INTRODUCTION

Red junglefowl, the wild ancestor of domesticated chickens, live in small flocks, but a typical cage-free poultry house holds 20,000 or more birds. As of 2013, around 172 egg-producing companies had approximately 95% of all “layers” in the United States.

From May through November 2010, nearly 2000 people reportedly became ill with Salmonella enteriditis poisoning attributed to shell eggs. The actual number of illnesses was almost certainly much greater, as many illnesses are not reported. When the Salmonella was traced back to two Iowa egg producers, the resulting recall was one of the largest egg recalls on record—over half a billion eggs were subject to the recall. What’s a consumer to do? “[T]reat eggs with the assumption that they’re contaminated with salmonella,” according to Carol Tucker Foreman, a

* Professor of Law, William Mitchell College of Law. Neil Pederson, William Mitchell College of Law class of 2015, provided invaluable research assistance even as he was establishing his own flock of backyard chickens. I would like to thank participants of the Regent Law Review 2013 Symposium for their excellent insight and comments, and the staff and editors of the Law Review for their flexibility, patience, and insight. All of the mistakes and weaknesses are mine.


3 Egg Industry Fact Sheet, AM. EGG BOARD, http://www.aeb.org/egg-industry/industry-facts/egg-industry-facts-sheet (last updated Oct. 29, 2013). Note that the 172 producers were those with flocks of over 75,000 birds. Id.


5 William Neuman, Growing Concern About Tainted Eggs as Millions More Are Recalled, N.Y. TIMES, Aug. 21, 2010, at B1. There were actually 3 recalls: an initial Wright County Egg recall, an expanded Wright County Egg recall, and the Hillandale Farms recall. Id.
food safety expert for the Consumer Federation of America, as reported in a 2010 New York Times article.\textsuperscript{6}

As consumers, we probably share common values around food. Food should not poison us. It should be wholesome and nutritious. Its production should not cause undue harm to the environment, workers, or animals. And we as consumers should have a way of knowing how our food was produced. All of these issues come together in the henhouse and on the egg carton. While the main focus for many consumers is food safety, in the case of eggs, preventing \textit{Salmonella} also tends to improve the lot of the hens involved. Moreover, the consumers who think about egg-laying hens at all prefer to think the hens are living acceptable lives.\textsuperscript{7} Thus consumers have three main interests regarding eggs: (1) that the eggs be safe, (2) that the hens be treated well, and (3) that the label information reports accurately on the first two.

This Article explores these consumer interests. Part I provides a brief background on \textit{Salmonella enteriditis} in eggs and general food safety hazards for eggs. Part II outlines regulatory efforts to prevent \textit{Salmonella} contamination and provide for animal welfare, pointing out that there is virtually no legislation or regulation protecting the welfare of egg-laying hens. Part III turns to consumer and industry measures for improving the welfare of egg-laying hens. Finally, Part IV describes the mismatch between consumer expectations and preferences on the one hand and egg production and labeling on the other. The Article concludes that even with the most recent developments in hen welfare and regulation, consumers are probably not getting what they want.

\section{I. Cookie Dough Is Dangerous Because of Eggs—Salmonella in Eggs and Flocks.}

Most of us have been scolded at some point for eating raw cookie dough. Raw cookie dough contains raw egg, which could be contaminated with \textit{Salmonella}.\textsuperscript{8} This Part discusses the incidence of \textit{Salmonella} and

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\textsuperscript{6} Id.


\textsuperscript{8} The author would like to point out that flaxseed meal mixed with water makes a fine substitute for the eggs in cookie dough recipes. See Cory Ramey, \textit{Replacing Eggs

briefly visits the ways in which regulation tries to prevent or minimize Salmonella contamination. To do so it asks, does the Salmonella begin with the chicken? Or does it begin with the egg?

Salmonella is dangerous and common and therefore one of the most common causes of foodborne illness. Symptoms include an unpleasant combination of diarrhea, fever, headaches, vomiting, and more. And while most people get better, not everyone does. Salmonella infections can be fatal. As noted above, the seven-month period from May through November 2010 saw almost 2000 reported cases of Salmonella enteritidis infections that were associated with contaminated shell eggs, according to the Centers for Disease Control and Prevention. But eggs are not the only source of Salmonella infection. People can also contract Salmonella infections from consuming undercooked contaminated chicken, as well as handling diseased chickens or pet turtles and hedgehogs.

Salmonella is an “enteric” disease, which means that it infects the intestines of people and animals. So how do eggs become contaminated?


9 In this Article, the word “hen” refers to female egg layers (which are also referred to at times as “layers”), while “chicken” is used more broadly to include broilers, pets, or other fowl where the ability to lay eggs is not paramount.

10 Elaine Scallan et al., Foodborne Illness Acquired in the United States—Major Pathogens, 17 EMERGING INFECTIOUS DISEASES 7, 7 (2011); see also CDC, FOOD SAFETY PROGRESS REPORT FOR 2012 (2012), available at http://www.cdc.gov/features/dsfoodnet2012/food-safety-progress-report-2012-508c.pdf. For 2012, Salmonella infection appears to be one of the most common foodborne disease agents, with Campylobacter following close behind and increasing. Id.


12 Salmonella accounts for almost one-third of foodborne-illness related deaths each year. Scallan et al., supra note 10, at 7.

13 Multistate Outbreak, supra note 4.


15 See Hammack, supra note 4, at 13–14. According to the FDA’s Bad Bug Book, there are two main species of the Salmonella genus that cause harm to humans. These two...
When non-animal foods such as fruits and vegetables cause *Salmonella* poisoning, it is obvious that the *Salmonella* got into or onto the food through improper handling or perhaps while the plants were still in the field before being harvested. But eggs come from hens who themselves may be infected. *Salmonella* can get into the egg before the egg is laid, in which case the contamination is not just a result of improper handling or storage, nor is it necessarily the result of unsanitary chicken houses. While we used to believe that *Salmonella* was always an external contaminant passed from an affected chicken to the egg as it was laid, we now know that the *Salmonella* may start in the chicken and get into the egg as the shell is forming. This means that an infected chicken can lay contaminated eggs, and no amount of cleaning on the outside of the shell can possibly remove the contamination. Any plan to ensure safe eggs, then, must include keeping hens healthy.

