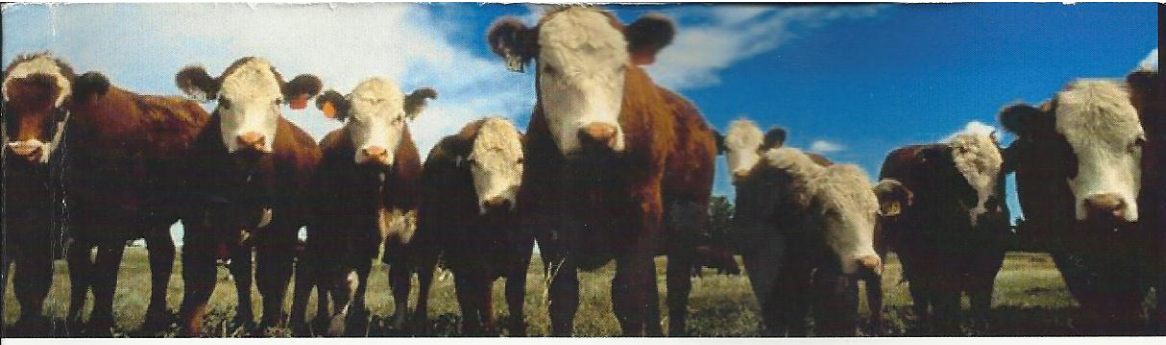

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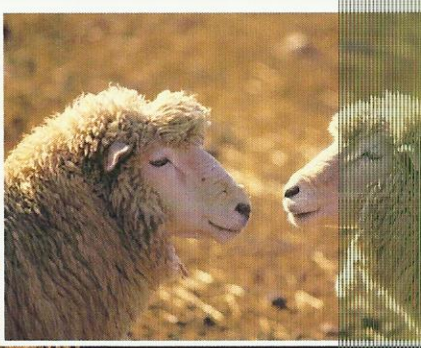

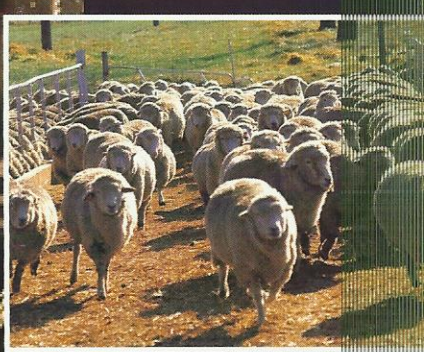

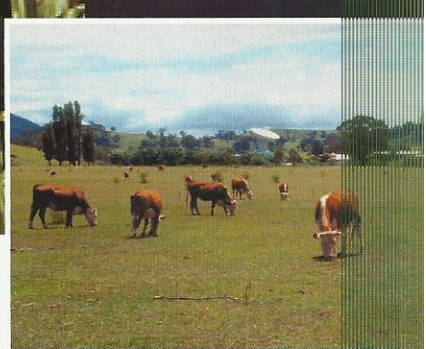

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Reproductive Performance of Crossbred Goats Submitted to Three Matings in Two Years under an Agro-ecological Production System in the Semi-arid Region of Brazil

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This aim of this study was to evaluate the reproductive performance of crossbred does, which were managed to have three mating seasons (MS) in two consecutive years (2006 and 2007), under an agro-ecological system in the semi-arid region of Brazil. At each mating season, an average of 57 does were mated to Anglo-Nubian and Canindé bucks. During the rainy season (December to June), animals were kept in Caatinga vegetation, while in the dry season (July to November) they were maintained in buffel grass pastures and supplemented with leucaena hay or wild cassava silage. The agro-ecological production system was designed to minimise external inputs, such as supplementary concentrates and forages, and to maximise the utilisation of home-grown forages. Animal health management was based on disease prevention and the use of phytotherapy to control internal and external parasites.

The following results were observed: an average kidding interval (period between 2 parturitions) of 8.4 months, kidding rate (does that delivered kids/exposed does) of 55.4%, prolificacy (kids born/kidding does) of 1.82, weaning rate (kids weaned/kids born) of 81.8%, and average liveweight production at 240 days of 11.60 kg/exposed doe (Table 1).

The three mating seasons and parturitions happened within 25.3 months, which resulted in an average of 1.4 parturitions/doe.year. There were no differences ($P>0.05$) among mating seasons for total number of parturitions, twinning rate, kidding rate, total kids born, prolificacy, mortality rate of kids, number of weaned kids and weaning rate (Table 1). The lack of differences for reproductive parameters between MS may be due to the limited number of animals.

Table 1. Reproductive parameters of goats raised in an agro-ecological production system in the semi-arid region of north-east Brazil

Parameters	MS1 (Feb/Mar)	MS2 (Dec/Jan)	MS3 (Sep/Oct)	Average/Year*
Total exposed does, n	61	59	54	81
Total parturitions, n	35	27	34	44
Twins births, n (%)	13 (37.1)	10 (37.0)	6 (17.6)	42.9
Kidding rate, %	57.3	45.7	62.9	55.4
Total kids born, n	48	37	40	59
Prolificacy, n	1.3	1.3	1.1	1.8
Mortality of kids, %				
0-90 days (weaning)	22.9	16.2	12.5	17.2
91-240 days, % (deaths)	5.4	12.9	5.8	8.06
Weaned kids, n	37	31	35	48
Weaning rate, %	77.0	83.7	85.5	81.8
Liveweight of kids at 240 days per exposed doe (kg)	9.1	5.8	9.6	11.6

MS = mating season. *Annual average considering a kidding interval of 8.4 months (1.4 parturitions/year).

The 8.4 months kidding interval of this study is less than the traditional goat production systems in Brazil, which, according to Freitas *et al* (2004), can have kidding intervals of more than 12 months. This reduction in kidding interval increases the number of kids born per year; therefore, increasing the profitability of goat production systems.

For goats raised in an agro-ecological production system, a kidding interval of 8.4 months is technically viable and has the potential to improve the annual productive performance of goats in the semi-arid region of Brazil.

Freitas V.J.F., Rondina D., Nogueira D.M. and Simplício A.A.(2004). *Livest. Prod. Sci.* **90**, 219.

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