

Case Study

California State Proposition 2: Standards for Confining Farm Animals

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Summary of the statute:

- Requires 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.
- Exceptions made for transportation, rodeos, fairs, 4-H programs, lawful slaughter, research and veterinary purposes.
- Provides misdemeanor penalties, including a fine not to exceed \$1,000 and/or imprisonment in jail for up to 180 days.

Background:

Animal agriculture is a major industry in California. Over 40 million animals are raised for commercial purposes on California farms and ranches. California's leading livestock commodities are milk and other dairy products, cattle, and chickens.

In recent years, there has been a growing public awareness about farm animal production methods, and how these practices affect the treatment of the animals. In particular, concerns have been expressed about some animal farming practices, including the housing of certain animals in confined spaces, such as cages or other restrictive enclosures.

Partly in response to these concerns, various animal farming industries have made changes in their production practices. For example, certain industries have developed guidelines and best practices aimed, in part, at improving the care and handling of farm animals.

State law prohibits cruelty to animals. Under state law, for example, any person who keeps an animal confined in an enclosed area is required to provide it with an adequate exercise area, and permit access to adequate shelter, food, and water. Other laws specifically related to farm animals generally focus on the humane transportation and slaughter of these animals. Depending upon the specific violation, an individual could be found guilty of a misdemeanor or felony punishable by a fine, imprisonment, or both.

Fiscal Effects:

Compared to current practice most commonly used by California farmers in the affected industries, this measure would require more space and/or alternate methods for housing pregnant pigs, calves raised for veal, and egg-laying hens. As a result, this measure would increase production costs for some of these farmers. To the extent that these higher production costs cause some farmers to exit the business, or otherwise reduce overall production and profitability, there could be reduced state and local tax revenues. The magnitude of this fiscal effect is unknown, but potentially in the range of several million dollars annually.

Additionally, this measure could result in unknown, but probably minor, local and state costs for enforcement and prosecution of individuals charged with the new animal confinement offense. These costs would be partially offset by revenue from the collection of misdemeanor fines.

Activity:

The class will be divided into five groups (see "Group Assignment Sheet" for group assignments): the American Veterinary Medical Association (AVMA) group, the Humane Society of the United States (HSUS) group, the Good Egg Political Action Committee (GEPAC) group, the Pew Commission on Industrial Farm Animal Production (Pew) group, and the California residents voting group (Voters). The AVMA, HSUS, GEPAC, and Pew groups will each be giving a presentation to the Voters to present their argument(s) in support of or in opposition to California State Proposition 2: Standards for Confining Farm Animals (Prop 2). Brief descriptions of the positions of the AVMA, HSUS, GEPAC, and Pew regarding Prop 2 are presented below, and the attached documents further elaborate on the arguments presented by these groups. The role of the Voters is also discussed below.

Group Descriptions and Positions:



The AVMA is the premier professional organization representing veterinarians in the United States. The AVMA believes Prop 2 is admirable in its goal to improve the welfare of production farm animals; however, by applying our principles and research to the question of supporting proposition 2, we find that it ignores critical aspects of animal welfare that ultimately would threaten the well-being of the very animals it strives to protect. Please come to class having

read the full position of the AVMA (pages 6-9 of this packet). For your SusAg 610 synopsis assignment, summarize the position of the AVMA regarding Prop 2.



THE HUMANE SOCIETY
OF THE UNITED STATES

The HSUS is the largest animal protection agency in the United States. We seek a humane and sustainable world for all animals—a world that will also benefit people. We are America's mainstream force against cruelty, exploitation, and neglect, and also the nation's most trusted voice extolling

the human-animal bond. We endorse Prop 2 because Prop 2 would help to reduce cruel treatment of animals and safety risks posed to human health. Prop 2 is better for animals – and for us. Please come to class having read the full position of the HSUS (pages 10-15 of this packet). For your SusAg 610 synopsis assignment, summarize the position of the HSUS regarding Prop 2.



Good Egg Political
Action Committee
(GEPAC)

GEPAC is a political lobbying group that is sponsored by the California Egg Producers Association. The goal of GEPAC is to inform governmental officials of the interests and needs of California's egg producers. Because GEPAC would like for California to have a thriving egg industry, GEPAC opposes Prop 2 because Prop 2 will greatly reduce California's ability to have competitive egg prices, which will reduce our ability to sell eggs within California and

nationally. Please come to class having read the full position of GEPAC (pages 16-18 of this packet). For your SusAg 610 synopsis assignment, summarize the position of GEPAC regarding Prop 2.