II. FOOD SAFETY AND SALMONELLA REGULATION—WHICH COMES FIRST?

**CHICKEN REGULATION OR EGG REGULATION?**

Federal and state regulations have addressed the egg *Salmonella* problem with hen-related rules and egg-handling and processing rules. These regulations have had some effects. Food regulation falls into a small number of categories. While consumers are likely to have concerns about price and animal welfare, federal regulation of food animals tends to focus on food safety and maintaining healthy herds and flocks. Ensuring that food is safe to eat is a matter of public health and safety. States can regulate food safety issues within their boundaries under

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species are further divided into subspecies and serotypes. This Article will simply use the term “Salmonella” for any and all of them; this Article’s focus is on hens and egg production rather than the differences among variants of *Salmonella*. Id. at 12.


18 Sandra B. Eskin, *Putting All Your Eggs in One Basket: Egg Safety and the Case for a Single Food-Safety Agency*, 59 FOOD & DRUG L.J. 441, 445 (2004). Compare Kenneth D. Quist, *Salmonellosis in Poultry*, 78 PUB. HEALTH REP. 1071, 1072 (1963) (stating that although “Salmonellae in bulk egg products have been generally attributed to contamination from the eggshells during breaking operations,” others have “suggest[ed] that the chief source of salmonellae may be from within the egg”), with Gantois et al., * supra* note 17, at 719 (describing two different routes for *Salmonella* to contaminate an egg including contamination while still within a chicken’s reproductive organs).


21 See *infra* Part II.B.
their police powers, but Congress has authority to regulate food safety and animal health under the Commerce Clause of the United States Constitution. Much regulation related to chickens and eggs falls into the latter category.

While consumer protection regulation can focus on safety, it can also focus on the free market. Consequently, consumer protection regulation that helps assure consumers that they get what they pay for is fairly common in the food context. Most labeling rules fall into this category and some of the earliest food laws were aimed at preventing food fraud.

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25 See, e.g., Fed. Sec. Adm’r v. Quaker Oats Co., 318 U.S. 218, 232 (1943) (“The legislative history of the [Federal Food, Drug and Cosmetic Act] manifests the purpose of Congress . . . to give to consumers . . . what they may reasonably expect to receive.”); United States v. Lane Labs-USA Inc., 427 F.3d 219, 227 (3d Cir. 2005) (“Such a mandate [in the Federal Food, Drug and Cosmetic Act] protects not only the public’s health, but also its economic interest in purchasing products that are what they claim to be.”); Armour & Co. v. Ball, 468 F.2d 76, 81 (6th Cir. 1972) (“[O]nly purpose of the Wholesome Meat Act is to empower the Secretary to adopt definitions and standards of identity or composition so that the ‘integrity’ of meat food products could be effectively maintained.”).


Interestingly, both food safety regulation and consumer fraud prevention are also good for industry as a whole. When consumers believe that a type of food is unsafe, all producers suffer. For example, when *E. coli* in bagged spinach caused a deadly outbreak in 2006, all bagged produce sales declined. The market for all spinach declined as well, causing significant economic damage to the spinach industry. The result was an industry-wide effort to prevent further such events and to reassure consumers. Since the outbreak, 99% of California leafy green producers, which produce a significant proportion of total U.S. leafy greens, operate under a voluntary marketing agreement called the Leafy Greens Marketing Agreement. The agreement imposes food safety standards and inspections on producers who choose to participate.

Regulation of poultry operations is no exception. Before there was actual federal regulation of laying hens, there was industry self-regulation, and joint industry-government regulation.

Finally, some food-related regulation is not aimed at food safety or consumer fraud, but at other issues of interest to consumers, such as animal welfare, or of interest to producers, such as preventing loss of a valuable resource (in this case, a flock). To some extent, animal welfare concerns and healthy flock concerns overlap. This is not surprising; any rule that increases consumer trust should be beneficial for producers,

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29 See sources cited supra note 28.


31 The participants represent the largest leafy green growers in California. See id.; see also Marketing Agreement, Cal. Dep’t of Food & Agric., California Leafy Green Products Handler Marketing Agreement (Mar. 5, 2008), available at http://www.caleafygreens.ca.gov/sites/default/files/LGMA%20marketing%20agreement%2003.08.pdf.


33 See infra Part III.


and this is as true of food-related legislation and regulation as for any other. In the case of eggs, regulation is mostly about protecting flocks from disease. While this may seem like a food safety or animal welfare issue, the original impetus was actually preservation of flocks—a concern for animal welfare per se had little to do with it.

Numerous regulatory agencies are involved at different levels: The United States Department of Agriculture (“USDA”), Food and Drug Administration (“FDA”), state and local agencies, and industry itself all have roles in regulating eggs and poultry. These intersecting purposes and the multitude of agencies can make the egg and chicken regulatory landscape seem as intractable as the chicken and egg question.

A. On Farm Regulation

Let us begin with the chicken (setting aside for the moment the question of which came first). Chickens on the farm are raised under the surveillance of the USDA, in particular, by the Animal and Plant Health Inspection Service (“APHIS”). Actual regulations are few, however. The National Poultry Improvement Plan (“NPIP”) is a joint effort of state agriculture departments, industry, and APHIS. The goal of this effort is to prevent Salmonella and other diseases from destroying commercial flocks. In that sense it is very much an industry-favorable program aimed at maintaining the industry. Let’s look at the features of NPIP.

