

Glossary of Silage Smells

Smell	Probable Cause	Management Issue
Sweet Acid	Probable strong fermentation: check pH, could be too low	Could have stability problems when fed out. Check yeast and mold levels.
Acetic/ Vinegar	Elevated acetic acid level: check VFAs etc. 1) High lactate, acetate and propionate: good stable silage, feeds well. 2) Lower acetate, some ethanol, maybe some butyric, iso-butyric (messy VFA profile), also some ammonia. Classic slow fermentation: may or may not be stable, intakes not ideal, lower performance.	Type 1: Excellent silage, feeds well, animals perform well. Type 2: Silage may not be stable, potential palatability problems, animals do not perform ideally.
Faecel/ putrid/ decaying	Clostridial silage: slow fermentation and/or contamination (ash>8%) has resulted in Clostridia dominating the fermentation and producing butyric acid (classic smell is mouse droppings), ammonia, amines (e.g. putrescine, cadaverine). Silage will be wet, pH may be elevated or may be low.	Silage will be very stable but intakes will be low. Forcing high intakes can cause health and fertility problems. Feed as low proportion of ration, mask with suitable flavor (e.g. butterscotch, caramel).

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Earthy	Bacillus growth: pH will be high.	Silage will eat and may also go moldy. Must be fed quickly, removing moldy material. Consider treating TMR.
No smell to alcoholic or fruity/ yeasty/ bread odor	Yeast growth, consumption of VFAs. pH will be elevated, may be some alcohol on analysis. Micro will probably show high yeast levels.	Silage very likely to be warm, hot or likely to heat. May also be or go moldy. Feed carefully as above.
Tobacco/ burnt odor	Silage has undergone excessive heating due to yeast and/or Bacillus growth. May also be moldy. Analysis shows little or no VFAs or other volatiles. May have a high level of bound/heat damaged protein (ADIN): this indicates temperatures have been in excess of 100F.	May have reasonable/high intake (cows like the taste) but will not perform well since most of the energy has already gone.
Musty/ moldy	Molds are growing in the silage, probably visibly. Silage as already heated due to yeast growth with losses of dry matter and nutrients.	Remove and discard moldy silage.