

Exhibit A

State of Missouri v. Harris
Case No. 2:14-cv-00341-KJM-KJN

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8 UNITED STATES DISTRICT COURT
9 FOR THE EASTERN DISTRICT OF CALIFORNIA

10 THE STATE OF MISSOURI, ex rel., Chris
11 Koster, Attorney General; THE STATE OF
12 NEBRASKA, ex rel., Jon Bruning, Attorney
13 General; THE STATE OF OKLAHOMA, ex
14 rel., E. Scott Pruitt, Attorney General; THE
15 STATE OF ALABAMA, ex rel., Luther Strange,
16 Attorney General; THE COMMONWEALTH
17 OF KENTUCKY, ex rel., Jack Conway,
18 Attorney General; and TERRY E. BRANSTAD,
19 Governor of the State of Iowa,

20 *Plaintiffs,*

21 v.

22 KAMALA D. HARRIS, in her official capacity
23 as Attorney General of California; KAREN
24 ROSS, in her official capacity as Secretary of the
25 California Department of Food and Agriculture,

26 *Defendants,*

27 and

28 THE HUMANE SOCIETY OF THE UNITED
STATES, and ASSOCIATION OF
CALIFORNIA EGG FARMERS,

Defendant-Intervenors.

Case No. 2:14-cv-00341-KJM-KJN

**PROPOSED AMICI CURIAE BRIEF OF
CENTER FOR FOOD SAFETY,
CONSUMERS UNION, FOOD &
WATER WATCH, FOOD ANIMAL
CONCERNS TRUST, HEALTHY FOOD
ACTION, INSTITUTE FOR
AGRICULTURE AND TRADE POLICY,
AND PUBLIC JUSTICE IN SUPPORT
OF DEFENDANTS' AND
DEFENDANT-INTERVENORS'
MOTIONS TO DISMISS**

Date: August 22, 2014

Time: 10:00 a.m.

Judge: Hon. Kimberly J. Mueller

1 **CORPORATE DISCLOSURE STATEMENT**

2 Amici Center for Food Safety; Consumers Union, now doing business as Consumer
3 Reports; Food & Water Watch; Food Animal Concerns Trust; Institute for Agriculture and Trade
4 Policy; and Public Justice are nonprofit corporations, have no parent corporations, and do not
5 issue stock. Amicus Healthy Food Action has a parent nonprofit corporation, Trust for
6 Conservation Innovation, which does not issue stock.

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13 Dated: June 10, 2014

Respectfully submitted,

14 /s/ Paige M. Tomaselli

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STATEMENT OF INTEREST

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2 Amici Center for Food Safety, Consumers Union, Food & Water Watch, Food Animal
3 Concerns Trust, Healthy Food Action, Institute for Agriculture and Trade Policy, and Public
4 Justice (collectively, amici), through undersigned counsel, respectfully submit this Brief as
5 Amici Curiae in support of Defendants’ and Defendant-Intervenors’ Motions to Dismiss.
6 Plaintiffs, Defendants, and Defendant-Intervenors consent to this filing.

7 Amici are all national nonprofit organizations committed to protecting consumer rights
8 and health with regard to food and agriculture. Amici consistently work to educate the public
9 about the harmful effects of industrial animal agriculture, protect consumers’ right to know how
10 their food is produced, and promote sustainable food systems. Each have dedicated programs
11 that address food safety and/or animal factories. Together, these programs utilize litigation,
12 scientific expertise, grassroots campaigns, educational outreach, legislative and regulatory
13 reform, and information sharing to carry out their missions. Amici collectively seek to inform
14 legislators, government agencies, medical professionals, and the public about practices that take
15 place in animal factories and the associated effects on public health. Amici also work to hold
16 corporations and our government accountable for harmful, illegal activity. Amici are thus
17 uniquely suited in their ability to illuminate for the Court the food safety implications of battery
18 cages and *Salmonella* poisoning.

19 As public interest advocacy organizations dedicated to protecting consumer rights and
20 health with regard to food and agriculture, Amici have a strong interest in ensuring that
21 consumers have access to information about how their food is produced, so that they are both
22 empowered to make informed decisions and protected from adulterated foods.

1 INTRODUCTION

2 *Salmonella* poisoning is the leading cause of food-related death in the United States, and
3 eggs are the leading cause of human infection by several strains of *Salmonella*. The United States
4 Food and Drug Administration (FDA) recently recognized that the public health impacts of
5 egg-related *Salmonella* poisoning are “serious.” *Salmonella* can contaminate any egg. Yet eggs
6 produced in egg production facilities that use battery cages are more likely to harbor *Salmonella*
7 than their cage-free counterparts. Just four years ago *Salmonella* contamination led to the largest
8 egg recall in history—more than half a billion eggs. Not surprisingly, the facility that produced
9 those eggs housed its hens in cages.

10 Several scientific studies indicate that battery cages increase risk to consumers of
11 contracting egg-related *Salmonella* poisoning. The use of these cages goes hand-in-hand with
12 larger flock sizes and other practices that exacerbate the risk of contamination, including the
13 routine use of antimicrobials, the reuse of cages without cleaning them between production
14 rounds, the high density of animals, inhumane treatment, and diminished air quality due to
15 indoor confinement. These practices can also lead to higher incidences of pest and rodent
16 infestation, which contribute to the spread of *Salmonella*.

