



COWS NEED BYPASS LYSINE AND METHIONINE. SOY BEST® DELIVERS.

Background

Soy Best High Bypass Soybean Meal is mechanically extracted soybean meal with fresh soy gums. It is manufactured using technology that increases rumen undegraded protein (RUP). In a nine-day continuous flow fermentation study at West Virginia University,¹ a total mixed ration with Soy Best with gums had more bypass protein than TMRs with other soybean meal based protein ingredients, including Soy Best without gums (Figure 1).

The current study² measured rumen undegraded methionine and rumen undegraded lysine.

Venue

Rumen Fermentation Profiling laboratory,
West Virginia University

Materials & Methods

Dacron bags containing Soy Best with fresh soy gums were incubated in the rumen of three lactating cows for either four or eight hours (six bags per cow per time period) using the simultaneous removal method (Figure 2). This gave 18 replications for each amino acid at each time period and 36 replications for each amino acid, overall. Cows were 12, 45 and 222 days in milk and milk production was 79, 91 and 54 lbs respectively. Methionine content was 0.65 percent of original dry matter and lysine content was 2.67 percent of original dry matter.

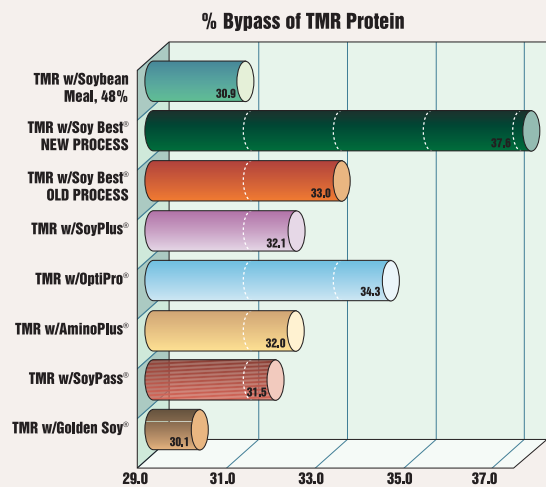


Figure 1.



Figure 2. Rumen fistulated cow, West Virginia University



Results

Overall rumen undegraded methionine was 76 percent and overall rumen undegraded lysine was 72 percent.

Comments

The test samples of Soy Best were suspended in bags in the rumen for certain time periods. None of the sample material was able to flow out of the rumen with rumen fluid. Therefore, the results are reported as *percent rumen undegraded* and not as percent rumen bypass. In “real life,” when a cow eats a feedstuff, some of it is degraded in the rumen and some leaves the rumen with the liquid that flows through the rumen. The percent rumen undegraded and the percent that flows out of the rumen with the liquid are added together to give *percent rumen bypass*. Therefore, under these trial conditions, it is expected that the overall Soy Best *rumen bypass* value for methionine was greater than 76 percent and the *rumen bypass* value for lysine was greater than 72 percent.

Note: Rumen bypass values are not fixed numbers. As this study shows, they will vary with rumen solids retention time. They will also vary with dry matter intake, rumen liquid turnover rate, rumen pH and rumen microbial population.

¹J. Dairy Sci., 2005, Vol. 83, Suppl. 1, Abst. #86

²J. Dairy Sci., 2011, Vol. 94, Suppl. 1, Abst. #T373

Original AA content:

	% DM	% Undegraded
Met	0.65	100
Lys	2.67	100

Rumen undegraded AA, 4 h rumen incubation:

	% of original	% Undegraded
Met	0.536	82.5
Lys	2.106	78.9

Rumen undegraded AA, 8 h rumen incubation:

	% of original	% Undegraded
Met	0.445	68.5
Lys	1.707	63.9

Rumen undegraded AA, overall:

	% of original	% Undegraded
Met	0.491	75.5
Lys	1.910	71.5



For proven-profitable information on Soy Best, go to www.soybest.com or call us at **1-800-422-4697**.