

RELATIONSHIPS BETWEEN THE LITTER SIZE AND THE FERTILITY OF DOES

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Introduction

The time of mating of breeding does after kindling is different in the large-scale and small-scale farms. There are various breeding methods in the practice, from the remating immediately after kindling to the mating after weaning. Today, the re-breeding in 12-14 days following the kindling is practised. The conception rate depends on the remating interval. Some fluctuations of the conception rate could also be detected when mated the does at the same time after kindling. At present, the possible causes, the relationships between the litter size of the previous kindling and the performance in the subsequent kindling were investigated. The aim of these investigations was to determine the best time of matings depending on the litter size.

Material and methods

For years back, the meat rabbit population mated 14 days after the kindling at the Research Station of the Faculty of Animal Breeding, ATE, Kaposvár gave data available before carrying out the investigations. 498 New Zealand White does were mated and the matings and conception rates were evaluated. Investigations were carried out on the relationships between the previous litter size and the conception rate of does. The litter size from the subsequent kindling and the birth weight of the young rabbits were evaluated too.

Results

Depending on the litter size at mating, the doe population (n=498), was divided into 5 groups (Table 1.).

Group 1 consisted of the does with 1-4 suckling young rabbits at the time of the mating (14 days after kindling). The highest conception rate could be achieved by this group (67 %). We investigated the relationships between the previous litter size and the subsequent litter size and the birth weight of the young rabbits as well. The litter size was the lowest in this group, but the birth weight was favourable.

Into the Group 2 were divided the does with the litter size of 5-6 young animals at the 14 days of age. The conception rate of this group amounted to 51.7 %. The litter size at birth (8.08) was more favourable compared to the Group 1, although the conception rate was by 20 % lower. It is worthy to note that the birth weight of the progenies was the lowest compared to other groups. That will take still some explaining.

To the Group 3 are attached the does with 7-8 suckling animals at the time of the mating. It must be taken into account here, that this is the optimal litter size according to the opinion of the breeders. About 40 % of the does could be divided into this group. The conception rate was just not favourable (under 40 %). The litter size was similar to the previous litter (8.00) and also the birth weight of the young rabbits was favourable (62.8 g). Despite of the unfavourable conception rate, the results of this group were the best ones and the reproduction rate was also very reliable.

In the Group 4 were divided the does with 9-10 suckling young rabbits. The conception rate, litter size at birth and birth weight was the lowest in this group.

The Group 5 consisted of does with the litter size above 11 young animals. Special attention has to be paid to the does and litters of this group. Compared to the previous group, the conception rate was higher (38.5 %) and the litter size at birth and the average birth weight was the highest of all. According to the selection carried out in this group, only the best individuals remained with the highest litter size, birth weight of the young rabbits and also the mothering ability was the best in this group. From the view of breeding, the progeny test of these young rabbits could be very important for the selection.

Conclusions

Investigating the results of the matings after 14 days after kindling of does having various litter sizes, it could be stated that the conception rate was the highest for the does with 1-4 young rabbits and the lowest for the does with 9-10 young animals. Based on the results it could be suggested that the time of re-breeding should be chosen depending on the litter size at suckling. The does with small litters could be mated immediately after kindling or on the 10-14 days after kindling. The does with great litters could only be mated in a later period.

Special attention should be paid to the does with the best rearing ability because the high litter size and birth weight could be stated also at the next kindling. These performance data show to excellent genetic abilities of these does.

Relationship between the litter size of the previous kindling and the reproductive ability of does

Litter size at mating	No of litters	Conception rate, %	Litter size at birth	Individual birth weight, g
1 - 4	64	67.19	7.09	60.25
5 - 6	116	51.72	8.08	58.99
7 - 8	193	39.90	8.00	62.81
9 - 10	112	35.71	7.88	61.17
11 - 13	13	38.46	9.00	62.89

RELATIONSHIPS BETWEEN THE LITTER SIZE AND THE FERTILITY OF FEMALE RABBITS

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In the practice of the rabbit production, the remating interval is very different. It is ranging from immediately after kindling to 1 - 2 weeks after the weaning. According to the present practice in the breeding farms, the mating of the meat breeds and sometimes also of the Angora rabbits is carried out on the 12th - 14th days after parturition. Investigating the results of matings it could be stated that about 50 per cent of the females became not pregnant. Therefore, we examined the relationships between the litter size at mating and pregnancy rate. It was stated that a significant relationship exists between the traits mentioned above.

ZUSAMMENHÄNGE ZWISCHEN DER WURFZAHL UND DER FERTILITÄT BEI WEIBLICHEN KANINCHEN

In der Praxis der Kaninchenzucht ist der Zeitpunkt der Deckung nach dem Werfen sehr unterschiedlich. Nach den derzeitigen Methoden in den Betrieben werden die Deckungen bei den Fleischrassen sowie gelegentlich in 12ten - 14ten Tag nach dem Werfen Angorazuchtbetrieben durchgeführt. Aus der Befruchtungsergebnissen geht hervor, dass etwa 50 Prozent der Mutter-Population leer bleibt. Wir untersuchten daher die Zusammenhänge zwischen den erfolgreichen Deckungen und der Anzahl der Nachkommen. Die bisherigen Untersuchungen zeigten enge Zusammenhänge zwischen der Anzahl der Nachkommen und der Befruchtungsrate der Muttertiere.

