Italian Journal of Animal Science

ISSN: (Print) 1828-051X (Online) Journal homepage: http://www.tandfonline.com/loi/tjas20

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To cite this article: E. Saccà, A. Vallati, T. Ruatti, F. Bigaran & E. Piasentier (2007) Aflatoxin occurrence in goat milk and supplied concentrate feed in farms of Veneto, Trentino and Friuli Venezia Giulia, Italian Journal of Animal Science, 6:sup1, 632-632

To link to this article: https://doi.org/10.4081/ijas.2007.1s.632

Aflatoxin occurrence in goat milk and supplied concentrate feed in farms of Veneto, Trentino and Friuli Venezia Giulia

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ABSTRACT

Aflatoxin M1 (AFM1) is a probable human hepatocarcinogen (IARC, monographs on the evaluation of carcinogenic risks to human. Vol. 56, 1993) found in milk of animals that consume feeds contaminated with aflatoxin B1 (AFB1), produced by fungi of genus *Aspergillus*. There is little information about goat milk: the aim of this study was to examine the level of contamination of milk, and related concentrate feed, in goat farms of Veneto, Trentino and Friuli Venezia Giulia.

In 2005 and 2006, during the lactation period, 79 samples of total daily milk and 125 concentrate feed samples (principally maize and concentrate feeds), collected in 17 goat farms of Triveneto, were analysed for the content of AFM1 and AFB1 respectively, by HPLC technique.

Concerning the milk samples, only one-third of total samples exceed the analytical reliability level (3 ppt), 14 of which were positioned under the value of 9 ppt and only 1 sample was over the value of 27 ppt. With regard to the feed samples, the two-thirds of total samples exceed the analytical reliability level (0.1 ppb), 54 of which had a value lower than 1 ppb and only 1 had a value higher than 10 ppb. The relation between levels of aflatoxin in milk and feeds was also considered: there is a significant correlation that confirms the role of feeds in the contamination of milk.

All the samples had values lower than the maximum limit established by Italian law concerning the content of aflatoxins in milk for human diet and the content of aflatoxin in the concentrates for the goat diet (AFM1: 50 ppt; AFB1: 20 ppb), showing a general situation of absence of risk for animal and human health, with only few cases to keep under control. The results are in accordance with the situation found in other regions of North Italy (Regione Lombardia, 2003-2005), where, also in the dairy cow sector, there was a reduction of aflatoxin contamination risk in 2005 after two years of high levels of contamination of the maize and of the milk.

The research was supported by Alpine Space INTERREG III B Programme, project ALPINET GHEEP, code I/III1.2/10, lead partner Provincia Autonoma di Trento.