

Research Letter

Cafeteria feeding: A philosophical opinion on the intricacies of its usage in animal nutrition

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Abstract

The term “*Cafeteria*” has been commonly used in animal nutrition research and feeding practices for decades. The use of this term is, however, not consistently applied across all animal science domains and has different implications depending on the intended applications. The exactness of reference has also been altered from the term’s original applied and common usage in time and space. Its current use and application presents inconsistencies that should be a cause for concern in animal nutrition. This letter seeks to briefly explore and discuss the context and intricacies of the use of the term “cafeteria” in animal nutrition.

Keywords: Animal feeds, cafeteria diet, free-choice feeding, ration

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Introduction

The term *cafeteria*, which is commonly used in the human nutrition space, appeared in the animal nutrition field as far back as the early 1900’s. Its use in animal nutrition has however been non-static, both in its original applied and modern adopted form. In particular, the current usage of this term in the animal feeds and mineral supplement industry seem to have disconcertingly deviated from its original applied form.

Animal nutrition involves the cumulative sum of the following intricate processes: ingestion, digestion, absorption, assimilation and excretion. Similar to these processes, the language and terminology used in the science of animal nutrition is also intrinsically specialised to avoid ambiguity and misrepresentation of intended allusions. The current usage of the term cafeteria in ruminant animal finishing and fattening field seems to violate this long established character of language use in animal nutrition. It is subject to this background that this letter seeks to briefly explore and discuss the intricacies of the use of the term *cafeteria* in animal nutrition.

History and etymology

Originally, the term *cafeteria* was a combination of the two Spanish words: *café*, meaning “coffee,” and the ending *-tería*, which translates as “a place where something occurs” (English, 2016). In its original context, therefore, the term *cafeteria* denoted a coffee-house. The term, therefore, referred to a place where people would gather and discuss matters of interest over a serving of a hot drink, particularly coffee. In this perspective, the clients were served their coffee of choice *without* any prospect of *self service*.

The modern time British English describes cafeteria as a type of food service location where there is *little or no waiting staff* service, whether at a restaurant or within an institution such as a large office building or school. This definition denotes a transformation (*little or no waiting staff*) from the original usage of the term, cafeteria. This transformation in usage is purported to have taken place around the early 1920’s. For instance, the ending *-tería* took a twist and came to be understood as “help-yourself,” in 1923, changing the meaning of the word to refer to a “self-service restaurant” (English, 2016). The current *cafeteria* reference seems to have been greatly influenced by this shift, with its usage in animal nutrition also appearing soon thereafter in the literature. For instance, in his work on new methods of fattening pigs, Evvard (1929) described and defined *cafeteria* analogous to the so called free-choice feeding system. However, the use of the term cafeteria in animal nutrition did not remain true to this description over time.

Usage in Animal Nutrition

The usage of the modern term *cafeteria*, in animal nutrition is often followed by ending words such as: diet, system, experiment, feeding or a combination of the latter with any of the former. However, these different ending words do not seem to be used to indicate a different meaning in all instances. Taking inspiration from the inference of Evvard (1929), researchers and others, particularly those from the animal feeds and mineral supplement industry, seem to use the word *cafeteria* (with whichever ending) to mean free-choice feeding albeit with different aspirations.

In the field of animal nutrition, where the word *cafeteria* is coupled with the ending -‘experiment’, the appropriate implication is that the different feed components are separately and freely provided to allow the animal to select and consume these feeds to satisfy their nutritional requirements. In agreement, Meier *et al.* (2012) identified two applications of the reference “*cafeteria experiment*” as: (1) for determining animal preference for, or the palatability of different feeds, and (2) for testing the animal's capability to satisfy their nutritional requirements. Both these applications would fall under the category of free-choice feeding similar to the inference of Evvard (1929).

On the other hand, researchers using animal subjects in the field of clinical nutrition (see Moore, 1987; Oliver *et al.*, 2013; Castro *et al.*, 2015) often use the term cafeteria with the same ending (-experiment) to refer to studies using diets that were originally prepared for human consumption as dispensed from a *Cafeteria*. In this instance, cafeteria refers to a type of restaurant. This form of reference is common among studies of thermogenesis using animal subjects, particularly diet-induced thermogenesis where the diets used are referred to as “cafeteria diets”. In this instance, animals are provided with a selection of calorie-dense palatable food items that have a high fat and carbohydrate content along with their regular diet (Sullivan *et al.*, 2012; Oliver *et al.*, 2013; Castro *et al.*, 2015). The research aspiration here can either be for inducing thermogenesis or for self-assessed dietary preferences of animals as indicated by their free-choice feeding from a large variety of their normal and unfamiliar foods or feed. Therefore, this form of application also falls under the category of cafeteria feeding, despite the contrasting aspirations of the different applications.

