

GRAZING ALFALFA: REAL COST OF “FEAR” OF BLOAT

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In the Southeast, including legumes like alfalfa and clover in pastures provides many advantages. It reduces the impact of fescue toxicosis, provides free nitrogen, and improves pasture quality leading to increased animal performance. Individual animal performance is greater on grass/legume pastures compared to performance on similar monoculture grass stands. Daily gains for steers grazing clover-fescue swards is improved compared to straight tall fescue pastures (Figure 1). Improved performance is partially due to greater forage intakes. This practice is sound management even though legume bloat is a risk to livestock. If one considers the number of cattle grazing pastures containing legumes worldwide, the “fear of bloat” results in far greater economic losses from low beef cattle gain than the potential losses from bloat itself. In other words, if you don’t incorporate legumes into your pastures, you are leaving money on the table.

Figure 1. Daily gain of steers grazing high-endophyte-infected tall fescue vs. those grazing non-infected tall fescue or clover.

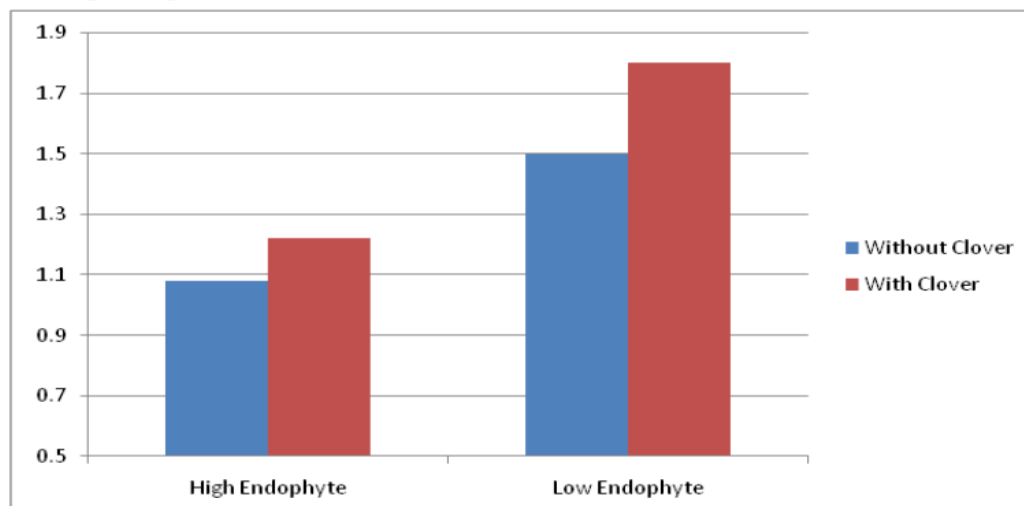


Figure 1 taken from ID-186 “Managing Legume-Induced Bloat in Cattle”
<http://www.ca.uky.edu/agc/pubs/id/id186/id186.pdf>

There are many millions of acres of pastures across the U.S. where legumes are not planted in pastures because cattlemen are concerned about the risk of bloat. The authors don't mean to belittle the "fear of bloat" though. Some of the best cattlemen in the country have lost one or more head to bloat and most can tell you about at least one sleepless night when they stayed up worrying about the potential for dead animals the next morning from bloat. The objective of this presentation is simply to provide a realistic picture of the risks of bloat occurring on your farm and to provide an example of the economic losses you may suffer by not planting legumes. We will also provide information from the UK Pub ID-186 on how to reduce the risk of bloat on your operation.

As a background, the spring of 2010 saw some of the largest bloat losses in recent memory in Kentucky. The UK Veterinary Diagnostic Lab received reported bloat cases that were 5 to 10 times higher than normal. Most of these losses were attributed to an abundance of white clover in pastures and climatic conditions that encouraged bloat events. Following this spring, UK Beef and Forage Specialists, led by Dr. Jeff Lehmkuhler, conducted a survey of county agents to better understand the severity of the problem. Figure 2 shows that the central Bluegrass area of the state had the greatest losses. This was not a comprehensive survey since only 42 counties reported, but we believe that it's safe to assume that the counties with the greatest losses were the ones that completed the survey.

Figure 2. Counties reporting cattle losses to bloat during the grazing season of 2010 based on 42 counties reporting.

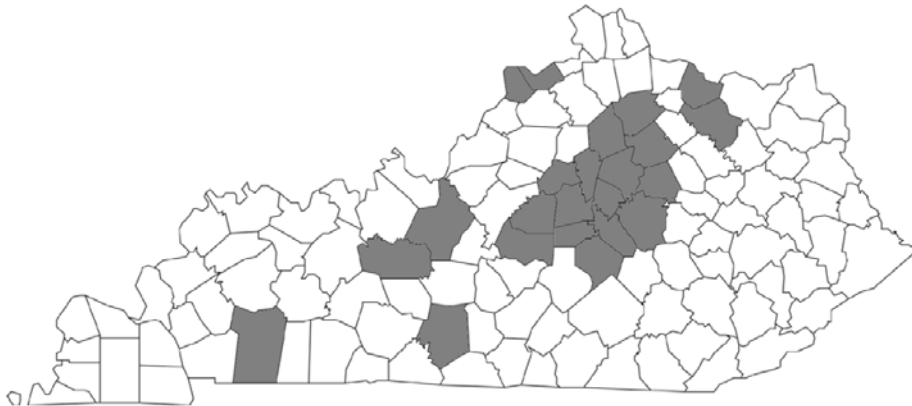


Table 1 shows the results of the bloat survey. The important thing is that 2010 provides a good example of a worst case scenario for bloat in Kentucky. Interestingly, even with this worst case scenario type of year and the fact that many counties in Kentucky did not report, the incidence of bloat was only 1%.

