



Good quality environmental enrichment and choice of hybrid can contribute to successful housing of laying hens in mobile houses

During the PPILOW project, we identified concerns among small-scale farmers in the Netherlands about keeping laying hens in mobile houses. Under normal conditions, the mobile houses on these farms are placed in the orchard, where the hens roam free, while simultaneously maintaining the quality of the soil. In this situation, the hens have plenty of opportunity for foraging, dust bathing and sun bathing. However, due to the risk of Avian Influenza infection, the hens are often restricted in their free range during periods of mandatory confinement. Moreover, one farmer kept their chickens in confinement because of a fox in the area, that already killed a substantial part of the flock. The farmers observed feather pecking outbreaks during these periods of confinement. Although each of the farms have built a covered veranda, the quality of enrichment in the veranda varied, and feather pecking still occurred often. The hens have intact beaks and live in small flocks of maximum 250 birds each.

To provide insights in which conditions are most ideal when keeping laying hens under these circumstances, we observed flocks with different levels of environmental enrichment and flocks of different breeds. Two flocks had only a haybale as enrichment (Enr-), two flocks had more variation in enrichment, i.e. hanging vegetables, old tree branches, and straw (Enr+). The farms had either a dual purpose hybrid (DP) or a layer hybrids (LH). The behaviour of the chickens was observed for 3 weeks.

Results study 1:

- DP hens showed more foraging behaviour than LH hens
- DP hens were less fearful of a novel object than LH hens, which is associated with less feather pecking in literature
- The most feather pecking and worst plumage condition was observed in the LH Enr- flock

In a follow-up study, we are currently investigating the effect of straw as floor bedding in the covered veranda on footpad lesions, plumage condition, and fearfulness. Footpad lesions can be an issue for laying hen welfare, especially when spending too much time on wet soil. This could happen when the veranda of a mobile house cannot move to new areas with grass, for example due to Avian Influenza restrictions. Flocks on four farms were assessed on footpad lesions and plumage condition over time (5 weeks). The first assessment was before putting the straw bedding in the veranda, acting as a baseline measure. The hypothesis was that footpad lesions and plumage condition would improve in time, due to better floor covering and more foraging opportunities with the added straw. The participating farms differed in quality of enrichment at baseline, hybrids and soil condition, with 2 farms being situated in more wet parts of the Netherlands. The first preliminary results are in, although the statistical analysis still needs to be finalized.



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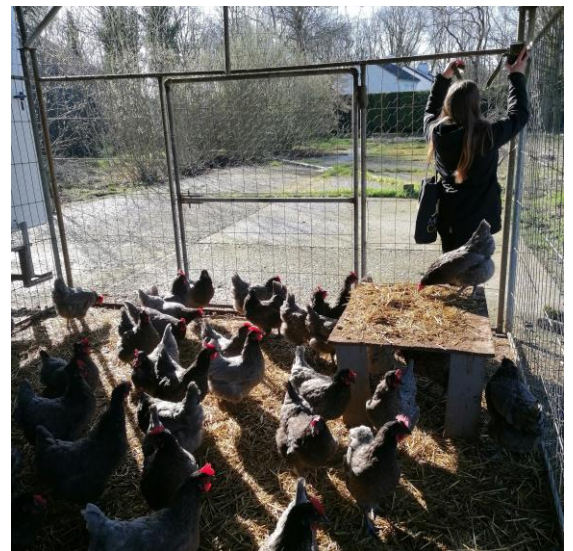
(Preliminary) results study 2:

- Hens on the two farms with less baseline enrichment had most benefits of the straw bedding. They had a better plumage condition and more re-growth of feathers
- No major problems with footpad conditions were observed in any of the flocks, so effect of straw on this aspect could not be evaluated



Conclusion

The use of mobile houses has many benefits for both farmers and chickens, compared to a static free-range poultry housing. However, when the chickens are confined to the mobile house because of Avian Influenza or predation risks, they are unable to express essential behaviours. Feather pecking outbreaks can be a consequence, as well as other health risks such as footpad lesions. A covered veranda with good quality enrichment is of crucial importance for chickens to be able to forage and dust bathe, and providing dry bedding material will likely reduce the risk of feather pecking and may help to prevent footpad lesions. In addition, the choice of hybrid can influence the success of keeping laying hens in mobile houses: dual purpose hens seem to be more suitable for this environment than layer hybrids.



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