AKEY Inc.
A Leader in Nutrition Solutions

Beef Briefs

Urea For Feedlot Diets

Urea is nutritionally correct for most all feedlot diets. Urea can be fed to calves over 500 lb and those calves receiving 5 or more pounds of grain or high corn silage rations. The ruminal microbes use urea with non-structural carbohydrate (usually starch) to grow. For urea to be used, the rumen must be functional and adequate starch must be available.

The amount of urea that should be fed generally increases with size of the calf and amount of grain consumed. A general rule of thumb is that .01 to .015 lb/day of urea can be fed for each 1 lb of corn that is fed. If a calf is consuming 45 lb of corn silage at 33% dry matter that would be 15 lb of corn silage dry matter. If one assumes that corn silage is 40% grain, then that would be 6 to 7 lb of corn grain equivalent from the corn silage. So that calf could use, .06 to .09 lb/day of urea.

Meal or pelleted feedlot supplements frequently contain about 20% non-protein nitrogen (NPN) and between 40 and 50% crude protein. A 20% NPN supplement would contain about 140 lb of urea per ton and provide .07 lb of urea per pound.

Urea stimulates intake of high concentrate diets because it feeds the ruminal microbes, allowing them to more efficiently digest grain in the rumen. All feedlot diets should contain urea, even receiver or starter diets. Receiver diets should provide between .03 and .05 lb of urea per head daily to insure the rumen microbes have an NPN supply and promote consumption.

Natural protein should not be overlooked in grower and feedlot diets. Low grain diets should contain adequate, natural protein. Soybean meal is perhaps the best source of protein for lightweight calves and growing diets. Soybean meal is very digestible, is degradable in the rumen to be used with the energy from grain, and is well balanced in amino acids (thus is high quality). Receiving diets benefit from a blend of proteins that are very digestible and provide a good amino acid profile. Once cattle reach about 900 pounds, most of the supplemental protein can come from urea and not compromise performance in any way. Some natural protein will improve gains of cattle under 900 lb. See the figure on the back for an example of how natural protein and urea are used in high grain, feedlot rations with increasing body weight of the calf.

The table below lists the cost of comparable rations from either all natural protein urea/natural protein supplements, and all urea base mixes. Urea is not only nutritionally correct, but economically correct as well.

Ingredient, lb/day	---------- Light Cattle ----------			---------- Heavy Cattle ----------		
Corn	10.00	10.00	10.00	17.00	17.00	17.00
Corn Silage	10.00	10.00	10.00	8.00	8.00	8.00
Alfalfa Hay	1.00	1.00	1.00	1.00	1.00	1.00
Soybean Meal 48%	.94	---	---	.94	---	---
Feedlot Base-R	.40	---	.40	.50	---	.50
45-20-R Supplement	---	1.00	---	---	1.00	---
Urea	---	---	.16	---	---	.16
Suppl. Cost, $/day*	.185	.160	.099	.203	.160	.117
Ration CP, %	12.2	12.4	12.9	11.6	11.8	12.0
Ration Neg, Mcal/lb	.60	.59	.59	.63	.63	.63
*Soybean meal = $240/ton, Feedlot Base-R = $360/ton, 45-20-R = $320/ton, Urea = $340/ton						

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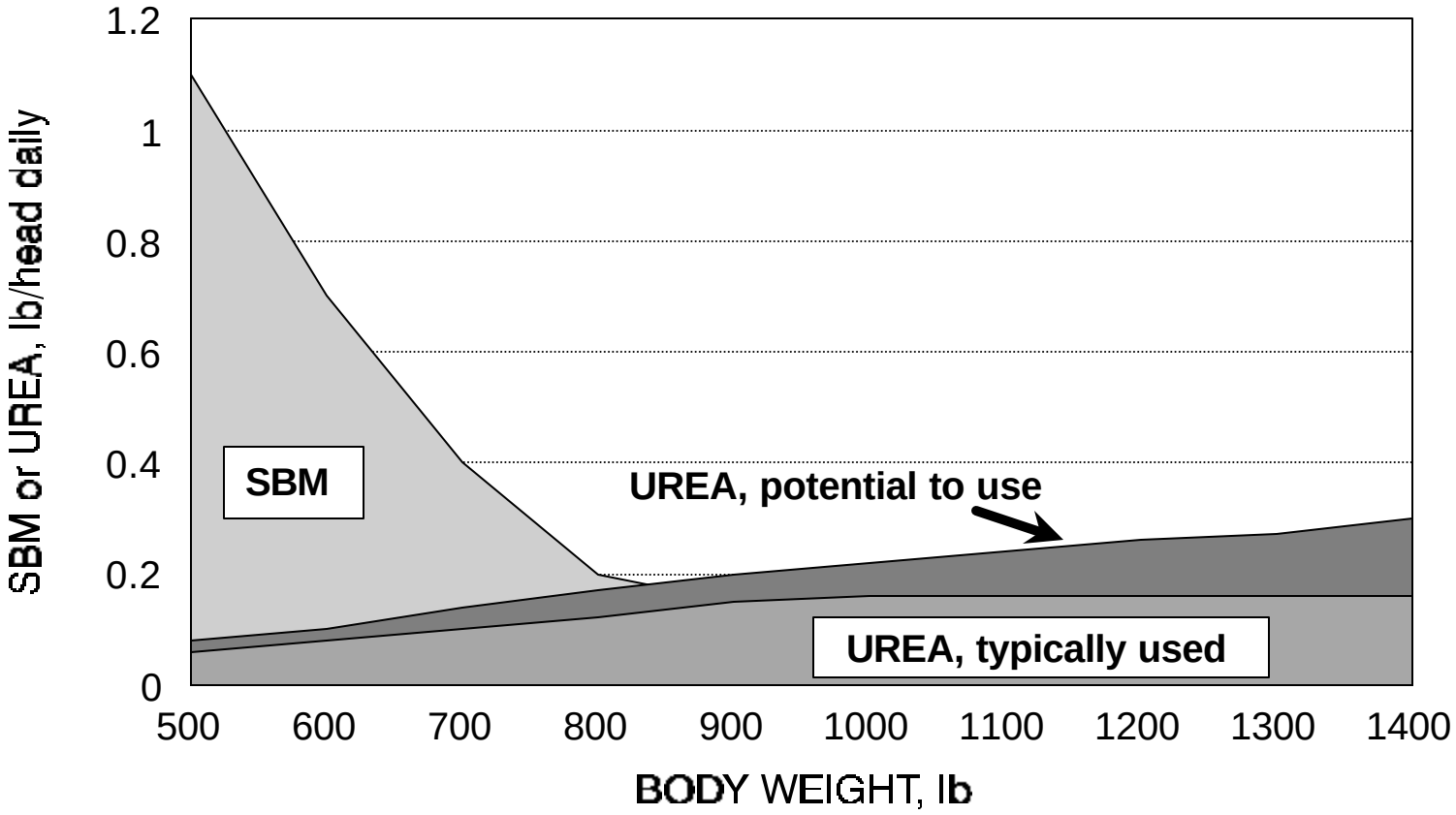
CRUDE PROTEIN USAGE IN HIGH GRAIN RATIONS



Amounts will vary based on other feeds in ration and mature body size