The misnomer

Unfortunately, in animal nutrition, the contemporary Animal Feeds and Mineral Supplement (AFMS) industry has deviated from the original free-choice or cafeteria feeding system as described by Evvard (1929). The only exception is the poultry industry, which still remained true to free-choice feeding or the so called cafeteria feeding principle. In the poultry industry, cafeteria feeding still refers to an alternative feeding method in which feed ingredients are provided in separate feeders and birds self-select energy, protein, mineral, and vitamin feedstuffs as needed (Fanatico *et al.*, 2013). This approach has also been applied in ruminant nutrition. For instance, Campher *et al.* (1983) described their cafeteria diet to include: whole maize with separately fed protein, roughage, feed-additive, and mineral pellets. This has, however, not remained true throughout modern times in the ruminant nutrition domain. What some AFMS producers label as cafeteria is not at all free-choice feeding, neither is it cafeteria system.

Table 1 A depiction of feed compositions from three South African Animal Feeds and Mineral Supplement producers using the term cafeteria

Ingredients	Company A		Company B		Company C	
	CFM (kg)	CAFM (kg)	CFM (kg)	CAFM (kg)	CFM (kg)	CAFM (kg)
Protein Concentrate	160	160	160	160	100	100
Bypass Protein	50	50	50	50	50	50
Energy (meal)	630	750	650	790	600	850
Molasses	40	40	-	-	-	-
Roughage	120	<i>Ad-lib</i>	150	<i>Ad-lib</i>	250	<i>Ad-lib</i>
Total (kg)	1000	1000	1010	1000	1000	1000

CFM = Complete feed mixture; CAFM= Cafeteria feed mixture.

Producer contacts are supplied as Annexure A in URL form.

Generally, where the AFMS producers use cafeteria as a reference, they almost always refer to a specially formulated high protein concentrate. These premix protein concentrates are then marketed for use in formulating a complete fattening ration or as a concentrated nutrient supplement often referred to as “cafeteria diet/ration”. However, the only difference is often that, as a complete ration, the roughage content is predetermined and included in the ration. On the other hand, for the so called “cafeteria diet”, roughage is separately provided for *ad libitum*, often as grazing or loose hay.

This is obviously a major deviation from the empirical meaning of cafeteria as described by Evvard (1929) and Fanatico *et al.* (2013). This deviation fundamentally denigrates and nullifies the inherent and specialised orthodox linguistic character of the science of animal nutrition. As a principle, language consistency plays an essential role in promoting accuracy and discouraging ambiguity in the field of science. The current usage of the term cafeteria, particularly by some South African AFMS producers in ruminant nutrition, violates this very important principle of science and could easily misrepresent the actual feeding applications. This misrepresentation signifies carelessness of logical consistency and contempt of the general doctrine of language use in animal nutrition.

A synthesis of product manuals from three prominent AFMS producers in South Africa that use of the term cafeteria is presented in Table 1. Given the feed compositions in Table 1, it is incomprehensible how a feed mixture or a ration can be referred to as cafeteria diet. It is clear from Table 1 that what these AFMS producers refer to as cafeteria diet, is actually a concentrate premix without the roughage component. Could this be deliberate? Alternatively, there is abundance of AFMS producer companies that produce and distribute the same or similar products without promoting these as cafeteria. Could they be at a marketing disadvantage?

Conclusion

Irrespective of the responses to the questions posed in this letter, the highlighted inappropriate usage of the term “cafeteria” could easily mislead those who are uninitiated in the science of animal nutrition to the detriment of this discipline at farm level as well as in the academic sphere, and such should be avoided.

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Annexure A

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Uniform Resource locators (URL's) or Web addresses for three South African Animal Feeds and Mineral Supplement producers using the term cafeteria in their feed data sheets.

<https://www.molatek.co.za/beef-fat-33/>

<https://www.snymanvoere.co.za/hitech-feedlot-50-concentrate?rq=cafeteria>

<https://www.meadowfeeds.co.za/products/beef/>