17 In order to address this unnecessarily dangerous situation—and in part to protect the
18 welfare of egg-laying hens—California voters passed Proposition 2. The Proposition recognized
19 that the industrialization of our food system, including the intensive confinement of farm animals
20 within that system, has increased the prevalence of foodborne illnesses, thereby posing a serious
21 threat to public health. Shortly after, with AB 1437, the state of California acted to protect
22 animal and human health by mandating that all eggs sold in California be manufactured in such a
23 way as to ensure their safety and minimize contamination. This legislation addresses the causes
24 of *Salmonella* contamination at their source, thereby protecting California consumers from the
25 known and preventable risk of potentially fatal or life-threatening *Salmonella* poisoning. By
26 doing so, AB 1437 serves a legitimate state interest and serves as an important complement to
27 federal food safety regulation.

1 **ARGUMENT**

2 **I. Eggborne Illness Presents a Significant Threat to Public Health**

3 Foodborne illness kills an estimated 3000 American consumers every year.¹ Even when
4 not deadly, foodborne illness is a serious threat to public health. One in six Americans—47.8
5 million people—fall sick and 128,000 people are hospitalized annually as a result of foodborne
6 illness.² Even mild cases of foodborne illness can involve five to seven days of severe stomach
7 cramps, diarrhea (often bloody), fever, and vomiting.³ Some cases cause serious long-term
8 effects such as chronic arthritis and brain and nerve damage.⁴ Infections can be severe or even
9 life-threatening.⁵ The annual national economic loss from just the resulting medical costs and
10 loss of productivity is over \$77 billion,⁶ and *Salmonella* infection accounts for \$365 million in
11 direct medical costs each year.⁷

12 *Salmonella* poisoning is the leading cause of food-related death in the United States.⁸
13 Researchers at the Centers for Disease Control and Prevention (CDC) have estimated that
14 *Salmonella* poisoning—the most commonly diagnosed foodborne bacterial illness in the United
15 States⁹—kills ten times more Americans every year than *E. coli* O157:H7.¹⁰ Eggs are particularly

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⁹ P. Chittick et al., *A Summary of National Reports of Foodborne Outbreaks of Salmonella*
Heidelberg Infections in the United States: Clues for Disease Prevention, 69 J. of Food
Protection 1150, 1150-53 (2006).

1 to blame. As FDA concluded in 2010, “Egg-associated illness caused by Salmonella is a serious
 2 public health problem.”¹¹ Eggs are the leading cause of human infection by several strains of
 3 *Salmonella*,¹² with *Salmonella*-tainted eggs causing an estimated 142,000 Americans to suffer
 4 from foodborne illness every year.¹³ In 1994, a single egg-related outbreak sickened more than
 5 200,000 Americans.¹⁴ The threat has not lessened since: between 2009 and 2010, *Salmonella*
 6 associated with eggs led to the most outbreak-related foodborne illnesses in the United States.¹⁵

7 Infants and young children are at a particularly high risk of contracting *Salmonella*
 8 poisoning and suffering from its long-term effects. For example, *Salmonella* poisoning can result
 9 in chronic arthritic joint inflammation and is commonly implicated in persistent irritable bowel
 10 syndrome in children.¹⁶ The risk posed by *Salmonella* infection to consumers is further
 11 exacerbated by the difficulty of destroying the disease-causing pathogens through cooking.
 12 Indeed, *Salmonella* can infect the ovaries of hens, resulting in infected hens laying eggs with the
 13 bacteria already inside.¹⁷ According to research funded by the American Egg Board, *Salmonella*
 14 can then survive multiple cooking methods.¹⁸

15 Moreover, the risk of contracting *Salmonella* from contaminated eggs is prevalent.

16
 17 ¹⁰ P.S. Mead et al., *Food-Related Illness and Death in the United States*, 5 Emerging Infectious
 Diseases 612, 612-25 (1999).

18 ¹¹ Press Release, FDA, New Final Rule to Ensure Egg Safety, Reduce Salmonella Illnesses Goes
 Into Effect (July 9, 2010), available at
 19 www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm218461.

20 ¹² See B.R. Jackson et al., *Outbreak-Associated Salmonella Enterica Serotypes and Food*
Commodities, United States, 1998–2008, 19 Emerging Infectious Diseases 1239, 1239-44
 (2013), available at http://wwwnc.cdc.gov/eid/article/19/8/12-1511_article.htm.

21 ¹³ FDA, *FDA Improves Egg Safety*,
 22 www.fda.gov/ForConsumers/ConsumerUpdates/ucm170640.htm (last updated Dec. 17, 2013).

23 ¹⁴ T.W. Hennessy et al., *A National Outbreak of Salmonella Enteritidis Infections from Ice*
Cream, 334 New Eng. J. Med. 1281, 1281-86 (1996).

24 ¹⁵ CDC, *Tracking and Reporting Foodborne Disease Outbreaks*,
<http://www.cdc.gov/features/dsfoodborneoutbreaks/> (last updated Mar. 29, 2013).

