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# Abstracts
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**Abstract Committee**

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## THE REPRODUCTIVE EFFECT OF KIDDING – ARTIFICIAL INSEMINATION INTERVAL IN GOATS

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### INTRODUCTION

Goat production in Portugal, even for milk, is based on indigenous breeds in extensive systems. Reproduction is based in April/May mating, with the kidding period in September/October. Artificial Insemination (AI) is a fundamental tool to implement breeding schemes for those breeds, which never had any improvement scheme, other than that done empirically by the owner/shepherd.
The goal is to identify the necessary interval between kidding and oestrous synchronization or AI, in order to obtain acceptable reproductive parameters.

### MATERIALS AND METHODS

Charnequeira goats (n=254), in the region of Castelo Branco (39° 49'N), have been inseminated in April 2003. Oestrous pharmacological control has been done (Day 0: insertion of intravaginal sponges, 45 mg FGA, Chrono-gest, Intervet; Day 9: injection of 450 UI of eCG, Intergonan, Intervet and 50 µg of analogue $PGF_{2\alpha}$, Estrumate, Schering-Plough Animal Health; Day 11: sponges removed). One cervical AI per goat on the synchronized oestrous has been done (43±1h after the sponge removal) with diluted sperm in skimmed milk and refrigerated at 15ºC, stored in straws of 0,25 ml., with approximately $200x10^6$ totals spermatozoids/ doses. Pregnancy diagnostic has been done by ultrasonography, 40 to 44 days after AI. Reproductive parameters have been compared within classes using the test for proportion (1) in the program Minitab v.12.

### RESULTS

The interval average within lambing and AI is 163 ± 49,5 days [24 – 227]. Pregnancy rate was 67,7%, from 14,3 % *vs.* 72,7 % in the classes 1 e 5 respectively (Table I).

Table 1. Reproductive parameters of inseminated goats in function of IK-AI

| Class | IK-AI | n | PrR | KiR | PIR | FeR | NPR | PrR-KiR | FeR-NPR |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ≤ 60 | 7 | 14.3 $^{a}$ | 14.3 $^{a}$ | 100.0 $^{a}$ | 14.3 $^{a}$ | 14.3 $^{a}$ | 0.0 $^{a}$ | 0.0 $^{a}$ |
| 2 | ]60-90] | 18 | 44.4 $^{ab}$ | 38.9 $^{ab}$ | 128.6 $^{ab}$ | 50.0 $^{b}$ | 33.3 $^{ab}$ | 5.6 $^{ab}$ | 16.7 $^{ab}$ |
| 3 | ]90-120] | 12 | 66.7 $^{bc}$ | 58.3 $^{bc}$ | 142.9 $^{b}$ | 83.3 $^{c}$ | 66.7 $^{bc}$ | 8.3 $^{ab}$ | 16.7 $^{abc}$ |
| 4 | ]120-150] | 30 | 63.3 $^{bc}$ | 63.3 $^{bc}$ | 152.6 $^{b}$ | 96.7 $^{c}$ | 63.3 $^{c}$ | 0.0 $^{a}$ | 33.3 $^{bc}$ |
| 5 | >150 | 187 | 72.7 $^{c}$ | 67.4 $^{c}$ | 207.1 $^{c}$ | 139.6 $^{d}$ | 102.7 $^{d}$ | 5.3 $^{b}$ | 36.9 $^{c}$ |
| | **Total** | 254 | 67.7 | 63.0 | 193.8 | 122.0 | 89.0 | 4.7 | 33.1 |

NOTE: **IK-AI** – Interval class between kidding and artificial insemination; **PrR** – Pregnancy rate; **KiR** – Kidding rate; **PIR** – Prolificacy rate; **FeR** – Fecundity rate; **NPR** – Numeric productivity; **PrR-KiR** – Pregnancy loss between pregnancy diagnostic and kidding; **FeR-NPR** – Loss of kids between parturition and the weaning per 100 AI goats; $^{a}$ to $^{d}$ – Significant differences for p<0,05;

KiR was 63,0%, from 14,3% *vs.* 67,4% in the classes 1 and 5 respectively. Classes 3, 4 and 5 do not differ between them for those two parameters (identical results for > 90 days). PIR, FeR and NPR are lower in the classes 1 and 2 (intervals < 90 days) relatively to the other classes (> 90 days). The PIR, from the synchronization treatment, is higher in the class 5 with significant differences for the remaining intervals.

### DISCUSSION AND CONCLUSIONS

The interval IK-AI is one variable that explains the fertility obtained with AI in goats for **milk**. Charnequeira goats should only participate in AI programs after 90 days from the kidding date; the pregnancy rate and kidding rate does not differ in the classes 3, 4 and 5. O IK-AI advisable (> 90 days) is lower than the 120 days referred by (2), maybe due to the productive level of the used animals.
For **meat** production, an important component of the milk system, is possible to see significant differences between the interval > 150 days, relatively to all the remaining classes, with more 36 young kids weaned per 100 females submitted to AI. This differential in the numeric productivity could justify the delay in an AI program beyond 150 days, which is compatible with the milk production system used, that involves one kidding/goat/year. The result of NPR could be improved with a better young kids handling (loss of youngsters: 36,9 per 100 goats AI).

### REFERENCES

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