

Protein and Mineral Substances in the Muscular Tissue of a Red Deer (*Cervus elaphus* Linnaeus, 1758) from Uvs Province, Mongolia

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Abstract

The authors defined the amount of macro and microelements, protein amino-acids, protein group substances, and general protein of the hindquarter muscular tissue of illegally hunted red deer from Turgen district of Uvs province. The content of general protein was 12.3%, and by applying acrylamid gel-electrophoresis method revealed 6-7 kinds of protein fractions. In addition, we found 16-17 kinds of replaceable and irreplaceable amino acids from the muscular tissue and defined their amount. From the ash of muscular tissue we determined 24 elements and made appropriate assessments regarding to them.

Key words: Muscular tissue, muscular protein, protein fraction, nutrient value.

Introduction

The red deer (*Cervus elaphus* Linnaeus, 1758) is the protected mammal species by the Hunting Law of Mongolia.

In the Mongolian traditional medicine from ancient times use medicines prepared from organic substances of diverse animals. The recipe of those medicines include organic substances of several organs as head, brain, bone, meat, skin, milk, stomach, hair, horn and gullet of different animals. For example, the ash of red deer old antlers referred in traditional medicinal scriptures as effective to dry up blood, phlegm and its blood and adipose were used as ingredient of medicine for treatment of helminthose diseases (Baavgai & Boldsaikhan, 1990)

As noted in sutras, Mongolian people use the meat, antlers, penis, testicles, tongue, tail and skin of red deer in medicine, technique, adornment accessory and in fields of industries (Dulamsuren et al., 1989). There are very scarce information on the study of muscular tissue of red deer.

The researchers of the Institute of Animal Husbandry of Mongolia defined the meat calorific values of Altai mountain wild sheep (*Ovis ammon* Linnaeus, 1758), Siberian ibex (*Capra sibirica* Pallas, 1776,) and black-tailed gazelle (*Gazella subgutturosa* Guldenstaedt, 1780) by finding out the respective amounts of meat protein, adipose and investigating ash of them (Chernova, 1964, 1965).

The meat of red deer is regarded as an excellent food due to its contamination of different nourishment substances. Some researchers mentioned that besides of fat and protein the deer meat contains vitamins of B group and various mineral substances (Pieve, 1972; Sillespie, 1960; Pavlovskiy & Palmin, 1975).

Different ingredient compounds of meat depend on the presence of muscular tissue, adipose and other kinds tissues. Muscular tissue is one of the important parts, which form the meat, and it performs various functions. It decreases the coagulation of blood, which circulate via blood vessels by spending a lot of energy and from stable resource of nourishment and energy needed for metabolism, when animal makes movements (Dulamsuren et al., 1989). Therefore, it appeared to be necessary to make research work on muscular tissue of the red deer.

Material and Methods

We used the muscular tissue sample of a red deer, which was illegally hunted by poachers in the territory of Turgen district, Uvs province in February of 2002, as the research material. The study is carried out by the statement of Natural Environment Protection Association of Uvs province. The hindquarter muscular tissue has the slight coagulation of blood on its external surface, and was in good frozen condition with brownish