25 ¹⁶ A. Ternhag et al., *Short- and Long-Term Effects of Bacterial Gastrointestinal*
Infections, 14 Emerging Infectious Diseases 143, 143-48 (2008); M. Saps et al., *Post-infectious*
 26 *Functional Gastrointestinal Disorders in Children*, 152 J. Pediatrics 812, 812-16 (2008).

27 ¹⁷ R.K. Gast & C.W. Beard, *Production of Salmonella Enteritidis-Contaminated Eggs by*
Experimentally Infected Hens, 34 Avian Diseases 438, 438-46 (1990).

28 ¹⁸ A.L. Davis et al., *Validation of Cooking Methods Using Shell Eggs Inoculated with*
Salmonella Serotypes Enteritidis and Heidelberg, 87 Poultry Sci. 1637, 1637-42 (2008).

1 Because of the large numbers of animals in a typical industrial facility and the limited hands-on
2 husbandry, pathogens can infect tens of thousands of animals and still go undetected. *Salmonella*
3 enterica, for instance, can colonize the intestinal tract of birds without causing obvious disease,
4 although infected hen ovaries then transfer the organism to eggs.¹⁹ The frequency of
5 contamination with *Salmonella* enterica in eggs may be relatively low, but the large number of
6 eggs produced in the United States each year—65 billion—means that contaminated eggs
7 represent a significant source for human exposure.²⁰ The 2010 multistate outbreak of *Salmonella*
8 underscored this point, as it led to the largest egg recall in history—550 million eggs.²¹

9 II. Eggs from Caged Hens Present an Increased Risk of *Salmonella* Poisoning

10 Eggs from hens that are raised in battery cages present serious risks of *Salmonella*
11 contamination. Inhumane treatment of egg-laying hens in battery cages often overlaps with
12 unsanitary conditions in industrial egg production facilities that, together, exacerbate
13 contamination. Pathogens not only spawn in facilities that use battery cages, but spread and
14 thrive in those conditions, thus increasing public health risk.

15 A. Risk of *Salmonella* is Closely Tied to the Use of Battery Cages.

16 Caged hens have consistently presented a higher risk of *Salmonella* than cage-free hens,
17 indicating a strong connection between cages and pathogen contamination.²² The European Food
18 Safety Authority (EFSA)—using the best available data set comparing *Salmonella* infection risk
19 between different hen housing systems—found, without exception, significantly higher
20

21 ¹⁹ Pew Comm'n on Indus. Farm Animal Prod., *Putting Meat on the Table: Industrial Farm*
22 *Animal Production in America* 13 (2008), available at
23 http://www.ncifap.org/_images/PCIFAPFin.pdf (citing S. Suzuki, *Pathogenicity of Salmonella*
Enteritidis in Poultry, 21 *Int. J. Food Microbiology* 89, 89-105 (1994)).

24 ²⁰ *Id.*

25 ²¹ CDC, *Multistate Outbreak of Human Salmonella Enteritidis Infections Associated with Shell*
26 *Eggs (Final Update)*, www.cdc.gov/salmonella/enteritidis/ (last updated Dec. 2, 2012); Dan
27 Flynn, *Egg Recall Grows to 550 Million*, *Food Safety News* (Aug. 21, 2010),
28 [http://www.foodsafetynews.com/2010/08/egg-recalls-grow-to-560-million-second-iowa-](http://www.foodsafetynews.com/2010/08/egg-recalls-grow-to-560-million-second-iowa-producer-involved/)
[producer-involved/](http://www.foodsafetynews.com/2010/08/egg-recalls-grow-to-560-million-second-iowa-producer-involved/).

²² Humane Soc'y of the U.S. (HSUS), *Cage Confinement of Laying Hens Increases Salmonella*
Risk, http://www.humanesociety.org/issues/confinement_farm/facts/salmonella.html (last visited
June 10, 2014).

1 *Salmonella* rates among caged hens for every *Salmonella* serotype grouping reported and for
 2 every type of production system examined.²³ EFSA’s analysis indicated that, compared with
 3 cage production, the odds of *Salmonella* Enteritidis contamination were 43% lower in cage-free
 4 production, 95% lower in organic egg production, and 98% lower in free-range production.²⁴ For
 5 *Salmonella* Typhimurium, the second most common source of *Salmonella* poisoning in the
 6 United States,²⁵ odds of contamination were 77% lower when hens were raised in barns
 7 compared to cages and 93% lower in organic and free-range systems.²⁶ For the other *Salmonella*
 8 serotypes, the odds of contamination were 96% lower in barn-raised flocks, 98% lower in
 9 organic flocks, and 99% lower in free-ranging birds as compared to cage facilities.²⁷ Thus, the
 10 odds of contamination are at least twenty five-times greater at egg production facilities that
 11 confine hens in cages compared to those that use cage-free production methods. The EFSA
 12 analysis expressly concluded that “[c]age flock holdings are more likely to be contaminated with
 13 *Salmonella*.”²⁸

14 Since this comprehensive survey was completed, at least sixteen scientific studies
 15 comparing *Salmonella* risk in caged and cage-free egg production facilities have found higher
 16 rates of *Salmonella* in cage production units.²⁹ Even industry acknowledges that the risk is
 17 greater. Simply put, as in the 2010 article “*Salmonella* Thrives in Cage Housing,” in the trade
 18 publication *World Poultry*: “the majority of the studies clearly indicate that a cage housing
 19 system has an increased risk of being *Salmonella*-positive in comparison to non-cage housing
 20

21 ²³ European Food Safety Auth. (EFSA), *Report of the Task Force on Zoonoses Data Collection*
 22 *on the Analysis of the Baseline Study on the Prevalence of Salmonella in Holdings of Laying Hen*
 23 *Flocks of Gallus gallus*, EFSA J. 97 (2007), available at
<http://www.efsa.europa.eu/en/efsajournal/doc/97r.pdf>.

