



A Special Report:
Some of the possible effects of the 2016
organic rule for egg production

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On April 13th, 2016, the United States Department of Agriculture's (USDA) Agricultural Marketing Service (AMS) proposes to amend the organic livestock and poultry production requirements adding new provisions for avian living conditions.

Some of these rules set a maximum indoor and outdoor stocking density for avian species, which would vary depending on the type of production and stage of life. The required outdoor space for egg laying hens is 2.25 lbs./ft². The required indoor space for egg laying hens depends on the housing type:

- is 4.5 lbs./ft² for pasture houses and for aviary houses
- is 3.00 lbs./ft² for floor litter houses
- is 3.75 lbs./ft² for pit/mesh litter houses

The calculations that follow are based on the Vukina et. al. results published in the 2014 Journal of Applied Poultry Research (23): 80-93. "Economic effects of proposed changes in living conditions for laying hens under the National Organic Program".

Cost of production and hen performance based on Vukina et. al. paper (table 4)

The cost of production of organic eggs for large producers (100,000 laying hens or more) is \$2.40/dozen under the current practices and \$4.70/dozen under Option 3 (closest to the proposed regulations).

The feed conversion of organic egg production is 3.74 lbs./dozen under the current practices and 3.96 lbs./dozen under Option 3 (closest to the proposed regulations). This increase in feed conversion would result in a higher carbon footprint per dozen eggs, as feed production is the most important component of the carbon footprint in poultry production, e.g., 71% of the total carbon footprint for conventional cage production. It would also require more land, which is estimated to be 4,952 additional acres of corn and 5,993 additional acres of soybeans to maintain the same level of production.

The organic layers under the current practices would produce 295 eggs/hen/year while under Option 3 (closest to the proposed regulations) would produce 280 eggs/hen/year. In both cases 75% of the eggs are sold as organic shell eggs and 20% as breaking stock.

Capacity under the proposed new rule based on Vukina et al.'s results

Vukina et al. estimated that large producers (100,000 layers or more) would reduce their flocks to 13.5% of the original size. Based on data from the industry, in June 2016 8.726 million organic layers are owned by large companies (having 100,000 or more organic layers). Therefore if no new investment were made in organic facilities the capacity lost would be approximately 7.548 million organic layers, leaving 1.178 million layers in the facilities considered. This reduction in the number of layers in the current organic facilities would represent a decrease of 56% of the total U.S. organic layers (from 13.500 million to 5.952 million layers). This, together with the higher average cost of production, would result in a big organic egg price increase for the consumers.

If no new investment occurs, the reduction in use of organic feed would be significant. The use of organic feed for the large operations would drop from 803.8 million pounds (8,726,000 layers × 24.6 dozen eggs/layer × 3.76 lbs. of feed/dozen eggs) to 109.1 million pounds (1,178,010 layers × 23.4 dozen eggs/layer × 3.96 lbs. of feed/dozen eggs). Assuming a 65% corn inclusion rate in the diet, the reduction in organic corn use would be 8.06 million bushels, which is equivalent to the production of 72,769 acres of organic corn, valued at 99.33 million dollars annually. This reduced amount represents 43% of the organic corn produced in 2014 (the last year with statistics), which would pressure the price of organic corn to go down. Similarly, assuming a 20% soybean meal inclusion in the diet, the reduction in organic soybean use would be 3.18 million bushels, which is equivalent to the production of 96,862 acres of organic soybeans, valued at 76.78 million dollars annually. This reduced amount represents 98% of the organic soybean produced in 2014 (the last year with statistics), which again would pressure the price of organic soybeans to go down. [Note that the soybean demand estimated at 20% inclusion is higher than the total U.S. production. This implies that the U.S. organic egg producers use imported organic SBM.](#)

Caveats and additional factors that will impact the final organic egg production capacity

[Vukina et al.'s estimation was based on large producers downsizing \(reducing the number of layers\) rather than investing in new facilities.](#) Investing in new facilities would result in a cost of production that is higher than \$2.40/dozen and it would be lower than \$4.70/dozen; however we need more time and information to estimate what would be the final cost of production under this scenario. In order to invest in new facilities, the organic egg producers would need some kind of assurance that the rules are not going to change in the future.

A reduction in the supply of organic eggs would result in an increase of organic egg prices, which in turn would motivate some producers to invest in new organic egg production capacity.

Such a big reduction in the demand for organic corn and soybean meal would result in a price reduction of these organic feed ingredients increasing the organic egg production margin, which would also result in some producers investing in new organic egg production capacity.

The final equilibrium of organic egg supply will depend on the elasticities of supply and demand of organic eggs and organic inputs such as corn and soybean meal.