PEW COMMISSION ON
INDUSTRIAL FARM
ANIMAL PRODUCTION

Pew was established through a grant from The Pew Charitable Trusts to The Johns Hopkins Bloomberg School of Public Health to recommend solutions to the problems created by concentrated animal feeding operations in four primary areas: public health, rural communities, the environment, and animal welfare. For this case study, you will assess

Pew's position on Prop 2 regarding public health and rural communities. Pew recommends implementing the modest animal welfare public policy improvements presented in Prop 2. Please come to class having read the full position of Pew (pages 19-26 of this packet). For your SusAg 610 synopsis assignment, summarize the position of Pew regarding Prop 2.



You are a registered voter in California, and you will be voting on Prop 2. Please come to class having read the text of the statute (pages 4-5 of this packet). For your SusAg 610 synopsis assignment, you will pose one question that you think is critical to determining whether you will vote yes or no on Prop 2, and you will posit if and/or how you think the AVMA, HSUS, GEPAC, and Pew will address your question. During class time, you are expected to be actively engaged in the arguments presented by the AVMA, HSUS, GEPAC, and Pew groups (hopefully their presentations will help to inform your voting decision). After all of the groups have presented

their arguments, you will be asked to cast your vote on Prop 2 in front of the class, and asked to give a one minute explanation of the rationale behind your vote.

California State Proposition 2: Standards for Confining Farm Animals
Proposed Law

SECTION 1. SHORT TITLE

This act shall be known and may be cited as the Prevention of Farm Animal Cruelty Act

SECTION 2. PURPOSE

The purpose of this act is to prohibit the cruel confinement of farm animals in a manner that does not allow them to turn around freely, lie down, stand up, and fully extend their limbs.

SECTION 3. FARM ANIMAL CRUELTY PROVISIONS

Chapter 13.8 (commencing with Section 25990) is added to Division 20 of the Health and Safety Code, to read:

CHAPTER 13.8. FARM ANIMAL CRUELTY

25990. PROHIBITIONS. In addition to other applicable provisions of law, a person shall not tether or confine any covered animal, on a farm, for all or the majority of any day, in a manner that prevents such animal from:

- (a) Lying down, standing up, and fully extending his or her limbs; and*
- (b) Turning around freely.*

25991. DEFINITIONS. For the purposes of this chapter, the following terms have the following meanings:

- (a) "Calf raised for veal" means any calf of the bovine species kept for the purpose of producing the food product described as veal.*
- (b) "Covered animal" means any pig during pregnancy, calf raised for veal, or egg-laying hen who is kept on a farm.*
- (c) "Egg-laying hen" means any female domesticated chicken, turkey, duck, goose, or guinea fowl kept for the purpose of egg production.*
- (d) "Enclosure" means any cage, crate, or other structure (including what is commonly described as a "gestation crate" for pigs; a "veal crate" for calves; or a "battery cage" for egg-laying hens) used to confine a covered animal.*
- (e) "Farm" means the land, building, support facilities, and other equipment that are wholly or partially used for the commercial production of animals or animal products used for food or fiber; and does not include live animal markets.*
- (f) "Fully extending his or her limbs" means fully extending all limbs without touching the side of an enclosure, including, in the case of egg-laying hens, fully spreading both wings without touching the side of an enclosure or other egg-laying hens.*
- (g) "Person" means any individual, firm, partnership, joint venture, association, limited liability company, corporation, estate, trust, receiver, or syndicate.*
- (h) "Pig during pregnancy" means any pregnant pig of the porcine species kept for the primary purpose of breeding.*
- (i) "Turning around freely" means turning in a complete circle without any impediment, including a tether, and without touching the side of an enclosure.*

25992. EXCEPTIONS. This chapter shall not apply:

- (a) During scientific or agricultural research.*
- (b) During examination, testing, individual treatment or operation for veterinary purposes.*
- (c) During transportation.*

(d) During rodeo exhibitions, state or county fair exhibitions, 4-H programs, and similar exhibitions.

(e) During the slaughter of a covered animal in accordance with the provisions of Chapter 6 (commencing with Section 19501) of Part 3 of Division 9 of the Food and Agricultural Code, relating to humane methods of slaughter, and other applicable law and regulations.