Almost a century ago, in the 1930s, there were problems with Salmonella pullorum, a strain of Salmonella lethal to chicks. In some

36 See id.
38 Boyd, supra note 34, at 640 (explaining that food safety was not the main purpose for passing regulations because the fear was loss of flocks, not contaminated food products).
40 9 C.F.R. § 145.1–2.
41 See, e.g., Animal Welfare Act, 7 U.S.C § 2132(g) (2012) (defining “animal” to exclude poultry).
42 9 C.F.R. § 145.1–3.
43 For an example of how a state has incorporated the NPIP into its own statutes, see MINN. R. 1520.5200–7200 (2009).
44 Boyd, supra note 34, at 640 & n.28.
cases 80 percent of an infected flock would be wiped out.\textsuperscript{45} The NPIP was developed to fight this dangerous pathogen by ensuring healthy flocks.\textsuperscript{46} Chicks are not food, so the \textit{Salmonella} at issue would not have affected food safety unless the few chicks that survived remained infected and were introduced into the food supply or produced contaminated eggs. Rather, saving these flocks was necessary to keep the poultry and egg industries healthy. Participation in NPIP was (and is) voluntary, but it is all or nothing—if one part of an operation participates, the whole operation must participate.\textsuperscript{47} Participants earn the right to use a logo on their products to show compliance with the program.\textsuperscript{48} The program generally requires that all chicks come from participating hatcheries and that they be kept in sanitary conditions.\textsuperscript{49} What are sanitary conditions in a henhouse? The walls, ceilings, and floors of the rooms where eggs are kept before hatching have to be cleaned and disinfected twice a week, as does certain equipment.\textsuperscript{50} In addition, the eggs are inspected to make sure that they are “reasonably uniform in shape.”\textsuperscript{51} The objective is to prevent the pathogen from entering the henhouse, and to monitor frequently to detect its presence.\textsuperscript{52}

Disease-free chicks are the starting point. Strictly maintaining a clean environment is the next phase, and this means preventing people or animals from bringing in disease.\textsuperscript{53} Finally, the environment is tested.\textsuperscript{54} When pathogens are found in the environment, say in the

\textsuperscript{45} \textsc{Animal and Plant Health Inspection Serv., U.S. Dep't of Agric., Program Aid No. 1708, Helping You, the Poultry Breeder, Prevent Disease}, (rev. ed. 2009), available at \url{http://www.aphis.usda.gov/publications/animal_health/content/printable_version/HelpingYouPoultryBreeder-PA1708-FinalJuly09.pdf}.


\textsuperscript{47} 9 C.F.R. §§ 145.3, 146.3. Moreover, if a person is “responsibly connected” (for example, a partner, officer, or director) with more than one hatchery, then all such hatcheries must participate or none will be certified. \textit{Id.} § 145.6(f).

\textsuperscript{48} \textit{Id.} § 145.10. There are several logos, which are specific to the various diseases for which monitoring may be undertaken. See, e.g., \textit{id.} § 145.10(o) (displaying a picture of the “U.S. Salmonella monitored” logo).

\textsuperscript{49} See \textit{id.} §§ 145.3(c), 145.5, 147.21–22.

\textsuperscript{50} \textit{Id.} § 145.6(a)(1).

\textsuperscript{51} \textit{Id.} § 145.6(d).

\textsuperscript{52} See \textit{id.} § 145.6; Boyd, supra note 34, at 640–41. Facilities must keep records and they are audited at least annually. If a state inspector determines that there has been a breach of sanitation, then more extensive testing is done to try to detect pathogens before they do much damage. 9 C.F.R. § 145.12. In addition, for hatcheries that produce layers, additional requirements apply, such as feed requirements and blood tests. \textit{See id.} § 145.73(d).

\textsuperscript{53} \textit{See id.} § 147.24(c). We will return to this when we consider free range hens.

\textsuperscript{54} \textit{Id.} § 147.12.
bedding in the henhouse, a sample of birds must undergo testing.\textsuperscript{55} Since some diseases might not make the adult birds appear sick, blood tests may be needed.\textsuperscript{56} If there is even one positive for \textit{Salmonella enteritidis} out of a sample of 30 or 60 birds, the whole flock is disqualified.\textsuperscript{57} Accordingly, the program encourages producers to do everything possible to eliminate disease by carefully ensuring that none gets started. Record-keeping and annual audits round out the picture.\textsuperscript{58} This is expensive. And none of this applies to smaller flocks or to farmers who sell all of their eggs directly to consumers and choose not to participate in NPIP.\textsuperscript{59}

NPIP, as we noted, is a joint program of the poultry industry and APHIS.\textsuperscript{60} APHIS is not a food agency, however.\textsuperscript{61} Rather, APHIS has a broad general mission: “to protect the health and value of American agriculture and natural resources.”\textsuperscript{62} For example, APHIS is charged with administering the Animal Welfare Act of 1966,\textsuperscript{63} the mission of which is “to insure that animals intended for use in research facilities or for exhibition purposes or for use as pets are provided humane care and treatment” because Congress found that such animals “are either in interstate or foreign commerce or substantially affect such commerce or

\textsuperscript{55} See id. § 147.10, .12(a)(1).

\textsuperscript{56} Id. § 145.15 (demonstrating that NPIP is not only aimed at \textit{Salmonella}).

\textsuperscript{57} Id. § 145.73(d)(2). The regulation allows for a second test if there was initially only one positive, and if there are no positives following the second test, then the flock is not disqualified. Id.

\textsuperscript{58} Id. § 146.11.

\textsuperscript{59} See supra note 47 and accompanying text.

\textsuperscript{60} Animal Health: Poultry Disease Information, Animal & Plant Health Inspection Service, U.S. DEP’T OF AGRIC., http://www.aphis.usda.gov/animal_health/animal_dis_spec/poultry/ (follow “Avian” hyperlink) (last updated Feb. 7, 2014) (“The National Poultry Improvement Plan was established in the early 1930’s to provide a cooperative industry, state, and federal program through which new diagnostic technology can be effectively applied to the improvement of poultry and poultry products throughout the country.”); see also 9 C.F.R. §§ 145.1–.3.


the free flow thereof.”64 For purposes of the Animal Welfare Act, the term “animal” excludes “farm animals, such as, but not limited to livestock or poultry.”65 So chickens are not animals under this legislation, and the legislation does not apply to them.66 The second federal statute governing animal welfare is the Humane Methods of Slaughter Act67 which amended the Federal Meat Inspection Act,68 enforced by the Food Safety and Inspection Service, another arm of the USDA.69 This statute also does not apply to chickens.70 In any event, this legislation kicks in at slaughter and not on the farm.

