



Technical Information

BMR 12 (BMR Revolution, BMR Choice, BMR Supreme) vs. BMR 6)

Differences in Brown Mid Rib (BMR) Forage Sorghum Genetic Backgrounds

It is a common misconception that the darker the brown mid rib in BMR forage sorghums, the better the feed quality of that BMR variety.

A recent study, conducted by the United States Department of Agriculture and the University of Nebraska, has compared the performance of a number of forage sorghum types in BMR 12 and BMR 6 genetic background. This was done by creating isogenetic lines (i.e.: isolating the particular BMR gene in different forage sorghum parents such as Rox - Orange). This then allows a comparison of the same parents with each BMR background.

Trials were undertaken to determine if there were any differences between the two backgrounds in height, dry matter yield, lodging, ADL (acid digestible lignin), ADF (acid detergent fibre), NDF (neutral detergent fibre), IVNDFD (in vitro NDF digestibility).

The results showed that the BMR 6 background had lower yield, shorter height, but did not significantly reduce ADL when compared to non-BMR types and BMR 12 types.

The BMR 12 background resulted in taller plants with higher yields, later maturity and reduced ADL. This reduced level of ADL is directly attributed to the increases in digestibility.

It should also be noted that the reduced lignin production in BMR 12 and BMR 6 forage sorghum types has been attributed to different biochemical pathways. The BMR 12 gene decreases caffeic acid O-methyl transferase (COMT) while the BMR6 gene is linked to a decrease in cinnamyl alcohol dehydrogenase (CAD)

Final Conclusions of the Study:

“When all data are considered in aggregate, **the BMR 12 gene appears superior to the BMR 6 gene** in terms of less negative impact on agronomic performance and greater positive impact on ADL content and fibre digestibility”

