

min incubation. Comparatively, the release of Korean mistletoe extract increased dramatically from 15.8% (0 min) to 83.2% (pH 8) for 60 min incubation in simulated intestinal fluid. Therefore, this study indicated that PGMS can be used as an effective coating material to microencapsulate Korean mistletoe extract

Key Words: Microencapsulation, Polyacylglycerol Monostearate, Korean Mistletoe Extract

T104 Microencapsulated Korean mistletoe extract for milk fortification. N. C. Kim¹, J. B. Kim², J. Ahn¹, and H. S. Kwak^{*1}, ¹Sejong University, Seoul, Korea, ²Handong Global University, Pohang, Korea.

This study was designed to develop a microencapsulated Korean mistletoe extract that could be used to fortify milk and to determine the sensory properties of milk fortified with microencapsulated Korean mistletoe. Coating material was polyacylglycerol monostearate. The highest efficiency of microencapsulation was 78.3% with 15:1:40 ratio (w/w/v) as coating to core materials to distilled water at 2,000 psi. When microencapsules were added and stored at 5°C for 12 days, 8.3 mg of Korean mistletoe extract was released in 100 mL milk. The TBA value was increased during storage and was significantly lower in capsulated group compared with that in uncapsulated group. In addition, the color values (L, a and b) viscosity were significantly different between capsulated and uncapsulated Korean mistletoe extract added groups when 1 or 2% Korean mistletoe extract added. With 1% microencapsulation addition, most sensory aspects were slightly different between capsulated and control, however, a significant difference was found between capsulated and uncapsulated groups in all storage periods. The present study indicated that the addition of microencapsulated Korean mistletoe extract with PGMS is effective for fortifying milk.

Key Words: Korean Mistletoe, Milk, Microencapsulation

T105 Occurrence of aflatoxin M1 in Manchego cheese. G. Battacone^{*1}, M. I. Berruga², M. Palomba¹, M. P. Molina³, M. Roman⁴, and A. Molina², ¹Università degli Studi di Sassari, Sassari, Italy, ²Universidad de Castilla-La Mancha, Albacete, Spain, ³Universidad Politécnica de Valencia, Valencia, Spain, ⁴Qualiam, Madrid, Spain.

Manchego is a cured, hard, enzymatically coagulated cheese, made in the four provinces of the Castilla-La Mancha Region (South East Spain) with milk of the Manchega breed ewes. It is the most popular Spanish sheep cheese, produced according to the EU regulation for Guarantee of Origin (POD, 1984), with a total yield of about 8000 Tn per year (44 % of POD Spanish cheeses in 2006). Currently eighty cheese factories are registered in the Council of POD Manchego. A different processing technology is adopted whether the milk has been previously pasteurized or not. In order to guarantee high standard of safety for this internationally recognized product, according to the international regulations about consumer health risks, it is important to investigate the possible occurrence of Aflatoxin M1 contamination. The aim of this work was to determine the level of Aflatoxin M1 contamination in Manchego cheese in a representative sample of cheese factories of the region of Castilla-La Mancha. Two months

aged samples of cheese (ready to be sold at the market) from fifty five cheese factories were randomly collected in spring 2006. Chemical composition (fat, protein, salt and moisture) was determined by a FoodScan™ Lab Dairy Analyser (Foss). The immunoaffinity technique was used to extract the Aflatoxin M1 from the cheese samples, and its concentration was determined by HPLC method. The results showed a mean composition of Fat/DM = 51.06±2.2 %; Protein/DM = 39.89±2.6 %. No statistical differences were found among provinces or method of elaboration. All analyzed cheese samples showed Aflatoxin M1 concentrations lower than the detection limit (2.2 ng/kg), suggesting a high safety standard of this dairy product.

Key Words: Aflatoxin M1, Ewe's milk, Cheese

T106 Prediction of fatty acid contents by mid-infrared spectrometry. P. Dardenne¹, F. Dehareng¹, H. Soyeurt^{*2,3}, and N. Gengler^{2,4}, ¹Agricultural Walloon Research Centre, Quality Department, Gembloux, Belgium, ²Gembloux Agricultural University, Animal Science Unit, Gembloux, Belgium, ³FRIA, Brussels, Belgium, ⁴FNRS, Brussels, Belgium.

The interest for the dairy products with higher nutritional quality increases. The aim of this research was to elaborate different calibration equations to predict by Mid-Infrared Spectrometry the fatty acid contents in bovine milk. 1,609 milk samples were collected between March 2005 and May 2006 for 475 cows from 6 dairy breeds (Dual Purpose Belgian Blue, Holstein, Jersey, Montbeliarde, Normande and Red and White) in 8 herds. 78 samples were chosen using Principal Components approach based on spectral variability. All samples were scanned by MilkoScan FT6000. The reference fatty acid concentrations were measured by gas chromatography with a capillary column of 100 m length. The calibration with Partial Least Squares (PLS) on 78 samples showed a ratio of standard error of cross-validation to standard deviation (RPD) ranged between 1.5 and 6.76. The FA present in high concentration in milk were better predicted as in previous studies. In conclusion, the development of this fast method to predict the FA contents and directly integrating in the milk recording structure gives new perspectives for the dairy industry to detect easily and finally improve nutritional quality of their dairy products.

Key Words: Fatty Acid, Mid-Infrared, Milk

T107 Isolation and characterization of growth factor in goat milk. F. Y. Wu^{*}, M. W. Chien, P. H. Tsao, Y. J. Tsai, Y. C. Lee, and T. Y. Kuo, National Ilan University, I-Lan, Taiwan, ROC.

Human milk contains various growth factors important for neonatal gastrointestinal tract development. The major growth factor activity in human milk has been identified as epidermal growth factor (EGF). Goat milk also contains growth factor activity. However, the type of growth factor has not been characterized. Further gained knowledge of the growth factor will be useful for developing goat milk-based nutraceutical products. Milk from pregnant does was centrifuged at 3,000 × g for 20 min at 2°C to remove fat and pellet. Casein was precipitated at pH 4.2. The activity, measured by ³H-thymide incorporation in MME cell line, remained in the whey. Growth factor activity was harvested by ammonium sulfate precipitation at 70%