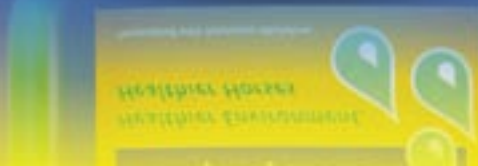




BIOfresh

Stops Harmful Ammonia



BIOFRESH and Ammonia

The respiratory health of horses and their owners is affected by the quality of the air they breathe. We are all familiar with the smell of ammonia that comes from soiled bedding, but how many of us appreciate the adverse health effects it can cause in both our horses and ourselves?

What is ammonia and where does it come from?

Ammonia is a noxious gas with a characteristic pungent odour that is present in the stable environment. It is produced from a substance called urea, that is passed in horse urine and faeces. Urea is converted to ammonia in wet horse bedding, by the action of bacteria present in the stables environment. These bacteria produce an enzyme 'urease' which drives the conversion of urea to ammonia. Management practices affect the levels of ammonia present in the stable. Production and build-up of ammonia in stable bedding is exacerbated in deep littering systems, such as those used with hemp, woodchips and shavings. Also this problem can occur when rubber matting is used with little or no bedding and when stable drainage and ventilation is poor, or soiled bedding is simply allowed to accumulate. Levels of ammonia in the air are worse during mucking-out and if straw is used as bedding. Ammonia can also be absorbed into the structures of the stable or loose box, particularly timber and semi-porous floors and will continue to escape back into the air, even after the stable has been mucked out. It can also be trapped under rubber matting placed on floors of stables and horseboxes.

Ammonia and respiratory health

When ammonia combines with water in body tissues, it becomes extremely irritating and harmful to the sensitive eye membranes, sinuses and respiratory system. In humans, short-term exposure to high levels of ammonia can cause upper and lower respiratory tract irritation and oedema and, over the long-term, can cause chronic bronchitis and may exacerbate occupational lung diseases including asthma. In horses, ammonia restricts the movement of cilia (brush-like hairs) in the airways that filter out harmful dust particles and its corrosive action causes inflammation and a build up of mucous. Excessive ammonia inhalation in horses is thought to be a significant contributing factor in recurrent

airway obstruction (RAO) formally known as COPD and lower respiratory tract inflammation of small airway disease. Persistent airborne ammonia exposure can also lead to an impaired response to respiratory bacterial and viral threats and has been linked to eye irritation and reduced hoof integrity.

How can Biofresh help?

A number of products are available commercially that are marketed to reduce the production and build up of ammonia in stables. These include deodorisers and traditional disinfectants.

Deodorisers achieve little other than to mask the smell of ammonia, whereas traditional disinfectants will reduce the population of bacteria that generate ammonia, but to be effective they must be used on a daily basis.

BIOFRESH is a novel anti-ammonia treatment for stables that is new to the equine market. It has a unique dual action for the eradication of ammonia.

- Blocks the action of urease and thus prevents the conversion of urea to ammonia.
- Absorbs ammonia already present in the air or that has penetrated into the stable structure.

The technologically advanced dual action of **BIOFRESH** is safe to use, resulting in healthier horses with fewer respiratory problems and provides fresher, more pleasant conditions in the stable.





- **Fewer Respiratory Problems***
- **Maintains Optimum Respiratory Performance**
- **Reduces Unpleasant Odours**
- **Better Working Conditions**
- **Completely Safe to Use**

How to use

Biofresh will be effective for one week and additional bedding need not be treated during this period. Apply weekly or after a major clean out, whichever is the most frequent.

A made up solution remains active for up to 7 days if stored in a cool dry place.

Remove lid and seal from the measuring chamber and squeeze bottle until 20ml is in the chamber. Add to 2 litres of clean water in a garden pressure sprayer and shake to mix well. Spray liberally on the bedding and walls. It is not essential to completely cover all surfaces, as any gaps in bedding will be filled in by hoof action.

For use in horseboxes and on rubber mats: spray liberally paying particular attention to joints and edges. Lift mats where possible.

* Associated with Ammonia inhalation



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