(f) To a pig during the seven-day period prior to the pig's expected date of giving birth.

25993. **ENFORCEMENT.** *Any person who violates any of the provisions of this chapter is guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not to exceed one thousand dollars (\$1,000) or by imprisonment in the county jail for a period not to exceed 180 days or by both such fine and imprisonment.*

25994. **CONSTRUCTION OF CHAPTER.**

The provisions of this chapter are in addition to, and not in lieu of, any other laws protecting animal welfare, including the California Penal Code. This chapter shall not be construed to limit any state law or regulations protecting the welfare of animals, nor shall anything in this chapter prevent a local governing body from adopting and enforcing its own animal welfare laws and regulations.

SECTION 4. SEVERABILITY

If any provision of this act, or the application thereof to any person or circumstances, is held invalid or unconstitutional, that invalidity or unconstitutionality shall not affect other provisions or applications of this act that can be given effect without the invalid or unconstitutional provision or application, and to this end the provisions of this act are severable.

SECTION 5. EFFECTIVE DATES

The provisions of Sections 25990, 25991, 25992, 25993, and 25994 shall become operative on January 1, 2015.

Sources:

"Text of Proposed Laws" Secretary of State of California. 14 Oct. 2008. < <http://www.voterguide.sos.ca.gov/text-proposed-laws/text-of-proposed-laws.pdf#prop2>>



The American Veterinary Medical Association is the premier professional organization representing veterinarians in the United States. As such, we are not only a key medical authority on animal health and welfare, but just as importantly, we truly care about the animals we serve every day. It is in that mindset that we strive for continued improvement of animal housing systems through comprehensive, science-based evaluations with the expert input from veterinarians and animal welfare scientists.

The AVMA, as a medical authority for the health and welfare of animals, are committed to the following eight integrated principles for developing and evaluating animal welfare policies, resolutions, and actions.

- The responsible use of animals for human purposes, such as companionship, food, fiber, recreation, work, education, exhibition, and research conducted for the benefit of both humans and animals, is consistent with the Veterinarian's Oath.
- Decisions regarding animal care, use, and welfare shall be made by balancing scientific knowledge and professional judgment with consideration of ethical and societal values.
- Animals must be provided water, food, proper handling, health care, and an environment appropriate to their care and use, with thoughtful consideration for their species-typical biology and behavior.
- Animals should be cared for in ways that minimize fear, pain, stress, and suffering.
- Procedures related to animal housing, management, care, and use should be continuously evaluated, and when indicated, refined or replaced.
- Conservation and management of animal populations should be humane, socially responsible, and scientifically prudent.
- Animals shall be treated with respect and dignity throughout their lives and, when necessary, provided a humane death.
- The veterinary profession shall continually strive to improve animal health and welfare through scientific research, education, collaboration, advocacy, and the development of legislation and regulations.

This association believes Proposition 2, 'Standards for Confining Farm Animals,' is admirable in its goal to improve the welfare of production farm animals; however, by applying our principles and research to the question of supporting proposition 2, we find that it ignores critical aspects of animal welfare that ultimately would threaten the well-being of the very animals it strives to protect. Although the AVMA applauds every effort to promote animal welfare, we believe that the best housing environments take into consideration all relevant factors, including: freedom of movement; expression of normal behaviors; protection from disease, injury, and predators; adequate food and water; and proper handling. Proposition 2 would clearly provide greater freedom of movement, but would likely compromise several of the other factors necessary to ensure the overall welfare of the animals, especially with regard to protection from disease and injury.

The following informational resources help explain the issue and the AVMA's concerns about Proposition 2:

Standards for Confinement:

California is already a leader in animal welfare, with some of the most stringent requirements on its livestock operations. The standards requested by the AVMA have been fully implemented. Our view of confining livestock and standards for poultry laying flocks are as follows:

Confinement rearing provides many opportunities to enhance the health and welfare of food animals by protecting them from adverse environmental conditions and predators, ensuring provision of adequate food and water, reducing aggression in many species, and enhancing the producer's ability to observe and access animals when they require care or handling.

Cages should be designed and maintained so as to avoid injury to birds. Construction of cages, feeders, and waterers should take into account scientifically documented advantages for bird comfort and health, and facilitate

the safe removal of birds. Cage configuration should be such that manure from birds in upper level cages does not drop directly on birds in lower level cages. All hens should be able to stand comfortably upright in their cages. Feeder space should be sufficient to permit all birds to eat at the same time (Standards)

California law is already requiring and in most cases exceeding the AVMA recommendations for animal care and housing.

