

## Autoclaved castor meal in the feed of growing pigs

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Use of castor meal in animal feeding seems to be an endless challenge due to presence of nitrogen compounds with toxic (ricin and ricinine) and allergenic (CB-1A allergenic factor) properties. Two experiments were made using 33 barrows to assess the nutritional value of autoclaved castor meal (ACM). In detoxification process castor meal was evenly mixed with 60 g kg<sup>-1</sup> of calcium oxide with subsequent hydration (1:1 by weight) and then autoclaved during 90 minutes at 1.23 atm and 104°C. After this process the material was sun dried during two days, and then it was milled. The first trial was for determination of the metabolizable energy balance corrected to nitrogen retention (MEn) of ACM. Eight barrows were used in a randomized block design with average initial pig weight of 40 ± 1.2 kg and one pig per metabolism cage. Treatments were: 1) reference diet (RD) and 2) Test diet containing 80% RD + 20% of ACM. Traditional methodology for metabolism assay was used with four replicates per treatment. In performance trial twenty five barrows with 28.1 ± 0.72 kg and 65 ± 5 days of age were used. Pigs with high genetic potential from crossbred of Landrace x Large White female and male Duroc x Hampshire were used and distributed in a randomized block design with five levels (0.0, 50.0, 100.0, 150.0 and 200.0 g kg<sup>-1</sup>, as fed) of ACM and five replications. Experimental unit was the pig individually lodged. Three nutritional phases were adopted and diets were formulated to be isonutritional except for calcium level. Trial lasted 35 days. At the end of experiment carcass evaluations using ultrasonic measures “in vivo” were made and blood were collected for the assessment of biochemical parameters. The calculated MEn value was 1937 ± 32 Kcal kg<sup>-1</sup>. The inclusion of ACM until 200.0 g kg<sup>-1</sup> as fed did not affect weight gain, feed to gain ratio and carcass values. In the 35 trial days the average weight gain ranged from 1195 ± 39 g d<sup>-1</sup> to 1096 ± 54 g d<sup>-1</sup>, respectively, at 0.0 and 200.0 g kg<sup>-1</sup> inclusion of ACM. Overall mean for feed to gain ratio and average final weight were 2.105 ± 0.0254 g g<sup>-1</sup> and 68.4 ± 1.3 kg, respectively. Feed consumption (1 to 35 days) was linearly affected (P<0.050) by ACM inclusion level and the reduced values observed may be due to higher crude fiber contents in diets with increasing ACM levels. All the blood biochemical parameters evaluated remained in normal physiological ranges and showed that ACM didn't presented toxic effect which could cause metabolic disorders to pigs.

**Keywords:** alternative feedstuffs, blood parameter, carcass, metabolism, performance, swine

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