



When can I have my silage tested?

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Once a forage has been harvested and sealed to prevent further air entry, it will undergo many compositional changes initially due to the action of plant enzymes. Then other chemical and organic changes occur due to a range of undesirable aerobic (air) micro-organisms (aerobic bacteria, yeasts and moulds) and desirable anaerobic (without air) bacteria. Their populations grow at different rates depending on the amount of air (actually oxygen) present, moisture content of the forage, sugar level of the plants, amount of contamination with mud or manure, species, etc.

The ideal silage undergoes a fast fermentation. The parent material is high in sugar content (usually leafy), is mown, wilted to the correct dry matter content and foraged or baled quickly (within 1 to 2 days), densely compacted and sealed airtight with high quality plastic as soon as possible after harvest. If any ONE of the above “ensiling actions” is not carried out judiciously, the undesirables can get the upper hand to a lesser or greater degree.

Air is one enemy of silage. While air is present in the stack or bale, the undesirables use the air to “live” or respire and their energy supply is the plant sugars of the harvested forage. The longer that air is present in the stack or bale, or continues to seep into the storage due to poor sealing, the more energy (DM) and quality will be lost. The end result is the production of carbon dioxide, water and heat which equates to loss of DM and nutritive value.

Excess moisture can be another enemy of silage. If forage is harvested too wet the Clostridia species of undesirables, apart from using the plant sugars for growth, will also break down proteins, produce an unpleasant smelling silage (butyric acid) resulting in an unpalatable silage.

This lead in explains why and when silages can be satisfactorily tested. Stacks made under ideal conditions will have its entrapped oxygen supply depleted within a day or so after sealing. These stacks should be well fermented within three to four weeks after sealing but many stacks undergo much less efficient fermentations and may not be complete until about eight to ten weeks after final sealing. Poorly rolled and inadequately sealed stacks may never be completely fermented at where air continues to gain access, and eventually becomes compost.

Baled silage, having a small discrete volume will have negligible oxygen within a few hours or less, providing it is densely packed and wrapped within an hour of baling with at least four layers of stretchwrap film that covers the entire bale.

Bottom line, well made stacks can be sampled for analyses after at least five to six weeks but preferably up to eight to ten weeks later if any of the above “ensiling actions” are not carried out. Well made bales may be sampled about three weeks later.