



The First International Symposium on Food and Agro-biodiversity (ISFA2014)

Safety Study of Milled Beef and Slices Beef Jerky Viewed from Cadmium and Plumbum Heavy Metals Contamination

Ellin Harlia^{*}, L. Suryaningsih, D. Suryanto, H. Istiqomah, R.W. Komariah

*Faculty of Animal Husbandry University of Padjadjaran
Jln. Raya Bandung-Sumedang Km. 21 Jatinangor Sumedang.*

ABSTRACT

Heavy metals Plumbum (Pb) and Cadmium (Cd) are chemical contamination that may contaminate during pre-harvest, processing as well as the contribution of environmental factors. The results showed an average content of Pb highest milled beef jerky products from trader C is 2.0177 ppm, while the highest Pb content of beef jerky slices of trader B 2.6680 ppm. The highest average cadmium content of beef jerky products milled from 4 traders coming from trader D is 0.8841 ppm, while the highest Cd content of beef jerky slices of trader B 0.3101 ppm.

© 2015 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of Indonesian Food Technologist Community

Keywords: *Milled, sliced, beef jerky, Cd, Pb*

INTRODUCTION

Milled beef jerky is meat with spices rolled into thin sheets, while slices beef jerky is the sheet meat added spices, dried with the help of sunlight and the oven. Milled beef jerky and sliced beef jerky are processed meat products that may be contaminated by heavy metals Plumbum (Pb) and cadmium (Cd). Sources of heavy metal pollution that is from meat as raw material, spices, water and ice. The heavy metal of Pb and Cd pollution can occur during the process of grinding the meat, adding seasoning, molding meat, drying and storage in the open state. The main sources of heavy metal contamination actually that is from the air and water [1]. The sources of pollution mainly derived from motor vehicles and the ink comes from the newspaper. The newspaper used as

^{*} Corresponding author.

E – mail address : harliaelin@yahoo.co.id

a table cloth by the traders [2]; [3]. Indonesian National Standard (SNI) in 2009 decide rules on the Maximum Residue Limit (MRL) of heavy metal Pb in meat and meat products, including beef jerky is a MRL of 1.0 ppm for residues and heavy metals Cd is equal to 0.3 ppm. This study aims to determine how much heavy metal content of Pb and Cd in milled beef and sliced beef jerky.

MATERIALS AND METHODS

This research is a descriptive study using survey methods of 4 trader from each market. Milled beef jerky obtain from Bandung Andir markets, while slices beef jerky obtained from Bandung Kosambi market. Sampling is purposive for milled beef and sliced beef jerky of 4 trader with repeat 6 times The data were analyzed descriptively. The finding show the average residual heavy metals Pb and Cd greater than the Maximum Residue Limit (MRL) of heavy metals Pb and Cd were recommended by SNI 2009 parameters observed the residual content of heavy metals Cd and Pb .

RESULTS AND DISCUSSION

Content of Heavy Metals Pb Residues in Milled Beef And slices Beef Jerky

Average Pb content of heavy metal residues in milled beef and slices beef jerky shown in Table 1.

Table 1. Content of Heavy Metal Residues Pb

Type jerky	Average residual content Heavy Metals Pb (ppm)			
	A	B	C	D
Milled beef	1.6429	1.5467	1.7177	1.7728
Sliced beef	1.5458	2.6680	0.6456	0.4559

Average of residual content of heavy metals Pb of 24 samples of milled beef jerky among four traders showed greater than the Maximum Residue Limit (MRL) established by SNI at 1.0 ppm. Average residual content of heavy metals Pb of 24 samples of slices beef jerky of two traders showed greater than the Maximum Residue Limit (MRL) established by SNI at 1.0 ppm, two traders showed still meet conditions by the smaller SNI at 1.0 ppm Average residual content of heavy metal Pb in milled beef jerky is higher than the slices beef jerky Milled beef jerky is mixture of various kinds of materials which suspected as a source of heavy metal Pb contamination. Therefore milled beef jerky has greater contamination opportunities than slices beef jerky. Sources of heavy metal contamination in milled beef jerky and slices beef jerky can be derived from several sources including raw materials, as meat, spices, water and air [4]; [5]; [6].

Download English Version:

<https://daneshyari.com/en/article/1266477>

Download Persian Version:

<https://daneshyari.com/article/1266477>

[Daneshyari.com](https://daneshyari.com)