Treatment of Soy Molasses and Evaluation of Nutritional Parameters in Rats

Silva, C.R.[1], De Rezende, S.T.[1], Santiago, B.L.S., Guimarães, V.M.[1]
[1]Departamento de Bioquímica e Biologia Molecular, Universidade Federal de Viçosa, Viçosa-MG, Brazil.

Soy molasses is a by-product from the improvement of the soy and source of sugars as rafinose (4% w/w) and estaquiose (24% w/w). The galactooligosaccharides (GO) are considered an antinutritional factor, interfering in the absorption of the diet's nutrients, besides inducing flatulence in humans and others animals. Studies indicate that the ingestion of soy products free or with low level of these sugars can improve the digestion of nutrients. The aims of this work were evaluate favorable conditions for the production of a-galactosidases by the yeast *Debaryomyces hansenii* UFV-1 cultivated in soy molasses and the study of the nutritional effects of GO elimination in Wistar rats. Soy molasses, in concentrations of 10-100 %, were incubated with 1, 2 and 5% of the yeast cells, at 30 ºC, 200 rpm. The use of 10 % soy molasses and 2 % *D. hansenii* cells was the best condition for the a-galactosidase production. The a-galactosidase activity increased with the incubation time and, the total reduction of GO, evaluated by HPLC, was at 24 h of cultivation. The rats were fed with diets prepared with GO-free soy molasses for 14 days. It was observed a significant enhancement ($p \leq 0,05$) in true digestibility of diet containing GO-free soy molasses in relation to its non-treated. However, the elimination of GO from the soy molasses did not promote significant enhancement in the values of weight gain, protein efficiency ratio and net protein ratio. The yeast cultivation in soy molasses promoted elimination of GO, increase of the diet digestibility and improvement of the nutritional value.

Keywords: galactooligosaccharides, a-galactosidase, *Debaryomyces hansenii* UFV-1.

Financial support: CNPq, FAPEMIG.