# THE FEMALE – MALE RATIO AS AN INFLUENCE FACTOR ON HATCHERY AND PRODUCTIVE INDICES OF THE HENS OF PARENTAL FLOCK

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*The study of the female / male ratio influence on productive a hatchery indexes of hens from parental flock, showed that all indexes were lower when the ratio was not accordingly to the technology requirements. The problem during the growing period of the young layers for brining up of parental flock it is very important to do the right planning of the needed numbers of females and males.*

*During the experiment there was watched the hens behavior of the parental flock. There was studied the eggs production of the layers during different periods of eggs laying and the influence of female – male relationship on this index. There were studied the received resultants of eggs fertility and hatchability and their comparison with the standard indexes of the cross. There was studied the eggs production and the average of this index was 117 eggs, when it had to be 180-200 per / period, accordingly to the cross standard. There was established that the male-female ration had the influence on the eggs fertility. When the ratio was 1:3 at the beginning of the time when the cross fertility had to be not less than 95.0 % or by 18.8 % higher. At four and five mouth of poultry using the fertility was 91.7 % but it still was lower that the cross standard, and it was influenced by the male-female ratio. The average of this index during the period was 88.3 %. This result does not allow to reach the cross standard and the maximal chicks receiving. There was established that using of the wrong ration at the beginning of the laying period had an influence on the hens during all period, and it was not very important that ratio got right at the beginning of second mouth, and it was accordingly to the standard by nine month. At the end of the experiment there was not noticed the great influence of the ratio on the hatchability level and this index was received accordingly to the cross standard. All received results showed the negative influence of incorrectly used the female - male ratio. As well the results show the importance of this question for parental flock using.*

***Key words*:** *female, male, ratio, hatchery indexes, fertilization, eggs production*

The influence of female – male ratio on the productive and hatchery index of females was established and proved theoretical and practical long ago. But sometimes in the production process may happen deviations which have an negative influence on the condition of used hens what leads to making worth and following down the productive and hatchery indexes characteristic to the cross or bread.

Because of the problem during the growing period of the young layers for brining up of parental flock it is very important to do the right planning of the needed numbers of females and males.

The males' number has to be accordingly to the technological requirements, what will allow the right reproduction of all females from reproductive flock what leads to the maximal eggs fertility percent receiving.

Too many males lead to the intensity of males' fights between them for determining the hierarchy in the flock, at the same time disturbing the females. As a results of the conflicts appearing, the layers can be shocked, what leads to the males avoiding and receiving the non fertilized eggs. After such kind of the stress the layers refuse the feed and water, the result of it is the great loosing of water from their body and at the same time the falling down of the eggs production [1].

The using of the large number of males showed that the economic effect of the poultry production was very low [1.2].

The literature dates [3], showed that just not very high number of males had a negative influence, what can be explained by the large number of non fertilized females and non fertilized eggs.

The normal ratio is: in the case of old cocks – 1:15, and young 1:6-8 hens [1].

## MATERIALS AND METHODS

The experiment for studding the influence of female and male relationship on the productive and hatchery indexes of the parental flock has been held at the reproduction farm SRL "Larsan - Nor".

For the experiment there was used the cross Harco what had been used at the farm just for the first year.

The analysis had been done during the production period.

The laying period lasted during nine month, but the eggs hatchery lasted only seven month.

During the experiment there was watched the hens behavior of the parental flock. There was studied the eggs production of the layers during different periods of eggs laying and the influence of female – male relationship on this index. There were studied the received resultants of eggs fertility and hatchability and their comparison with the standard indexes of the cross.

For the study of the female – male ratio influence on the eggs fertility and the eggs hatchability there were analyzed the hatchery results of the eggs. The hatchery of the eggs was in the incubator "Jamesway" accordingly to the well known regime.

## RESULTS AND DISCUSSIONS

The results of experiment showed that at the beginning of laying period the male – female ratio was 1:3 in the first mouth and 1:6 in the second mouth. During this period there was established the aggressive behavior of the cockerels and oppression of the layers hens. However, for the next improving of the poultry behavior there was regulated the male – female ratio by choosing the cockerels, what allowed normalizing this index.

