

California's Egg Regulations: Implications for Producers and Consumers

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California's egg regulations became effective January 1, 2015. Immediately, egg prices in California were nearly double those in the rest of the U.S. as producers worked through an adjustment to new regulations. The price premium for eggs in California has narrowed but is likely to remain well above prices in the rest of the U.S. due to the continued regulatory uncertainty and higher costs associated with complying with the regulations.

In 2014, nearly 87 billion table eggs were produced in the United States—7.25 billion dozen. As recently as two decades ago, California was the number one egg producer. Today, egg production is concentrated in the Midwest, with the top 3 egg producing states (Iowa, Ohio, and Indiana) accounting for 33% of total U.S. egg production in 2014. According to the American Egg Board, 66 firms have more than 1 million hens (87% of total production) and 17 firms have more than 5 million hens.

The average person in the U.S. consumes nearly five eggs per week in various forms. California is the largest egg-consuming state in the U.S. but only produces 4.6% of the national supply. As a result, California imports eggs produced in Arkansas, Colorado, Illinois, Iowa, Minnesota, Missouri, Oregon, South Dakota, and Wisconsin.

The Regulations

In November 2008 California voters passed Proposition 2, which subsequently became the Prevention of Farm Animal Cruelty Act. This statute required that, by January 1, 2015, California egg producers comply with requirements that egg-laying hens be allowed enough space to turn around and move their limbs. While there is yet to be a consensus on exactly how much space per hen that requires, clearly it requires much more space than was typically provided.

Approximately 94% of the shell eggs produced in the U.S. are laid in conventional wire cages that house 6-10 laying hens. The typical caging system provides each bird with approximately 67 square inches of floor space, with sloped floors to facilitate egg collection and litter disposal. Research conducted at the UC Agricultural Issues Center (AIC) found that Proposition 2, if enacted in isolation, would almost completely eliminate egg production in California. The AIC report reasoned that production of eggs in California would not be competitive because production costs under California law would be too high relative to the production costs outside California.

Two years after Proposition 2 passed, Gov. Schwarzenegger signed Assembly Bill (AB) 1437 into law. AB 1437 requires egg farmers outside of California to comply with the confinement standards set forth by Proposition 2, if their eggs are sold in California for human consumption. Statements in this bill and the surrounding discussion indicate that its purpose was food safety, i.e., to protect California egg consumers from the dangers of *Salmonella* contamination. The bill claims that egg-laying hens subjected to stress will have higher levels of pathogens in their intestines, which increases the likelihood that consumers will be exposed to higher levels of food-borne illness. Recent research in *Poultry Science* by Jones et al., however, suggests that the prevalence of *Salmonella* on

Also in this issue

Faculty Profile: Tim Beatty.....4

The Economic Impact of Food and Beverage Processing in California

Richard J. Sexton, Josué Medellín-Azuara, and Tina L. Saitone.....5

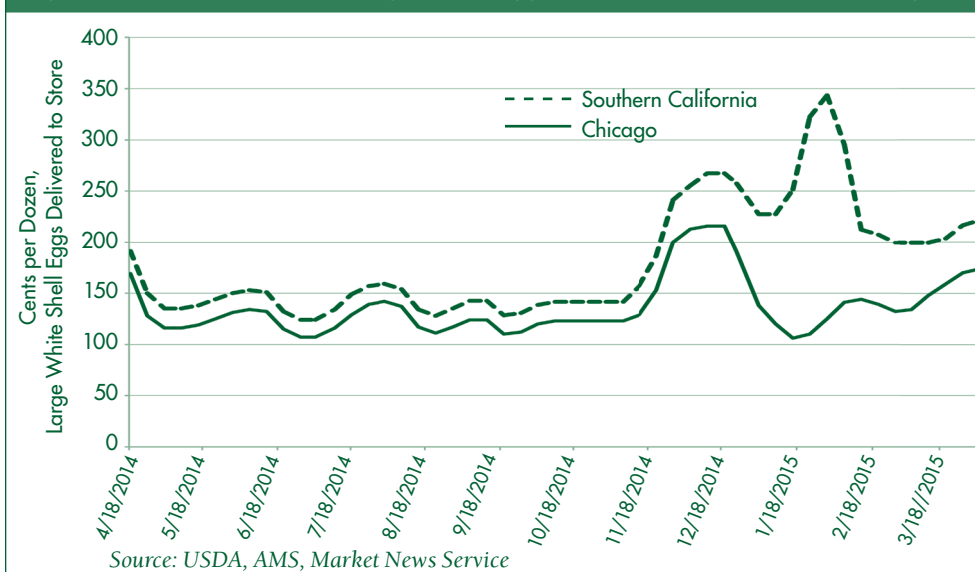
Port Slowdown Impacts California Agriculture

