Optimising the use of hen runs by structures and management

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One of the main problems in free range husbandry of laying hens is the uneven use of the hen run. This leads to an overuse of pasture near the hen house. In a series of behavioural experiments we tried to determine management and structuring factors which may result in more hens in the run and a more even distribution of the animals.

In the first study we investigated the effect of roofed dust baths on the use of the hen run. We had 8 groups of 500 laying hens, once with and once without roofed dust baths at the end of the hen run to structure the free range. We found no difference in the number of hens in the free range with or without structure but there was an influence on the distribution. When structures were located in the furthest quarter of the hen run, more hens were there than without structure. In the first quarter there were more hens when there were no structures in the hen run.
As even the small and distant structure in the first experiment had an effect on the distribution we tried to find out more about the preferences of hens for certain kinds and amounts of structuring elements. Eight groups of 20 hens and a rooster had a hen run which was visually divided into two parts (A and B). Two experiments were carried out. In the first experiment (amount of structuring elements), part A of the hen run had a shelter which covered 1% of the area and part B had five such shelters. In the second experiment (different kind of structuring elements), part A was supplemented with four different objects of the same size. These four objects were a perch on two levels, a pecking-tree (vertical trellis on a stake with hanging corks), a box with fir-cones for scratching and two small fir-trees .The other part stayed the same with five shelters. In each experiment the hens were accustomised to the structures for four weeks before observations were carried out. In this choice experiment we could not find an influence of the amount of structuring elements on the use of the hen run, but the hens preferred the part with various structures and they stayed evenly beside, under or on all different structures.
A further question was if it is possible to improve the use of the run by scattering grains in the outdoor area during the rearing period (flock customisation). The experiment was undertaken on four rearing hen farms with at least two groups of hens (test and control group). The test group received grains in the hen run, the control group got grains as usual only in the bad weather run. In the middle and in the end of the rearing period the number of animals in the run was not different with or without flock customisation. Furthermore, there was no difference in the distance to the poultry house between the animals of the test and the control groups. However, some differences in the behaviour occurred. We suppose that with flock customisation food search activity increased but other factors than scattering grains have had a bigger impact on the use of the free range.

These results show, that the quality and variation of structures influence the use of the hen run more than the amount of structures. This is probably due to individual differences in the hens as to which structures they are attracted by or their need for different structures in different circumstances.

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