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Recent Experiences with Brown-Midrib Sorghums

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What is a **BMR** ? Typically there is an obvious vein referred to as a midrib in the leaf blade of most grasses. This midrib is generally white or cloudy. Mutations of forage sorghums resulting in a brown-midrib (BMR) as well as a brown pigmentation in other plant parts have shown the potential to dramatically reduce lignin concentration. The presence of the BMR trait does not guarantee a lignin reduction, it only suggests the possibility. Only with the correct BMR line can you insure a favorable lignin reduction.

What is **LIGNIN**? Lignin is a universal component of plant cell walls that is generally0 regarded as indigestible. Lignin is necessary for plant structure and rigidity but is also considered to be the primary factor limiting the extent of forage fiber digestion by ruminant animals.

What is **Nutri+Plus BMR**? – Production Plus + was the first seed company to offer for sale a sorghum BMR hybrid which utilized a BMR mutant developed by Purdue. Nutri+Plus BMR is a sorghum x sudangrass hybrid, which has all the agronomic qualities of a conventional variety. Plus has a proven record for a significant lignin reduction in the plant. In a 2000 Forage Study conducted by Texas A & M, Production Plus+ had two BMR varieties with the lowest lignin levels. One of the first questions asked of new forage is “What about the stem size and how will the animals eat the forage as it matures”? In asking about maturity and stem size, producers are attempting to manage lignin levels; smaller plants and younger plants have less Lignin. Forages with the correct BMR trait help to manage lignin.

What about Animal **Preference**? Production Plus + has had a tremendous response world wide as to how their animals prefer this forage over other sorghums, alfalfa, clovers and oats and that they totally cleanup the BMR forage in all forms for grazing, baled hay or silage. Dave Roberts with Star Seed Inc., Osborne, Kansas reports that cattle ate all the Nutri+Plus first and totally cleaned up the ground before they started on the conventional bales. How much is it worth to have forage that your animals totally cleanup with very little waste and at the same time improve animal health and performance?

What about **Nutritive Value** and Animal **Performance**?

- Tom Gallenburg, Wolf River Valley Seeds of Wisconsin reported a significant increase in milk production and animal health for dairies using Nutri+Plus in their programs.
- Tom Kilcer, Cornell Cooperative Extension, after switching from corn to BMR sorghum-sudan, found milk production was maintained without change and when evaluated on a whole crop basis, a 13-ton/Acre BMR sorghum-sudan crop will produce the same milk/acre as a 15-ton corn silage crop.
- Merrill Hearn- Stafford Kansas drilled in 25 lbs. per acre on 107 acres the last of May. He turned 260 head of 450 lb. steers on 65 acres when height was 30-inches tall and chopped 400 tons off the remaining 42 acres. The crop was then allowed to regrow and grazed until the 1st of September (Average daily gain of 1.8 lbs).

Additional **Benefits**? Nutri+Plus BMR is “User Friendly”. Traditionally sorghum x sudangrass hybrids have not been good silage for dairy animals. This is not the experience with Nutri+Plus BMR. This product when managed properly compares with the nutritive value of excellent ensilage corn and maintains a wide window of acceptable quality. With the BMR you can harvest early to ensure available forage or plant late to rescue a failing crop. Generally with excessive maturing of a conventional sorghum x sudangrass hybrid, the nutritive value and utilization drop to almost zero. With Nutri+Plus animals totally cleanup the forage even when the stalks are very big and mature.

Who is **Responsible**? The Brown-Midrib story began at Purdue University with research by Oliver Nelson and Joseph Kuc with the discovery that the bm3 gene in corn reduces lignin content. Other geneticists and forage physiologists in agronomy at Purdue suggested that this could be useful to improve forage quality of many of the forage grass species. Prominent among these individuals was Vic Lechtenberg, Bob Barnes, V.F. Colenbrander, and K.S. Porter. John Axtell produced the first Brown-Midrib mutants and offered three of these gene mutants to the private seed sector and public institutions. Production Plus + has certainly been the benefactor of the research programs of so many; particularly, John Axtell and Keith Johnson who believed in and encouraged a collaborative system involving the efforts of Purdue University and a small seed business like Production Plus+. It has certainly been a rewarding experience to be a part of a system that actually works, a system that is able to offer a true value-added product to our farmers.

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