

## Silage Troubleshooting: Problems, Causes, and Solutions

PROBLEM	CAUSES	MANAGEMENT AND FUTURE AVOIDANCE
High pH silage (see Figure 3)	<p>A number of possible causes:</p> <ul style="list-style-type: none"> <li>• Slow fermentation: smell and look at VFA profile for indicators (butyric etc.)</li> <li>• Yeast growth: look for indicators in smell (no smell or slightly alcoholic), VFA profile and microbial analyses.</li> <li>• Bacillus growth: earthy smell, may be heating.</li> </ul>	<p>Management is largely down to what else is going on. If silage is not heating, feed rate needs to be high and/or a TMR treatment used. If silage is butyric, feed rate must be carefully controlled. Performance is likely to be compromised due to energy lost from silage. Avoidance: Total management approach -harvest stage, chop length, speed of fill, pack rate, plus use a good additive.</p>
Silage heating or heated	<ul style="list-style-type: none"> <li>• Yeast growth (main initiators of heating).</li> <li>• Bacillus growth.</li> <li>• Acetobacter growth: rare, usually only in cereal silages.</li> </ul>	<p>Managing needs high feed rate, good face management, maybe also use of a TMR treatment. Avoidance: Focus on management—packing, speed of fill, chop length, etc., plus use an aerobic spoilage inhibitor on the silage.</p>
Moldy silage	<p>All mold comes in from the field and grows in silage because air is present. Air can be due to poor packing (e.g., balls or lumps of mold in silage mass), delays during filling (e.g., bands of mold in silage: fill lines), poor sealing (mold at top and/or sides) or slow feedout (mold across face). Large diseased areas in the field at harvest.</p>	<p>Be very careful! If any doubt, throw away moldy silage: by the time it's moldy it has lost most of its available energy. See also LAN Mold Guide. Avoidance: Exclude air in the silage, use fungicides properly in the crop in in the field, and use a proven aerobic spoilage inhibitor on the silage.</p>
Silage pH too low	<p>This usually results from the activity of "wild" lactobacilli naturally present in the silage and often results after a slow initial fermentation (usually a fast fermentation will prevent the wild lactobacilli becoming established).</p>	<p>May need to be careful what is fed to avoid acidosis, etc. Avoidance: Largely management (fill rate, packing, etc.) and use an inoculant with a good homolactic LAB.</p>
High ammonia	<p>Some lactic bacteria (<i>Enterococcus/Streptococcus faecium</i>) break down protein, so can cause a higher ammonia level in an otherwise well-preserved silage. High ammonia can also result from a Clostridial silage (strong fecal smell) or from Entero-bacteria. High ammonia can result from over-application of fertilizers (total crude protein will be unrealistically high).</p>	<p>Requires care when feeding. If silage is butyric, be careful with rate of inclusion in ration. If not butyric, be careful with level of NPN in ration. Avoidance: If fertilizer problem, man fertilization better. If Clostridia, avoid soil inclusion (ash &lt;8%), harvest drier (30% DM), and use a homolactic LAB inoculant.</p>