

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

SWEET POTATO VINES AS A COST REDUCER IN RABBITS DIETS

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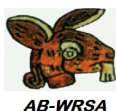
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Resumo: O objetivo deste trabalho foi estudar a viabilidade econômica do uso do barão de batata-doce (BBD) em substituição ao feno de alfafa (FA) em dietas fareladas para coelhos de corte. Três dietas foram formuladas e tiveram seu custo calculado: sem inclusão de BBD; 50% de substituição do FA por BBD; e 100% de substituição do FA por BBD. Conduziu-se ensaio biológico com 30 coelhos, com idade inicial de 35 dias divididos em três grupos. O ensaio teve duração de 49 dias. Os dados de consumo de ração e ganho de peso foram anotados periodicamente para cálculo da conversão alimentar (CA). Ao final do ensaio com base no custo do quilo da ração e da CA calculou-se o custo para produzir um quilo de coelho vivo (QCV). As dietas 0BBD, 50BBD, e 100BBD apresentaram custo de R\$0,93; R\$0,78; e R\$0,63 respectivamente. A CA figurou em 3,3; 3,5 e 3,6 nos grupos 0BBD, 50BBD e 100BBD. O QCV foi de R\$3,56, R\$2,96 e R\$2,30 nos grupos 0BBD, 50BBD e 100BBD. Conclui-se com base na CA e no QCV que o BBD pode substituir até 100% o FA e compondo assim 30% da dieta de coelhos de corte na fase de crescimento.

Key-words: Animal nutrition, Rabbit farming, Residues

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Introduction

In rabbits farming, the cost of feeding can comprise up to 75% of the total cost. Thus, the search for alternative ingredients, such as agricultural residues, is an alternative to make rabbit farming less costly and to reduce environmental impacts (Molina et al., 2015). In this sense, alfalfa hay is the most expensive ingredient of the rabbits diets. Highly recommended in rabbits diets (Pinheiro et al., 2018) being the most used 30% level, alfalfa hay represents between 1/3 and 1/2 of the monetary value of feed ingredients.

Sweet potato Vines (SPV) is a residue of sweet potato production and is usually discarded. SPV have favorable characteristics to be used in rabbit's diets, such as 16-18% crude protein, 21% crude fiber, 3-4% ethereal extract in addition to presenting a large amount of mineral antioxidants such as K, P, Ca, Mg, Fe, Mn, and Cu (Sun et al., 2014).

In this sense, the objective of this study was to evaluate the economic feasibility of using sweet potato (SPV) to replace alfalfa hay (AH) in diets for growing rabbits.

Materials and methods

Three experimental mash diets were formulated and their cost was calculated: no inclusion of SPV (0SPV), 50% substitution of AH for SPV (50SPV); and 100% of substitution of AH for SPV (100SPV). Biological assay was conducted with 30 New Zealand White rabbits, with initial age of 35-days divided into three groups based on weaning weight. The assay lasted 42 days. The feed consumption and weight gain data were annotated and tabulated for the calculating feed conversion (feed intake / weight gain).

At the end of the assay, the cost to produce a live rabbit kilogram was calculated. The prices used for the ingredients were based on the values practiced in the agricultural market of Santa Maria in March 2018: Alfalfa hay = R\$1.50; Soybean meal = R\$ 1.05; Maize = R\$ 0.37; Wheat bran = 0.462; Oil = R\$ 2.20; Salt = R\$

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1.00; Premix = R\$ 100.00; Limestone = R\$ 0.13; Dicalcium phosphate = R\$ 1.30;
Rice hull and SPV= \$ 0.00

Results and discussion

The experimental diets 50SPV and 100SPV were less expensive than 0SPV (Table 1). The cost per kilogram of diet reduced linearly with the substitution of SPV and the control diet presented cost R\$ 1.08 while the diets 50SPV and 100SPV were in R\$ 0.85 and R\$ 0.63 respectively.

Table 1- Cost per kilogram of feed for growing rabbits with increasing replacement of alfalfa hay by the sweet potato vines

Ingredients	Ingredients cost (in one kilogram of diet) (R\$)		
	0SPV	50SPV	100SPV
Alfalfa hay	0,45	0,225	-
SPV*	-	-	-
Soy bean meal	0,18375	0,18375	0,18375
Maize	0,063825	0,063825	0,063825
Wheat bran	0,1155	0,1155	0,1155
Soy bean oil	0,055	0,055	0,055
Salt	0,005	0,005	0,005
Premix	0,2	0,2	0,2
Limestone	0,000325	0,000325	0,000325
Rice hulls	-	-	-
Dicalcium Phosphate	0,0104	0,0104	0,0104
Total	1,08	0,85	0,63

* SPV = Sweet potato vines. 0SPV: Diet without SPV; 50SPV and 100SPV: Diets with 50 and 100% SPV as a replacement alfalfa hay. Ingredients cost (per kilogram): Alfalfa hay= R\$1.50; Soy bean meal= R\$1.05; Maize = R\$0.37; Wheat bran= 0.462; Soy bean oil =R\$2.20; Salt = R\$1.00; Premix = R\$100.00; Limestone= R\$0.13; Dicalcium phosphate = R\$1.30; Rice hulls and SPV= R\$0.00.

Rabbit feed conversion was 3.3, 3.5 and 3.6 in the experimental groups 0SPV, 50SPV and 100SPV respectively. Therefore, the cost for the production of one kilogram of live rabbit is R\$ 3.56, R\$ 2.96 and R\$ 2.30 in groups 0SPV, 50SPV and

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100SPV respectively. In percent the cost to produce one kilogram of live rabbit is 35% lower in the 100SPV group than the control group.

FAO (2014) states that by 2050 there will be a need to increase food production worldwide. However, we are reaching stages of agricultural land stagnation. Alfalfa hay, for example, is expensive and demands extensive mobilization of land areas used solely for this purpose. Our study shows that feed conversion were similar in all treatments, while the cost was reduced linearly in which alfalfa hay was increasingly replaced with SPV.

In this sense, Machado (2012) mentions that some farmers unite to manufacture the rabbits feed, since acquiring this input often makes unfeasible rabbit's production. In this way, there is a great saving on the part of them, since the feeding of the animals represents about 70% of the costs of the production. Militão (2011) also mentions that in the cooperative system, where the farmers contracted services from a factory to produce the rabbits feed, the cost of the same is from R\$ 0.80 to R \$ 0.85 per kilo, similar to the cost of the 50BBD diet.

Conclusion

It was concluded that up to 100% of sweet potato vines can successfully be included in the diet of rabbits as a more affordable replacement for alfalfa hay. The SPV is economically viable, making the feed for growing rabbits 35% cheaper. Still the sweet potato vines are a promising alternative for growing rabbits in the family farming.

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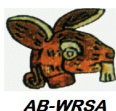
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