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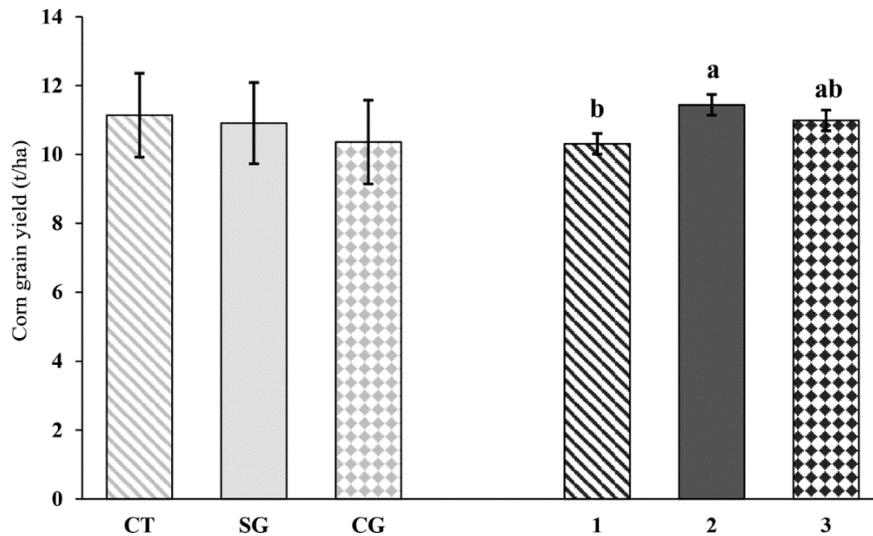
Combining beef cattle and crop enterprises to lower feed costs

Effects of grazing corn plant residue on cattle performance, nutritional characteristics of the residue, and subsequent corn yield are studied in a new article in *Applied Animal Science*

Champaign, IL, October 11, 2021—Integrating crop and livestock production when corn plant residue is abundant could potentially lower feed costs in the fall and winter for beef enterprises. Scientists at the University of Illinois recently published an [article](#) in *Applied Animal Science* that investigated the nutritive characteristics of corn plant residue and beef cattle performance after grazing. They also examined the effects of grazing on subsequent corn yields. The article discussed a three-year study in which paddocks were not grazed or grazed with one of two methods: continuous grazing or strip grazing. Strip-grazed paddocks were divided into three strips, and cattle were allowed access to an additional strip every 14 days.

The researchers first compared the two methods of grazing with regard to beef cattle performance. They pointed out that while the plane of nutrition decreases over time with continuous grazing, strip grazing potentially stabilizes the plane of nutrition over the grazing period. The scientists did find that cattle in the strip-grazing treatment had increased body weight after grazing compared with cows in the continuous grazing treatment, but body condition score was not different between the two treatments. “Compared with continuous grazing, strip grazing requires increased labor and fencing,” said lead author D. W. Shike, PhD, Animal Sciences Laboratory, University of Illinois at Urbana-Champaign, USA. Considering that body condition score did not differ, he added, “additional costs incurred when strip grazing may not be adequately offset.”

The nutritional quality of corn residue was then outlined. “The corn plant is used widely for both grain and forage production for humans and animals,” said David K. Beede, PhD, editor in chief of *Applied Animal Science*. Comparing the two grazed paddocks with the ungrazed one, the scientists found that the grazed paddocks had more acid detergent fiber and less crude protein. They also found that the grazed paddocks had less total residue, cobs, leaves, and husks, indicating selective grazing, although stalk availability was not different among the paddocks. “It is important to note that the decline in total residue availability would represent consumption, weathering, and trampling losses,” said Shike.



Caption: Effects of grazing strategy [continuously grazed (CG), strip grazed (SG), and ungrazed control (CT)] and individual strip (1, 2, 3; in which cattle had access to strip 1 on days 1–14, strips 1 and 2 on days 15–28, and strips 1, 2, and 3 on days 29–42) within strip-grazed residue for three years on subsequent corn crop yield standardized to 15.5% moisture. Means without a common letter (a, b) differ ($P \leq 0.05$). Error bars represent the standard error of the mean (Credit: D. W. Shike).

Crop yield after grazing was also assessed, and despite conflicting data in the literature, the article reported that grazing treatment did not affect subsequent corn yield. The researchers, however, found that yield differed between the strips in the strip-grazed treatment, in which the strip with an increased amount of cattle traffic due to the location of the mineral feeders and water troughs had reduced yield.

At the end of the experiment, it was found that both grazing methods resulted in acceptable cattle performance. Shike concluded, “Utilization of crop residues for cattle grazing could lower feed costs in the livestock enterprise without negatively affecting grain production in the crop enterprise.”

The article appears in the October issue of *Applied Animal Science*.

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Notes for Editors

“Effects of grazing corn plant residue on beef cattle performance, residue characteristics, and subsequent crop yield” by B. E. Lehman, K. P. Ewing, T. Liu, M. B. Villamil, L. F. Rodriguez, A. R. Green-Miller, and D. W. Shike (DOI: <https://doi.org/10.15232/aas.2020-02129>), *Applied Animal Science*, Volume 37, Issue 5 (October 2021), published by Fass Inc. and Elsevier Inc.

This article is available at <https://doi.org/10.15232/aas.2020-02129>.

Full text of the article is available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or arpas@assoqhq.org to obtain copies. To schedule an interview with the author, please contact D. W. Shike at dshike@illinois.edu.

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