Research:

Maintaining good welfare within housing systems usually involves trade-offs. For example, housing systems that allow hens to perform natural behaviors (e.g., nest building for laying hens) may, in fact, result in more challenges for disease and injury control. Conversely, improving disease and injury control by more intensively confining hens can limit the hens' freedom of movement and ability to engage in normal behaviors.

The LayWel project, (Welfare implications of changes in production systems for laying hens), on which we are a primary collaborator, gives us a scientific basis for evaluating Proposition 2. The chart and discussion below, which illustrates the welfare trade-offs among housing systems for laying hens is taken from the LayWel summary report, titled: A Comparison of Conventional Cage, Furnished Cage, and Non-cage (Barn and Outdoor/Free-range) Systems for Housing Laying Hens.

Please be aware there are other indicators of animal welfare that are not included in the chart below; the point is simply to show that there are welfare advantages and disadvantages to every housing system.

Indicators	Conventional Cage	Furnished Cage			Non-Cage (Barn)		Outdoor (Free Range)
		Small	Medium	Large	Single Level	Multiple Levels	
Mortality (%)			ϕ				
Mortality from feather pecking & cannibalism							
Bone strength & fractures	¥	+	+	+	¥	¥	¥
Exposure to disease vectors (e.g. wild birds)							
Internal parasites (e.g. coccidia, roundworms)							
External parasites							
Bumblefoot							
Feather loss							
Hen hysteria & piling/smothering							
Risk of predation							
Level of egg production & cleanliness							
Use of nest boxes							
Use of perches							
Foraging behavior							
Dustbathing behavior							
Air quality (e.g. dust, ammonia)							

ϕ = Recent unpublished data indicate lower mortality may be achievable in large furnished cages

¥ = Reduced bone strength, fractures when birds are caught

+

¥ = More fractures during lay despite stronger bones

Good	Medium	Poor	Insufficient Data
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Feather pecking = Feather pecking is an abnormal behavior in which birds damage other birds' feathers; most often it results from an inadequacy in the birds' environment. Feather pecking can include simply chewing on feathers or actually plucking them out. There are many contributors to feather pecking, including genetics, poor diet, infectious or parasitic diseases, and stress. Birds with damaged feathers have poor thermoregulation and greater energy demands than unaffected birds. If feather pecking is severe, bleeding may occur, which attracts even more pecking from other birds (cannibalistic behavior). Beak trimming is a common way to deal with excessive feather picking. Feather pecking and feather loss are greatly influenced by strain of bird, beak trimming, and epigenetic factors.

Cannibalism = The act of consuming tissues of other members of the same species, whether living or dead and at any stage of the life cycle; this is an abnormal behavior in laying hens. In laying hens, cannibalism may be directed toward different tissues, ranging from feathers to eggs, but the problem of most concern is pecking and tearing of the skin and underlying tissues and organs. If excessive, such behavior can cause hens to be severely injured or die. Cannibalism is greatly influenced by strain of bird, beak trimming, and epigenetic factors.

Bumblefoot = An inflammation and/or infection of the skin and connective tissues of the foot. The "bumbles" are really abscesses caused by the bacteria *Staphylococcus aureus*. Bumblefoot has been shown to be correlated to the use of wet or non-optimally designed perches or flooring.

Hen hysteria = A behavioral state characterized by extensive use of defense mechanisms and by a variety of clinical signs associated with high levels of fear, anxiety, restlessness, and general irritability.

Foraging = The act of looking or searching for food. Foraging behaviors are affected by the availability and type of food, as well as the availability and type of other substrates (e.g., litter, shavings).

Dustbathing = Involves tossing and rubbing dust between the feathers to maintain feather and skin condition.

According to this AVMA sponsored research, there are certainly areas for improvement in the current California laying hen housing standards, but simply requiring a larger cage does not address the majority of these animal welfare concerns.

Arbitrary Language:

In addition to the scientific arguments, the language of Proposition 2 is unclear, and is thus open to much interpretation that could further endanger the animals that it seeks to protect. Depending upon the interpretation, it may not allow implementation of some housing systems with the potential to improve animal welfare.

