MAREK PIESZKA[a], MARIAN KAMYCZEK[b], BARTOSZ RUDZKI[c], PAULINA SZCZUREK[a], WŁADYSŁAW MIGDAŁ[d]

[d]Department of Animal Nutrition and Feed Science, National Research Institute of Animal Production, Krakowska Street 1, 32-083 Balice, Poland

[b]Experimental Station, National Research Institute of Animal Production, Mielżyńskich Street 14, 64-122 Pawłowice, Poland

[c]KWS Lochow Polska Ldt., Kondratowice, Słowiańska Street 5, 57-150 Prusy, Poland

[d]Department of Animal Products Technology, University of Agriculture in Krakow, Balicka Street 122, 31-149 Kraków, Poland

THE EFFECT OF RYE HYBRID CONTENT IN CONCENTRATE MIXTURE ON MEAT QUALITY, FATTENING AND SLAUGHTER TRAITS IN POLISH HOLSTEIN-FRIESIAN BULLS (BLACK AND WHITE TYPE)

The aim of the study was to determine the optimal content of rye hybrid in concentrate mixture on meat quality, fattening and slaughter traits in Polish Holstein-Friesian growing bulls. The experiment was conducted on 30 Polish Holstein-Friesian bulls (black and white type) divided randomly into 3 groups (n=10). The fattening started at an average body weight of 200 kg (7-8 months of life) and it lasted 275 days until animals reached 600 kg (19 months of life). The animals received corn silage, alfalfa silage, beet pulp and concentrate mixture containing 0 or 20% and 40% of rye hybrid varieties Visello. Bulls were fed individually according to the DLG standards. After completion of the experiment bulls were slaughtered, and meat quality, fattening and slaughter traits were determined. The results were statistically analyzed using one-way ANOVA at a significance levels of $p \leq 0.05$ and $p \leq 0.01$. The bulls fed with mixture containing 20% of rye hybrid (G1) had significantly higher body weight, 615.2 kg *vs*. 595.7 kg in control group (CG) and *vs*. 588.4 kg in experimental group receiving 40% of rye hybrid (G2) ($p \leq 0.01$). Average body gains for the whole fattening period were high and ranged from 1282 g (G2), 1345 g (G1) to 1354 g (CG) ($p \leq 0.09$). The animals from groups G1 and G2 were characterized by 1% higher slaughter yield compared to CG. There were no significant differences in meat pH_{45min}, pH_{24h} and its color measured in the L*a*b system. The use of concentrate mixture containing 20% and 40% of rye hybrid significantly increased the content of unsaturated fatty acids to 16.40% and 14.63%, respectively, *vs*. 12.60% in CG ($p \leq 0.05$). The meat of bulls from experimental groups had significantly higher level of vitamin E, 3.02 and 3.08 ug/g, respectively, compared to 2.65 ug/g in CG ($p \leq 0.05$). The ration did not affect meat TBARS level which ranged from 0.443 to 0.505 mg/kg. There was a tendency to improve the meat texture from bulls fed with a rye hybrid mixture.