24 ²⁴ *Id.*

25 ²⁵ CDC, *Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted*
 26 *Commonly Through Food—10 States, United States, 2009*, 59 *Morbidity & Mortality Weekly*
 27 *418*, 418-422 (2010), available at
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5914a2.htm>.

28 ²⁶ EFSA, *supra* note 23.

29 ²⁷ *Id.*

²⁸ *Id.* at 46.

²⁹ HSUS, *supra* note 22.

1 systems.”³⁰ Cage-free hens experimentally infected with *Salmonella* may even clear the infection
2 faster than caged hens.³¹

3 B. Conditions in Industrial Egg Production Facilities Exacerbate the
4 Increased Risk of Eggborne Illness Caused by the Use of Battery Cages.

5 Industrial egg production facilities use many practices in conjunction with battery cages
6 that can exacerbate the risks that battery cages pose to consumer health. Together, these practices
7 create stressful conditions that cause hens to shed bacteria they may be harboring, and an
8 unsanitary environment that causes these bacteria to spread. For example, excessive use of
9 antimicrobial feed additives and non-therapeutic antibiotics—common at industrial egg
10 production facilities—contributes to the emergence of resistant strains of pathogens. In turn,
11 resistant bacteria proliferate and spread among animals that are then introduced into the food
12 supply, which directly impacts public health. CDC recently recognized that “there are specific
13 situations in which the widespread use of antimicrobials in agriculture has resulted in an increase
14 in resistant infections in humans.”³² In fact, six antibiotic-resistant microorganisms have been
15 linked to foodborne illness.³³

16 Hens at industrial egg production facilities are often kept under unsanitary and inhumane
17 conditions. Defendant-Intervenor the Humane Society of the United States (HSUS) has
18 conducted numerous undercover investigations at battery cage facilities, documenting that hens
19 are often confined in overcrowded cages with the rotting corpses of other birds or birds suffering
20 bloody injuries, covered in feces from birds in overhead cages, and prone to drown in manure
21 trenches that run underneath the cages and into pipes leading to outside lagoons.³⁴ Decaying
22

23 ³⁰ Jeroen Dewulf, *Salmonella Thrives in Cage Housing*, 25 *World Poultry* 18, 18-19 (2010),
24 available at <http://www.worldpoultry.net/Breeders/General/2010/5/Salmonella-thrives-in-cage-housing-WP007481W/>.

25 ³¹ J. De Vylder et al., *Effect of the Housing System on Shedding and Colonization of Gut and*
26 *Internal Organs of Laying Hens with Salmonella Enteritidis*, 88 *Poultry Sci.* 2491, 2494-95
(2009).

27 ³² Lydia Zuraw, *CDC Acknowledges Role of Farms in Antibiotic Resistance*, *Food Safety News*
(Sept. 17, 2013), www.foodsafetynews.com/2013/09/drug-resistant-infections/.

28 ³³ *Id.*

³⁴ HSUS, *Undercover at the Largest U.S. Egg Producer* (2010), available at

1 dead hens are customarily left in cages and on cage ledges and tops, often in direct contact with
 2 live hens and eggs.³⁵ A 2009 undercover investigation at one of the largest egg suppliers in the
 3 United States revealed mummified bird corpses disintegrating in cages with live birds, and eggs
 4 rolling over rotting carcasses.³⁶ In 2010, HSUS conducted an undercover investigation that
 5 revealed hens and eggs in a battery cage operation exposed to dead birds, manure, and blood in
 6 their cages.³⁷ That same year, FDA called for a nationwide egg recall when eggs from an Ohio
 7 plant tested positive for *Salmonella*,³⁸ and similar conditions that FDA documented at an Iowa
 8 egg processing plant led to one of the largest egg recalls in United States history.³⁹ In fact, the
 9 Iowa facility's food safety violations were so egregious that the operators pleaded guilty to
 10 criminal charges and agreed to a \$6.8 million fine.⁴⁰

11 When animals are not only exposed to feces and decaying carcasses but live in and
 12 among them, the risk of contamination with pathogens is dire. Exposure to feces is particularly
 13 problematic given that *Salmonella* can survive for more than two years in dried chicken feces.⁴¹
 14 Cages are notoriously difficult to clean and disinfect; even the "gold standard" treatment of
 15 saturating cages with formaldehyde-laden steam for 24 consecutive hours at more than 140
 16
 17

18 http://www.humanesociety.org/assets/pdfs/farm/cal-maine_investigation_report.pdf.

19 ³⁵ *Id.*

20 ³⁶ Compassion Over Killing, *Dunkin' Donuts' Egg Supplier Exposed!*,
<http://dunkincruelty.com/investigation> (last visited June 10, 2014).