There is showed the number of poultry and the male – female ratio during the using period (*tab. 1*).

Table 1

**The male-female ratios of the hens' flock of Harco cross**

| The mouth of hens laying | The number of | | The male-female ratio |
|---|---|---|---|
| | male | female | |
| January | 1707 | 5490 | 1:3 |
| February | 920 | 5341 | 1:6 |
| Mart | 766 | 5179 | 1:7 |
| April | 758 | 5019 | 1:7 |
| May | 550 | 4786 | 1:8 |
| June | 483 | 4331 | 1:9 |
| July | 429 | 3791 | 1:9 |
| August | 405 | 3149 | 1:8 |
| September | 377 | 2496 | 1:7 |

As it was mentioned before correspondingly the male – female ratio during the young cockerels using there was 1:6-8 hens [1]. Because of this it is possible to see that at the beginning of the second mouth of hens using, the indexes are becoming normal, but the technological deviation at the beginning of laying period (1:3) will have the negative influence on the productive and hatchery indexes. While the hens are used, the male-female ratio becomes as it has to be, because the cockerels what do not respond to the technological indexes are slaughtered, and by the end of the eggs laying period the ration was 1:8-9.

There was studied the influence of male-female ratio on the eggs production of Harco cross hens.

The eggs production was not affected too much of the hens behavior at the beginning of laying period, when the male-female ratio was 1:3. And the average of the laying eggs by the hens was 17 and than this index came to the normal. It is necessary to mention that accordingly to the cross standard this index is 180-200 eggs by period. In our experiment this index was 117 eggs, this is connected to the hen's behavior at the beginning of the laying period, what had an influence on the whole period.

After the hatchery of the eggs there were studied the results of the fertility and hatchability levels and the influence of male-female ration on this indexes. The results of eggs hatching are shown in *table 2*.

Table 2

**The results of eggs hatching of Harco cross**

| The mouth of eggs laying | The initial number of hatchery eggs | The number of eggs after the first biologic control | Fertility, % | The number of received chicks | Hatchability, % |
|---|---|---|---|---|---|
| I | 30240 | 24440 | 76.2 | 16849 | 68.9 |
| II | 83160 | 76480 | 91.2 | 60447 | 79.0 |
| III | 65480 | 60654 | 92.0 | 53658 | 88.4 |
| IV | 82204 | 75884 | 91.7 | 62407 | 82.2 |
| V | 74391 | 68701 | 91.7 | 56513 | 82.2 |
| VI | 26540 | 23579 | 87.4 | 22028 | 93.4 |
| VII | 7503 | 6694 | 87.9 | 6153 | 91.9 |
| The average, % | - | - | 88.3 | - | 83.7 |

There was established that the male-female ration had the influence on the eggs fertility. When the ratio was 1:3 at the beginning of the time when the cross fertility had to be not less than 95.0 % or by 18.8 % higher. At four and five mouth of poultry using the fertility was 91.7 % but it still was lower that the cross standard, and it was influenced by the male-female ratio. The average of this index during the period was 88.3 %. This result does not allow to reach the cross standard and the maximal chicks receiving.

All the previous index were lower that the requirement of Harco cross, except the hatchability level, which was 83.7 %. This index accordingly to Harco cross standard has to be 83-86 %.

The results of the experiment showed the influence of male – female ratio on the basically indexes of Harco cross, and the need to use the necessary ratio accordingly to the technology.

## CONCLUSIONS

The review of the received results allowed determining the influence of male-female ratio on the productive and hatchery indexes of Harco cross hens. There was established that using of the wrong ration at the beginning of the laying period had an influence on the hens during all period, and it was not very important that ratio got right at the beginning of second mouth, and it was accordingly to the standard by nine month. At the end of the experiment there was not noticed the great influence of the ratio on the hatchability level and this index was received accordingly to the cross standard. For good results of using the parental flock it is necessary to establish at the very beginning of the period the right male – female ratio what would correspond to the physiological possibilities of poultry.

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