Georgi T. Gabrielyan and Daniel A. Sumner.....9

In the next issue

Special Issue:
The Economics of the Drought for California Food and Agriculture

Figure 1. Wholesale Price of Large White Eggs, Southern California and Chicago



egg shells does not differ significantly across egg-laying hen housing systems.

Six states, Alabama, Iowa, Kentucky, Missouri, Nebraska, and Oklahoma, filed suit against California in federal court over the egg regulations. The suit alleges that AB 1437 is an attempt by California to protect its egg industry and regulate out-of-state producers in violation of the U.S. Constitution's Interstate Commerce Clause. In October 2014, U.S. District Court Judge Mueller ruled that the plaintiffs lacked standing to bring this action on behalf of egg producers. This decision is under appeal.

With the passage of Prop 2 and AB 1437, considerable uncertainty permeated throughout the egg industry in terms of what confinement standards would be compliant with California law. Motivated by the goal of reducing the risk of *Salmonella* in shell eggs, the California Department of Food and Agriculture (CDFA) stepped into this void and issued minimum cage size regulations by adopting CCR 1350 in May 2013. This regulation stipulates specific egg-laying hen enclosure sizes, i.e., inches per bird. For example, an enclosure containing 9 or more birds shall provide a minimum of 116 square inches per bird. It is because of CCR 1350 that you will see a "CA Shell Egg Food Safety Compliant" seal or label on your egg carton.

While these regulations are intended to be "harmonious" with California's existing egg regulations, compliance with CCR 1350 does not necessarily imply compliance with Prop 2 or AB 1437. Further, CDFA does not have the authority to enforce the statutory requirements of Prop 2 or AB 1437.

Alternative Confinement Systems

Alternative housing systems, including cage-free, free range, and organic account for about 6% of national production. While statistics are not yet available, it is anticipated that California egg regulations will increase the amount of egg-laying hens housed in alternative housing systems by approximately 10% nationally.

Cage-free production systems can be categorized into two types: open floor and aviary. Open-floor systems, (or barn systems), house hens all together on an open barn floor with nesting boxes placed over automated egg collection equipment. Aviary systems provide hens with multiple tiers of nesting and access to feed and water while also retaining floor space for dust bathing and litter access. Free-range systems provide hens with outdoor access during the day and indoor shelter at night and for egg laying. Egg-laying hens used to produce certified organic eggs are

housed uncaged inside barns and are required to have some outdoor access. Finally, enriched colony cages, which have California compliant space per hen, offer hens added amenities (e.g., perches, scratching areas, and nesting boxes) to facilitate natural behaviors.

Producing eggs in alternative housing systems comes at an increased cost to farmers due to higher mortality rates, lower egg production, lower feed conversion rates, increased labor costs, and higher energy costs. Matthews and Sumner estimated cost increases for cage-free housing systems relative to conventional systems at 36%, and 13% for enriched. In addition to these per-unit cost increases, in order to comply with the California regulations, farmers will incur substantial fixed costs to retrofit their existing barns or build new facilities.

After years of acrimonious disagreement, in 2011, the Humane Society of the United States (HSUS) and United Egg Producers (UEP; a cooperative that represents members with 95% of egg-laying hens in the United States) came together to lobby for uniform national cage size requirements as part of the 2014 Farm Bill. Although ultimately unsuccessful, this attempt represented recognition by both organizations that imposing regulations or private standards on a piecemeal basis creates unintended consequences and leads to additional costs that would not exist under a unifying set of regulations or standards.