21 ³⁷ HSUS, *supra* note 34.

22 ³⁸ *Id.*

23 ³⁹ Letter from John W. Thorsky, FDA Dist. Dir., to Austin Decoster, Owner, Quality Egg LLC
 (Oct. 15, 2010), *available at*
<http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/2010/ucm229805.htm>;
 Associated Press, *Recall Expands to More Than Half a Billion Eggs*, NBCNews.com,
http://www.nbcnews.com/id/38741401/ns/health-food_safety/t/recall-expands-more-half-billion-eggs/
 (last updated Aug. 20, 2010).

25 ⁴⁰ Letter from Kevin W. Techau, U.S. Attorney, to Hon. Leonard T. Strand, Magistrate Judge,
 26 *United States v. Quality Egg, LLC*, No. 14-CR-3024-MWB (N.D. Iowa, June 2, 2014), ECF No.
 15.

27 ⁴¹ R.H. Davies & M. Breslin, *Persistence of Salmonella Enteritidis Phage Type 4 in the*
 28 *Environment and Arthropod Vectors on an Empty Free-Range Chicken Farm*, 5 *Env'tl*
Microbiology 79, 79-84 (2003).

1 degrees Fahrenheit may not effectively disinfect battery cage sheds.⁴² Some operations do not
 2 even attempt to disinfect cages or clear manure pits between flocks.⁴³ This compounds the
 3 problem, as flocks are replaced annually.⁴⁴ Battery cage operations also create more rodent and
 4 insect disease vectors than cage-free counterparts.⁴⁵ Manure pits attract disease-carrying rodents,
 5 flies, and other pests that are closely tied to *Salmonella* rates, which can nest in the pits without
 6 interference from confined birds.⁴⁶ As a result, these pests exist in greater abundance and become
 7 more of a nuisance in egg production facilities that use battery cages.⁴⁷

8 Studies link the use of slaughterhouse waste such as “spent hen meal” to *Salmonella*
 9 outbreaks. Spent hen meal consists of the rendered parts of slaughtered hens, which are fed back
 10 to other hens. In 1995, FDA tests revealed that over half the samples of feed that contained
 11 slaughterhouse waste were contaminated with *Salmonella*,⁴⁸ and numerous human *Salmonella*
 12 outbreaks have been specifically tied to feeding farm animals contaminated meat and bone
 13

14 ⁴² K.O. Gradel, *Disinfection of Salmonella in Poultry Houses* (Feb. 2004) (unpublished Ph.D.
 15 thesis, University of Bristol Department of Clinical Veterinary Science), available at
 16 [http://kimorengradel.com/Disinfection%20of%20Salmonella%20in%20poultry%20houses_27-](http://kimorengradel.com/Disinfection%20of%20Salmonella%20in%20poultry%20houses_27-4.pdf)
 17 [4.pdf](http://kimorengradel.com/Disinfection%20of%20Salmonella%20in%20poultry%20houses_27-4.pdf); K.O. Gradel et al., *Monitoring the Efficacy of Steam and Formaldehyde Treatment of*
 18 *Naturally Salmonella-Infected Layer Houses*, 96 J. of Applied Microbiology 613, 613-22 (2004),
 19 available at onlinelibrary.wiley.com/doi/10.1111/j.1365-2672.2004.02198.x/pdf.

20 ⁴³ See S. Van Hoorebeke et al., *Determination of the Within and Between Flock Prevalence and*
 21 *Identification of Risk Factors for Salmonella Infections in Laying Hen Flocks Housed in*
 22 *Conventional and Alternative Systems*, 94 J. Preventive Vet. Med. 94, 99 (2010).

23 ⁴⁴ Veronica Hirsch, *Legal Protections of the Domestic Chicken in the United States and Europe*,
 24 *Animal Legal & Historical Ctr.* (2003), <http://www.animallaw.info/articles/dduschick.htm#2D>
 25 (“A laying hen will lay about 300 eggs during her economic lifespan of about one year, after
 26 which she will usually be slaughtered.”).

27 ⁴⁵ EFSA, *supra* note 23.

28 ⁴⁶ See J.J. Carrique-Mas & R.H. Davies, *Salmonella Enteritidis in Commercial Layer Flocks in*
 29 *Europe: Legislative Background, On-farm Sampling and Main Challenges*, 10 *Brazilian J. of*
 30 *Poultry Sci.* 1, 1-9 (2008); R.H. Davies, *Pathogen Populations on Poultry Farms*, in *Food Safety*
 31 *Control in the Poultry Industry* 122 (G.C. Mead, ed., 2005).

32 ⁴⁷ See A.R. Olsen & T.S. Hammack, *Isolation of Salmonella spp. from the Housefly, Musca*
 33 *domestica L., and the Dump fly, Hydrotaea aenescens (Wiedemann) (Diptera: Muscidae), at*
 34 *Caged-layer Houses*, 63 J. of Food Protection 958, 958-60 (2000); R.C. Axtell & J.J. Arends,
 35 *Ecology and Management of Arthropod Pests of Poultry*, 35 *Annual Review of Entomology* 101,
 36 101-26 (1990).

