Is an Alfalfa Grass Mix Good for Your Farm?

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For most of my career as an Ag Rep I had been a pure alfalfa disciple. It was easy to take such a stance having lived and worked in an area where the soils were fertile and it was difficult to move the native soil pH off of 7.0. Alfalfa thrived until intense harvesting and multiple winters took their toll.

Agronomically, there wasn't a good reason to complicate the issue by bringing grasses into the mix. Of course, that was not true in many regions of the Province.

My concern with alfalfa-grass mixtures was the variation in forage quality from year-to-year and cutting-to-cutting. Even with the same seeding rate, the amount of grass that established differed each spring depending on environmental conditions. Variability can be a killer in the dairy and hay marketing industry. "Grass" is a big term, and the variability between species and varieties creates more variation than we see in alfalfa or corn.

Further, grasses express themselves differently in the spring than in the summer and fall. Nearly all of the grasses we use are cool-season grasses, meaning they don't grow well in the hot, dry summers. This creates a situation where spring and fall cuts of a mixed stand will have a high proportion of grass, while summer cuts will be higher in alfalfa. This variability causes some uneasiness among nutritionists and hay buyers.

25 years ago, mixed stands and pure alfalfa stands were cut when the alfalfa was in the 10% to full bloom stage, and older grass genetics tended to be earlier maturing, meaning the grass was headed out and drying down when alfalfa came into bloom. This forage really would be lower quality than a straight alfalfa stand. However, with modern grass breeding, there are varieties of fescues, orchard grasses and other species that are just coming out of the boot stage when alfalfa is in the late bud to early flower stage. Mixed stands cut at this stage will have superior forage quality.

Another beef I had with alfalfa-grass mixtures was the realization that first cutting would often be delayed by rain. When this occurred, grasses seemingly turned overnight from high-quality forage to cordwood.

So what has changed? In both dairy and beef rations, there are good reasons to feed a mixture of alfalfa and grass. For dairy, this has been precipitated by feeding higher corn silage rations which typically contain elevated levels of non-fiber carbohydrates (NFC). Such rations have been strongly linked to higher incidences of cattle lameness. Grasses have higher neutral detergent fiber (NDF) content than alfalfa, but they are also more digestible.

When dairy science was only looking at acid-detergent fiber (ADF), neutral-detergent fiber (NDF) and protein, it was thought that grass was too high in fiber to be fed to dairy cows. When we compare the NDF level of silages made from corn, alfalfa or grass, the grass had the highest NDF level and was therefore thought to be low-energy. Too much NDF would limit intake and lower the energy value for a given feed.

With the advances in the understanding of fiber digestibility, we now understand what the cows had been telling us all along: There was energy in grass. The term NDFD (the percentage of the NDF that is digestible in a given timeframe) sheds some light onto the energy content of grass as forage. While most alfalfa samples have NDFD around 50 percent or less, and corn silage has an NDFD of 50 to 60 percent, grasses routinely test at 60 to 70 percent NDFD. If two-thirds of the NDF in the forage is digestible and usable as an energy source, that will likely mean less grain is needed to maintain milk production, and since grasses have almost no starch, energy increases while decreasing the starch load. Coupled with faster digestion, some grass inclusion makes for a good fit with high corn silage (elevated NFC) diets.

In the case of beef cattle, wintering cows that consume only alfalfa hay receive more than adequate protein but may be limited by energy. A high-quality alfalfa-grass mix can help to moderate the protein consumption while adding a bit more TDN (total digestible nutrients).

These nutritional benefits can only be realized if the grass is cut before it becomes too mature, at which point there are copious amounts of not so digestible NDF. This has historically been a challenge in alfalfa-grass mixtures, but new grass selections have helped.

Alfalfa-grass mixtures offer some unique challenges beyond just the timeliness of cutting. Further, there is still going to be annual and seasonal forage quality variability attributed to grass expression.

If mixing alfalfa and grass at seeding time isn’t appealing but you’d like to capitalize on the nutritional benefits of high-quality grass forage, there is another option. Dedicate

some acres to pure stands of grass that can be stored separately and then mixed into a TMR or fed along with alfalfa hay. This approach offers some ration control benefits and may help minimize forage quality variation.

Other benefits of mixing alfalfa and grass

There are a number of other benefits of mixing alfalfa and grass other than nutrition. When we remember years where we have experienced winter kill in our alfalfa stands we see how having a mixture can help fill in those area or get us through a potential forage shortage by having the grasses fill in for the loss of the alfalfa.

Weed and pest control options are more difficult in a mixed stand, this may discourage some producers. While it is true that we see fewer weed and pest issues in mixed stands, the fact remains that it is difficult to control grassy weeds in a stand that is 30 percent grass.

Soil erosion is something we don't often think about, but it steadily removes the best topsoil, leaving your land less productive even if it isn't noticeably washed out. The top layer of soil contains most of the organic matter and most of the recently applied fertility. This is the first thing you lose with erosion.

If you have any question about the ability of alfalfa roots or grass roots to hold soil, conduct this experiment on your own: Find an alfalfa crown and dig it up as deep as you can with a shovel (8 to 12 inches will do). Find a grass plant and do the same. Soak them both in a bucket of water for 30 minutes, and then remove the plants from the bucket. What you will notice is that nearly all the waterlogged soil will slough off the alfalfa roots, while the grass roots have to be shaken vigorously to dislodge any of the soil. You can imagine the difference on a sloping field after a 6-inch rain.

More and more livestock producers are making alfalfa-grass mixtures work to their advantage, but timely cutting is key to maximizing the benefits of an alfalfa/grass mixture.