WISCONSIN– Evaluation of Row Spacing on Sorghum Dry-Down, Harvest Timing & Effects of Feeding Sorghum Forage to Dairy Heifers

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Dairy heifers require moderate-quality forages to maintain adequate body weight gains (1.8-2.2 lb average daily gain). Corn silage is a high-energy forage (70-75% TDN); however, older dairy heifers (>900 lb body weight) require only 60-62% TDN. When corn silage is used as a main part of the diet it can cause excessive gains and body condition in heifers compared to lower energy diets that include high-fiber forages (Coblentz, et al., 2015). Excess bodyweight and condition potentially lead to calving difficulties and metabolic issues after calving, lowering milk production and profitability of dairy farmers.

Project objective – evaluate effects of different row spacings (7.5, 15, and 30") for photosensitive (PS) and non-PS sorghum-sudangrass on forage dry-down and potential for harvest using a single direct-cut harvest in a field setting. Additionally, the project evaluated the use of sorghum-sudangrass as a high-fiber, low-energy dilutant forage in dairy heifer diets.

Overall, use of a non-PS sorghum-sudangrass would not necessitate increasing row spacing to >15" due to it fully maturing at the ideal DM for direct harvest. Increasing row spacing for PS varieties would help encourage a faster and more thorough frost-kill and thus, a quicker dry-down prior to harvest. Yields were reduced for wide spacing along with significant weed pressure, thus, a slightly narrower spacing of 20-25" with multiple seeded rows between the larger spacings may be ideal to maintain higher yields and allow greater airflow. This needs to be further evaluated in large field settings.

The use of sorghum-sudangrass silage to increase NDF content and lower energy in heifer diets helped control intake and heifer growth. Increasing diet NDF content led to greater gut fill and lower feed intake similar to other high-fiber forages (i.e., straw, corn stover, gamagrass) tested and is another option for dairy farmers and heifer raisers for feeding pregnant heifers. This project was funded by MFA's MFRP; the final report can be found at: midwestforage.org/pdfRschProj/17-Akins.pdf.

Conventional sorghum-sudangrass at 15 and 30″ row spacing on 10/4/18.

Photosensitive sorghum-sudangrass at 7.5″, 15″, and twin-30″ row spacings on 10/4/18.