Evaluation of Intestinal Digestibility of Various Protein Supplement Sources

Recent University of Minnesota research has shown that intestinal protein digestion (ID) can be an important criterion in selecting appropriate protein supplements.

The table below shows ID of various protein supplements as determined by a technique developed at the University of Minnesota. The ID levels indicate what percentage of the undegraded intake protein (UIP) is digested in the small intestine. This is an important factor because, before proteins can become available for absorption, they must be digested in the small intestine.

SoyPLUS® was determined to have the highest ID of all the ingredients shown, with 99% of its UIP digested in the small intestine. Intestinal protein digestion was lowest for meat and bone meal (55%), batch-dried blood meal (63%), and hydrolyzed feather meal (67%). The wide range of ID values shown for most ingredients suggests a potential quality control problem. As expected, the SoyPLUS samples showed the narrowest range, another example of the consistency of SoyPLUS.

The Minnesota research illustrates that ID may be a guideline to selecting appropriate protein supplements. Other key factors to consider when evaluating protein ingredients include UIP level and amino acid balance.

Intestinal Protein Digestion (ID) of Various Protein Supplements

Protein Supplement	ID	Standard Deviation	Range
Blood meal, batch-dried	63	17	29-86
Brewers grains, dried	77	2	73-79
Corn gluten meal	89	4	86-91
Distillers grains, dried	81	5	72-85
Feather meal, hydrolyzed	67	6	58-75
Fish meal, menhaden	80	5	73-88
Meat and bone meal	55	10	41-70
Solvent soybean meal	90	4	86-93
Soybean meal, lignosulfonate	88	4	82-92
SoyPLUS	**99**	**1**	**98-100**