Verandas for laying hens

A veranda or winter garden is an additional roofed structure attached to the outside of a poultry building, which has a fully littered floor. These structures provide the hens with natural daylight and an outdoor climate. Verandas or winter gardens are becoming more popular in the laying hen industry, with new-build systems choosing to invest in them.

The RSPCA commissioned ADAS to prepare a report on Verandas in 2016.
The report includes types of verandas, advantages and disadvantages and an estimate of cost. The lack of research and experience of managing verandas in the UK is highlighted.

The European Food Safety Authority [1] recently published a scientific opinion report on 'The Welfare of Laying hens on farm'. Verandas / winter gardens were identified as a positive housing measure that benefits welfare by providing a choice of light and temperature conditions and opportunities to perform more natural behaviours. If the floor area of verandas / winter gardens is not included in the total usable area, the birds will also benefit from more space and litter provision. In addition, for free-range birds, verandas may support improved usage of the outdoor area, which could help to reduce the risk of injurious feather pecking.

Verandas were included in the list of main recommendations concerning more urgent welfare issues in egg production:

'Provide a covered veranda for all birds to reduce effective/local stocking density during daytime periods when birds are most active, and permit birds to choose between temperatures, light conditions and substrate quality. This would reduce the risk of the welfare consequences inability to perform foraging, exploratory and comfort behaviour. Compared to an outdoor range, the risk of predation stress, gastroenteric disorders and other infectious diseases in case of outbreaks in the member states will be reduced. In climates where a covered veranda cannot be provided, provide extra space to birds' [1].

Summary benefits

1. Provide natural light and outdoor climate
2. More space for enrichment and foraging opportunities
3. Maintain litter quality in the main house
4. Reduce main house stocking density
5. Increase range access
6. Smooth transition of young birds to the outside range
7. Indirect impacts on improving feather cover
8. Used during avian influenza housing orders

Use in Europe

Verandas are commonly used in European countries and are included as an aspect in both the Beter Leven one, two and three star requirements and the KAT guides for laying farms. The key aspects required in these verandas are an outdoor climate, natural daylight and litter provision. Producers using verandas report positive outcomes, such as being able to house intact beak birds, better litter quality and more activity in hens. There is limited

research into verandas, as the countries that use them have been using these systems for many years.

Research looking at production systems on Belgium farms in 2015 reported that out of 47 randomly selected flocks, 28% of barn systems had a covered run and 19% had a free-range area which always included a covered run [2]. Similarly, researchers looking at Swiss farms visited 96 farms and reported 59.3% of the flocks had access to the outdoors. In addition, 48.9% of the flocks had access to a veranda and a free-range area. A veranda without a free-range area was present in 6.0% of the flocks [3].

Examples of some Swiss systems

Literature review

When not included in the usable area, access to a veranda during the daytime will significantly reduce the stocking density in the main house. There is a clear relationship between higher stocking density and an increased risk of feather pecking [4–6]. The use of verandas appeared to increase with increasing stocking density when organic birds were kept at 6, 9 and 12 birds/m² [7] suggesting the value of a larger litter area.

Hens spend about 38% of their daily time budget engaged in foraging behaviours [8] and in ancestral red jungle fowl this can be up to 60% [9]. In farmed systems the majority of this behaviour occurs on the litter area, along with comfort behaviours such as preening and dustbathing. It has long been known that litter provision is a key environmental factor that enables birds to perform many natural behaviours and reduces the chance of abnormal behaviour developing [10–14]. However, only one third of the environment is covered in litter, and this is also the area where the majority of other enrichment is provided. The inclusion of verandas in both barn and free-range systems provides more areas for the performance of important litter-related behaviours and also increases the space available for more varied enrichment items such as dustbathing boxes and pecking objects.

Verandas in free-range systems

Some studies have looked at the percentage of hens utilising different areas outside the house consisting of verandas, close range and far range. Larsen et al, [15] reported the percentage of birds that accessed only the verandas ranged between 0.3% and 2.8% whereas the percentage of birds that accessed all three zones ranged between 73.7% to 84.5%, demonstrating that the provision of a veranda on a free-range system does not result in restricted range use. Another study looking at range use in Swiss commercial flocks found large variability in range use of RFID tagged hens. However overall between 79 - 99% of tagged hens visited the veranda at least once and 47 - 90% visited the range at least once [16]. In this study more tagged birds were observed in the veranda compared to the range. In fact verandas may increase range use, a review paper by Pettersson et al [17] summarised that in commercial studies range use rarely exceeds 40%.

Verandas provide an ideal transition area onto the free-range. Practical experience and research has shown that birds will utilise ranges with artificial and natural cover [18–20]. One study found that range distribution was improved with the addition of narrow shelter runways and found that birds actively sought these shelters when exiting popholes onto the range area [21]. Creating a transition area to the outside range may be another way to increase range use. The area outside popholes is often barren and consists of hard terrain to maintain a dry area and deter wildlife, however this does not encourage range use, as suggested by research looking at provisioning shelters and cover on range areas [19,21].

The opportunity for choice and environmental complexity has been well studied in laying hens and has positive effects on welfare [22]. Laying hens have strong environmental preferences and these can often be influenced by fear levels [23]. Providing transition areas to the outdoor range, such as verandas, could reduce fearful associations with the outside range by allowing hens to adjust to an outdoor climate and natural daylight within the veranda area.

The importance of early-life positive experiences is well known in the laying hen industry [24] and many rearing systems now match the laying environment in an effort to minimise the differences and reduce fear and stress. Early enrichment provision and complex environments have long term effects of range use and adaptability to environmental stressors [25]. The free-range egg marketing regulations require laying hens to have access to the range from 21 weeks of age. Up to this point they will have limited experience of natural daylight and an outdoor climate. Providing these aspects in verandas may reduce the fear response to the outside environment and promote more range use.

Since 2021 the UK has had over 300 cases of avian influenza, and for the past two years poultry species have been housed for up to 5 months of the winter season. Housing hens can be very stressful and there have been reports of increased cases of feather pecking and smothering. Providing access to a veranda to older hens during an Avian influenza housing order has multiple benefits. Hens will still experience the opening of popholes into a novel area with natural daylight and an outdoor climate, and the house stocking density will be reduced. Once range access is provided once more hens will have experience of some aspects of the outside range and this will reduce stress and fear responses.

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