37 ⁴⁸ D.G. McChesney et al., *FDA Survey Determines Salmonella Contamination*, 67 *Feedstuffs*
 38 20, 20-23 (1995).

1 meal.⁴⁹ This practice has been implicated in the worldwide spread of *Salmonella* along with
 2 other cost-cutting practices that are commonplace in industrial animal production, such as forced
 3 starvation molting.⁵⁰ Hens raised in incubators and confined in barren wire cages also lack
 4 natural gut flora that help prevent *Salmonella* infection, which chicks normally obtain from their
 5 mothers or from being raised on bedding.⁵¹

6 Additionally, egg production facilities that use battery cages confine greater numbers of
 7 birds in a single building.⁵² A national USDA survey of the domestic egg industry found that
 8 sheds confining more than 100,000 birds were four times more likely to be contaminated with
 9 *Salmonella*.⁵³ Cage-free operations typically hold much fewer birds, while a single caged facility
 10 in the United States can cage millions of hens.⁵⁴ Such high densities of birds can produce a larger
 11 volume of contaminated airborne fecal dust.⁵⁵ USDA researchers have found that “[f]locks with
 12 high levels of manure contamination were [ten] times as likely to produce contaminated eggs as
 13 were flocks with low levels,” concluding that flocks with the highest levels of contamination
 14
 15

16
 17 ⁴⁹ *Id.*; W.A. Knox et al., *A Milk-Borne Outbreak of Food Poisoning Due to Salmonella*
 18 *Heidelberg*, 61 *J. of Hygiene* 175, 175-85 (1963); J.H. Pennington et al., *Salmonella Virchow in*
 19 *a Chicken-Packing Station and Associated Rearing Units*, 4 *British Med. J.* 804, 804-06 (1968).

20 ⁵⁰ Brian W. Sheldon, *Impact of Laying Hen Cycle and Molting on the Prevalence and*
 21 *Populations of Salmonella*, 4 *Zootechnica* 42, 42-55 (2008).

22 ⁵¹ F.B. Santos et al., *Influence of Housing System, Grain Type, and Particle Size on Salmonella*
 23 *Colonization and Shedding of Broilers Fed Triticale or Corn-Soybean Meal Diets*, 87 *Poultry*
 24 *Sci.* 405, 405-20 (2008); D. Reynolds, *Tenants of the Last 1.5 Metres*, 5 *Microbiologist* 26, 26-30
 25 (2004).

26 ⁵² See generally R.V. Tauxe, *Emerging Foodborne Pathogens*, 78 *Int’l J. of Food Microbiology*
 27 31, 31-41 (2002).

28 ⁵³ USDA, Animal & Plant Health Inspection Service, *Salmonella Enterica Serotype Enteritidis*
 in *Table Egg Layers in the U.S.* (Oct. 2000), available at
http://www.aphis.usda.gov/animal_health/nahms/poultry/downloads/layers99/Layers99_dr_Salmonella.pdf.

⁵⁴ See, e.g., Ohio Dep’t of Agric., *Livestock Environmental Permitting*,
http://www.agri.ohio.gov/apps/lepp_permits/dlep_permits.aspx (last visited May 30, 2014)
 (listing ten permits for egg production facilities with over one million hens).

⁵⁵ H. Namata et al., *Salmonella in Belgian Laying Hens: an Identification of Risk Factors*, 83
Preventive Veterinary Med. 323, 323-36 (2008); see also Michael Greger, *Bird Flu: A Virus of*
Our Own Hatching (2006), available at <http://www.birdflubook.org/a.php?id=70>.

1 “appeared to pose the greatest public health threat.”⁵⁶

2 Increased flock density is directly linked to an increased food safety risk. A key finding
 3 of a joint World Health Organization and Food and Agriculture Organization of the United
 4 Nations *Salmonella* risk assessment was that “[r]educing flock prevalence results in a directly
 5 proportional reduction in human health risk. For example, reducing flock prevalence from 50%
 6 to 25% results in a halving of the mean probability of illness per serving [of eggs].”⁵⁷ As
 7 mentioned above, infected hens can lay infected eggs. Of the nine published studies comparing
 8 *Salmonella* contamination rates between eggs from battery cage production versus cage-free
 9 systems, not a single one showed more *Salmonella* in cage-free eggs. All nine studies either
 10 found no *Salmonella* in eggs from either system or a trend towards higher infection rates in eggs
 11 from caged hens compared to barn-raised birds.⁵⁸

12 _____
 13 ⁵⁶ D.J. Henzler et al., *Management and Environmental Risk Factors for Salmonella Enteritidis*
Contamination of Eggs, 59 Am. J. of Veterinary Research 824, 824-29 (1998).

14 ⁵⁷ World Health Org. & the Food & Agric. Org. of the United Nations, *Risk Assessments of*
 15 *Salmonella in Eggs and Broiler Chickens* (2002), available at
 www.fao.org/DOCREP/005/Y4392E/Y4392E00.HTM.

