

Production and application of Biolactin in piglet rearing

Summary

This study determined the conditions for the production and application of a prolactin preparation in piglet rearing under farm conditions. In the first step of the study a new method of obtaining prolactin from pig hypophyses was developed. The protein obtained (with a molecular weight of 22-23 kDa) corresponded to the molecular weight of prolactin. A new technological procedure for producing 'Biolactin-solution' was developed on a laboratory and an industrial scale. The next step of the study was carried out on newborn piglets at the Experimental Station of the National Research Institute of Animal Production in Żerniki Wielkie. Two products were used – 'Biolactin-lyophilisate' and 'Biolactin-solution', containing purified pig prolactin. The products were administered by injection or per os at doses of 0.1, 0.5 and 1.0 mg PRL/kg of piglet body weight. In the control group piglets received 0.9% NaCl saline administered by injection or per os. The following data were monitored: number of piglets born alive, litter weight at day of birth and at 21 and 28 days of age (weaning), and the mortality of piglets from birth to 21 and 28 days of age. The experiment was carried out on 5,182 piglets from 428 litters. The results were analysed statistically with GLM SAS 9.3 software. Based on the results of the experiment we determined the optimal dose of the prolactin preparation 'Biolactin-solution' to be 0.5 mg/kg body weight. Administration of this dose reduced the mortality rate by half and increased body weight by about 8% in comparison to the group of piglets which did not receive this product. It was also determined that the optimal method of administering 'Biolactin-solution' to newborn piglets is *per os*.

KEY WORDS: pig, prolactin, newborn piglet, survivability