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## **PERFORMANCE OF BEEF CATTLE FED SPECIALTY CORN HYBRIDS**

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With the development of crop genetic lines that have built-in resistance to disease or insect damage, come questions and concerns as to the impact these characteristics of the plant may have upon its nutritional/feeding value for livestock. Over the past three years, several specialty corn trials have been conducted here at the Purdue Animal Science Research and Education Center Beef Unit. Specialty corns include Bt, Roundup Ready, and High Oil just to name a few. Bt and Roundup Ready are both Genetically Modified Organisms, or GMO's. The control corn hybrid for these two corn types is their isoline, the closest related corn hybrid without genetic modification. The safety and quality of GMO corn types has been questioned by many groups, including producers and consumers, so our motivation for researching these corn types has been to find out if there are differences in quality. Most of our research has focused on starting calves, one-month post weaning, on a whole plant corn silage based ration. After approximately 85 days, they are stepped up onto a high concentrate-finishing ration containing the same specialty corn type. We have also done some work with cows grazing Bt corn residue.

Our research into specialty corns began with High Oil corn back in 1997. High Oil corn has significantly more oil and protein than normal corn. An early trial using High Oil corn for cattle feeding demonstrated a substantial increase in cattle performance, but we have not seen an increase in performance here at Purdue.

We have done more work with Bt corn than any other specialty corn. There have been reports from farmers that cows preferred not to graze Bt corn residue. We ran two corn residue grazing trials with cows; one in which they were given a choice between Bt residue and one with its isoline, and another in which there were four groups of cows; two groups grazing only Bt corn residue and the other two grazing only the isoline corn residue. In the preference trial, the location of the cows was recorded three times per day by counting the number of cows in each residue type. The cows tended to cycle back and forth between the fields. They were located in the isoline's residue 54% of the time, which was statistically significant, but still not decisive evidence of any preference. In the other corn residue trial in which cows were assigned to either a Bt residue or its isoline residue, there was no difference in performance with two years worth of data.

During the silage feeding phase, the calves consuming the isoline corn silage outperformed the cattle consuming Bt corn silage one year, but there was no difference the following year. Performance during the finishing phase was very similar both years.

Our Roundup Ready trial also included a silage feeding phase and a finishing phase. There was no difference in performance between Roundup Ready corn and its isoline.

This research leads us to conclude that the feeding value of these specialty corns is equivalent to normal corn.

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