

SUNFLOWER SCREENINGS IN BEEF COW DIETS

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Sunflower screenings were fed at 37 percent of the diet dry matter compared to barley malt and wheat midds in lactating cow diets that contained equal amounts of other feeds. The three dietary treatments were fed from calving until the end of breeding season. Weight change (-26 lb, +25 lb, +28 lb) and condition score change (-.12, +.46, +.15) were recorded for sunflower screenings, barley malt and wheat midds diets, respectively. The initial nutrient analysis of sunflower screenings used to formulate the ration was not consistent with subsequent product used or cows were not able to capture nutrients from the sunflower by-product. Calf weight gain was similar for all treatments. Pregnancy rate was only 23 percent in mature cows fed sunflower screenings but satisfactory in other pens. This observation may have been confounded by only one natural service sire used per pen but weight and condition score changes suggest that cow condition and weight change were likely contributors to the reduced pregnancy rate. Producers who calve early and feed for an extended time before turnout should include a margin of safety in their diet formulation if they use sunflower screenings, or use other feeds that have a more consistent nutrient content during this critical time. Nutrient profile of sunflower screenings varied widely. Crude protein ranged from 11.5 percent to 15.7 percent, acid detergent fiber varied from 24.2 percent to 42.4 percent and neutral detergent fiber varied from 37.1 to 53.1 percent.

Materials and Methods

Mature cross bred beef cows and first calf heifers and their calves (n=111 pairs) were allotted to three treatments at the conclusion of spring calving in early May. Diet dry matter and as fed amounts are presented in Table 2.

Results

Average cow weight changes were considered typical for the barley malt (+25 lbs.) and wheat midds treatments (+28 lbs.) but were less than predicted for the sunflower screenings treatment (-26 lbs.). The weight change pattern was consistent for both mature cows and first calf heifers. Condition score changes are consistent with weight changes of cows and also suggest deficient nutrients in the sunflower screenings diet. Calf gains appear to be similar. Pregnancy rate reveals a potentially serious problem if producers use co-products without constant vigilance of nutritional profile of specific ingredients. While the rebreeding rate is satisfactory for the barley malt and wheat midds diets, and for the first calf heifers in the sunflower screenings, weight and condition score losses may have been reduced cyclically to minimal levels. There is a potentially confounding effect of sire as only one natural service sire was used in each pen. However, the mature bull used was a proven sire and had been fertility tested and passed prior to the start of the breeding season.

Discussion

Sunflower screenings may be used at higher levels in diets that are not as critical to reproduction, such as during fall or winter for gestating cows. Because sunflower screenings are so cost competitive, they are widely sought and used in forage-limited areas. Producers who calve early and continue to feed before turnout need to be particularly aware of the potential nutritional problems documented in this study.

Table 1. Diets for lactating beef cows fed sunflower screenings, barley malt, or wheat midds.

	Dietary treatment					
	Sunflower screenings		Barley malt		Wheat midds	
	As fed %	DM basis %	As fed %	DM basis %	As fed %	DM basis %
Wheat straw	17	25	14	21	17	25
Potato waste	54	27	54	25	54	27
Alfalfa	7	12	7	12	7	12
Sunflower screenings	22	37	-	-	-	-
Barley malt	-	-	25	42	-	-
Wheat midds	-	-	-	-	22	37

Table 2. Effect of co-product feeds on cow and calf performance.

	Dietary treatment		
	Sunflower screenings	Barley malt	Wheat midds
Avg cow wt change, lb	-26	25	28
Avg cond score change	-.12	.46	.15
Avg calf daily gain, lb	2.07	2.24	2.10
Pregnancy rate			
Mature cows, %	23	96	96
First calf heifers, %	91	73	91