When can I open my silage?

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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, followed by other chemical and organic changes due to a range of desirable anaerobic (without air) bacteria. Fermentation goes pair-shaped with undesirable aerobic (air) micro-organisms (aerobic bacteria, yeasts and moulds) if not enough air is expelled by compaction at harvest gains. 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, pH, 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 using the plant sugars as their energy supply or food. The longer that air is present in the stack or bale, or continues to seep into the storage due to poor sealing or holes, 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 is 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 fed out (or 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 fours weeks after sealing but many stacks undergo much less efficient fermentations and fermentation may not be complete until about six to eight weeks after final sealing. Poorly rolled and inadequately sealed stacks may never be completely fermented 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 or so of baling with at least four layers of stretchwrap film that covers the entire bale. Well-made bales will still need about three weeks after wrapping to be well fermented.

Bottom line, well made stacks can be fed out after about 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 fed out anytime after sealing due to its discrete packaging but the material will be in various degrees of fermentation and may deteriorate rapidly if not consumed quickly. The bales may also smell a bit strange if opened within a week or so since fermentation is in the early stages.