

THE INFLUENCE OF PROBIOTICS ON CARCASS, MEAT AND FAT QUALITY IN PIGS

Gintaras Sudikas¹, Jurgis Kulpys¹, Andrejus Jerešiūnas¹, Violeta Juškienė², Raimondas Leikus², Jūratė Norvilienė²

¹*Veterinary Academy of Lithuanian University of Health Sciences*

Tilžės 18, LT-47181 Kaunas, Lithuania, Tel: +370 3763408, Fax. +370 37 362417, e-mail: rolandas@lva.lt

²*Institute of Animal Science of Veterinary Academy, Lithuanian University of Health Sciences*

R. Žebenkos 12, LT-82317 Baisogala, Radviliškis distr., Lithuania

Tel. +370 422 653 83; fax. +370 422 65 886; e-mail. LGI@lgi.lt

Summary. A trial involving German Landrace and Norwegian Landrace crossbred pigs was conducted at the Institute of Animal Science of Veterinary Academy, to investigate the effects of the probiotic (*Bacillus licheniformis* DSM 5749 - $1,6 \times 10^9$ CFU/g and *Bacillus subtilis* DSM 5750 - $1,6 \times 10^9$ CFU/g) on the carcass, meat and fat quality. Eighty seven pigs were divided randomly into three analogous groups of 29 pigs in each (Groups 1–3) by parentage, age, weight, condition score and gender (approx weight 35 kg). The pigs in all groups were fed twice daily with dry home-made compound feed with the supplementary inclusion of probiotics – 0.04 % (Group 1), 0.06 % (Group 2) or no probiotics (controls, Group 3).

The results from this study indicated that 0.04 % probiotic supplementation (Group 1) had no influence on the carcass quality. However, pigs on diet supplemented with 0.06 % probiotics (Group 2) increased the weight of carcass by 5.9 % ($P=0.045$) and the amount of lean meat by 1.72 % ($P=0,045$) compared to the controls (Group 3). Furthermore, 0.04 % probiotic supplementation of the diet resulted in 11.9 % more S graded and 7.8 % fewer U graded carcasses. Meanwhile, 0.06 % probiotic supplementation of the diet resulted in 24.1 % more E graded carcasses and 27.6 % fewer U graded carcasses.

There were no significant differences for the physicochemical indicators of meat and fat. Diet with 0.04 % probiotic supplementation (Group 1) had no effect on the composition of intramuscular fat and backfat compared to the controls (Group 3). The same tendency was observed in pigs on 0.06 % probiotic supplementation of the diet, except that there was an increase of palmitoleic acid of the backfat (0.3 %; $P=0.056$).

Keywords: probiotic, fattening pigs, carcass quality, meat physicochemical composition, fatty acids.