
DRIED APPLE POMACE AS A FEED COMPONENT FOR FATTENERS

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Introduction: Progressing inflation and the related increase in animal feed prices give breeders an impulse to look for different ways to reduce production costs. The growing popularity of fruit preserves, *e.g.* juices, purees, mousses or smoothies, results in a significant increase in the amount of post-production waste. Poland is the largest producer of apples in Europe, and in 2022 we produced over 4.495 million tons (GUS, 2023). Around 20-40% of the total apple production is processed. By-products include pomace, skins or seeds. Such waste constitutes from 10 to 35% of the weight of the processed raw material and its disposal is a significant burden for the food industry. Due to the chemical composition, apple pomace can be a valuable source of fiber in the nutrition of farm animals. They also contain magnesium, iron, phosphorus and calcium, vitamins, lipids, polyphenols, carotenoids and triterpenoids, antioxidant substances such as quercetin glycosides and are a source of pectins. The aim of the study was to evaluate the effects of introducing dried apple pomace to the diet on the production parameters of fattening pigs and on carcass post-slaughter indexes.

Materials and methods: As a part of the EU project carried out at the PULS with the acronym "mEATquality", a production experiment was carried out on a private farm producing pigs in a closed cycle (Wielkopolska voivodeship) on 60 commercial hybrid fatteners (30♀, 30♂) with an initial body weight of approx. 30 kg, which were divided into two nutritional groups. The control group received a typical feed mixture based on soybean meal and domestic cereals, and the experimental group the same mixture with 4% of dried apple pomace. The mixtures have been balanced according to the needs of the animals. The experiment was divided into 2 periods, grower and finisher. The animals received the mixture in mash form *ad libitum*. During the experiment, pig health was monitored, weight gain and group feed intake were controlled, and the feed conversion ratio was calculated. The fatteners were slaughtered in a commercial slaughterhouse at an average weight of approximately 113 kg. Typical carcass measurements and meat content estimation were performed in the slaughterhouse. Meat and fat samples were taken for further analysis.

Results: The weight of the fatteners at the end of the grower period did not differ between the groups, but animals from the experimental group had of approx. 1.5 kg lower slaughter weight. Daily weight gain in the control group was 860 g in the grower phase, and 1040 g in the finisher phase, while in the group with the addition of dried apple pomace it was 870 g and 990 g, respectively. The feed conversion ratio in both groups was the same, and in the grower period it was approx. 2.6 kg/kg and in the finisher period 3.38 kg/kg. Throughout the fattening period, animals in the control group gained 83.77 kg (931 g/day) and in the experimental group 82.06 kg (910 g/day) with an average feed conversion ratio of 2.98 kg/kg. The percentage of slaughter efficiency in both groups was similar and averaged 79.5. However, animals from the group receiving the addition of apple pomace were characterized by significantly higher meat content at the level of 58.65% compared to 52.95% in the control group. The average thickness of the longissimus dorsi muscle in the experimental group was 67.23 mm and in the control group 64.27 mm. The average backfat thickness in experimental animals was 1.1 mm greater than in the control group.

Summary: On the basis of preliminary studies, it was noticed that the addition of dried apple pomace to feed for fattening pigs slightly reduces the growth of pigs and their slaughter weight. However, there was no evidence of a deterioration in the feed conversion ratio. Moreover, the addition of apple pomace will have a positive effect on the post-slaughter parameters of the carcass, increasing the meatiness of the animals and the thickness of the backfat.

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