

Letters to the Editor

Evolution of mammals

Mammary – and other – glands

Madam

A recent item in your Out of the Box column questioned the relevance of the inclusion of the champion cyclist Lance Armstrong in our review 'Evolution of lactation: nutrition *v.* protection with special reference to five mammalian species'⁽¹⁾. In general it has obviously achieved our aim of stimulating thought and interest in the evolution of lactation.

In the review we mainly discuss the importance of the mammary gland to the evolutionary success of mammals. This was supported by both the large proportion of daily resting energy directed to lactation and the compensatory functional responses of the mammary glands within an individual mammal⁽²⁾. When twelve piglets suckling twelve teats of a sow were restricted to suckling only six teats, milk production in the remaining functional six glands increased to the extent that the growth of the twelve piglets was maintained⁽³⁾.

Although it could be argued that this may be the result of increased suckling pressure on the restricted number of teats, such is not the case with a study in cows that was carried out at the Hannah Research Institute, before it was unfairly considered to be a sub-prime research asset. The udder halves of two groups of cows (one high producers and the other low producers) were milked four times per day. When milk production had stabilised, the milking frequency of one udder half of each cow was reduced to twice daily milking and, as expected, milk production from the twice-daily milked halves decreased significantly. However, there was a compensatory increase in milk production in the udder halves that continued to be milked four times per day⁽⁴⁾. This physiological response was independent of any change in milk removal from the udder half.

We felt that it was relevant to note the suggestion that another important paired reproductive organ also might show similar compensatory functional responses⁽⁵⁾. However, the testicular response referred to seems to be more in line with the sow rather than the cow example. It would be difficult to design an experimental protocol examining changes in testicular function associated with a unilateral decrease from four times per day to twice per day.

The potential for the above compensatory responses in the synthetic capacity of the mammary gland obviously has positive implications for facilitating the survival of the suckling mammal under circumstances, such as mastitis, that significantly limit milk synthesis in the infected gland⁽⁶⁾.

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Leaf concentrate

Not only lucerne

Madam

In a recent note within your letters section, you asked for evidence of the effects of leaf concentrate from sources other than Lucerne⁽¹⁾.

I am a Professor of Food and Nutrition at the University of Rajasthan in Jaipur. I have been working with leaf concentrate prepared from berseem and cowpea leaves, as well as from lucerne, for over two decades. At first I worked with its presentation and acceptability, and then I carried out a number of supplementary feeding trials with children, women, adolescent girls and pregnant women. The nutritional value of leaf concentrate is significant, but acceptability poses problems at higher levels.