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Evaluation of the intake of fresh mulberry (*Morus alba*) in crossbred large white pigs: morphometric, histological and hematological study

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Key words: mulberry (*Morus alba*), Intake, Large white, morphometric foliage (leaves and fresh stems) and histological indicators

Introduction The use of new non conventional feed sources, from shrubs and trees, is becoming a promising alternative for pig meat production in response to the limited availability of conventional feedsources. With this premise, the objective of this work was to evaluate the intake of fresh mulberry foliage (leaves and fresh stems) in crossbred Large white pigs, and its influence on production, reproduction, offspring health, as well as, morphometric, histological and hematological indicators in the pig research-production facility.

Materials and methods The first trial was performed with 8 growing pigs, in a controlled environment. Pigs were weighed at the beginning of the experiment and every 15 days until the study ended. Several indicators were determined: average live weight (kg), daily gain (g LW/pig/day), feed conversion for mulberry, and total feed conversion. Afterwards, a similar trial was conducted with 10 sows fed *ad libitum*, in different reproductive states, which, in the post-partum, allowed comparison of their productive, reproductive, and offspring health indicators with a control group. In this trial the following indicators were determined: for piglets, number born, alive 48 hours after birth, dead 48 hours after birth, weight at birth (kg), weight 10 days after birth (kg), total weight of the litter at birth (kg), total weight of the litter 10 days after birth (kg), percentage of viability 48 hours after birth, percentage of mortality 48 hours after birth, number of piglets with diarrhea 48 hours after birth, and percentage of piglets with diarrhea 48 hours after birth. The morphometric analysis of the digestive and accessories organs was done by measuring and weighing them in the pigs slaughtered at a weight higher than 90 kg. The histological processing was conducted using hematoxylin-eosin dyeing to study the hematological indicators: hematocrit, hemoglobin, and leucogram with differential. The statistical analysis was done by means of the Analysis of Variance (ANOVA), with SSPS Statistical Program, Version 10.0.

Results and discussion An increase of mean daily gains occurred, with an increase of live weight and an increased efficiency of utilization of mulberry in the total diet; no differences were found in the intake values between the different reproductive categories. There were increases in the number of piglets born and alive 48 hours after parturition, the average weight of the litter (kg) and the viability percentage, with a decrease in the appearance of diarrhea in the pig offspring. These results were maintained 10 days after parturition. A better performance of the morphometric, histological and hematological indicators was found in the pigs that ate the foliage of fresh mulberry. The results show the feasibility of using mulberry foliage as partial substitute for commercial concentrates, with an improvement in the productive and reproductive response of pigs.