking why is have both binding and deactivation of toxins important in the product I choose? Usually when presented with a toxin challenge it comes from a range of toxins not one specific type. Toxins also have a multiplying effect on each other when found in combination. Therefore, if you want to secure your feed and reduce the toxin's effects on performance being able to reduce the impact of a variety of toxin's is critical and the product used is a decision not to be taken lightly. At this stage it is important to realise that not all toxins behave the same or have the same properties, and this has large impacts on how we reduce the impact of that toxin type and what product you use.

There are a group of toxins that are known as POLAR TOXINS. These toxins have a chemical nature that confers a differentially charged chain length impact to the toxin. IE a +/- polar impact. The two groups of toxins that are accepted to have this structure are Aflatoxins and to a lesser degree Fumonisins.

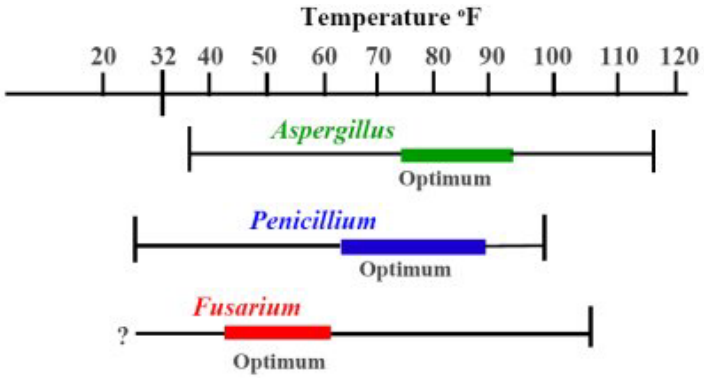
These toxins lend themselves to be bound, either with mineral based products that utilise ion exchange capacity, or with other binders such as MOS style products that "adsorb" the toxin onto the surface area of the control product. The toxin is rendered more unavailable for absorption and is excreted from the body.

Many other toxins however do not have such a polar structure, and as such traditional binders are far less effective against these toxins and you need to deactivate them in some manner. Such non-polar toxins include Zearalenone, T-2 toxins and other Tricothecenes.

The safest and best products to use protect your animals against both non-polar and polar type toxins. This group of products offer both binding and deactivation properties.

From a perspective of the challenge faced in southern Australia, we need to consider what fungi groups are producing the toxin challenge.

In cooler climate, the fungal challenge is more typically Fusarium fungi….and they are the producers of the toxins that are not readily bound. Warmer conditions are favoured by Aspergillus fungi that produce Aflatoxins that are more readily bound.



The tropical parts of the world have a risk of toxins dominated by Aspergillus and aflatoxin, but more temperate areas see the challenge as Fusarium and a wider range of toxin challenge

Within this discussion we stress that no product used to manage toxin challenge can hope to reduce 100% of the challenge from 100% of the toxins. That is completely infeasible. What we can hope to do is to increase our impact against a wider range of toxins.

	Mold inhibitors	**Mycotoxin binders**	**Elitox**
Fungi	Yes	No	No
Aflatoxins	No	Yes (good)	Yes
Trichothecenes	No	Not effective	Yes
Ochratoxins	No	Very limited	Yes
Zearalenone	No	Very limited	Yes
Fumonisins	No	Yes (quite OK)	Yes
Alkaloid toxins	No	No	Yes, in general

For Toxin Deactivators/Binders most cost between **$4/MT and $8/MT or 6c-10c/h/day for dairy/beef cattle to use.**

That's not the end of the story though. The net value created can range from being equivalent to **$10/MT - $40/MT of feed or 20-40c/cow/day. An ROI in the range of 3:1 - 8:1.**

We know Elitox very well and have great confidence in the recommendations but it's important to understand that using toxin deactivators/binders is very much about preventing or minimising the impact of toxins on animal performance.

Let's look at some of the reasons why you use a toxin binder/deactivator.

1. **Fertility**
    a. Toxins can have a catastrophic effect on fertility. Subclinical levels of toxins could be considered to reduce fertility by 15-20%.

2. **Production efficiency**
    a. Even at subclinical levels daily growth or milk production can crash and a figure of 20% reduction are representative.

3. **Security**
    a. You don't know sometimes! Having a preventative is better than not! We all take personal insurance out for health, income protection, life etc. Why not insurance for animal performance.

4. **Ingredient cost/feed formulation saving.**
    a. If you already own or are committed to parcels of feedstuffs/forages and recognise these as being risky, then you can still use these with greater confidence. A $10/MT saving is is a conservative average outcome without affecting performance.

I also know you would love to read about all the technical reasons behind these benefits, but that's for another document and conversation when you have time.

I hope this helps you put some context into the cost and payback when using Toxin Binders/Eliminators.

If you need more information, feel free to contact me

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