

Cornstalk cross-sections demonstrate the difference in lignin content between Mycogen® brand Silage-Specific™ BMR hybrids (left) and conventional corn (right).

HIGHLIGHTS

BMR corn hybrids contain less lignin, which leads to increased digestibility.

The *bm3* gene is lower in lignin and higher in digestibility than other BMR mutations.

All Mycogen® brand Silage-Specific™ BMR corn hybrids contain the *bm3* mutation.

Know which type of BMR you are planting to get the highest feeding value.

NOT ALL BMR HYBRIDS ARE CREATED EQUAL

By Karl Nestor, Senior Nutritionist, Mycogen Seeds

You've heard of brown midrib (BMR) corn hybrids, but did you know there are four different BMR gene mutations? They are *bm1*, *bm2*, *bm3* and *bm4*, and they are very different when it comes to corn silage performance.

1. UNDERSTAND BMR

BMR, discovered in 1924, is a naturally occurring gene mutation that results in less lignin in the cornstalk. Lignin is the indigestible portion of the corn plant. Lower lignin means higher digestibility, which leads to greater dry matter intake (DMI) and more milk. Sixteen research trials since 1999 show that cows fed Mycogen® brand Silage-Specific™ BMR corn produce an average of 4.8 pounds more milk per day. Greater corn silage intake allows producers to reduce the amount of grain included in the ration.

2. KNOW THE DIFFERENCE BETWEEN BMR MUTATIONS

As early as 1971, studies have been conducted to determine the differences between the BMR gene mutations. For decades, scientists have proven that *bm3*, found in Mycogen brand Silage Specific BMR hybrids, has a dramatic advantage in digestibility over the other mutations. In 1972, a study was reported by Lechtenberg, et al., again showing *bm3* as having the highest digestibility. This study also shows that one of the BMR gene mutations (*bm2*) actually contains higher amounts of lignin than conventional corn hybrids.

In 1999, a study was conducted measuring the lignin content and digestibility of BMR and conventional hybrids. Ostrander, et al., confirmed earlier findings that *bm3* has the lowest lignin content and highest digestibility (Figure 1). Lignin was again studied by Marita, et al., in 2003. Results, shown in Figure 2, conclude, once again, that *bm3* had the lowest level of lignin among all mutations.



3. KNOW WHICH TYPE OF BMR YOU ARE PLANTING

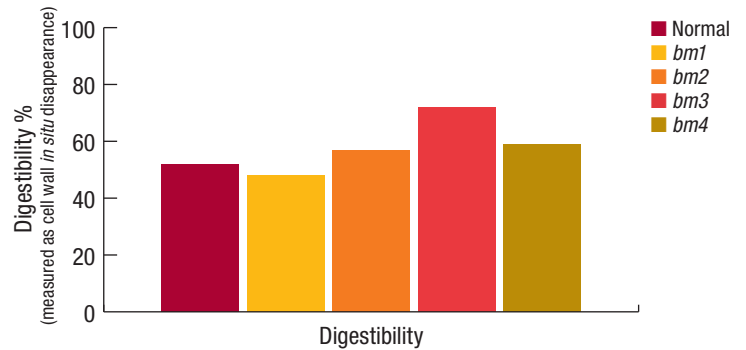
The *bm3* mutation has been proven over many years to be superior in digestibility not only to conventional corn hybrids, but also to the other known BMR gene mutations. All Mycogen brand Silage-Specific BMR corn hybrids contain the *bm3* mutation. Expert Mycogen Seeds agronomists and nutritionists can help you successfully grow and ensile BMR hybrids. Make sure you adjust your ration when incorporating highly digestible BMR corn silage. Use of BMR can help achieve higher milk production and increase the value of corn silage for a higher return on investment.

For more information on how Silage-Specific™ BMR corn silage can have a positive impact on a dairy's bottom line, visit the Mycogen Seeds website at www.mycogen.com or contact your local Mycogen Seeds representative.

Ostrander B, Maillot M, Toillon S, Barriere Y, Pollacsek M, Besle J. Cell wall phenolics and digestibility of normal and brown midrib maizes in different stem sections and across maturity stages. *J Sc. Food Agric.* 1999;79:414-415.

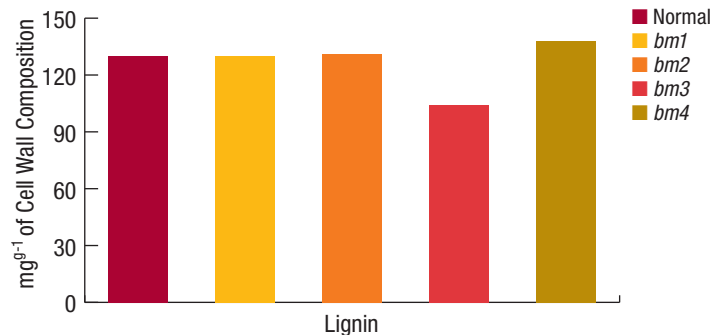
Marita JM, Vermerris W, Ralph J, Hatfield RD. Variations in the cell wall composition of maize brown midrib mutants. *J Agric Food Chem.* 2003;51:1313-1321.

FIGURE 1: DIGESTIBILITY OF NORMAL AND BMR MUTANTS OF CORN SILAGE



Ostrander, et al. 1999

FIGURE 2: LIGNIN CONTENT OF NORMAL AND BMR MUTANTS OF CORN SILAGE



Marita, et al. 2003

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