Chitotriosidase activity in goat kids, diet effects.

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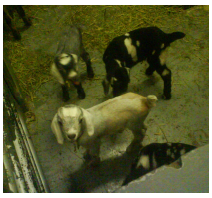
Introduction

Chitotriosidase (ChT) is a functional chitinase with high homology to chitinases that belong to family 18 of glycosylhydrolases that are present in different species. Chitotriosidase is able to hydrolyze chitin in the cell wall of fungi and nematodes. Recently ChT has been reported as part of innate immune system on small ruminants and no information about diet effects is available. The aim of the current study was to measure ChT activity in goat kid blood serum from birth until 60 days old.

Material and Methods

30 Majorera goat male kids at birth

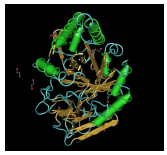


Feed bottle

- Goat Milk (GM)
- Milk Replacer (MR)
- Milk Replacer + 20g/kg DM CLA (CLA)

Blood samples at days 1, 2, 3, 4, 5, 10, 20, 30, 40, 50 and 60

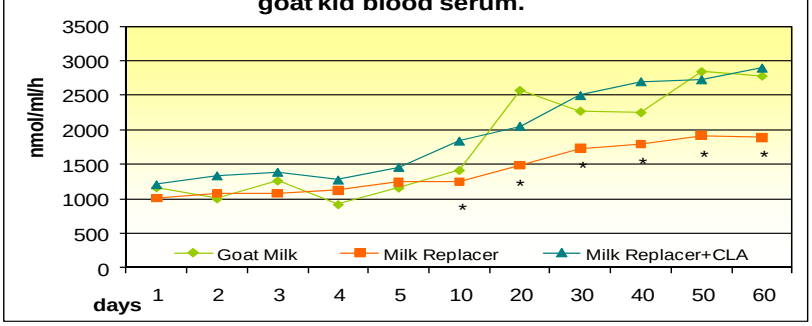
After centrifugation of blood samples, serum is obtained and frozen until analysis. ChT acticity was measure using a synthetic substrate in a fluorescence assay.



Results

Figure 1 shown the evolution of ChT activity in kid blood serum from birth until day 60. ChT activity increased during the first 60 days of life in all groups. At day 1, there were not significant differences in ChT activity between the groups, and during the first 5 days the ChT activity remained stable. From day 10 until 60, in GM and CLA groups, the activity increased sharply than in the MR group. At day 10, 20, 30, 40, 50 and 60 ChT activity was higher in GM and CLA than in MR group.

Fig 1. Evolution of chitotriosidase (ChT) activity in goat kid blood serum.



Conclusion

Milk replacer formula must be remake due to results observed in the present study and it is reinforced by other studies where the milk replacer not sufficiently stimulate the activity of complement system in goat kid. The ssupplementation with a product rich in CLA improve the immune system of the goat kid.