



A Case for Annuals Part 3 by Daniel Olson

This article was published in Graze Magazine. However the ideas fit harvested forages as well

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Of all of the popular sayings in our English language, few are as true as “Money Talks.” This certainly is true when it comes to the improvement of forage genetics. The things a perennial grass farmer views as positives – longevity, fewer seed heads, and less seed needs are actually negatives for a seed company’s bottom line. This is why the majority of research dollars have gone toward developing and improving annual varieties. Farmers are beginning to benefit from those efforts. I know its cliché, but this could actually be a win-win for farmers and the companies that supply them.

The other break-through is the increased availability of imported annual genetics from New Zealand, Eastern Europe and South America. It is much easier to research which varieties translate to our climate and growing conditions than to develop totally new varieties.

Annuals are split into two main categories – Cool Season, which grows early in the spring and late into the fall and Warm Season, which require warmer temperatures and are often more drought tolerant.

Warm Season:

Corn has dominated the warm season annual scene for conventional farmers but in the last few years Forage Sorghum, Sudan Grass and Sorghum X Sudan crosses have become exciting alternatives for graziers looking to create more feed per acre and fill in summer slump.

The improvements have come in three areas. Firstly, the insertion of the Brown Mid-Rib gene has been a huge improvement in the quality of the feed. Nearly all of the Warm season annuals have high amounts of fiber. Brown-Midrib is a mutation that reduces the amount of lignin [indigestible fiber.] This increases the amount of energy in the feed and also greatly increases palatability. The newest mutation is the “gene 6” which is the purest of the BMR’s. This has improved the sugar/fiber ratios in the Sorghum, Sorghum X Sudan and Sudan grasses. This also helps with the amount of energy in the forage, but perhaps more importantly; it helps with the fermentation of harvested balage.

The second improvement for graziers is the Bracitic Dwarf Trait in Sorghum and Sorghum x Sudan. This trait compresses the growth nodes in the stalk which allows for a higher leaf-to-stem ratio. It also helps with regrowth. A Sorghum plant needs at least two nodes to regrow. In a normal plant, these nodes are 3-4 inches apart. In a dwarf those nodes are compressed to 1-2 inches. This makes grazing management much easier.

The third improvement, and possibly the most important, is that plant breeders are breeding Sorghums and Sorghum x Sudan grasses to thrive in Northern areas of the country. This break though has allowed them to succeed on many more Grazing dairies. This past summer I did side-by-side trials with two forage Sorghums. The new variety yielded 20.8 tons of forage @ 70% moisture. The old variety only yielded 12.4 Tons. That yield difference is the difference between me being satisfied or disappointed.



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Generally, the Sudan and the Sorghum X Sudan hybrids are the best for grazing. Although Sorghum will out-yield anything, the seeding rate for Sorghum is much lower than the others which results in lower plant palatability and larger stalk diameter. Plan on harvesting the Sorghum as balage or haylage for winter feed.

We have also experimented with grazing corn and "Grazing Corn." The first corn I grazed was some bin-run deer corn from the neighbor. I drilled it at 1 bushel an acre and had really good results. We mob grazed heifers when it started tasseling and had pretty decent utilization. The next year we did it again and it totally flopped. Bin-run corn does not handle stress at all. Also, because of GMO traits, if it's not organic it's likely illegal to plant. A University of Wisconsin Professor recommended bin-run corn at a meeting this summer. An hour later he had to stand back up and tell the group he had been contacted by Monsanto and told it was illegal to do so.

We have also worked with the MasterGraze corn. The unique tillering really made for a dynamic grazing corn. The main stalk may get 6 ft tall but can have 6 or more tillers that are waist high. MasterGraze is also a BMR which really helped reduce residue. It takes about 60 days to get to grazing maturity and the yields were impressive. The main drawback is that it doesn't handle weed pressure and really needs an herbicide application to make it work.

There are also a number of Warm-season legumes. My favorite is Crimson clover as a companion to Sorghum x Sudan which grows very quickly in the summer and can improve the protein content of the mix. Farmers have also used soybeans and cowpeas although it seems like they may do better farther south.

Cool Season:

Small grains fall under two categories, winter grains [that needs to go through a winter before they mature] and spring grains that mature in the seeding year.

Rye is still the most popular grain for spring grazing because it can be planted late and matures quickly in the spring. If managed right, it can make great quality feed but the harvest window is very small.

Triticale is a cross between Rye and Wheat. Most of the breeding has focused on forage yield and quality. Some of the new Triticale varieties have amazing yield potential [2-3 tons dry matter per acre] and energy similar to corn silage. The protein on any small grain is related to Nitrogen availability, but a properly fertilized Triticale pasture can have 16-20% protein. It needs to be planted earlier than rye [think wheat] and it needs better fertility to do well.

There are also spring triticale varieties. They offer more yield and quality upside than oats but need good soil to realize their potential.

Forage oats are a much more consistent yielder and the new varieties have increased their quality. The difference between the new forage oats and grain oats is the amount of tillering they do. This allows for lower seeding rates, [which is good because they're expensive]



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and provides yields without getting too tall. I haven't found a benefit with planting forage oats over Jerry oats in the fall, but in the Spring there are huge benefits.

The other big deal for graziers is the research that has been done on Brassicas. We had been pretty much limited to Purple Top turnips for the last 30 years but companies from Europe and New Zealand have made a whole new lineup of brassicas available to us. From brassicas that stay alive down to 5 degrees to Rape that will grow all summer, plant breeders have done amazing things with brassicas. My personal favorite is a Kale x Rape hybrid that comes from New Zealand. I won't get a bulb, but it grows a tremendous amount of feed in a short period of time and seems to handle insect pressure. Even though these new seeds are expensive per pound, the seeding rate on brassicas is so low it doesn't significantly increase the cost.

All these new options can seem overwhelming but also create opportunities. The most important research is what you do on your farm. Nothing someone at a seed company or university can duplicate something done in your climate with your own fertility program. Next month I will talk more about the "systems approach" and how we have combined cool and warm season annuals to maximize every growing day in the year.