Implications for Egg Producers

One of the fundamental issues facing egg producers in California and elsewhere in the U.S. is uncertainty regarding what regulatory environment will ultimately emerge. The mandate set forth in Proposition 2 is rather vague, stipulating that animals shall not be confined in a manner wherein they are not able to lay down, stand up, fully extend limbs, or turn around freely. Thus, producers are not provided with

a metric of what constitutes minimum space per bird that will be considered compliant with California law. HSUS, which lobbied for passage of Proposition 2, believes farmers will only comply if their chickens are housed in a cage-free environment (e.g., see <http://cagefreeca.com/>), whereas others in the industry have come to use the space requirements associated with CCR 1350 as a guide for compliance.

Uncertainty is greatest for California egg producers. They must meet the minimum cage size standards specified by CCR 1350 without knowing whether the minimum of 116 square inches of space per bird required by this regulation is sufficient to meet the requirements of Proposition 2. California egg producers could invest millions of dollars to reconfigure their operations to meet this standard and later find this investment to be worthless if a court accepts the HSUS argument that Proposition 2 requires cage-free operations.

Out-of-state producers are similarly challenged in determining what they must do to comply with California law. Eggs produced from systems determined not to be in compliance with California law can be sold elsewhere. However, California operators could never survive in such a competitive environment because they would be saddled with higher production costs and higher transportation costs compared to operations located in the heartland.

Implications for Egg Consumers

Given this uncertainty, egg producers did not use the phase-in period offered by Prop 2 or AB 1437 and instead waited for additional clarification, if not through legislation then possibly through the judicial decisions associated with pending lawsuits. This lack of preparation caused a disruption of pricing in the market for eggs in California when the regulations became effective. This disruption is shown in Figure 1, which depicts wholesale

prices for large white shell eggs in Southern California and Chicago.

Prior to November 2014, prices in Southern California and Chicago moved in near lockstep, with prices in California exceeding those in Chicago by an average of almost \$0.19/dozen. Prices in the two markets began to deviate from this pattern in advance of the implementation of the regulations in January 2015. Almost a month after the regulations became effective, wholesale prices in California were nearly double (\$2.19/dozen higher) than those in Chicago and elsewhere in the U.S.

Yet, as time has passed, this substantial price premium associated with adjustment to the regulations has dissipated. As of early April 2015, wholesale prices in Southern California exceeded those in Chicago by about \$0.47/dozen— a 28% premium. Some consumers may, however, still be seeing relatively high retail prices in grocery stores. This prolonged price disruption at the retail level likely has more to do with retail prices responding asymmetrically to wholesale cost changes than it does with California's egg regulations. Retail prices are known to rise rapidly in accordance with increasing costs, but they decline slowly and sometimes incompletely in response to falling wholesale costs.

Because the housing systems now required for California and out-of-state producers shipping eggs to California have increased production costs, we anticipate that the California price premium will eventually approximate production cost differences. Assuming that the price differential observed in April 2015 persists, a consumer in California with average per capita consumption of 21 dozen eggs per year will pay nearly \$6 more annually as a result of Prop 2 and AB 1437. While this additional cost may seem insignificant at first glance, it may be substantial for low-income large families who use eggs as a relatively affordable source of protein.

In the U.S. typical consumers spend less than 10% of their income on food, and eggs are only one small component of this food budget. However, if California continues to impose cost-increasing regulations on an increasing number of food products, the additional cost burden to consumers could become important.

Conclusion

While some of the initial adjustment-period price spike has dissipated, California and out-of-state egg producers still face great uncertainty regarding whether or not their housing systems will comply with California regulations. This uncertainty will result in some out-of-state egg farmers to abandon the California market due to the high capital investments required for compliance. At the same time, California consumers will be paying higher prices for eggs than prior to the implementation of the regulations, but not at the levels that were seen in late January and early February 2015.

Suggested Citation:

Carter, Colin A., and Tina L. Saitone. "California's Egg Regulations: Implications for Producers and Consumers." *ARE Update* 18(4):1-3. University of California Giannini Foundation of Agricultural Economics.

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For additional information, the authors recommend:

Sumner, D.A., J.T. Rosen-Molina, W.A. Matthews, J.A. Mench, and K.R. Richter. "Economic Effects of Proposed Restrictions on Egg-laying Hen Housing in California." University of California, Agricultural Issues Center, July 2008. Available at: http://aic.ucdavis.edu/publications/eggs/egg_initiative.htm.