

The Coalition for Sustainable Egg Supply project: An introduction

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ABSTRACT In the United States, empirical information on the sustainability of commercial-scale egg production is lacking. The passage of state regulations specific to hen housing created urgency to better understand the effects of different housing systems on the sustainability of the egg supply, and stimulated the formation of a coalition, the Coalition for a Sustainable Egg Supply (CSES), to conduct research on this topic. The CSES is a multi-stakeholder group with 27 members, including food manufacturers, research institutions, scientists, restaurants, food service, retail food companies, egg suppliers, and nongovernmental organizations. A commercial-scale study was developed to

better understand the effect of 3 housing systems (conventional cage, enriched colony, and cage-free aviary) on 5 areas related to a sustainable egg supply. These 5 sustainability areas represent effects on people, animals, and the environment: animal health and well-being, environment, food safety, worker health and safety, and food affordability. Five teams of scientists, each associated with a sustainability area, conducted an integrated field study at a commercial site in the upper Midwest through 2 flock cycles in 3 housing systems. This paper provides a brief overview of the CSES project to serve as an introduction for the papers that follow in this volume of *Poultry Science*.

Key words: coalition, sustainable, egg supply, housing system

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INTRODUCTION

The passage of California Proposition 2 (Prevention of Farm Animal Cruelty Act, 2008), which effectively banned the use of conventional cages for laying hens, created urgency among stakeholders of the egg industry to gain insight into how changes in laying hen housing systems could affect the sustainability of the US egg supply. Although legislation banning or limiting the use of conventional cages had also passed in several other states by 2011 (Mench et al., 2011), few commercial-scale egg production facilities had nonconventional housing systems from which to draw information about effects. The lack of diversity of laying hen housing systems also meant a lack of US commercial-scale research.

During the same time period, the American Egg Board sponsored the Socially Sustainable Egg Produc-

tion Project (SSEP), which funded teams of scientists to develop white papers about what was known, what was not known, and what research areas needed to be pursued in terms of the effects of laying hen housing systems on the social sustainability of egg production (Swanson et al., 2011). The SSEP teams published these papers, which addressed important sustainability areas that affect egg production systems, in *Poultry Science* in 2011. These SSEP white papers catalyzed the formation of the Coalition for Sustainable Egg Supply (CSES).

THE COALITION

The CSES is composed of a multi-stakeholder group that collaborates on research concerning the effect of laying hen housing on a sustainable egg supply. At the time of writing this article, the CSES has 27 members. Members include food manufacturers, food retailers, food suppliers, egg suppliers, food service, research institutions, and nongovernmental organizations (<http://www2.sustainableeggcoalition.org>). The CSES project is facilitated through the Center for Food Integrity (<http://www.foodintegrity.org>) and has an advisory committee with representatives from the American Veterinary Medical Association, Environmental Defense Fund, and USDA Agricultural Research Service. A CSES steering committee is used for

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decision-making regarding a variety of issues associated with the project such as annual meetings, release of findings, publications, and presentations. The University of California–Davis and Michigan State University serve as lead institutions of the project, with Iowa State University and the USDA Agricultural Research Service as collaborators on the project.

PROJECT OVERVIEW

The papers featured in this issue of *Poultry Science* are the result of the CSES study on 3 housing systems (conventional cage, enriched colony, and cage-free aviary) conducted over 2 flock cycles at a commercial-scale egg production facility located in the upper Midwest. With the SSEP white papers serving as a foundation, the scientists engaged in this project were members of research teams representing 5 areas identified as critical to sustainability: hen health and well-being, food safety and quality, environment, worker health and safety, and food affordability.

The goal of the CSES project is to assess the trade-off among the 3 laying hen housing systems by evaluating housing system effects on each of the 5 areas of sustainability. Several research areas were addressed within each sustainability area:

Hen Health and Well-Being

Hen behavior and resource/space use, physiological indicators of stress, comprehensive physical condition and health outcomes measured using a standardized evaluation system plus clinical observation and testing, bone quality and bone breaking strength.

Food Safety and Quality

Interior and exterior egg quality, egg shelf life, microbial contamination levels of eggs and housing

areas, immunological responses of hens to the *Salmonella* vaccine.

Environment

Indoor air quality and thermal conditions, gaseous and particulate emissions from houses and manure storage areas, efficiency of resource (feed, water, energy), nitrogen mass balance, life cycle analysis.

Worker Health and Safety

Personnel exposure to gaseous and particulate matter, respiratory health, ergonomic stressors.

Food Affordability

Production costs (feed, land and buildings, labor, hen disease and health, pullet costs), and revenue (marketable output flows).

The papers that follow present a set of initial research results from the CSES project. The information generated from this project is not intended to promote any single housing system but instead to draw attention to positive and negative attributes that may affect independent decision-making regarding laying hen housing systems. Most importantly, the CSES project will add much needed information obtained under field conditions to the existing body of knowledge on laying hen housing systems.

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