The Use of Mulitdimensional Scaling for the Investigation of Ruminant Feed Preference. (C06-fisher142420-Oral)

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Abstract:

The number of factors that may be involved complicates investigating animal preferences for feeds. When offered a choice between two feeds an animal may choose only one of the pair or may consume both feeds equally. When offered all possible pairs sequentially for a group of feeds, the collective feeding decisions may reflect of one selection criterion or multiple selection criteria. When preference experiments are designed to test all possible pairs of feeds then multidimensional scaling (MDS) provides a statistical method of estimating the number of criteria involved in the decisions. Multidimensional scaling has been used in other fields of study for many years. Criteria are expressed as orthogonal MDS dimensions and may be related to measured variables by correlation or regression. We have utilized this procedure in studies of ruminant feed preference and specifically in tests for variation in preference for afternoon versus morning harvests of hay. Ruminant preference among each pair is expressed as a difference ratio. Ruminants often make selections on the basis of multiple criteria related to variables such as digestibility, soluble carbohydrates, and fiber.

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