Finally, the Animal Health Protection Act does apply to chickens,71 In fact, it applies to all animals, even those raised for food, and even poultry, but it operates primarily by creating authority to order destruction or quarantine of animals and disinfection of equipment and living quarters.72 It does not actually impose requirements on how animals are raised.73 Thus, when APHIS regulates chicken or hen welfare under NPIP, its purpose is to protect a food supply, not to ensure animal welfare per se. To the extent that consumers have a preference for eggs from well treated hens,74 federal legislation does not protect that preference.

B. Food Safety Regulation of Poultry—Egg Safety Final Rule (as of 2010)

The FDA is charged with maintaining egg safety.75 After years of consideration, the FDA announced its Egg Safety Final Rule in 2009, bringing the food safety arm of the government into the picture for

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65 Id. § 2132(g).
66 Id.
67 Id. §§ 1901–07.
71 Id. §§ 8301–22.
72 Id. §§ 8302(1), 8303, 8306.
73 See generally id. §§ 8301, 8303–08.
74 See sources cited supra note 7.
75 See 21 U.S.C. § 331(a)–(c) (2012) (prohibiting the introduction of adulterated food into interstate commerce under the Federal Food, Drug, and Cosmetic act, which is enforced by the Food and Drug Administration); id. § 342(a) (providing a definition for “adulterated”); see, e.g., 21 C.F.R. § 115.50(e) (2013) (authorizing the FDA to regulate shell eggs to prevent adulteration).
eggs.\textsuperscript{76} The Egg Safety Rule applies to any flock with more than 3000 hens.\textsuperscript{77} In general, the rule provides guidelines intended to prevent \textit{Salmonella} contamination,\textsuperscript{78} and it is similar to the NPIP in that regard.\textsuperscript{79}

Accordingly, a farmer must buy chicks only from certified suppliers who comply with the NPIP requirements or its equivalent.\textsuperscript{80} In addition, a farmer must prevent rodents and other pests from interacting with the hens.\textsuperscript{81} The barnyard in Charlotte’s Web, where Templeton the rat comes and goes at will, would surely not qualify.\textsuperscript{82} But barnyards we see in stories do not have 3000 hens. Most large operations keep the hens indoors and rodent prevention may be possible. There are, however, some operations of over 3000 hens that allow the hens to roam freely on


\textsuperscript{77} 21 C.F.R. § 118.1(a).

\textsuperscript{78} E.g., id. § 118.4.

\textsuperscript{79} Compare id. (requiring all shell egg producers to comply with a list of \textit{Salmonella} prevention measures), with 9 C.F.R. § 145.23(d)(1) (2013) (establishing various feed standards and \textit{Salmonella} testing methods with which egg producers must comply in order to achieve compliance under the National Poultry Improvement Plan).

\textsuperscript{80} To that extent, the Egg Safety Final Rule is similar to NPIP. Compare 9 C.F.R. §§ 145.1, 145.3, 145.4(d) (requiring NPIP participants to by all “hatching eggs, baby poultry, and started poultry” from other NPIP participants), with Prevention of \textit{Salmonella} Enteritidis in Shell Eggs During Production, Storage, and Transportation, 74 Fed. Reg. 33,030, 33,034 (July 9, 2009) (requiring regulated farmers to procure chicks from \textit{Salmonella} monitored suppliers that meet NPIP or equivalent standards).

\textsuperscript{81} 21 C.F.R. § 118.4(c)(1)–(3).

\textsuperscript{82} E.B. WHITE, \textsc{Charlotte's Web} 44–45, 47 (1952).

It was on a day in early summer that the goose eggs hatched. This was an important event in the barn cellar. . . . At this point, Templeton showed his nose from his hiding place under Wilbur’s trough. He glanced at Fern, then crept cautiously toward the goose, keeping close to the wall. Everyone watched him, for he was not well liked, not trusted. “Look,” he began in his sharp voice, “you say you have seven other goslings. There were eight eggs. What happened to the other egg? Why didn’t it hatch?” “It’s a dud, I guess,” said the goose. “What are you going to do with it?” continued Templeton, his little round beady eyes fixed on the goose. “You can have it,” replied the goose. “Roll it away and add it to that nasty collection of yours.” . . . With her broad bill the goose pushed the unhatched egg out of the nest, and the entire company watched in disgust while the rat rolled it away. Even Wilbur, who could eat almost anything, was appalled. “Imagine wanting a junky old rotten egg!” he muttered. . . . [Templeton] disappeared into his tunnel, pushing the goose egg in front of him.

\textit{Id.}
pasture. These pastured operations present special challenges to which we will return.

Other requirements include testing of the henhouse environment and sometimes the eggs, timely refrigeration of eggs, and a written *Salmonella* prevention plan. While eggs may be safer now, the grand effect of all of this legislation for chicken welfare is almost nothing. Federal law does not create any requirements for the type or size of cages, access to the outdoors, type of feed, or anything else one might consider. As far as chickens are concerned, it is a hen-peek-hen sort of world.

There are, however, some lifestyle guarantees for organically raised chickens. For organically raised chickens producing organic eggs or being raised as broilers, the USDA is still the agency in charge, but in addition to APHIS, the National Organic Program is involved. The National Organic Program is administered under another part of the USDA, the Agricultural Marketing Service (“AMS”). Accordingly, although the National Organic Program rules dictate how organic chickens are raised, the purpose of organic certification is somewhat marketing oriented, aimed at “ensuring the integrity of USDA organic products in the U.S. and throughout the world.” The integrity of an organic chicken is ensured when an authorized third-party certifier confirms that the farmer is following the organic program rules. For the chicken, this means that it has been under organic management since at least the second day of life. Organic chickens do not need to be born organic.

Organic chickens have to be kept in circumstances that will protect their health and welfare, which means, *inter alia*, “conditions which allow for exercise, freedom of movement, and reduction of stress

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84 Production, Storage, and Transportation of Shell Eggs, 21 C.F.R. § 118.4 (“You must have and implement a written [*Salmonella enteritidis*] prevention plan that is specific to each farm where you produce eggs . . .”); id. § 118.4(e) (describing the requirement of refrigeration); id. § 118.5(a) (detailing environmental testing procedures for henhouses and eggs).


86 See 7 C.F.R. § 205.2.


89 7 C.F.R. § 205.236(a)(1).

