

Questions & Answers

Regarding haylage for horses



Answers to the most commonly asked questions regarding haylage for horses

A number of factors must be considered in order to produce good forage for horses. Below are some of the most commonly asked questions, with answers on how to produce haylage of high hygienic quality and suitable nutritional content.

? What is DM?

DM is an abbreviation for dry matter. The DM specifies the amount of dry matter in the material. If the DM content is 55%, the forage contains 55% dry matter and 45% water. The usual DM content of hay is 84%, whilst the DM content of silage can vary from around 25% right up to more than 70%. When the DM exceeds 50% it is normally referred to as haylage. Haylage with a high DM content has less preservative protection in the form of lactic acid, and is mostly dependent on the oxygen-free environment being maintained during storage.

? What is pH?

This is an expression of the degree of acidity, and an indication of how successful the fermentation has been. As an example, pure water has a pH of 7, and the lower the pH figure, the higher the acidity. Thus, a silage with a pH of 4,0 is likely to be better preserved than one with a pH of 6,5. Organisms, which cause spoilage, do not thrive in highly acidic conditions.

? What is ensiling?

Ensiling is a way of preserving forage, just as haymaking is another. The preservation process is based on lactic acid bacteria starting to produce lactic acid, which in turn lowers the pH. For the lactic acid bacteria to reproduce, the environment must be free of oxygen. By lowering the pH value in

combination with the oxygen-free environment other bacteria and mould cannot grow in the silage and haylage.

? What is the difference between silage and haylage?

The original term for all fermented forage is actually silage. Haylage is a name that has come about for silage with high dry matter content. There are no definite limits as to what constitutes silage and what constitutes haylage, but when the content of dry matter exceeds around 50%, the forage is usually referred to as haylage. As haylage contains less water than silage, less lactic acid is produced in haylage. The lactic acid bacteria need water to grow and enable the production of lactic acid to begin. Haylage is thus preserved as a result of an oxygen-free environment, and less as a result of lactic acid production.

? Does DM content in haylage vary?

The DM content of the haylage varies between bales and sometimes, even within the same bale. This is because the conditions in the field can vary - some places have more sun during the drying period and in other places the pasture is thicker resulting in thicker swaths of grass, which dry more slowly. These variations also mean that the nutritive value will vary. Search the market in order to find the haylage quality best fitting the needs of your horse.

? How much haylage should you give a horse?

Haylage contains more water and less DM per kg than hay. So, haylage is more “diluted” than hay, and you may therefore have to feed more haylage than hay. To find out how much haylage a horse requires, you first have to calculate how many kg DM the horse should have per day. As a ground rule, a horse should have at least 1,5 kg of roughage DM per 100 kg of body weight per day, and given the opportunity to seek for feed at least 8 h per day. This means that a horse of 500 kg must have at least 7,5 kg roughage DM every day. Divide the number of kg DM by the DM content of the forage. This is equivalent to $7,5 \text{ kg DM} / 0,84 = 9 \text{ kg hay}$ or $7,5 \text{ kg DM} / 0,55 = 13,6 \text{ kg haylage}$ if the haylage has a DM content of approx. 55%. If you have to restrict the allowance of coarse fodder/forage 2.0 kg DM/100 kg body weight and day is appropriate, but free access to forage of suitable quality works well for many horses.

? Is haylage too nutritious to make a good horse forage?

Haylage is usually a bit more nutritious than hay, mainly due to the slightly earlier harvest and leafier crop. It is possible that the haylage is of a higher nutritional value and the horse fattens even though the concentrated feed has been reduced or removed altogether. This problem occurs mainly with horses and ponies that are not exercised. In such cases, it is perfectly acceptable to



replace some of the haylage with one or more kg of straw.

? Which pasture species are suitable for horse haylage?

The nutritional content of haylage is affected more by the maturity of the grass at harvest than botanical composition. There are several species that are suitable for horse haylage and which can be grown together; examples include timothy, meadow fescue and perennial rye grass. The pasture mix may also contain a small proportion of clover.

? What is botulism, and how common is it?

Botulism is a form of food poisoning that can affect both people and animals. Horses are particularly susceptible to botulinum type B, which has a mortality rate of approx. 90% in affected horses, although Botulism is a very rare illness. Botulism is caused by a toxin (poison) that is produced by the bacteria *Clostridium botulinum*. The bacterium

is anaerobe, which means that it thrives in oxygen-free environments, such as haylage. The botulinum bacteria can enter the haylage via soil or carcasses. There are several ways to prevent the presence of botulinum bacteria in haylage. Avoid soil contamination by keeping the grass stubble height at least 8 cm, but preferably 10 cm. Turn the grass carefully, take care not to lift any soil into the swath when preparing for baling. Rapid drying is important to achieve an even DM content in the haylage. The botulinum bacteria cannot grow in dry environments. It is also possible to vaccinate against botulism, and use haylage additives that inhibit *Clostridia*.

? There are sometimes 'white dots' on the surface of a bale. Is this dangerous?

