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AJINOMOTO ANIMAL NUTRITION GROUP

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PRODUCT DESCRIPTION SHEET

AjiPro®-L

Lysine is the first-limiting amino acid, or the co-limiting with methionine, in corn-based diets for high-producing dairy cows. Ajinomoto Heartland's AjiPro®-L [Feed Grade] contains a minimum of 40% L-Lysine on a dry matter basis (wt/wt).

Corn, which comprises a large portion of dairy cow diets in North America, is low in lysine. In order to meet the amino acid requirements of high-producing dairy cows that cannot be met only with microbial protein, high-protein ingredients such as soybean meal and animal by-product meals are commonly fed. In the past, excess protein was fed to meet the requirement of the first-limiting amino acid of dairy cows, which was also the case for swine and poultry. With the commercialization of L-Lysine, the lysine requirement of monogastric animals has been successfully met in a cost-effective manner by reducing the amount of costly, high-protein ingredients that were once fed. Because a similar advantage has been expected when formulating the dairy cow diets, if lysine could escape the rumen degradation and be efficiently delivered to the small intestine of cows, development of an effective rumen-protected lysine product has been desired.

Supplementing lysine in a form of bypass protein has sometimes failed to show the response to lysine mainly because of (1) impaired microbial protein synthesis caused by feeding an excess amount of rumen undegradable protein (RUP) and an insufficient supply of rumen degradable protein (RDP), (2) insufficient supply of metabolizable lysine from such bypass protein sources due to lower quality than expected, (3) partitioning the energy more to catabolism of excess amino acids in the liver rather than to milk and milk protein synthesis, and so on. On the other hand, a large number of studies have demonstrated that today's high-producing dairy cows respond to higher levels of dietary lysine particularly in milk and milk protein production when lysine was duodenally or abomasally infused or when lysine was supplemented in a form of rumen protected lysine. This indicates that elevating the proportion of lysine in total metabolizable protein (MP) supplied to dairy cows would be the most effective way to improve milk and milk protein production, as it has been well documented in monogastric nutrition and commonly recognized as "an ideal protein concept."

AjiPro®-L offers dairy nutritionists flexibility and simplicity with feed formulation practices. AjiPro®-L allows nutritionists to raise the proportion of lysine in total MP (Lys/MP ratio) without adversely affecting rumen fermentation. AjiPro®-L helps reduce the use of bypass protein sources in the diet and reduces the excess supply of protein to dairy cows, which would lead to improved protein utilization efficiency and, as a consequence, decreased excretion of urinary nitrogen into the environment.

AjiPro®-L

Appearance: White

L-Lysine content: 40% minimum on dry matter basis

Dry matter: No less than 95%

Specific gravity: 1.10-1.15 g/cm³

AjiPro®-L is composed of

L-Lysine monohydrochloride (6.11 in AAFCO 2011), vegetable oil (33.2), and lecithin (87.5).