

IVMA Animal Welfare Committee
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“Cage-Free” Egg Production
A cluttered future

Recently, I had the opportunity to attend a leadership event that covered areas in our life that become cluttered - both physically and mentally. When assessing how an individual can end up with a mentally cluttered life, this statement summarizes one of the recurring themes:

“Saying ‘yes’ to something requires you to say ‘no’ to something else.”

This statement may seem kind of simple when making life choices such as working, sleeping, exercising, playing with your kids, etc. and may even seem simple enough in little choices like “should I eat a pizza or should I eat a salad”. But what about eggs? Should I buy conventional eggs or should I buy cage-free eggs? Should we cage birds or should they be cage-free? Should we let laying chickens be free range?

At first glance, it seems like such a simple decision to make--why not get these birds out of cages? What is wrong with taking birds out of cages? Every decision in life has potential positives and negatives. Weighing these benefits and detriments for every egg production housing style can be more difficult than some would think.

What we currently know about housing style welfare indicators is summarized very well in both the table below and the listed AVMA literature reviews. Any number of these specific topics can be discussed in detail, and in many ways we don’t know what the future holds as more producers adapt to alternative housing systems. Some housing systems are able to increase a welfare indicator of one area but may have an inferior welfare indicator for other areas (i.e. increased natural behaviors such as scratching and perching but higher disease vector exposure). For decades, animal scientists and veterinarians helped guide producers to adapt to caged egg production. Reducing disease incidence and mortality rates, and thus contributing to animal health always seemed to be the gold standard of a welfare indicator.

As more exposure to diseases increases in alternative housing systems (high dust, increased fecal-oral exposure) producers and veterinarians will have to adapt to this pressure with an increasingly small toolbox. Even before the new FDA antibiotic guidance in food animals, commercial layers were limited to a fairly short list of medications that can be used in lay due to the challenges with meeting zero withdrawal time with the need for daily eggs being laid. Both cage and cage-free production have legal access to just five antibiotic or anti-parasitic products that can be used. How will this industry adapt to the increased parasite loads like roundworms and coccidia, higher bacterial challenges such as *Pasteurella*, and higher enteric viral loads like Reovirus? All these challenges will be difficult with a toolbox limited to probiotics, vaccination, and biosecurity.

Over the history of modern egg production, primary breeding companies selected for birds that performed well in cage production systems. Genetic selection is one major contributor to why it is so difficult to quickly switch to cage-free egg production. It is not

a simple task to take a strain of bird that has been bred for generations and release them into an alternative production system – this in itself can be a major welfare detriment. Updates to primary breeding stock will not happen over night.

Other challenges with alternative systems include handling birds for important tasks such as vaccination, weighing, or shipment. Can you imagine the potential stress and difficulty of catching and handling loose birds of a flock several times in their lifespan within the roughly 300 million layers in the United States?

What about money and people? This article is intended to cover animal welfare aspects but we cannot set aside the other areas impacted by cage-free egg production. These include increased cost of production and the increasingly difficult ergonomics and safety of human workers in these new alternative housing styles, both of which would change as shifts to cage-free housing occur.

Indicators	Conventional Cage	Furnished Cage			Non-cage (Barn)		Outdoor (Free-range)
		Small	Medium	Large	Single Level	Multiple Levels	
Mortality (%)	Good	Good	Good	Good ^S	Poor	Poor	Poor
Mortality from feather pecking and cannibalism	Good	Good	Good	Good	Good	Good	Good
Bone strength and fractures	Good [†]	Good [*]	Good [*]	Good [*]	Good [‡]	Good [‡]	Good [‡]
Exposure to disease vectors (e.g., wild birds)	Good	Good	Good	Good	Good	Good	Poor
Internal parasites (e.g., coccidia, roundworms)	Good	Good	Good	Good	Poor	Poor	Poor
External parasites	Good	Good	Good	Good	Good	Good	Good
Bumblefoot	Good	Good	Good	Good	Poor	Poor	Poor
Feather loss	Good	Good	Good	Good	Good	Good	Good
Hen hysteria and piling/smothering	Good	Good	Good	Good	Poor	Poor	Poor
Risk of predation	Good	Good	Good	Good	Good	Good	Poor
Level of egg production and cleanliness	Good	Good	Good	Good	Good	Good	Poor
Use of nest boxes	Poor	Good	Good	Good	Good	Good	Insuff Data
Use of perches	Poor	Good	Good	Good	Good	Good	Good
Foraging behavior	Good	Good	Good	Good	Good	Good	Good
Dustbathing behavior	Poor	Good	Good	Good	Good	Good	Good
Air quality (e.g., dust, ammonia)	Good	Variable [¥]	Variable [¥]	Variable [¥]	Poor	Poor	Good

^S = Recent unpublished data indicate lower mortality may be achievable in large furnished cages

[†] = Reduced bone strength, fractures when birds are caught

^{*} = bones stronger from perch use but increased incidence of deformation of the keel

[‡] = More fractures during lay despite stronger bones

[¥] = Variable, depending on whether loose litter is dispensed; litter presents challenges for maintaining air quality

How well welfare measures are met:

Good	Medium	Poor	Insuff Data
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Table from AVMA comparison of Cage and Non-cage Systems for Housing Laying Hens

Press releases, positive marketing and social media can make the future of egg production seem like a forgone conclusion – cage-free egg production must be better if people are asking for it, right? In the end, if a consumer asks for a product, then there will be a product made to fit those desires. However, there is more to this decision and behind-the-scenes process than simply putting words on an egg carton or menu.

Saying ‘yes’ to cage free eggs will mean saying ‘no’ to something else. Yes, birds will be more able to exhibit natural behaviors but can they also have good health? Perhaps; veterinarians, animal scientists, flock owners, and animal

caretakers must work together to overcome these health challenges. What we have said no to isn't yet clear, but a cluttered future is a certainty.

Resources:

Literature Review on the Welfare Implications of Laying Hen Housing. AVMA.
January 26, 2012. <https://www.avma.org/KB/Policies/Pages/Layer-Hen-Housing-Systems.aspx>

A Comparison of Cage and Non-Cage Systems For Housing Laying Hens. AVMA.
<https://www.avma.org/KB/Resources/Reference/AnimalWelfare/Pages/AVMA-issues-A-Comparison-of-Cage-and-Non-Cage-Systems-for-Housing-Laying-Hens.aspx>