16 ⁵⁸ J.L. Barnett, *Welfare and Productivity of Hens in a Barn System and Cages* (1998), Final
 Report to Rural Industries Research & Dev. Corp., available at
 http://sydney.edu.au/vetscience/apss/documents/1999/APSS1999-barnett-pp65-68.pdf; J.A.D.
 17 Barbosa Filho et al., *Egg Quality in Layers Housed in Different Production Systems and*
 18 *Submitted to Two Environmental Conditions*, 8 Brazilian J. of Poultry Sci. 23, 23-28 (2005);
 Food Safety Auth. of Ireland, *Bacteriological Safety of Eggs Produced Under the Bord Bia Egg*
 19 *Quality Assurance Scheme* (2003), available at
 www.fsai.ie/uploadedfiles/monitoring_and_enforcement/monitoring/surveillance/eggs_bacteriol
 20 ogical.pdf ; H. Kinde et al., *Salmonella Enteritidis, Phage Type 4 Infection in a Commercial*
 21 *Layer Flock in Southern California: Bacteriologic and Epidemiologic Findings*, 40 Avian
 Diseases 665, 665-71 (1996), available at
 www.birdflubook.org/resources/kinde_1996_AD_40_665.pdf; U.K. Food Standards Agency,
 22 *Report of the Survey of Salmonella Contamination of UK Produced Shell Eggs on Retail Sale*
 23 (Mar. 18, 2004), available at www.food.gov.uk/multimedia/pdfs/fsis5004report.pdf; C.L. Little
 et al., *Survey of Salmonella Contamination of Non-UK Produced Shell Eggs on Retail Sale in the*
 24 *North West of England and London. Final report*, (Nov. 15, 2006), available at
 http://multimedia.food.gov.uk/multimedia/pdfs/nonukeggsreport.pdf; C.L. Little et al., *Survey of*
 25 *Salmonella Contamination of Raw Shell Eggs Used in Food Service Premises in the United*
 26 *Kingdom, 2005 through 2006*, 71 J. of Food Protection 19, 19-26 (2008); T.J. Humphrey et al.,
 27 *Numbers of Salmonella Enteritidis in the Contents of Naturally Contaminated Hens’ Eggs*, 106
 Epidemiology & Infection 489, 489-96 (1991), available at
 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2271858/pdf/epid infect00027-0066.pdf;

28 D. Stepień-Pyśniak, *Occurrence of Gram-Negative Bacteria in Hens’ Eggs Depending on Their*
 CASE NO. 2:14-cv-00341-KJM-KJN
 PROPOSED AMICI CURIAE BR.

1 One recent study, conducted in 2010, reported that housing laying hens in conventional
 2 battery cages is a significant risk factor for *Salmonella* Enteritidis and/or Typhimurium, and that
 3 *Salmonella* shedding in caged flocks was more likely than in non-caged flocks.⁵⁹ The study
 4 attributed this to several factors, including larger hen flocks on cage farms, reusing cages without
 5 cleaning them between production rounds, the high density of animals, and low air quality due to
 6 indoor confinement.⁶⁰

7 These practices together result in more psychological stress to egg-laying hens, which is
 8 generally thought to render birds more susceptible to infectious disease.⁶¹ Stress hormones can
 9 increase *Salmonella* colonization and systemic spread in chickens.⁶² The stress hormone
 10 noradrenaline can boost the growth rate of *Salmonella* bacteria by orders of magnitude, and
 11 stress-related corticosteroids can impair the immune system.⁶³ Overall, flatly contrary to
 12 Plaintiffs' assertions, the use of battery cages in egg production is clearly connected to food
 13 safety and has serious and well-documented negative implications for public health.

14 **III. AB 1437 Serves a Legitimate State Interest**

15 Farm animal well-being and food safety are inextricably linked. Improvements in animal
 16 welfare of the kind required by AB 1437 improve food safety by reducing the effects of the
 17 combination factors described above, including stress-induced immunosuppression, infectious
 18

19 *Source and Storage Conditions*, 13 Polish J. of Veterinary Scis. 507, 507-13 (2010), available at
 20 www.birdflubook.org/resources/stepien-pysniak_2010_13_507.pdf.

21 ⁵⁹ S. Van Hoorebeke et al., *supra* note 43.

22 ⁶⁰ *Id.* at 99.

23 ⁶¹ See T. Humphrey, *Are Happy Chickens Safer Chickens? Poultry Welfare and Disease*
Susceptibility, 47 British Poultry Sci. 379, 379-91 (2006); A.M. de Passillé & J. Rushen, *Food*
 24 *Safety and Environmental Issues in Animal Welfare*, 24 Revue Scientifique et Technique de
 25 l'Office International des Epizooties 757, 757-66 (2005).

26 ⁶² U. Methner et al., *Effect of Norepinephrine on Colonisation and Systemic Spread of*
Salmonella Enterica in Infected Animals: Role of Catechol Siderophore Precursors and
 27 *Degradation Products*, 298 Int'l J. of Med. Microbiology 429, 429-39 (2008).

28 ⁶³ M.T. Bailey et al., *In Vivo Adaptation of Attenuated Salmonella Typhimurium*
Results in Increased Growth Upon Exposure to Norepinephrine, 67 Physiology & Behavior 359,
 359-64 (1999); S. Shini et al., *Biological Response of Chickens (Gallus gallus domesticus)*
Induced by Corticosterone and a Bacterial Endotoxin, 149 Comparative Biochemistry &
 Physiology Part B 324, 324-33 (2008).

