

PRESERVATION OF MEAT USING LYOPHILIZATION METHOD

Jacek Kondratowicz¹, Iwona Chwastowska¹, Birutė Staniškienė², Paulius Matusevičius²

¹*University of Warmia and Mazury in Olsztyn, Department of Science of Commodities of Animal Raw Materials, PL-10-719 Olsztyn, Poland*

²*Lithuanian Veterinary Academy, Tilzes st. 18, LT-47181 Kaunas, Lithuania*

Summary. The tests were carried out on pork (*musculus longissimus dorsi*) and on beef (*musculus quadriceps femoris*). The muscle (*musculus longissimus dorsi*) was separated from inner conjunctive tissue and fat, and was sliced off. 15 sample slices were frozen using liquid nitrogen and lyophilized. Average sample was prepared from several slices from different parts of the muscle as well, and the sample was analysed in fresh state (without processing). We divided each of 15 slices from muscle (*musculus quadriceps femoris*) into two pieces, where one of them was frozen and lyophilized, and the other was tested fresh without processing. Beef and pork, frozen using liquid nitrogen, was pink before drying, whereas after drying it was light grey to light brown. It was determined that organoleptic characteristics of lyophilized meat were worse than of fresh meat. Decrease of tenderness and juiciness of lyophilized meat was also noticed, and it was better defined in pork. Meat delicacy decrease rate as well as worsening of other coherent parameters would be lower for a product, lyophilized after thermal treatment without using liquid nitrogen. However minimization of time between freezing and drying is obligatory for dehydration of raw meat, frozen using liquid nitrogen.

Key words: muscle, chemical composition, physical-chemical characteristics, lyophilization.