

Making best silage: Production of high quality haylage for horses



When feeding horses conserved forages three key concerns are at the forefront of any horse owners mind. These are the presence of:-

- Small particles causing respiratory problems
- Harmful microorganisms such as Listeria, Clostridia and Moulds
- Presence of toxins such as mycotoxins

Any of the above can cause serious health problems and in some instances even death.

In terms of small particles, often known as respirable particles, hay is the chief culprit, with dry hay having upward of 30,000 respirable particles in every litre of air inhaled from each kg of dry hay. So many horse owners soak their hay which greatly reduces these to less than 5,000.

However soaking hay removes many nutrients including certain minerals and generally hay and particularly soaked hay is low in protein and digestible energy. Thus many horse owners have converted to feeding haylage which can be of better nutritive value and has a low risk of respirable particles, BUT can have other problems associated with it.

Haylage, as defined in the encyclopedia of farm animal nutrition, is high dry matter silage, the point at which silage can be classified as haylage is arbitrary but a dry matter content of 50% or greater is often used as a guide. Haylage is almost entirely conserved in large bales wrapped with film.



There has been much resistance to using fermented feeds for horses probably because owners are concerned about Listeria, Clostridia, Moulds and mycotoxins. However recent scientific studies have shown that:-

- horses prefer haylage over hay and actually lower D silage and haylage was eaten by horses in preference to hay and higher DM haylage.
- Intakes were higher, and so intake of energy and protein, were greater in haylage and baled silage over hay and clamped silage.

So how can we reduce the risks of haylage as a feed for horses and thus ensure we can reap the nutritional benefits.

Reducing harmful microorganisms and mycotoxins

There are many microorganisms some of which are helpful whilst others are harmful. The most important of the detrimental microorganisms for horse owners are Listeria, Clostridia and Moulds with some moulds being responsible for the production of mycotoxins.

Whilst these can be a problem in silage and haylage following a few key rules can reduce the risks of these within your feed.

Ensuring that the grass to be ensiled is of good quality is the first key point. As the grass matures it is more prone to invasion by moulds that will increase the risks of mouldy silage. Ideally the grass needs to

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be cut be cut whilst still in its vegetative state and before the seed begins to ripen.

Listeria, clostridia and moulds are everywhere particularly in soil and on dead and decaying plant material. So the first point is to ensure that sufficient stubble is left when cutting between 2.5 and 4 inches is desirable depending on ground conditions, this will minimize soil contamination and reduce dead material in the base of the sward entering the bale.

However, whilst doing this will reduce the risks it won't eliminate them. Once cut, the grass should be spread into a wide swath as quickly as possible. Leaving the grass in a thick swath will reduce the drying rate and increase the humidity in the cut grass which, in turn, will act as a compost heap allowing a huge increase in moulds.

Once the grass is ready to be harvested ensuring that a rapid fermentation is achieved in the bale will greatly reduce the chances of an undesirable fermentation occurring and thus reduce the risks of Listeria, Clostridia or Moulds. To do this consider using an additive to ensure the right bacteria are present to carry out a beneficial fermentation. Even on good quality grass the number of undesirable bacteria can outnumber the beneficial lactic acid bacteria by 1000 to 1 so by adding an additive the balance is back in favour of the good guys. Also consider using a combination product that not only provides high numbers of lactic acid bacteria but also contains compounds used in human food that are inhibitory to moulds. Once the crop has been baled it is essential to wrap the bales, as soon as possible and at most 2 hours after baling, at the stacking site. This ensures the fermentation will begin immediately and help to ensure that the good guys will dominate the fermentation and out

compete the bad guys. Not wrapping at the stacking site increases the risk of damage to the wrap which will result in air penetrating the bale which greatly increases the risks of Listeria and Mould growth. For haylage the fact that it is dry means that air, if present, will penetrate further into the bale than a lower DM silage bale. For these reasons, it is advisable to wrap high value, high DM crops with 8 layers of film to further reduce the risks of undesirable microorganisms in the haylage.

When feeding the haylage ensure that the bale is open for a minimum period and ideally a maximum of 3 days before it's fed. An exception to this rule is if you are feeding a large rectangular bale where you can open one end and keep the remainder of the bale sealed and work back from one end as required. This ensures minimal ingress of air which will encourage mould growth in the haylage.

Following the above advice will minimize the chances of either undesirable microorganisms or products in the haylage. However when opening the bale if you find areas of mould ensure that you remove a generous portion from around the mouldy area as this is where the highest levels of Listeria are likely to be.



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