1 disease incidence, pathogen shedding, and antibiotic use and resistance.⁶⁴

2 As a result, AB 1437 serves a legitimate state interest of protecting consumers from
 3 known and preventable causes of foodborne illness. AB 1437 explicitly recognizes the
 4 connection between battery cages and public health, and regulates the former in order to protect
 5 the latter. It is beyond question that protecting the public health is a legitimate state interest. *See*
 6 *Merrifield v. Lockyer*, 547 F.3d 978, 986 (9th Cir. 2008); *Chinatown Neighborhood Ass’n v.*
 7 *Harris*, No. 12-cv-03759-WHO, 2014 U.S. Dist. LEXIS 40432, *23 (N.D. Cal. Mar. 25, 2014);
 8 *see also Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 144 (1963) (“[T]he
 9 supervision of the readying of foodstuffs for market has always been deemed a matter of
 10 peculiarly local concern.”). Despite Plaintiffs’ claims that AB 1437 was economically motivated,
 11 the fact remains that in terms of potential *Salmonella* contamination, eggs from caged hens are
 12 simply more dangerous than their cage-free counterparts. *Cf. Sporhase v. Neb.*, 458 U.S. 941,
 13 956 (1982) (stating that state regulation of “a vital resource” such as water “for the purpose of
 14 protecting the health of its citizens—and not simply the health of its economy—is at the core of
 15 [a state’s] police power”).

16 Prohibiting the sale of eggs from caged hens within California has the effect of making
 17 our food supply safer by ensuring that California consumers are not unnecessarily exposed to
 18 eggs that carry an increased risk of contamination. The studies upon which AB 1437 was based
 19 support this conclusion. The Pew Commission on Industrial Farm Animal Production detailed
 20 the link between animal and human health, noting many of the factors described above.⁶⁵ The
 21 *Salmonella* Risk Assessment conducted by the World Health Organization and Food and
 22 Agricultural Organization of the United Nations found that reducing the prevalence of
 23 *Salmonella* pathogens within a flock lessens consumers’ risk of contracting *Salmonella*
 24 poisoning.⁶⁶ In addition to these studies, the best available science suggests that cage-free
 25 operations increase the safety of the American food supply. Because egg production facilities

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 27 ⁶⁴ A.M. de Passillé, *supra* note 61.

28 ⁶⁵ Pew Comm’n on Indus. Farm Animal Prod., *supra* note 19.

⁶⁶ World Health Org. & the Food & Agric. Org. of the United Nations, *supra* note 57.

1 that use battery cages present a more serious risk of *Salmonella* contamination, prohibiting the
2 use of cages translates directly into safer food for consumers.

3 **IV. AB 1437 Serves as a Complement Rather than an Obstacle to Federal Food**
4 **Safety Regulation**

5 AB 1437 is not preempted by federal law. To the contrary, it directly supports the
6 objectives of federal regulation of our food supply. *See McDaniel v. Wells Fargo Invs., LLC*, 717
7 F.3d 668, 674 (9th Cir. 2013) (explaining standard for obstacle preemption); *Williamson v.*
8 *Mazda Motor of Am., Inc.*, 131 S. Ct. 1131, 1139-40 (2011) (holding state statute did not stand as
9 obstacle to federal regulation). The Egg Products Inspection Act (EPIA) unambiguously allows
10 states to exercise their jurisdiction to prevent the distribution of any eggs or egg products for
11 human consumption that are in violation of federal law. 21 U.S.C. § 1052(b) (“[A]ny State or
12 local jurisdiction may exercise jurisdiction with respect to eggs and egg products for the purpose
13 of preventing the distribution for human food purposes of any such articles which are . . . in
14 violation of any of said Federal Acts or any State or local law consistent therewith.”). Eggs
15 contaminated with *Salmonella* are adulterated under the Federal Food, Drug, and Cosmetic Act
16 (FFDCA), *see id.* § 342(a)(4)-(5), bringing them squarely within the type of state regulation that
17 the EPIA permits.

18 Moreover, FDA has delegated authority to the states to pass laws that further reduce
19 *Salmonella* contamination in shell eggs as long as the laws are “consistent with” the FFDCA. *Id.*
20 § 1052(b). These laws are not preempted as long as they are more stringent than the federal
21 standards. Prevention of *Salmonella* Enteritidis in Shell Eggs During Production, Storage, and
22 Transportation, 74 Fed. Reg. 33030, 33091 (July 9, 2009) (regulations are only “minimal
23 national prevention measures” and “do not preempt . . . more stringent [state] requirements”); *see*
24 *also* 21 C.F.R. § 118.12(d) (prohibiting only *Salmonella*-related state regulations that are “less
25 stringent” than FDA regulations).

26 It is thus well within the states’ jurisdiction to adopt regulations aimed at keeping
27 contaminated eggs out of the food supply.

CONCLUSION

The use of battery cages in egg production creates a serious but preventable risk to the health of California consumers. AB 1437 addresses this risk and therefore protects consumers by prohibiting the conditions that cause foodborne illness pathogens to proliferate. In doing so, AB 1437 serves a legitimate state interest and complements federal food safety regulation.

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Respectfully submitted,

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