

microwave oven, compared to those produced from pork thawed in the atmospheric air and subjected to chilling. Concentrations of sodium chloride in smoked pork sirloin was a similar level in the experimental groups under the analysis.

EFFECTS OF BLUE LUPIN IN DIETS FOR LAYING HENS ON EGG-LAYING PERFORMANCE AND EGG QUALITY

Drażbo A., Naczmański J., Jankowski J.

Department of Poultry Science
University of Warmia and Mazury
Olsztyn, Poland

The objective of this study was to determine the effect of blue lupin seeds as a native source of protein on production parameters and egg quality of laying hens aged from 18 to 34 weeks.

The experiment was performed on 150 Lohman Brown hens allocated to three experimental groups with 50 replicates each. All birds were kept individually in cages during the first 16 weeks of the laying period and feed complete mixtures with various sources of vegetable protein: diet A – with soybean meal, rapeseed meal and sunflower meal; diet B – with soybean meal, rapeseed meal and 10% of blue lupin, diet C- with soybean meal, rapeseed meal and 20% of blue lupin.

The use of blue lupin together with the soybean meal and rapeseed meal had positive impact on selected production results. Feed intake was lower by 1,5-3.0% and the feed conversion ratio calculated for one egg was better by 3,8-4,3% in comparison the hens fed diet A. No significant difference in total number of eggs and egg mass was found between all experimental groups. The analyzed experimental factor significantly affected the egg quality parameters. The positive effect was for yolk color, which was darker in eggs from hens fed the diet containing blue lupin than in eggs from treatment A. The shell thickness also was better when diets with blue lupin were used, as compared to diet with sunflower meal.

The results of the study indicate that diet supplementation with blue lupin seeds as a protein source allowed to achieve good production results and egg quality of young hens.

AFTER SLAUGHTER CARCASS QUALITY IN RELATION TO THE SPECIES OF GRAIN LEGUMES AND THE ADDITION OF FEED ENZYMES

Fiedorowicz E., Sobotka W., Kuczyńska A.

Chair of Animal Nutrition and Fodder Science
University of Warmia and Mazury
Olsztyn, Poland

In the time of intensive crop and animal production there is a growing demand for high-protein feed. In the temperate zone the seeds of coarse-grained legume plants are an ideal source of nutritional protein. Those plants are: pea and faba bean. The addition of feed enzymes may improve the digestibility of nutritional elements and the use of feed and limit its negative health properties.

The aim of the research was to determine slaughter value and carcass quality of pigs fed with mixes with diversified species of grain legumes and the supplement of microbiological β -glucanase and xylanase.

The research was carried out on pigs that were fed with the full-portioned mix Grower (in the first phase of fattening) and Finisher (the second phase of fattening) with diverse plant protein, and with or without feed enzymes: mix 1 (with addition of faba beans), mix 1+E (with faba beans and feed enzymes), control mix 2 (with peas) and mix 2+E (with peas, β -glucanase and xylanase). The nutritional value of the mixes was determined according to Polish Pig Nutrition Norms.

The research results show that the use of peas and rapeseed meal improved productivity of pigs when compared to the pigs fed with faba beans and rapeseed meal. The species of grain legumes had no influence on slaughter indicators and chemical content of pork, except for the content of intramuscular fat. A lower level of cholesterol was detected in the meat of pigs fed with pea seeds and rapeseed meal. The addition of microbiological β -glucanase and xylanase improved productivity of pigs, but had no effect on carcasses. The quality of meat from the pigs fed with mixes containing enzymes was better.

REGRESSION EQUATIONS FOR POSTMORTEM ESTIMATION OF THE LEAN MEAT AND FAT CONTENT OF THE CARCASS IN HEAVY-TYPE TURKEYS

Kleczek K., Wawro K., Wilkiewicz-Wawro E., Makowski W.

Department of Commodity Science and Animal Improvement, University of Warmia and Mazury, Olsztyn, Poland

The content of tissue components in the carcasses of selected fowl species can be determined using simple regression equations, with the weight of skin including subcutaneous fat (without the skin from wing tips) and carcass weight without skin as independent variables which are relatively easy to measure. The objective of this study was to develop simple regression equations for postmortem estimation of the weight of lean meat and the weight of fat and skin in the carcasses of heavy-type turkeys.

The experimental materials comprised 48 Big 6 turkeys (24 males and 24 females). Toms were raised to 22 weeks of age, and hens to 16 weeks of age. The birds were fasted for 12 hours, they were weighed and slaughtered, and their carcasses were dissected. This provided the basis for developing simple regression equations for estimating the total weight of lean meat and fat in carcasses, in which independent variables were carcass weight without skin and subcutaneous fat (X_1) and skin weight (skin including subcutaneous fat over the body surface area encompassing the neck, legs, breast and back; X_2). These independent variables were found to be highly correlated with carcass meatiness and fatness in turkeys. In particular carcass weight without skin and subcutaneous fat can be a very good indicator of lean meat content. Thus, the proposed equations can be used for predicting carcass tissue composition in turkeys, without the need to carry out detailed dissection.