Proposition 2 indicates that covered animals must be able to lie down, stand up, fully extend their limbs, and turn around freely. Fully extending the animal's limbs is defined as fully extending all limbs without touching the side of an enclosure, including, in the case of egg-laying hens, fully spreading both wings without touching the side of an enclosure or other egg-laying hens. Unfortunately, the language of the initiative is not clear as to how much space is actually required for a housing system to comply with Proposition 2. Will the space provided be considered adequate if an individual animal is able to extend its limbs/wings without touching the sides of the enclosure or another animal while other animals in the enclosure are huddled together, or must all animals in the enclosure be able to extend their limbs/wings simultaneously without touching the sides of the enclosure or another animal? Furthermore, since the language requires that animals be able to turn around freely, what effect does the presence or absence of movement (i.e., turning) have on the calculation of the space requirement?

Legally the language may be clear; scientifically, it is not. Because this is not clear, it is difficult to determine what type of housing systems may or may not be permitted should Proposition 2 pass. It is possible that some housing systems that seek a more equitable compromise between meeting behavioral and other needs, and thereby have the potential to improve overall welfare, may not be allowed under the space criteria set by Proposition 2.

Conclusion:

An assessment of the ability of various animal care systems to protect welfare must take into consideration all relevant factors, including whether animals are free to move; whether the system allows them to engage in normal behaviors; whether they are protected from disease, injury, and predators; whether food and water are available in the appropriate amounts and type, and are of high quality; and whether the animals are handled properly. Proposition 2 helps address some of the animals' behavioral needs; unfortunately, it doesn't adequately consider the animals' other needs. All aspects of animal care and housing systems must be assessed simultaneously to avoid unintended negative consequences resulting from changes to part of the system. It is important to avoid trading one set of animal welfare challenges for another.

The AVMA is concerned that legislating isolated, arbitrary and emotion-based criteria to implement farm animal housing systems may actually do more harm than good for the well-being of the animals while compromising the sustainability of production systems that are essential to ensure we continue to have the safest, most affordable, and abundant food supply in the world

Sources:

"A Comparison of Conventional Cage, Furnished Cage, and Non-cage (Barn and Outdoor/Free-range) Systems for Housing Laying Hens" The American Veterinary Medical Association. 2 Oct. 2008. <http://www.avma.org/issues/animal_welfare/cage_noncage_systems.asp>

"AVMA Animal Welfare Principles" AVMA.com. Nov. 2006. The American Veterinary Medical Association. 2 Oct. 2008. <http://www.avma.org/issues/policy/animal_welfare/principles.asp>

"California Proposition 2" AVMA.com. June 2005. The American Veterinary Medical Association. 2 Oct. 2008. <http://www.avma.org/issues/policy/Animal_welfare/california_proposition2.asp>

"Confinement Rearing of Livestock and Poultry" AVMA.com. June 2005. The American Veterinary Medical Association. 2 Oct. 2008. <http://www.avma.org/issues/policy/animal_welfare/confine.asp>

"Housing Layer Chickens in Cages" AVMA.com. June 2005. The American Veterinary Medical Association. 2 Oct. 2008. <http://www.avma.org/issues/policy/animal_welfare/housing_chickens.asp>

"Questions and Answers Regarding California Proposition 2, Standards for Confining Farm Animals" The American Veterinary Medical Association. 2 Oct. 2008. <http://www.avma.org/issues/animal_welfare/california_proposition2_QA.asp>



THE HUMANE SOCIETY
OF THE UNITED STATES

The Humane Society of the United States (HSUS) is the largest animal protection agency in the United States. The HSUS was established in 1954 and today is the most powerful animal protection organization in the country.

The HSUS seeks a humane and sustainable world for all animals—a world that will also benefit people. We are America's mainstream force against cruelty, exploitation, and neglect, and also the nation's most trusted voice extolling the human-animal bond. Our mission statement: Celebrating Animals, Confronting Cruelty.

California: Yes on Prop 2 to Halt the Suffering on Factory Farms

On November 4, Californians should vote yes on Prop 2, the [Prevention of Farm Animal Cruelty Act](#), to halt unacceptable abuses on factory farms. This measure would provide basic protections requiring that animals confined in industrial farms have enough room to freely turn around and extend their limbs.

Many animals on industrial farms are confined in small cages or crates and suffer tremendously. Breeding pigs are kept in gestation crates, unable to turn around for months on end; egg-laying hens are confined in battery cages, unable to spread their wings; and young calves are kept in crates so tiny that they spend their entire lives hardly able to move. The overcrowded conditions on factory farms have also been found to pollute the air, contaminate groundwater and threaten human health. Visit [Yes! on Prop 2](#) to learn more about this initiative and how you can help.