90 Id.
appropriate to the species.” 91 In addition, all organic animals must have access to the outdoors for at least part of the year. 92 As we will see, this means that some conventional poultry practices are not acceptable for organic chickens. 93

Finally, even though there are no federal requirements regarding the treatment of chickens in general, the NPIP, with its goals of minimizing or eliminating disease, does provide some standards, as we have seen. 94 Whether those standards improve the welfare of poultry in the program is a subject of discussion a bit further on in this Article. 95

Once a hen has laid an egg, we can focus on regulation of the eggs themselves. We make a distinction between “shell eggs,” which are eggs still inside intact shells, and “egg products,” which are all other eggs. 96 Mostly, “egg products” means eggs that were cracked (intentionally) to make liquid or processed egg products. 97 Shell eggs must be handled carefully and correctly to prevent growth of pathogens such as Salmonella. Although the FDA has jurisdiction over shell eggs on the farm and at the market, 98 the USDA’s Agricultural Marketing Service administers the grading and quality classifications. 99 Processed eggs, on the other hand, are inspected by another arm of the USDA, the Food Safety and Inspection Service (“FSIS”). 100

So to summarize, there is very little regulation of chickens at the federal level. If a chicken farmer wants organic certification, then the National Organic Program has oversight. If the farmer wants NPIP

91 Id. § 205.238(a)(4). Nonetheless, organic animals may undergo “physical alterations as needed to promote the animal’s welfare and in a manner that minimizes pain and stress.” Id. § 205.238(a)(5). For a chick, this usually means a debeaking procedure. Since chicks do not have to be organically raised until the second day, organic and conventional chicks can come from the same broods.

92 Id. § 205.239(a)(1).

93 See infra Part IV (describing many poultry practices that are normal in the current poultry industry).

94 See supra notes 44–59 and accompanying text.

95 See infra Part III.


97 § 1033(f) (defining “egg product”).

98 See id. § 331(a)–(c); see, e.g., 21 C.F.R. § 115.50(e).


100 21 U.S.C. § 1034(e)(1); see Food Safety and Inspection Service, Department of Agriculture, 9 C.F.R. § 300.2. The Secretary of the Department of Health and Human Services (HHS) has authority and responsibility for inspecting food manufacturing establishments, institutions, and restaurants that are not egg packers. § 1034(d). Egg handlers with flocks of less than 3000 are exempt from USDA inspection. Id. § 1034(e)(4).
certification, then APHIS has oversight. And if the farmer wants to sell shell eggs labeled with grade and quality, then AMS has some say. Compliance with these sources of regulation and standards is voluntary, but most chickens and eggs fit into one of them.

III. HEN WELFARE—CONSUMERS WANT EGGS FROM HAPPY HENS

In addition to concerns about Salmonella, some consumers have concerns about chicken welfare. The egg industry is said to be the worst offender in terms of animal cruelty and environmental degradation. While there is no actual animal welfare legislation that applies to chickens, industry efforts at self-regulation are slowly moving towards systems that allow more natural behaviors. Nevertheless, most commercial eggs come from chickens raised in cramped conditions in battery cages. Given the almost universal picture of hens scratching in dirt, how did chickens come to be kept in such cramped conditions?

A century ago, most eggs were produced in flocks of fewer than 400 birds. Today, 99% of the egg-laying hens live on farms with 400 or more layers, and some flocks have over a million birds. What difference does this large scale production make? Aren’t eggs just eggs? While regulatory efforts, as we have seen, attempt to keep disease away from eggs, consumers are also interested in the lifestyles of the hens that

101 7 C.F.R. § 56.20 (describing who may initiate the voluntary application process for AMS shell egg grading service); 9 C.F.R. § 145.3 (detailing the voluntary participation standard for the APHIS’s NPIP certification).

102 See LU ET AL., supra note 7, at 3 (“Research on consumer attitudes . . . shows that people in Europe, Australia, US[,] and Canada are concerned about farm animal welfare issues.”); see also RW Prickett et al., Consumer Preferences for Farm Animal Welfare: Results from a Telephone Survey of US Households, 9 ANIMAL WELFARE 335, 336 (2010) (“Studies have demonstrated that Americans as a whole are concerned about farm animal welfare. . . . [I]t is clear that some [Americans] exhibit great concern for the well-being of farm animals . . . .”).


105 See 1 U.S. DEP’T OF AGRIC., 2007 CENSUS OF AGRICULTURE 24 (Dec. 2009 ed.) (indicating that 346,329,244 of the nation’s 349,772,508 egg-laying hens, or 99% of hens, come from farms with 400 or more layers). In fact, over 90% of layers live on farms with 20,000 or more egg-laying hens. See id.

lay the eggs. Producers are aware that consumers prefer to eat eggs from hens living the good life, and we see the evidence of this on egg carton labels. Most consumers have at least noticed that some egg cartons say “cage free.” Other commonly seen labels proclaim “vegetarian fed” and “free range.” Consumers want to know that their eggs come from hens that are not mistreated. Unfortunately, consumers imagine that hen conditions are better than they really are.

In *Eat Like You Care*, law professors Gary Francione and Anna Charlton describe animal agriculture as producing “an absolutely staggering amount of suffering and death.” Most people agree, moreover, that we should not cause unnecessary suffering to animals. Economists have tried to quantify this moral preference through various studies. In general, studies show that consumers state a preference for eggs from well-treated hens. For example, Lu, Cranfield, and Widowski asked Canadian study subjects their preferences for different housing systems—including typical cages or enhanced cages that allow for natural behaviors. Consumers were willing to pay more for eggs from free range and cage-free systems, but not for eggs from enhanced cage systems. In addition, the study demonstrated willingness to pay for specific features such as nest boxes, perches, and more space.