Table 1. Summary of 2010 Kentucky Clover Induced Bloat Questionnaire: Number of operations and cattle numbers represented by questionnaire responses.

Item	
No. of responses	295
No. of counties represented	42
Total No. of cattle represented	65,822
No. of responses that indicating cattle lost to bloat	107
% of responses with cattle losses to bloat	36.3%
Est. number of cattle lost to bloat	670
Cattle lost as a % of the total represented	1.0%

Dr. Kenny Burdine has developed several economic projections about the benefit of adding legumes to a pasture and the potential losses to your operation if you suffer death losses due to bloat. Table 2 shows the added value of including legumes in a pasture. On the conservative end legumes should provide an additional 0.25 lbs/hd/day gain and often add an additional 0.50 lbs/hd/day gain. When grazing mixed alfalfa/orchardgrass pastures that contain a 50% or more alfalfa, it would not be uncommon for the additional daily gain to be higher than this. In short, this table shows that adding legumes can give the potential for more gain per day and that this added daily gain translates into a making more money per head (even with the price slide). Table 2. Increased weight gain valuation – the price impact – when grazing pastures that contain legumes. The “No change” column in this table represents the value of the animal that was grazing a pure grass pasture. The next two columns represent the animal that gained 0.25 and 0.50 lbs/day grazing a mixed grass/legume pasture and the additional revenue you would receive from this added gain.

Sale Price	No Change 750 lbs	0.25 lbs per day 795 lbs	0.5 lbs per day 840 lbs
\$200 per cwt	\$1,500	\$1,561	\$1,620
		\$61	\$120
\$210 per cwt	\$1,575	\$1,641	\$1,704
		\$66	\$129
\$220 per cwt	\$1,650	\$1,720	\$1,788
		\$70	\$138

Assumptions: 750# steer, \$8 slide, 180 day period

Table 3 shows the economic losses that can occur when cattle die because of bloat. The simplest example is that if 1% of your herd is lost to bloat and the placement cost is \$1000, then you lose \$10 per head. In other words, if a cattleman with 100 head losses one animal, then he/she losses \$10 per head because of this one mortality. Based on the 2010 Kentucky survey where losses were at historic highs, the bloat losses were approximately 1% in the area that was the hardest hit. We have also included a 2.5% and a 5% mortality rate because bloat does not affect all producers the same. For example, many producers may be using the strategies listed below to reduce the chance of bloat and have no losses, but if one producer in five has a 5% death rate, then the overall average mortality rate is 1%.

Table 3. Mortality reduction impacts based on placement cost and different mortality rates.

Placement Cost	Mortality Rate			
	0	1%	2.5%	5%
\$1,000	\$0	\$10	\$25	\$50
\$1,200	\$0	\$12	\$30	\$60
\$1,400	\$0	\$14	\$35	\$70

Recommendations to reduce the risk of bloat

When cattle graze lush plants capable of causing legume bloat, no management practice will insure bloat doesn't occur. The following management strategies can, however, reduce its incidence:

- Grow grass-legume mixtures instead of pure legumes.
- Avoid grazing very immature white clover or alfalfa. Research shows alfalfa grazed less than 10 inches tall had two times more bloat than when it is grazed at 19 inches.
- Put animals on lush legume pastures only when plants are free of surface moisture (dew or rain).
- Provide a full feeding of hay before turning animals into lush legume stands for the first time.
- Although bloat is associated with certain plants, some animals have a genetic predisposition to bloat, so you should cull chronic bloaters.

- Do not remove animals from pasture during first signs of bloat. Continuous grazing results in less incidence of bloat than removal and return.
- Provide access to water and minerals.
- Observe animals closely following any abrupt change in the weather.
- Feed bloat-reducing compounds. *Note: Ionophores like monensin reduce the risk of bloat. Poloxalene is a compound that when fed at the recommended rate prevents bloat. It is often sold in “bloat blocks” or mineral blocks containing poloxalene. The limitation to bloat blocks is that all animals don’t consume the same amount. One way to insure the correct dosage is to mix poloxalene with feed and then give a daily ration of the mixture).*
- Mowing and wilting legumes prior to grazing has shown some potential to reduce the incidence of bloat in alfalfa, based on research in the upper Midwest. Currently, the potential of this practice to reduce bloat when grazing white clover is uncertain.

In conclusion, bloat can be a concern when grazing mixed grass/legume stands during certain years. Although the incidence of bloat is rare, when it does occur it can be significant to an individual producer. One option is to not include legumes in your pastures in Kentucky, but leaving legumes out results in significant economic losses from gain you don’t realize (for more details see ID-186 “Managing Legume-Induced Bloat in Cattle” <http://www.ca.uky.edu/agc/pubs/id/id186/id186.pdf>).