

forrageiras: *Urochloa brizantha* cv. MG5, *Andropogon gayanus*, *Urochloa humidicola* e *Digitaria umfolozi* foram incubadas para obtenção dos dados de produção de gás *in vitro*. O delineamento experimental utilizado foi em blocos ao acaso. As leituras de produção de gás foram obtidas as 2, 4, 6, 8, 10, 12, 15, 19, 24, 30, 36, 48, 72 e 96 horas de incubação. Os parâmetros de fermentação ruminais foram estimados pelo modelo bicompartimental ($V(t) = (Vf1/(1 + \exp(2 - 4 * c1 * (T - L))) + (Vf2/(1 + \exp(2 - 4 * c2 * (T - L))))$), onde: $V(t)$ é o volume acumulado no tempo t ; $Vf1$ (ml/g), o volume de gás oriundo da fração de rápida digestão (CNF); $c1$ (1/h), a taxa de degradação da fração de rápida digestão; L , latência ou tempo de colonização em horas; T (h), o tempo de incubação; $Vf2$ (ml/g), o volume de gás da fração de lenta degradação (B2); $c2$ (1/h), taxa de degradação da fração de lenta digestão. Os dados obtidos foram submetidos a análise de variação e as médias comparadas pelo teste de Tukey a 5% de significância. Observou-se diferença significativa (P

Palavras-chave: *Andropogon*, Parâmetros ruminais, Produção de gás

ID: 6-1 Can the carbon footprint of Brazilian pig production be reduced by using co-products in diets?

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The environmental impacts of livestock system, especially pig production, have come under increase debate in recent years. The challenge is meeting the growing demand for food at an affordable cost, without compromising the environmental integrity. Previous studies have shown that feed production is responsible for the majority of CO₂-eq. emission resulting from pig farming system. Furthermore, due to the concern on food-feed competition, there is an increased interest in using alternative feedstuffs in livestock diets. The implications of using co-product from food processing in pig diets for the environmental impacts were examined using Life Cycle Assessment (LCA), under Brazilian pig systems. The pig fattening in South Region of Brazil was considered to carry out the LCA, including production and transport of feedstuffs and complete feeds, raising of pigs, and manure management. Impacts were estimated at farm gate and the functional unit was one kg of body weight gain (BWG) over fattening. We considered a fattening pig farm using diets based on maize and soybean meal, with amino acids inclusion, in a 4-phases feeding program. Soybean was assumed to be produced without deforestation. The following diets were evaluated: diet with soybean meal as protein rich ingredient (Control); diet with soybean meal and meat and bone meal as protein rich ingredients (Co-product). Diets were formulated at least cost. Performance and excretion of pigs from 30 to 115 kg BW on average, were simulated for each protein source scenario using InraPorc population model (24,000 pigs/scenario) and considering between-animal variability. The LCA calculations were performed for each pig, according to its individual performance and excretion, using a model developed with SAS software and the results were subjected to variance analysis. The climate change impact of pigs fed with Control diet

was 2.45 kg CO₂-eq. per kg BWG, while estimated potential impacts of eutrophication and acidification were 17.5 g of PO₄-eq. and 58.4 g of SO₂-eq. per kg BWG, respectively. The Co-product used in pig diets reduced by 4% the potential impacts of climate change compared with the Control, with mean value of 2.36 kg CO₂-eq. per kg BWG. Conversely, for eutrophication and acidification, Co-product strategy slightly increased the impact by about 1 and 3%, respectively. Results indicated that the inclusion of co-products, as meat and bone meal, in growing-finishing diets can reduce the carbon emissions in pig farming system, whereas it has no benefit for other impacts such as eutrophication and acidification.

Palavras-chave: climate change, environmental impact, global warming potential, life cycle assessment, pig

ID: 6-2 Precision feeding program shows a potential in reducing nutrient excretion in Brazilian pig production

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Optimizing nutrient efficiency is essential to increase the sustainability of pig production systems. Many studies have shown that this efficiency could be improved by better adjusting nutrient supply to pig's requirements. The economic and environmental advantages of precision feeding were previously reported and the results are very promising although the technology for feed distribution has still to be improved. This study was developed to assess the impact on performance and nutrient balance resulting from the switching of conventional phase- to precision-feeding programs for growing-finishing pigs. Four treatments with different feeding programs were compared: two phases (2P), four phases (4P), multiphase (MP) and precision feeding (PR). The phases feeding programs were obtained with fixed blending proportions of feeds A (high nutrient density) and B (low nutrient density); against PR for which the blended proportions of feeds A and B were adjusted daily to meet the estimated nutritional requirements of each pig individually. Performance and excretion of pigs, from 30 to 115 kg BW on average, were simulated for each scenario using InraPorc population model (12,000 pigs/feeding program) and considering the individual variability. The results were subjected to variance analysis using SAS. Compared with the 2P program, the PR feeding reduced

Palavras-chave: nutrient requirements, precision feeding, simulating data

ID: 287-1 Características físicas da carne de ovinos Morada Nova alimentados com farelos de biscoito e de castanha de caju como fontes alternativas de energia

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