On the other hand, studies of actual market behavior show that consumers are more price-motivated than they think they are. In other words, they don’t behave in the grocery store the way they claim they will when answering survey questions. For example, a California study examined actual grocery purchases of households that purchased eggs on a regular basis before the California Proposition 2 cage-free egg

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107 See HENG ET AL., supra note 7, at 2 (noting that an increase in the United States of awareness of farm animal welfare has led to changes in state regulations and industry standards); LU ET AL., supra note 7, at 2–3 (stating that increasing awareness of and concern about animal welfare impacts the production and marketing methods of animal products); GODDARD ET AL., supra note 7, at 62 (finding that there are key characteristics in consumers that drive animal welfare concerns); Allender & Richards, supra note 7, at 440 (concluding that consumers express a preference for enhanced animal welfare standards but are less willing to actually pay for it).


109 Gary L. Francione, Animal Rights and Animal Welfare, 48 Rutg. L. Rev. 397, 398 (1996) (“Almost everyone—including those who use animals in painful experiments or who slaughter them for food—accepts as an abstract proposition that animals ought to be treated ‘humanely’ and not subject to ‘unnecessary’ suffering.”).

110 See LU ET AL., supra note 7, at 9.

111 Id. at 23.

112 Id.
debate. The study found that for many consumers, higher egg costs could significantly curtail egg consumption.

Of course, what consumers understand about egg production may not fit reality, and it is possible that more information about actual production practices might induce people to change their purchasing behavior. I have argued elsewhere that label information is most important for people who would have a preference if they knew more about their available purchasing choices. Next, this Article will explore the available label information and its meaning.

Remember the Little Red Hen? The Little Red Hen is a children’s story about a very busy hen who lived on a farm with several other animals. The busy little hen asked for help to plant, grow, and harvest wheat, and then to take the grain to the miller, bring back the flour, and make bread. The other animals, who were lazy, were never willing to help. And when the bread was ready, the hen refused to share it with them. The intended moral, of course, is that work is important because that’s how we get bread. But there is another, perhaps unintended, message. In this story and other stories with hens, there are a very small number of barnyard hens involved. They freely go in and out, and they eat grain. This is the picture of hens and chickens that most of us imagine. It is the picture of chickens and hens painted by great artists. It is the barnyard scene in Cinderella. It is in Charlotte’s Web. But this is a picture of backyard chickens, not industrial egg layers.

IV. YOU CAN’T REALLY GET WHAT YOU WANT—LABELS ARE MISLEADING, AND RECENT WELFARE EFFORTS MAY BE MISGUIDED

In some urban areas, interest in backyard chicken coops has been on the rise. Martha Stewart says, “[k]eeping and caring for chickens

113 Allender & Richards, supra note 7, at 440. Proposition 2 was a 2008 California ballot measure that will require that calves raised for veal, egg-laying hens and pregnant pigs be confined only in ways that allow these animals to lie down, stand up, fully extend their limbs, and turn around freely. The measure passed with 63% of the vote, and some provisions will take effect in January 2015. See also Cal. Soc’y of State, Prevention of Farm Animal Cruelty Act, in CALIFORNIA GENERAL ELECTION: OFFICIAL VOTER INFORMATION GUIDE 82 (2008), available at http://vig.cdn.sos.ca.gov/2008/general/pdf-guide/vig-nov-2008-principal.pdf (requiring that calves raised for veal, egg-laying hens, and pregnant pigs be confined only in ways that allow those animals to lie down, stand up, fully extend their limbs, and turn around freely).

114 Allender & Richards, supra note 7, at 439–40.


117 See WHITE, supra note 82, at 68 (referencing a “henhouse”).
myself means I know exactly how they are housed, what they eat, and what goes into their delicious eggs.”118 The implication, of course, is that how a hen is housed, what she eats, and therefore what goes into her eggs is important to Martha (and by extension to her readers). But most consumers do not know that most hens spend their lives in cramped cages indoors, or that “cage free” merely means packed by the thousands into a closed building instead of into small cages.119 Most consumers do not get to make choices about the kind of hens that lay their eggs because they simply do not know there is a choice. The horrific reality of egg production is well described elsewhere; the goal is to simply show that consumers are not getting clear information that they may want. This is the lite version.

This section describes some of the hen welfare issues that are, or may be, of interest to consumers and discusses the reality behind the label.120 Any legislation regarding hen welfare is likely to address some or all of these issues.121 The section first describes the issues and then examines the provisions of the former United Egg Producers (“UEP”) and Humane Society of the United States’ (“HSUS”) agreement regarding hen welfare.122 While the agreed-upon changes would have moved egg production a bit closer to the ideal “hens-in-the-yard” picture, the new standards still would not reflect the picture consumers are likely to hold in their imaginations. Moreover, even if the agreement were more helpful for hen welfare, United Egg Producers decided in February 2014 not to renew its agreement with the Humane Society.123

121 There is currently no federal legislation regarding the welfare of layer hens. In 2012, United Egg Producers and the Humane Society of the United States agreed that the two organizations would work to pass legislation that would ban conventional battery cages. See JOEL L. GREENE & TADLOCK COWAN, CONG. RESEARCH SERV., R42534, TABLE EGG PRODUCTION & HEN WELFARE: THE UEP-HSUS AGREEMENT AND H.R. 3798 (2012). To that end, legislation which would amend the Egg Products Inspection Act, 21 U.S.C. §§ 1031–56 (2012), has been introduced but not yet passed. See S. 820, 113th Cong. (2013); H.R. 1731, 113th Cong. (2013). In February 2014, United Egg Producers announced that it would cease pursuing the legislation. Dudley W. Hoskins, United Egg Producers Decline to Renew MOU with HSUS, NASDA (Feb. 19, 2014), http://www.nasda.org/News/24781.aspx.
122 See generally GREENE & COWAN, supra note 121.
123 Hoskins, supra note 121.
Finally, we consider the role of egg carton labels and conclude that egg labels are and will continue to be misleading for many consumers.

The UEP estimates that worldwide, 90% of eggs produced come from hens living out their lives in battery cages.124 In the United States, the figure is higher—95% or more.125 The conventional battery cages hold 6 to 10 birds per cage and provide about 67 to 86 square inches per bird.126 For comparison, a sheet of notebook paper is 93.5 square inches, but if someone tore a 2.5 inch strip off the end, the resulting 8.5 inch square would have 72.25 square inches, about the amount of space allowed to a typical egg-laying hen.127 To put this density in context, the University of Minnesota Extension Service recommends 3 to 5 square feet (or 432 to 720 square inches) per bird for backyard hens, or around 8 to 10 times the space provided in a typical battery cage.128 The cages, holding 6 to 8 hens each, are situated in long rows, three to five rows high—a battery of cages.129 Cages facilitate egg collection, feeding, and removal of fecal material. They also serve to keep hens safe from predators.130 When an egg carton label says “cage free” these are the cages from which the layers are free.