Legal Petition Filed to Stop San Diego Area Egg Farm from Releasing Tainted Water

October 8, 2008

The Humane Society of the United States (HSUS) and a neighbor of Valley Center's Armstrong Farms petitioned the San Diego Regional Water Quality Control Board yesterday seeking enforcement action against the egg factory farm's repeated discharges of manure-tainted water. The petition alleges that, according to public records, one of Armstrong's four San Diego County factory farms has illegally discharged contaminated water onto neighbors' properties and into the county storm water management system on numerous occasions.

This petition comes as voters in California decide how to vote on [Proposition 2](#), which is an anti-cruelty measure on the November ballot. If passed, Proposition 2 will prohibit the most abusive factory farming practices in California and ensure modest welfare standards for farm animals by allowing them simply to turn around and stretch their limbs. Armstrong Farms has donated more than \$64,000 to the campaign to defeat Proposition 2, and Ryan Armstrong, who co-owns and operates the facility, is a spokesperson for the agribusiness-led opposition to Prop 2.

Public Records Show Repeated Polluting

In August, Armstrong told state legislators that "we don't have anything to hide" at his egg factory farms during a hearing of the Senate and Assembly Committees on Agriculture of the California Legislature. But according to public records, San Diego County officials cited his operation at least 17 times in the past two years for waste water violations and even issued two cease and desist orders in 2007. These violations apparently include illegally flooding neighboring properties with contaminated water and illegally connecting pipes on his property to dump waste water directly into county storm water drains. Despite the citations and co-owner and operator Alan Armstrong's admission in records that he knows these discharges are "wrong," the pollution apparently continues to occur regularly.

In addition to the cited violations of local law, Armstrong's discharges may also violate the federal Clean Water Act, which regulates discharges from large factory farms as well as storm water system discharges.

Public records obtained by The HSUS state that some of the water Armstrong discharges originates from sprinkler systems installed above the tiny wire cages that confine the egg laying hens. Manure from these birds simply falls under the caged hens into enormous piles that are apparently only removed twice per year. The sprinkler water then apparently soaks the manure beneath the hens and much of it eventually flows off Armstrong's property—carrying with it the threat of spreading virulent diseases, including avian influenza. Avian flu is spread primarily through poultry feces and the virus can

survive in surface water for months. This means that contaminated water can potentially infect other animals and humans long after it has left Armstrong's facility.

Public Health Risks

"Studies have shown that water coming into contact with chicken excrement can contain bacteria capable of causing serious human illness, including multi-drug resistant *E. coli*, *Salmonella*, *Campylobacter* and even VRE, vancomycin-resistant enterococci, one of the most dangerous of the newly emerging 'superbugs,'" said Dr. Michael Greger, The HSUS's director of public health and animal agriculture. "Additionally, studies have shown that operations cramming birds into cages have 20 times the odds of *Salmonella* contamination compared to cage-free farms. It's time to phase out these inhumane and unsafe confinement practices."

The Armstrong neighbor who joins The HSUS on its petition has asked to remain anonymous to protect his privacy and safety, and has said that nearly every day in the summer and periodically in the winter for the past several years his property is inundated with manure-smelling gray water carrying chicken feathers, and on occasion, even dead hens. Despite his repeated complaints, the situation has never improved and he fears that the contaminated water will pollute his well water—the property's only source of fresh water—and that it may sicken or kill his prized Holsteiner horses. In addition, according to public records, Armstrong's discharged poultry waste sometimes reaches other neighbors' land as well.

Avian Influenza: Flu Factories

In our efforts to streamline farming practices to produce more meat for more people, we have inadvertently created conditions by which a harmless parasite of wild ducks can be converted into a lethal killer of humans.

—Johns Hopkins University neurovirologist R.H. Yolken and Stanley Medical Research Institute director E.F. Torrey. [\(1\)](#)

By Dr. Michael Greger

How does [naturally occurring, innocuous waterfowl flu mutate](#) into virulent, highly pathogenic avian influenza (HPAI)?

