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ENERGY SUPPLEMENTS FOR GROWING CALVES

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During the fall and winter after weaning, grass pastures have limited production and are poor in quality. Molasses-nonprotein nitrogen feeds are often used as an energy/protein supplement to stockpiled grass pasture or low quality hay, but typically have not provided the nutrition necessary to breed heifers for calving at two years of age. Corn-based feeds are used in some cases, but expense limits their widespread use. Other feeds should be evaluated as economical energy supplements for cattle in Florida.

Soybean hulls are a by-product of the soybean processing industry. They are high in digestible fiber, making them a good source of energy. Because soybean hulls are high in fiber, they do not exhibit the same degree of negative associative effects on forage digestion that occur with other energy supplements such as molasses or corn. The objective of current research at Ona is to evaluate level of various energy supplements on the growth of yearling steers.

After weaning in 1989, crossbred steers (550 pounds) were placed on bahiagrass pasture and fed one of the seven supplements shown in the table. Mature stargrass hay was made into round bales and ammoniated at four percent of the forage dry matter. Steers on all treatments were fed ammoniated hay free-choice. In addition, steers on all treatments were fed one pound cottonseed meal (CSM) per head per day. Energy supplements and CSM were fed on Monday, Wednesday and Friday.

Steers fed ammoniated hay plus CSM gained 1.2 pounds per day (table). All three energy supplements improved daily gain and feed efficiency compared to the control. At the three pounds/head/day of supplement feeding, molasses provided less gain than corn or soybean hulls. Feed efficiency was best for corn, and similar between molasses and soybean hulls, but feed cost for the added gain was least for molasses. At the six pounds/head/day level of supplement feeding, steers fed corn or soybean hulls gained more, were more efficient and had a lower feed cost for added gain compared to steers supplemented with molasses. At both levels of supplemental feeding, soybean hulls and

corn provided similar animal performance, but at the higher level, soybean hulls had a lower feed cost for added gain. For molasses supplementation, increasing from three to six pounds/head/day resulted in only a small increase in daily gain, poorer feed efficiency and more expensive cost of added gain. Therefore, it appears that high levels of molasses feeding should be avoided when feeding yearling cattle.

Although this research was conducted with steers, the practical application in Florida is also for developing heifers. It should be noted that supplements used in this trial were fed with ammoniated hay and cottonseed meal, which probably influenced the level of animal performance obtained (1.2 to 2.4 pounds/ day). With nontreated poor quality hay or stockpiled grass pasture, greater amounts of supplement would be required to obtain the same level of performance. This demonstrates the importance of maintaining quality of the basal forage component of the diet in addition to providing supplement for young growing cattle.

At these levels of supplementation, soybean hulls had an energy value equal to corn. Soybean hulls cost approximately $40/ton less than corn, and may provide an alternative feed source when a dry supplement is desired or when high levels of supplement are fed. Local feed companies may consider formulating soybean hull-based feeds for energy supplements and weaning feeds. Molasses can be fed from a lickwheel feeder, thereby reducing the frequency of feeding compared to a dry feed. Adequate trough space and more frequent feeding are required when feeding a dry supplement to ensure that all cattle have an opportunity to consume their share of feed.

Effect of source and level (lbs/head/day) of energy supplementation on the growth of yearling steers.

		3 lbs	6 lbs	3 lbs	6 lbs	3 lbs	6 lbs
	Control	Mol	Mol	Corn	Corn	SBH	SBH
Daily gain, lbs	1.2	1.7	1.9	2.0	2.3	2.0	2.4
Feed/Gain	13.5	9.9	10.7	9.4	8.1	9.8	8.3
Cost of added lb of gain,$		.22	.40	.26	.31	.24	.23