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PROCESSING INFLUENCES AVAILABLE LYSINE IN DRIED BLOOD

Based on its amino acid composition dried blood should be an excellent protein supplement for livestock feeding because it is particularly rich in lysine and tryptophan. However, feeding trials have suggested that the lysine may not be biologically available in blood dried by conventional methods.

Professor P. E. Waibel and R. J. Meade, University of Minnesota, with grant support from FPRF, have been investigating the influence of processing methods on the composition and amino acid availability of dried blood. Preliminary results indicate that the method of drying does not markedly influence the amino acid composition of the dried blood (Table 1).

However, the lysine availability, as determined by a chemical method, was significantly different in blood dried by different processes. The differences were even more evident in biological assays using turkey poults (Table 2). It should be noted that the chemical values for lysine availability correlate well with the biological assay values although the actual figures obtained are different.

If these results are confirmed by studies on additional samples, producers of dried blood for feed should give careful consideration to the method used for drying blood. The nutritional value of this important protein supplement can be improved by using proper drying techniques. Dried blood with a high available lysine content will be of greater value as a feed ingredient and should find ready acceptance and command a higher price on the market.

Table 1. Amino Acid Content of Samples of Blood Dried by Different Methods

Method of Drying	Sample No.	Isoleucine %	Leucine %	Lysine %	Methionine %	Phenyl-alanine %	Valine %
Conventional	W8	0.9	11.9	8.1	1.2	6.8	8.4
	W10	0.9	11.9	8.0	1.3	6.9	8.4
	W20	0.9	11.9	7.8	1.6	6.9	8.3
Spray Dried	W3	1.0	10.0	6.9	1.1	5.6	7.0
	W11	1.0	13.1	8.5	0.9	6.9	9.0
	W13	0.8	12.0	7.9	1.2	6.6	8.3
Ring Dried	W5	1.0	12.6	9.3	1.6	7.2	9.0
	W6	1.0	12.7	8.8	1.5	7.4	9.2
	W19	0.9	12.7	8.9	1.1	6.9	8.6

Table 2. Available Lysine in Dried Blood

Method of Drying	Sample No.	Lysine Available % Chemical	Lysine Available % Biological
Conventional	W8	87	42.7
	W10	84	27.8
	W20	64	14.4
Spray Dried	W3	99	44.3
	W11	97	81.0
	W13	96	84.4
Ring Dried	W5	97	86.4
	W6	97	86.8
	W19	-	81.5