According to the World Health Organization's 2005 assessment of the pandemic threat, HPAI viruses aren't born, they're made. "Highly pathogenic viruses have no natural reservoir. Instead, they emerge by mutation when a virus, carried in its mild form by a wild bird, is introduced to poultry. Once in poultry, the previously stable virus begins to evolve rapidly, and can mutate, over an unpredictable period of time, into a highly lethal version of the same initially mild strain." [\(2\)](#) Scientists have demonstrated this transformation in a laboratory setting.

Duck, Duck...Chicken

A collaboration of U.S. and Japanese researchers started with a harmless virus isolated from waterfowl and proceeded to do serial passages through baby chickens. First, the researchers took day-old baby chicks and squirted a million infectious doses into their lungs. The virus was left there for a few days to allow it to start to adapt to the chicks' respiratory tracts. The viral mutant naturally selected to predominate would presumably be the one that learned best through trial and error to undermine the hatchlings' defenses. After three days, they killed the chicks, ground up their lungs, and squirted the viral lung slurry down the throats of other chicks. They allowed a few days for the virus to adapt further before repeating the cycle two dozen times.

The researchers ground up the final baby chickens' brains and infected five additional rounds of healthy chicks with infected brain pulp. With every passage, the virus grew more adept at overwhelming and outwitting the fledging birds' immune systems to best survive and thrive in its new environment. The final infected brain sample, after two dozen cycles through lungs and five cycles through brain, was squirted into the nostrils of healthy adult chickens. By the 18th lung passage, the virus was able to kill half of the chickens exposed. After the final five brain passages, the virus was capable of rapidly killing every chicken. The researchers concluded, "These findings demonstrate that the avirulent [harmless] avian influenza viruses can become pathogenic during repeated passaging in chickens." [\(3\)](#)

If mad scientists wanted to create a bird flu virus of unprecedented ferocity, they could try to continually keep cycling the virus through chickens. Imagine if the serial passaging was done not two dozen times, but 20,000 times. What kind of virus would come out the other end?

Industrialized Animal Agriculture and Disease

Each year in the United States, nearly 9 billion chickens are raised and killed for meat [\(4\)](#) and approximately 300 million hens [\(5\)](#) lay eggs. The overwhelming majority of these birds are confined in industrialized factory farms. Broiler chickens are housed by the tens of thousands in football field-sized sheds, [\(6,7\)](#) living in their own excrement, and egg-laying hens are intensively confined in small, wire "battery cages," metal enclosures so small, the birds can't even spread their wings, [\(8,9\)](#) suspended over massive pits of their manure.

Of factory farming, the director of Toronto General Hospital's Centre for Travel and Tropical Medicine said, "The primary driver has been economics—short-term gain. We bring tens of thousands of animals together, crush them into these abnormal environments, poke them full of whatever and make them fatter for sale. Any microbe that enters that population is going to be disseminated to thousands of animals...." [\(10\)](#) Indeed, in the filthy and intensive conditions on factory farms, mass disease outbreaks may be inevitable. [\(11\)](#)

Factory Farms and Avian Influenza

Inside overcrowded broiler chicken factory farm sheds, the birds live in their own excrement, so the virus need not even develop true airborne transmission via nasal or respiratory secretions. Rather, the virus has an opportunity to be excreted in the feces and then inhaled or swallowed by the thousands of other birds confined in the shed, allowing the virus to rapidly and repeatedly circulate. With so many birds in which to readily mutate, low virulence strains can sometimes turn into deadly ones. Highly pathogenic bird flu viruses seem predominantly to be products of factory farming. [\(12\)](#) Indeed, said University of Ottawa virologist Dr. Earl Brown, a specialist in influenza virus evolution, "You have to say that high intensity chicken rearing is a perfect environment for generating virulent avian flu virus." [\(13\)](#)

Many of the world's scientific authorities seem to agree. The World Health Organization blames the increasing trend of emerging infectious diseases in part on the "industrialization of the animal production sector" [\(14\)](#) in general, and the emergence of H5N1 on "intensive poultry production" in particular. [\(15\)](#) The OIE blames in part the shorter production cycles and greater animal densities of modern poultry production which result in "greater number of susceptible animals reared per given unit of time." [\(16\)](#) According to the Royal Geographical Society, "Massive demand for chicken has led to factory (battery) farming which provides ideal conditions for viruses to spread orally and via excreta which inevitably contaminates food in the cramped conditions that most birds are kept in." [\(17\)](#) "High concentrations of animals," concluded the International Food Policy Research Institute, "can become breeding grounds for disease." [\(18\)](#)