While battery cages provide for efficient egg production, they really do not allow hens to engage in typical chicken-like behavior. Chickens are jungle fowl; in the wild, they would roost in trees and other surfaces.

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125 See id.

126 See id. at 18; see also Greene & Cowan, supra note 121, at 3.

127 The space allowed to broilers is specified in inches per pound of bird weight. Although broilers also share space with each other, they may not experience the same crowding as layers. Under the National Chicken Council guidelines, stocking density depends on weight and is specified in pounds per square foot. See Nat’l Chicken Council, National Chicken Council Animal Welfare Guidelines and Audit Checklist for Broilers 4 (2010), available at http://www.nationalchickencouncil.org/wp-content/uploads/2012/01/NCC-Animal-Welfare-Guidelines-2010-Revision-BROILERS.pdf. The range is 6.5 to 8.5 pounds per square foot. Id. This means just under one and a half 5.5-pound broilers per square foot.


129 Green, supra note 119, at 21.

130 Id. at 20, 40 (noting benefits of traditional cage systems, including better performance and health and a reduction of the risk from predators for hens that have access to the outdoors, such as free-range hens).
off the ground. They would make nests. They would scratch in the dirt, stretch their wings, and develop a social hierarchy—a pecking order. None of these behaviors is possible in a battery cage.

In cage-free production, battery cages are eliminated. A typical cage-free barn may contain 20,000 birds, however, so crowding is still part of the lifestyle. But perches and roosting places off the ground can be made available, along with dark nesting boxes. Roosting and nesting places are recommended for backyard hens too because these allow for natural behaviors. But cage-free poultry houses are still a far cry from the chicken yards consumers imagine. Chickens do not naturally form flocks of 20,000 birds, and this flock size makes it difficult or impossible to develop a social hierarchy. In addition, such a large number of birds means a lot of bird waste. Keeping ammonia levels down in poultry barns can be a challenge, especially when ventilation is limited to preserve heat. And although cage-free hens are able to roost and nest, other natural behaviors may still be inhibited.

Egg industry websites suggest that the cage-free barns are less sanitary than cage systems—for example, eggs and birds are more likely to come into contact with fecal material—and less safe for the birds, which are more likely to be injured or trampled because of their increased movement.

Another way in which commercial egg production does not quite fit the chicken yard picture is that for the most part, commercial hens spend their lives indoors. It should be obvious that caged hens have no access to the outdoors, but cage-free hens also typically spend their


132 Chickens are said to recognize up to 100 other birds in order to develop this social order. Michael Specter, *The Extremist*, NEW YORKER, Apr. 14, 2003, at 52, 64.

133 Green, supra note 119, at 2.

134 Id. at 2–3 (stating flocks in cage-free systems range from just a few thousand to well over 100,000).

135 See id. at 24.

136 WIELAND & NOLDEN, supra note 128.

137 See Peter Singer, *Animal Liberation* 100 (2009) (discussing aspects of social interaction between chickens and the impact high-density housing has on those interactions).

138 See GUIDELINES, supra note 124, at 28 (establishing UEP guidelines for ammonia concentration of no more than 25 ppm and preferably under 10 ppm, although higher exposure for brief periods may be acceptable); see also NAT'L CHICKEN COUNCIL, supra note 127, at 3 (requiring an ammonia concentration, for broilers rather than layers, of no more than 25 ppm at the bird height).

139 See infra notes 141–47 and accompanying text.

whole lives indoors. There is no chicken yard in their lives, and they may never see the outdoors at all. But consumers like to imagine hens free to scratch in the dirt, so some egg producers are willing to provide “free range” eggs from hens that were free to go outside. This designation does not mean that the hens actually went outside; it only means that they had the option. The caricature of chickens as being fearful is well deserved, and in a large poultry house with a small door leading out to a bright world, few hens are likely to be outside at any time.

Because most hens spend their lives indoors, they miss out on seasonal cues such as day length. Seasons matter, however. In the normal scheme of things, hens “molt”—lose their feathers and grow new ones—in the fall when days get shorter. They lay more eggs in the spring when days get longer. This seasonal molting cycle results in greater egg production overall, although there may be a decrease during the molting period. Unfortunately, without seasonal cues, hens do not molt and their egg production merely declines. Farmers interested in egg production have the choice of either killing the hens after that first laying cycle, or finding a way to get the hens to molt, ideally all at the same time. This induced molt can be accomplished in various ways, the traditional approach being to withdraw feed for a week or two. The feed-withdrawal method of inducing molting is now seen as inhumane.

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141 Green, supra note 119, at 24.
142 Id.
143 See id. at 24, 41.
144 Id. at 41.
145 Id.
147 See generally SINGER, supra note 137, at 118; see also Mormino, supra note 146 (explaining that chickens lay eggs more frequently in the spring).
149 SINGER, supra note 137, at 118.
150 See id.
and is no longer favored. Instead there are now various non-feed-withdrawal methods.

Molting is not the point here. Rather, it is that consumers with the henyard model in their minds have no idea that this is part of the process. Would they care about molting if they knew? It is hard to know because labels are silent about most aspects of egg production, including molting. When did you last see a label that read “no-forced-molt eggs”? Industry advocates argue that induced molting gives chickens a longer productive life and thus a longer life in general. Surely a longer life is better than a short one, but this is a somewhat ingenuous argument. Chickens can live up to ten or fifteen years. A laying hen, however, has a useful lifespan of about one to three years. But the life of a layer is not much to envy.

Breeding itself can reduce the quality of life for hens. Selecting for hens that lay more eggs may mean selecting hens that have more fragile bones. Accordingly, broken bones and the attendant suffering they produce may be higher than necessary among layers. Fragile bones may also result from cage production itself. When hens cannot move around, they lose muscular strength, resulting in increased fractures.

