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# Forage Quality of First Cutting Due to Wet Spring

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Frequent and above average rainfalls can make haymaking nearly impossible. In addition, the rainy weather meant many cloudy days with little sunshine for photosynthesis to provide energy for growing forage and the cool weather also slowed growth. This combination of cool and cloudy weather has caused some unusual situations as far as the quality of the harvested forage.

Forage analyses from first cutting may indicate low nitrogen. It is not unusual to see analyses that are 18% CP, 30% ADF, and 40% NDF instead of the 20% CP we would expect with such fiber levels. Lower protein than normal has occurred because nitrogen fixation in alfalfa and clovers was decreased. Nitrogen fixation requires large amounts of energy that comes from photosynthesis. Nitrogen fixation also requires oxygen in the root area which was limited in some soils due to water saturation.

In some cases, forage analyses may not report lower nitrogen content because much of the hay and haylage was lodged before it was harvested. This meant that only the top of the alfalfa plants was harvested and lower stems were left in the field. While lodging greatly reduced tonnage, it should have increased forage quality because the top portion of the plant is higher in leaf content which is high in energy and protein and the upper stems are more digestible than the lower stems.

Lodged forage may have elevated ash content. When alfalfa lodges the laying on the ground increases soil attached to the stems and attempts to pick up lodged forage will often include some additional soil. It is worthwhile to have the ash content check before balancing a ration.

When cut, forage is rained on forage quality is reduced by leaching protein and nonfibrous carbohydrates from the leaves. With one inch of rain more than 30% of the dry matter can be lost due to leaf shatter and another 10 to 15% of the dry matter is lost due to leaching. The two types of losses both result in high fiber, low protein and low nonfibrous carbohydrate (NFC) in forage.

Consider that adding lactobacillus or other inoculants to rained on hay will likely not enhance fermentation due to low starch and sugar (NFC) in forage. While we would normally recommend adding lactobacillus to first alfalfa haylage due to low naturally occurring levels in the field, we would ***not*** add it to any alfalfa that had laid in the field more than three days. After three days, the NFC has declined to the extent there is not enough food (substrate) to feed the microbes and adding more microbes does not increase fermentation.

Rained on alfalfa haylage should be examined it carefully before feeding. Lower NFC than normal may result in poor fermentation. If the fermented haylage does not smell normal, watch for clostridia and other molds and bacterial that may cause animal health problems.

In addition, watch for the potential for mycotoxins in the forage. Mycotoxins are compounds produced by molds that affect animal intake and their immune system. The latter can result in elevated somatic cell counts in milk as well as predisposition the cattle to get other diseases. Mycotoxins are produced

when the molds are stressed as can occur when forage lays in the field too long or in poor fermentation in the silo. There is no good test for these compounds. The antibody (Elisa) test kits tend to give a lot of false positives and HPLC only analyzes for a small number of the approximately 400 different mycotoxins so it frequently finds nothing simply because a different mycotoxin was present. The best management is to watch the cattle carefully and see if any changes occur when feed source is changed.

Rain during harvest generally results in lower quality than desired but it can be fed and produce good milk levels with appropriate management. The key is to know what potential problems might occur and to watch for them.