



DEVELOPMENT OF A QUECHERS METHODOLOGY FOR RACTOPAMINE ANALYSIS IN MEAT AND BONE MEAL

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Abstract

Ractopamine is used as a feed additive in many countries in swine and cattle production because of its benefits in decreasing fat and increasing muscle deposition. Many studies showed that ractopamine residues remain in animal tissues. It is also known that some residues of the animal production may be destined to prepare meat and bone meal (MBM) for animal feeding. Usually, ractopamine sample extraction is done by SPE methods which are very time consuming. As an alternative for slow sample preparation procedures, QuEChERS extraction methods are being applied not just for pesticides in fruits and vegetable samples, but also for different substances and matrices. Since ractopamine may enter the animal chain through indirect ways such as MBM, this study was carried out to develop a QuEChERS extraction method for ractopamine in MBM samples. Steps using hydrolysis with protease and β -glucuronidase enzymes were necessary for MBM residue analysis in order to have free ractopamine in the sample. Afterwards, extraction and clean-up with roQ™ kits were used with an additional sample concentration step. Finally, the samples were analyzed by LC-MS/MS. The developed method showed recovery rates of 98.2, 95.2 and 95.9% for concentrations of 10, 50 and 200 ng/g respectively, which indicates a good alternative method. In addition, other pros of this method are using less solvent and reducing extraction time up to 70%.

Keywords: LC-MS/MS, extraction.