Moreover, hens in close quarters deprived of normal behavior may experience hysteria and peck each other, so a standard practice is to sear off the end of the beak within a week or two of hatching. The UEP

152 See GUIDELINES, supra note 124, at 10 (noting that current UEP-certified guidelines allow only non-feed withdrawal methods).


154 See SINGER, supra note 137, at 118 (describing how molting increases production).

155 WILLIAMS & DEMELLO, supra note 151, at 29 (contrasting the lifespan of a broiler of just forty-five days with a chicken’s typical lifespan of up to fifteen years).

156 See GUIDELINES, supra note 124, at 9; see also Ruth C. Newberry, Contemporary Issues in Farm Animal Housing and Management: Poultry Well-being, in SUSTAINABLE AGRICULTURE 338, 339 (Christine Jakobsson ed., 2012) (asking whether it would be better to terminate the lives of hens after the first productive cycle rather than inducing a molt).

157 WILLIAMS & DEMELLO, supra note 151, at 40 (remarking how vitamin deficiency, lack of exercise, and over-breeding to further egg production cause the majority of laying hens to have osteoporosis).

158 See id.

159 Id.

160 While “pecking” is natural behavior (hence the term “pecking order”), in close quarters, the pecked hen has no escape. See D.C. Lay Jr. et al., Hen Welfare in Different Housing Systems, 90 POULTRY SCI. 278, 283 (2011).

161 WILLIAMS & DEMELLO, supra note 151, at 37 (stating that, typically, within one to two weeks of birth the beaks of chicks are removed).
cites some advantages: less pecking, feather pulling, and cannibalism, and better stress levels and feather condition. On the other hand, debeaked hens may have difficulty eating in addition to pain and stress from the procedure. But the welfare question is not whether the advantages outweigh the disadvantages; the real issue is that production practices that lead to pecking, feather pulling, and stress, and lead to a perceived need for such an invasive and painful procedure as beak trimming, are far from the consumer picture of happy hens in a courtyard. To a large extent, consumers are not getting what they think they are. For many people, eggs are eggs, but if consumers believe the eggs come from hens like those pictured in story books and on egg cartons, then consumers are being misled.

Consumers do care about animal welfare, and the UEP has made an effort to respond to animal welfare concerns. It has developed voluntary guidelines and a “UEP certified” logo. The UEP website proudly exhorts consumers to “[s]how your commitment to animal welfare and buy UEP certified eggs.” The website points out that although caged hens don’t seem to have much room, they naturally huddle together anyway, even when they have more room. Nonetheless, although cage-free hens can move about more and exhibit more natural hen behaviors, they are more likely to be injured as a result and there is greater possibility of hens and eggs coming in contact with fecal material. Intensive egg production means that hens are raised in large groups; as a result, debeaking is necessary for caged and cage-free flocks alike. But is this what consumers want? Is it what consumers think they are buying?

Ignorance is bliss, and to an extent it may be utility maximizing. If consumers have no idea an issue or choice exists, then they suffer no

162 GUIDELINES, supra note 124, at 8.
163 Id.
164 Id. at 5–6 (defining and explaining the UEP-Certified logo, as well as procedures that certified companies must implement when choosing to display the logo on their products).
165 UNITED EGG PRODUCERS, http://www.uepcertified.com/ (last visited Mar. 20, 2014) (inviting website visitors to link to the UEP on Facebook to show commitment to animal welfare).
168 Id.
direct loss of utility by being deprived of choice. But when consumers do know about an issue and care about it, utility is affected by choice. The problem is that sometimes consumers would care if they knew an issue existed, but because they are ignorant of the issue altogether, they have no preference. Food labels perform a variety of functions, one of which is education. Labels may alert us to issues we might not otherwise realize are issues, and labels may provide information about those issues. When consumers know enough about an issue to form a preference, they are best able to maximize their utility through market choices based on information about products.

CONCLUSION

Martha Stewart asks whether backyard coops are a possible solution to the food safety, animal welfare, and sustainability concerns related to egg production. But this is not an Article about backyard chicken coops. Rather, we are focused on the mismatch between consumer beliefs and expectations, and the eggs available in the grocery store. As we have noted, people care about animals, but perhaps surprisingly, there are very few if any laws or regulations specifically aimed at the well-being of poultry. Nevertheless, due to consumer concerns, chicken welfare is an issue, and the industry is attempting to self-regulate as a way of warding off mandatory regulations.

Consumer studies show a stated preference for eggs from hens with opportunities for natural behavior. Moreover, the preference is affected by information about egg production practices. This suggests that even in the presence of labels proclaiming “cage free” and “free range,” consumers don’t have enough information to make informed choices. If consumers would choose differently given more information, then they are essentially being misled to their detriment by being kept in the dark.

169 Consumers are blissfully ignorant of the fate of male chicks in egg production, for example. Male chicks, as well as hens that have become unproductive, are “euthanized.” See Williams & Demello, supra note 151, at 35–37. The UEP provides guidelines for how this is to be accomplished. Guidelines, supra note 124, at 12–14. Euthanasia is supposed to be instantaneous and painless. Acceptable methods are based on American Veterinary Medical Association guidelines and do not allow for throwing live chicks in the trash. See AVMA Guidelines for the Euthanasia of Animals 6 (2013 ed. 2013).

170 See Byrne, supra note 115, at 37.

171 Id. at 60 (stating labels alert the consumer to the existence of an issue, playing an educational role, and provide information to allow the consumer to make a choice, fulfilling an informational role).


173 The UEP’s mission includes “guidelines that are driven by the industry rather than government mandates or legislation.” Guidelines, supra note 124, at 3.
The result is that many consumers who buy cheap conventional eggs may actually be overpaying. The Food, Drug, and Cosmetic Act labeling provisions are intended to prevent misleading consumers to their detriment, but egg cartons, with their pictures of individual hens, open fields, and sun shining on barns, mislead consumers just as inaccurate label words might do.

Given the failure of the UEP-HSUS agreement, it seems unlikely that either consumers or hens have much hope of improving conditions in the near future. Indeed, until consumers really have complete information about hen welfare, they cannot truly exercise their market preferences.