



## How Environmental Enrichments in Chicken Houses Can Benefit Producers

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Environmental enrichments are items or resources in the barn that allow birds to perform important behaviors — such as perches or platforms to allow roosting at elevation or the provision of straw, hay, or other substrate to stimulate exploration and play. Encouraging diverse, natural behavior can positively impact the birds' health and mental state.

But do these enrichment items benefit producers? The unsatisfying answer is, it depends.

There are several potential benefits for poultry producers, from improved productivity, reduced health problems, and economic gains, which are direct benefits, but there are also indirect benefits that are not so easily observed.

### Direct Benefits

Broiler breeder flocks with access to panel barriers increased egg production by 2.1% and produced 4.5 additional chicks per female compared to the control. This represents an estimated \$3 million benefit for the participating company if all flocks received these barriers (Leone, 2008).

Likewise, broilers raised with laser lights exercised more, spent more time walking, engaged in more positive behaviors, and showed improved weight gain and bone density (Bobeck et al., 2022).

Broilers raised with step platforms had a lower prevalence of subclinical spondylolisthesis (kinky back) compared to the control group (Lourenço da Silva et al., 2023).

A combination of perches, elevated platforms (like in Figure 1), and combined structures was shown to reduce footpad dermatitis in fast-growing chickens (Spiess et al., 2022).

Similarly, a review documented reductions in footpad dermatitis and breast blisters, plus an improvement in meat quality (Abdallah et al., 2024).

A combination of perches, elevated platforms, and combined structures reduced footpad dermatitis in fast-growing chickens (Spiess et al., 2022), and a review documented reductions in footpad dermatitis and breast blisters, plus an improvement in meat quality (Abdallah et al., 2024).

An analysis of 23 studies on injurious feather pecking indicated that enrichments reduce feather pecking and feather damage in laying hens, even compared with conventional cage systems (van Staaveren et al., 2020).

Foraging material as an enrichment was most effective in reducing feather pecking behavior in hens, though dustbathing material and objects also reduced it compared with the control group (Dixon et al., 2010).



Figure 1. A conventional chicken house with platform enrichments, which can benefit both the birds and the producer (photo provided by Leonie Jacobs, Virginia Tech).

# Indirect Benefits

While the direct benefits are measurable and have been studied extensively, the indirect benefits are harder to correlate.

For example, environmental complexity can improve short-term memory and spatial cognition throughout life.

Animals learn and navigate their environment, a process that is particularly important for birds housed in one system and then moved to another environment for the production phase.

Learning to manage and navigate this more complex environment can enhance neural plasticity, helping animals develop coping mechanisms to handle stressors later in life.

Likewise, enrichment generally reduces fear because it exposes the birds to novelty, through which they learn to deal with other new experiences.

Fear can have a detrimental impact on productivity. Heightened fear can result in injuries like scratches and fractures caused by panicked fleeing, and it can result in wasted energy, increasing feed costs.

Fearful hens produced lighter eggs (de Haas et al., 2013), and hens that were more avoidant of humans had lower peak hen day production (Barnett et al., 1992).

Similarly, stronger behavioral avoidance of humans was associated with a worsened (higher) feed conversion ratio (Hemsworth et al., 1994). This was thought to be caused by either prolonged distress or a series of short-term stresses experienced by these birds (Cransberg et al., 2000).

But the right enrichment for the right flock also matters for producers to reap gains.

Enrichment use can be ensured by picking items that are biologically relevant. This takes into consideration what animals want and like to increase the chances of stimulating behaviors that are important for them.

If an item is attractive to the birds, they need to be able to actually use it, too. This means they need to

have enough space, especially if the stimulated behavior is a social behavior.

One example of a desired bird behavior that requires ample space is dust bathing, which is socially facilitated, meaning that seeing the behavior will stimulate the behavior in other birds.

If a friable litter (coconut coir, sand, clean shavings) is provided as an enrichment, there needs to be enough space for all birds that want to perform the behavior to be able to perform the behavior.

When implemented properly, though, flocks can benefit, offering producers healthier and happier animals and potentially healthier checkbooks. Visit this Lancaster Farming article on [the ABCs of enrichments](https://lancasterfarming.com/farming-news/poultry/the-abcs-of-improving-broiler-welfare-with-enrichments/article_3eb38040-f83b-4f48-9bf6-ed88dd1b1d29.html) (lancasterfarming.com/farming-news/poultry/the-abcs-of-improving-broiler-welfare-with-enrichments/article\_3eb38040-f83b-4f48-9bf6-ed88dd1b1d29.html) for more information.

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## Additional Resources

This article was originally published in and modified from the following:

[https://www.lancasterfarming.com/farming-news/poultry/how-environmental-enrichments-in-chicken-houses-can-benefit-producers/article\\_749b1c1c-4e7f-438f-85e6-5718bcb01004.html](https://www.lancasterfarming.com/farming-news/poultry/how-environmental-enrichments-in-chicken-houses-can-benefit-producers/article_749b1c1c-4e7f-438f-85e6-5718bcb01004.html)

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