

Soybean Oil Meal Compared with Urea and Varying Levels of Grain in a Wintering Ration for Steer Calves (Project 370)

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It is generally recognized that a readily available source of energy (preferably grain) must be in the ration for efficient synthesis of protein from nonprotein nitrogen. Therefore, non-protein nitrogen is used primarily in finishing rations. There is practically no information on the minimum amount of grain needed for efficient utilization. This test was designed to compare soybean oil meal (natural protein) and urea (nonprotein nitrogen) on an equivalent nitrogen basis in wintering rations and at levels of 0, 3 and 6 pounds per head daily of added grain. Sorghum silage was fed in the amount that the animals would clean up. The sorghum produced 85 bushels grain per acre. Two pounds of average quality alfalfa hay was fed per head daily to all animals.

Results and Observations

Results are shown in table 26. Urea was less efficient than soybean oil meal without added grain. With the excellent silage, apparently 3 pounds of grain was sufficient for efficient utilization of the urea.

This test is being continued by adding grain to finish the steers for market.

Table 26
Urea Compared with Soybean Oil Meal and Varying Levels of Grain
in Wintering Ration of Steer Calves

Lot	13	14	15	16	17
No. steers per lot	14	14	14	14	14
Av. initial wt., lb.	519	525	520	518	519
Av. final wt., lb.	689	665	703	710	730
Av. daily gain, lb.	1.52	1.24	1.63	1.72	1.88
Av. daily ration, lb.					
Sorghum silage	24.8	24.1	21.1	20.7	17.1
Alfalfa hay	2.0	2.0	2.0	2.0	2.0
Soybean oil meal	1.0	---	1.0	---	---
Grain-Urea supplement ¹	---	1.0	---	1.0	1.0
Sorghum grain	---	---	3.0	3.0	6.0
Feed per cwt. gain, lb.					
Sorghum silage	1634	1939	1291	1205	910
Alfalfa hay	132	161	123	117	106
Soybean oil meal	66	--	61	--	--
Grain-Urea supplement	--	80	--	58	53
Sorghum grain	--	--	184	175	319
Feed cost per cwt. gain	\$11.16	\$12.17	\$13.13	\$11.52	\$12.94

1. 86% sorghum grain and 14% urea = 44% protein equivalent.