The white dots are yeast and are usually completely harmless. More widespread, slightly "fluffy" patches are mould. Mould growth in haylage is a sign that the bale has not been properly sealed during storage, as mould cannot grow

without oxygen. If the bale is not sufficiently dense, there will be a lot of oxygen-rich air left in the haylage when it is wrapped, which can also lead to mould growth. Mould is harmful in two ways:

- 1) Through mould spores, which can cause respiratory problems in horses, and;
- 2) Through the toxins (poisons) that are produced by moulds. Moulds should therefore be carefully removed before feeding, especially if they are any colour other than white. If a bale is full of mould or has pieces of mould visible throughout, the bale should not be fed at all.

? How do you determine if the haylage is of approved hygienic quality?

The simplest way is to use the senses; nose and eyes. The haylage should smell "good" and not be musty. Low DM contents mean that the haylage will smell acidic (vinegary) as more lactic acid has been formed. The haylage should be green to brown-



greenish in colour. If the haylage smells ammoniac, or is slimy or “decomposed” and dark, it should not be fed. Make a habit of looking at and smelling the haylage carefully before it is fed, and you will quickly learn to detect odd smells, an unusual colour or any other abnormal features.

? How many layers of film should there be on the bale?

The number of layers of film needed depends on how dry the crop is. The drier the crop - the more layers of plastic are needed to avoid perforations in the film. Horse haylage is usually drier and of higher porosity than silage for cattle, which means that 8 layers of plastic are often needed in order to seal the bale sufficiently. Extra layers of plastic are also needed to protect the bales if they are going to be handled a lot.

? How long does an opened bale stay fresh?

How long a bale can be left open depends on the hygienic quality of the haylage when the bale is opened, the ambient temperature and humidity, as well as the DM content. In spring and autumn, you should not expect a bale to last for more than three days. When the temperature is below zero, most bales will stay fresh for considerably longer than three days. A week or more is not unusual.

? How many horses do you need to be able to use big bale silage?

As a guideline you could say around 10 horses will use up a big bale in three days, but it obviously depends on how many kg of DM the bale contains. Calculate how much haylage each horse eats per day, and then add together what all the horses eat in three days. Then you can easily see if you can use up a big bale in three days, or if smaller bales are a better alternative. A big bale may be useful in the winter and small bales in the spring and autumn.

? Can you put a haylage bale out in the field and let the horses help themselves?

Yes you can, but only if you use feed racks. Feed racks will avoid waste and tramped forage. With more horses you need more feed racks so that all the horses can eat in peace at the same time. Take care to collect and remove any spilled forage. The ideal situation is a graveled or hard feeding area which is easy to keep clean and does not become muddy.

? Should you have round or square bales?

The shape of bale you choose is not important for the quality of the haylage. Many feel that square bales are easier to handle when feeding, but it depends on the type of feeding equipment you have access to. Most important is choosing a bale shape and size that suits the systems you use and the number of horses you keep. Regardless of whether the bales are made using a round or a square baler, the baler must produce hard, well-shaped bales with high bale density (kg DM per m³), ensuring there is little air left in the bale. Trioplast HorseWrap is suitable for both round and square bales.

? How should the haylage bales be stored?

The bales should be stored on an even surface that is well drained and free from sharp objects and vegetation. This will reduce the risk of puncturing bales and help to keep rodents away. Protect the bales from birds by using a net or tarpaulin. Inspect the stored bales often, and if holes or other damages are found, repair them as soon as possible. Holes should be repaired with special fixing tape. Ask your local distributor for Trioplast special fixing tape. Normal tape will not prevent oxygen leakage and does not adhere well to the bale wrap. Mark the fixed bales so that they can be checked extra carefully before feeding and if possible use them first. Look after the bales; think of how much money each bale is worth!

? Additives - what are they?

Additives or inoculants are different preparations that can be added during the baling process to help the lactic acid bacteria start producing lactic acid more quickly. There are many different types of silage additives and they work in slightly different ways. If conditions are difficult when making haylage, the use of additives that are effective against Clostridium may be appropriate. Silage additives may also be used if the DM content is below 45%.

? What am I supposed to do with the used bale wrap?

For the polyethylene film to be taken care of in an environmentally friendly way, it is important to keep the film free from other objects. As soon as the bale is opened, take care of the polyethylene film and store it in a suitable place, so that it is not mixed with other products. If the polyethylene film is collected it may be used for energy recovery, where the only residues will be carbon dioxide and water. The polyethylene film can also be recycled, if cleaned, sorted, and not mixed with any other non-polyethylene products.

? What is HorseWrap®?

HorseWrap is an extra durable stretch film, specially developed and produced for wrapping horse haylage. HorseWrap is protected against UV deterioration with a guarantee of up to 12 months. The film is produced in lighter colours to reflect heat. We all know the darker the colour, the more heat it absorbs from the sun. The lighter the colour, the more it reflects the sun's radiation.

If you have any further questions about haylage, please contact us at Trioworld or contact your local distributor of HorseWrap. Our experience can be your knowledge!



HORSEWRAP®

WHEN ONLY THE BEST IS GOOD ENOUGH

Trioworld • Box 143, SE-333 23 Smålandsstenar • +46 371 345 00 • trioworld.com



HorseWrap is developed in cooperation with SLU

