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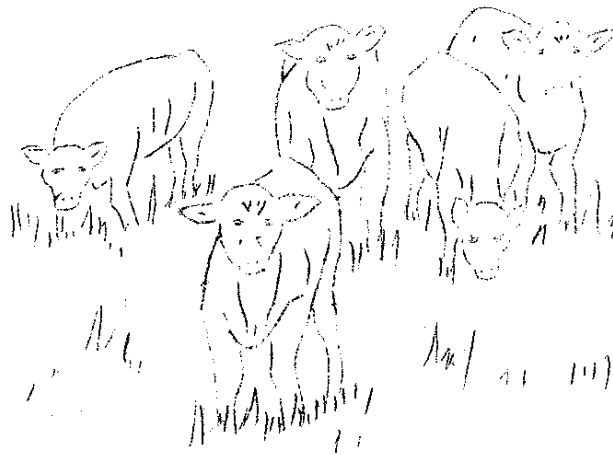
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KEEPING UP WITH RESEARCH 11
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ROUGHAGE SOURCES EVALUATED FOR GROWING HEIFERS



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Roughage Sources Evaluated for Growing Heifers

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When roughages are a large percentage of the ration, as in growing rations, roughage quality is important so less supplementary protein and energy are needed. Sudangrass hay is a potential high yielder of high quality hay.

We compared two sorghum x sudan crosses (Sudax ST6 and Pioneer 988) and a hybrid sudangrass (Trudan V) with commonly used hay, bermudagrass, and native grass. Fescue pasture was included because it often is grazed fall and winter in southeastern Kansas with cattle like the heifers we used.

Sudangrasses were cut when they reached 4 to 5 feet high. Bermudagrass was baled as it started to head, and native hay was baled when the most tonnage of high quality hay could be harvested (July-August). Five acres of Kentucky-31 fescue was overseeded into an established stand of Midland bermudagrass (overseeded September 1972). Fifty pounds per acre of actual nitrogen was applied before the cattle pastured.

Sixty head of Hereford and Angus heifers were equally divided by weight among the six treatments. All hays were offered free-choice; rolled milo and soybean oil meal were fed at 3.6 and 0.5 pounds, respectively, per head daily to all cattle. Dicalcium phosphate and salt were offered free-choice. Before starting the study, we injected each calf with 1 million international units of Vitamin A.

Results

Heifers fed the two sorghum x sudan crosses (Sudax ST6 and Pioneer 988) gained faster ($P < .05$) and were more efficient than other heifers did. The crosses contained 11.3-12.8% protein and may have not required supplemental protein. Trudan V's larger, thicker stalk made a coarse hay. Its crude protein content was considerably lower than the other two sudan hays. Trudan V, bermudagrass hay, and fescue pasture produced similar cattle gains. Cattle fed native hay were the least efficient and had the poorest gains of any hay-fed group. Grazing fescue appears to be a good alternative to drylot roughage feeding in terms of labor requirements and animal performance. The supplementary energy and protein needs of light weight cattle on fescue will be studied in the near future.

With proper management sudangrass offers an excellent potential for the production of high quality hay that can be used to reduce supplementary protein needs in a wintering program.

Table 1. Performance of heifers fed indicated sources of hay and roughages during the winter of 1974 (January 23, 1974, to May 1, 1974 -- 99 days).

Item	Sudax* ST6	Pioneer* 988	Trudan* V	Bermuda- grass hay	Native hay	Fescue** pasture
No. of animals	10	10	10	10	10	10
Initial wt., lbs.	408.5	406.5	403.0	405.0	399.5	415.5
Final wt., lbs.	547.5	554.5	519.5	508.5	483.0	512.5
Wt. gain, lbs.	139.0	148.0	116.5	103.5	83.5	109.0
Avg. daily gain, lbs.	1.40 ^a	1.49 ^a	1.18 ^b	1.05 ^b	.84 ^c	1.10 ^b
<u>D.M. Daily Intake, lbs.</u>	17.4	17.3	17.1	14.5	15.0	----
Hay	13.3	13.2	13.0	10.4	10.9	----
Grain	3.6	3.6	3.6	3.6	3.6	3.6
Soybean meal	.5	.5	.5	.5	.5	.5
Feed/gain, lbs.	12.4	11.6	14.5	13.8	17.9	----
Hay's crude protein, %	11.3	12.8	8.3	6.9	5.3	----

* Sudax ST6 = sorghum x sudan cross; Pioneer 988 = sorghum x sudan cross; Trudan V = hybrid sudangrass. Received 90 pounds actual nitrogen, 60 pounds K_2O , and 90 pounds P_2O_5 .

** Overseeded in established bermudagrass sod September 1972. Received 50 pounds of actual N in September 1973.

a,b,c. Values on same line with different superscripts differ significantly ($P < .05$).

Information in this report is for farmers, producers, colleagues, industry cooperators, and other interested persons. It is not a recommendation or endorsement as it is not yet backed by enough research.

Contribution no. 41, Southeast Kansas Branch Experiment Station, Mound Valley, Kansas Agricultural Experiment Station, Kansas State University.

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