

---

**BUCKWHEAT HULL AS A FEED COMPONENT FOR FATTENERS**

**Zaworska-Zakrzewska A.,<sup>1\*</sup> Kasprowicz-Potocka M.,<sup>1</sup> Lodyga D.,<sup>1,2</sup> Sell-Kubiak E.<sup>2</sup>**

<sup>1</sup>*Department of Animal Nutrition / Faculty of Veterinary Medicine and Animal Sciences / Wołyńska 33, 60-637 Poznań, Poland \* anita.zaworska-zakrzewska@up.poznan.pl*

<sup>2</sup>*Department of Genetics and Animal Breeding, Faculty of Veterinary Medicine and Animal Sciences / Wołyńska 33, 60-637 Poznań, Poland*

**Introduction:**

Buckwheat is a valuable crop due to the chemical composition and nutritional value of the grain, as well as other parts of the plant. Numerous wastes from the processing of buckwheat into groats and buckwheat hulls previously constituted an economic problem. Currently, the numerous advantages of buckwheat as well as the properties of the husk have been appreciated and found their application, thanks to which this plant is widely used in various industries. Due to the chemical composition, buckwheat hull can be a valuable source of fiber and bioactive substance in the nutrition of farm animals. A group of antioxidant compounds has been identified in the husk - mainly polyphenes, which include: flavonoids, flavones, phenolic acids, tannins, phytosterols and fagopyrins. The aim of the study was to evaluate the effects of introducing buckwheat hull 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 Poznan University Life of Sciences 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 2.5% of buckwheat hull. 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 (FCR) was calculated. The fatteners were slaughtered in a commercial slaughterhouse at an average weight of approx. 113 kg. Typical carcass measurements and meat content estimation were performed in the slaughterhouse.

**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 850 g and 1020 g, respectively. The FCR was similar, but slightly lower in the control group ( 2.6 vs 2.7 kg/kg but in the finisher period were 3.39 kg/kg in control vs 3.49kg/kg on experimental group. Throughout the fattening period, animals in the control group gained 83.77 kg (931 g/day) and in the experimental group 82.34 kg (915 g/day) with an average FCR of 2.99 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 buckwheat hull were characterized by significantly higher meat content at the level of 57.53% compared to 52.95% in the control group. The average thickness of the longissimus dorsi muscle in the experimental group was 68.64 mm and in the control group 64.27 mm. The average backfat thickness in experimental animals was approx.. 3 mm greater than in the control group.

**Summary:**

On the basis of preliminary studies, it was noticed that the addition of buckwheat hull 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 FCR. Moreover, the addition of buckwheat hull will have a positive effect on the post-slaughter parameters of the carcass, increasing the meatiness of the animals and the longissimus lumborum muscle.

**Funding:**

This study was supported by the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 101000344 "Linking extensive husbandry practices to the intrinsic quality of pork and broiler meat", acronym: mEATquality.

---