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Facultad de Medicina Veterinaria y Zootecnia, Asociación Científica Mundial de Cunicultura – Rama Americana  
Secretaría de Desarrollo Agropecuario del Gobierno del Estado de México, Secretaría de Agricultura, Ganadería, Desarrollo Rural,  
Pesca y Alimentación, Consejo Mexiquense de Ciencia y Tecnología

**USE OF DIFFERENT MATERIALS FOR NEST BEEDING  
OF PREGNANT DOES**

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**ABSTRACT**

This study was carried out to evaluate the pregnant doe nest characteristics with different bedding material and its effect on the litter size and weight at the birth and the weaning and on the nest material use by the doe. Thirty does were used in a randomized block design with three treatments and ten replicates each. The treatments consisted of the nest bedding with wood shavings (280 g), Tifton hay (220 g) and chopped newspaper (200 g). The nest state was evaluated in relation to the material mixture level with the fur, to the fur presence and to the preservation of the original material put in the nest, beyond the litter size and weight at the birth and weaning. There was not effect ( $P>0.05$ ) of the bedding material type on the litter size and weight at the birth and weaning and on the mixture level with the fur, the fur amount in the nest and on the preservation of the original material put in the nest. It was concluded that the Tifton hay and chopped newspaper may be used as bedding nest to pregnant does replacing the wood shaving without impairing the litter performance.

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**Keywords:** doe behavior, nest for does, rabbit production



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## INTRODUCTION

Rabbits have the habit of nest building and the doe use to visit the nest, after the birth, to nurse the kits (Baumann et al., 2005). The nest is also a favorable environment to newborn development, since they still not have thermoregulation ability. Thus, the nest material should provide comfort to the doe and kits, minimize ammonia production and must not be a powder (Lanteigne & Reeb, 2006), as the powder can irritate nostrils and eyes of the doe and kits.

Wood shavings is the most used material for nest bedding in Brazil, but due its scarcity in some regions, it is necessary the study of other materials that can be used with no negative effects on the kits performance. In addition, it is possible that there is a doe preference for some materials, since they will use the nest for several days.

Thus, this study was carried out to evaluate the characteristics of nest for pregnant does, lined with different materials and its effect on the kit size and weight at birth and weaning, and on the nest material use by the doe.

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## MATERIAL AND METHODS

Thirty rabbit does were housed in cages that contained beside the nest, a feeder and a drinker, both made from ceramic. The animals were five months old and primiparous. The experiment was carried out in randomized blocks design, with three treatments and ten replicates each one. Treatments consisted of the nest bedding based on wood shavings (280g), Tifton hay (220g) and chopped newspaper (200g).

Nests were made from wood and the measures were 34 x 40 x 30 cm in height, length and width, respectively. They were placed in the cages three days before the expecting birth and were taken out at 20 days after the birth (Figure 1).



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**Figure 1:** Nest lined with wood shavings (a), Tifton hay (b) and chopped newspaper (c) on the day that were placed in the cages.

Since the nest placement in the cages, its status was determined by one observer twice a day (8:30 and 16:30 h, to evaluate the nest as close as possible to the birth moment). The evaluation of the nest status consisted of qualitative analysis, as follow (Blumetto et al., 2010):

- mixture of the material and rabbit fur (1 – with no mixture, 2 = a little bit of mixture and 3 – almost all the material mixed with the fur);
- presence of fur (1 – there was no fur in the nest, 2 – more than 50% of the nest still had visible material, 3 – more than 50% of the nest had material covered by the fur and 4 – only fur were seen on the material);
- preservation of the original material placed in the nest (1 – less than 30% was kept, 2 – between 30 and 60% was kept and 3 – more than 60% was kept).

These evaluations were finished when the birth occurred, since the nest building ceases after the birth (Hudson et al., 2000). Kit size and weight were recorded after the birth, and they were weighed again at 35 days of age, in order to obtain the weaning weight. The average initial body weight was  $53.93 \pm 1.28\text{g}$ .

Data were submitted to analysis of variance, and kit size and weight means at the birth and at the weaning were compared by t test, and the nest evaluation means were compared by the Kruskal-Wallis test, both at 5% of probability. The newborn number was used as a co-variable to the statistical analysis of the birth and weaning weight.

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**RESULTS AND DISCUSSION**

There was no effect ( $P>0.05$ ) of the bedding material type on the kit size and weight at the birth and at the weaning (Table 1), what indicates that all the materials provided appropriate conditions to the nest for the kit rearing since the birth up to the 35<sup>th</sup> day of age, when they were weaned.

There was no effect ( $P>0.05$ ) of material type on the mixture level with the fur, on the fur amount in the nest, and on the preservation of the material placed in in the nest (Table 2), however, the smaller fur amount was noted in the nest lined with chopped newspaper, possibly due the its softness, providing a higher comfort level to the doe.

**Table 1:** Size and weight, at the birth and at the weaning, of kits reared in nest lined with different material types

Parameter	Nest bedding material			CV (%) <sup>1</sup>
	Wood shavings	Tifton hay	Chopped newspaper	
Kit size at the birth	8.87	9.50	8.10	6.14
Kit weight at the birth (g)	56.02	52.65	52.84	5.52
Kit size at the weaning	7.50	8.12	7.50	6.65
Kit weight at the weaning (g)	733	756	750	5.10

<sup>1</sup>CV = coefficient of variation.

**Table 2:** Nest bedding material evaluation at the birth day

Parameter	Nest bedding material		
	Wood shavings	Tifton hay	Chopped newspaper
Fur and material mixture level	2.28	2.14	2.11
Fur presence in the nest	2.43	2.57	2.00
Preservation of the material placed in the nest	2.71	2.28	2.89



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At the day of birth, nest lined with Tifton hay showed a smaller original material amount. These results may indicate that the Tifton hay has been, probably, the less comfortable to the rabbit doe, and this material was ingested or thrown out of the nest in a higher amount than the wood shavings and chopped newspaper.

These results are similar to Blumetto et al. (2010). These authors evaluated the straw and wood shaving use in the nests, and did not noted differences on the kit size and weight at the birth and at the weaning, and on the material and fur mixture level, fur presence in the nest and preservation of the original material placed in the nest.

### CONCLUSION

Tifton hay and chopped newspaper may be used as nest bedding for pregnant rabbit does replacing the wood shavings without impairing to the kit performance since the birth up to the weaning age.

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