

SEXUAL ETHOLOGY OF RABBITS

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Introduction

Development of Hungarian rabbit breeding necessitated thorough survey of behaviour of intensive meat rabbit species. These ethological surveys are of great importance because on the basis of their results technologies can be developed satisfying the demands of the species.

Material and method:

New Zealand White and Californian species of closed line were subject to our surveys in the closed type experimental plant of our Institute. During the study on the behavioural type our method was continually descriptive. Further more 24 hour long experiments were carried out working a four-hour shift. The results were statistically analyzed.

Results

Under group penning behaviour of young bucks towards their surrounding and the others was lively over 12 weeks from 9 to 11.00 a.m. and from 16 to 18.00 p.m. They rubbed their chin against protruding parts of the hutch and sides and backs of the other rabbits. Jumping upon their mates sometimes they made covering movements. As for sex, males didn't make any difference at this time. Attempt to bite towards the bottom of runaway rabbit is frequent. The young females run away without any bite or hurt. When young buck attempted to bite another young buck, in most cases he turned to face the other after the attempted bite and passing by he initiated in the same way towards the back of it. It is frequent to bite each others bottom and swinging to

side. Facing the two abdominal part they seriously scratched each other and often fought for minutes biting out the other's sex organ.

Agressiveness of biten rabbit caused increased attack of it. Fighting rabbits were running around the cage sometimes and tred the others. The feeder - extending to the area of the cagemight hurt the runaway rabbit. In 15 % of the cases the defeated one suffered so severe injures that later he was unsuitable for pedigree stock.

To make clear this case experiments were carried out in groups formed from different litters and species. Analyzing the experiment - on the basis of gravity - the result of fighting was summed up as follows: fur plucking, hide lesion, exsanguination, genitals plucking. Observations were carried out at the age of 12-15 weeks. During the 21 day observation datas were registered by 8 hours each day, during the active period.

| | fur pluc- king | hide lesion | exsangui- nation | genitals plucking |
|--------------------------------|-------------------|----------------|---------------------|----------------------|
| litter mates | 34 | 6 | 1 | - |
| litter mixed within species | 182 | 28 | 5 | 3 |
| litter mixed among | 243 | 52 | 13 | 11 |

There were 4 male and 4 female rabbits in each group and each case. 4 groups were studied from all the 3 variation in Latin square arrangement. The table unambiguously shows that after 12 weeks litters may be bread together only of necessity and mixed groups are not recommended to be formed. By 12 weeks the young intensive meat rabbit species are of 2,45-2,50 kg marketing weight avaregely. The older age-group -which is to be for own breeding or rebreedinghas to be placed separately.

Only the young does can be bread in groups from among young breeding rabbits. A couple breeding is to be understood under group and they have to be from the same litter. Young bucks of over 12 weeks require individual housing. Sexual maturity of young does develops at the age of 14-16 weeks in the form of jumping upon the other. Bite and severe fight are of rare occurrence.

After sexual maturity rabbits are keenly interested in the furnishings of the cage, animals of the near by cages and tenders. Having reached breeding maturity age the buck tries to touch the tender - unless he feels fear of him - with his chin presumably with the aim of applying his underchin glandular secretion.

Some breeding males apply urine signs - by a bad habit- as follows: During side-jump he jets urine for some meters in the most different parts of the day. The male in the near by cage is irritated by this action. On the basis of literary references doe's heat takes place every 8-12 days. In case of our examination it did every 6-10 days. From the doe's behavioural change we may infer her heat, giving the signs of aggressiveness, more lively temperament, inflating and discolouring her sex organ. The most frequent mating method of rabbits is controlled mating. It is the doe to be taken to the male in each case. Having placed doe to the buck her heat stadium can be decided in a short time. Non heating does run away from bucks; they try to press their bottom into the corner of the cage. Does-beeing for some hours permanently together with bucks- become aggressive after runaway and several trials of bucks. Heating doe stops, squats own and lifts her bottom after some runaway movement. It is a well proved method in rabbit breeding to try repeat mating after 8-10 days of the successful one. If doe is pregnant her behaviour changes towards the buck. She intensively runs away from the attempting buck and stopping she presses her bottom into the floor. When the buck jumps upon her she gives weeping sounds. This weeping sound is one of the most sure signs of pregnancy.

An experiment was also carried out in order to clear up whether there is any difference between jumping ability of bucks of certain lines and species or not. For this experiment New Zeland White and Californian bucks were selected from two closed lines each. There were 30 bucks in each group, repeating four times from the doe's placing in to the buck's jumping on her in seconds.

The results are as follows:

Applied signs and abbreviations:

New Zeland White lines: White: F Red: P
 Californian lines: Green: Z Yellow: S

Sd_{ZF} = 2,416
 t_{ZF} = 2,06 significant
 Sd_{ZS} = 4,19
 t_{ZS} = 3,9 significant
 Sd_{SP} = 4,67
 t_{SP} = 1,3 non significant
 Sd_{FS} = 4,4
 t_{FS} = 2,53 significant
 Sd_{FP} = 3,1
 t_{FP} = 1,6 non significant
 Sd_{ZP} = 2,8
 t_{ZP} = 3,5 significant

Estimation of buck's jumping ability /sec/

| | a.m. | p.m. |
|---------------------------|-------|-------|
| New Zeland White ♀ line | 11,75 | 11,17 |
| " " ♂ line | 17,00 | 18,00 |
| Kalifornian I. ♀ line | 12,8 | 9,4 |
| Kalifornian II. res. line | 22,7 | 28,00 |

The above table shows that jumping ability of matrilineal bucks of less weight is quicker than that of paternal and reserve line of more weight. There was significant difference between matrilineal lines but a significant one was between buck and reserve lines.

Summary:

It is not recommended to place New Zeland White and Californian type young rabbits in mixed groups after 12 weeks.

Young does - from the same litter - can be kept in pairs under given technology; breeding young bucks individually.

60-65 % of mature and breeding bucks give smell sign with their underchin gland and 1,5 % of them give urine sign. Examining the jumping ability of different types of bucks there was significant difference between matrilineal and paternal lines of New Zeland White types as well as between matrilineal and reserve lines of Californian types. There was not significant difference between matrilineal lines. Significant difference was there between doe and reserve lines.

Resumé

Après l'ages de 12 semaines c'est ne pas convenable d'élever des lapereaux d'espèce de California et de Nouvelle Zelande blanche en masse, les deux sexes ensemble. Par la technologie, on peut élever les élèves lapines originaires de portée par couple, mais les lapins males en cage individuelle. 60-65 % des lapins males en ages de reproduction et des reproducteur marquent de la senteur de la glande sousmenton, alors que 1,5 % marquent de l'urine. En exeminent la capacité du saut des lapins males des differences espèces on a trouvé difference significative entre la filiation maternelle et la lignée paternelle de Nouvelle Zeland blanche. On a trouvé aussi difference significative entre la filiation maternelle d'espèce California et la lignée réserve. Il n'y a pas difference significative entre la lignée paternelle et la lignée réserve.