Other experts around the world similarly lay blame on "so-called factory farming," [\(19\)](#) "intensive poultry production," [\(20\)](#) "large industry poultry flocks," [\(21\)](#) "intensive agricultural production systems," [\(22\)](#) or "intensive confinement." [\(23\)](#) "We are wasting valuable time pointing fingers at wild birds," the U.N.'s FAO has stated, "when we should be focusing on dealing with the root causes of this epidemic spread which...[include] farming methods which crowd huge numbers of animals into small spaces." [\(24\)](#)

A Global Problem

With intensive confinement operations spreading around the globe, southern China may lose its distinction as purported pandemic epicenter of the world. [\(25\)](#) In Chile in 2002 [\(26\)](#) and in Italy and Mexico in the 1990s, the same scenario played out: A low-grade waterfowl virus found itself locked inside a building with thousands of chickens, leading to the "now predictable mutation to a highly pathogenic virus." [\(27\)](#)

In Mexico, a low-grade H5N2 virus, causing no more than mild respiratory symptoms in chickens, found its way into industrial poultry facilities outside Mexico City and turned deadly, [\(28\)](#) eventually affecting nearly a billion birds throughout the country. [\(29\)](#) The "informative, but frightening" [\(30\)](#) lesson to be learned from the Mexico outbreak is that once a

harmless waterfowl virus is introduced into millions of farmed chickens,[\(31\)](#) it can "accumulate multiple mutations and become a highly pathogenic strain that causes high mortality."[\(32\)](#)

The Italian outbreak in 1999-2000 among "intensively reared poultry" caused the deaths of over 13 million birds in 3 months, evolving into a virus with 100% morbidity and 100% mortality,[\(33\)](#) which means once the virus got into a flock, every bird caught it and every bird died. Over the preceding 20 years, the Italian poultry industry had grown and industrialized dramatically, particularly in the Veneto and Lombardia regions, where the 1999 epidemic broke out.[\(34\)](#)

The epidemic wiped out both broiler chicken and egg operations. OIE veterinary officials in Italy at the time wrote, "To date, HPAI has affected virtually all intensively reared avian species regardless of age or housing system."[\(35\)](#) The virus spread slower within battery-cage egg facilities than broiler chicken sheds. Although all the caged laying hens would eventually succumb, the virus spread from cage to neighboring cage, instead of exploding throughout the building at once as was seen in the broiler chickens living directly on their own waste. The investigating scientists suspect then that the behavior of viral spread "was probably related to the amount of infected feces in direct contact with the birds."[\(36\)](#) This suggests that outdoor flocks may be the least risk since droppings may quickly dry in the sun and open air, rapidly killing any virus contained within.[\(37\)](#)

Animals and Humans at Risk

The intensive chicken and egg industries are not only playing with fire with no way to put it out, they are fanning the flames. And firewalls to contain the virus don't exist. A pandemic of H5N1, or a comparable future bird flu, has the capacity to spark a devastating human catastrophe. It may be wiser to move away from intensive poultry production altogether or, at the very least, stop encouraging its movement into the developing world.

Drawing on his 37 years of experience within the poultry industry, Ken Rudd concluded his trade publication article, "Poultry reality check needed," with these prophetic words:

"Now is the time to decide. We can go on with business as usual, hoping for the best as we charge headlong toward lower costs. Or we can begin making the prudent moves needed to restore a balance between economics and long-range avian health. We can pay now or we can pay later. But it should be known and it must be said, one way or another we will pay."[\(38\)](#)

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Good Egg Political
Action Committee
(GEPAC)

A ballot initiative in California that would place restrictions on the housing of commercial egg laying hens is scheduled for the fall 2008 elections. The specific workings of the initiative are imprecise. Nonetheless, informed expectations and careful assessments are that, if passed, the resulting regulations would eliminate the use of cage systems for laying hens in California and may even be more restrictive. If passed, the initiative would mean that typical non-cage systems would be restricted as well. The restrictions imposed by the new policy would take effect at the beginning of 2015, allowing about six years for adjustment.

Citizens of California will be impacted in many ways if Proposition 2 is passed. The initiative will have an economic impact on both consumers buying eggs in the grocery stores and producers who may be forced out of business due to the expensive changes the initiative demands. Communities where layer hen facilities are located will face hard times as companies move their facilities (and jobs) to other states or to Mexico as a result of Proposition 2. The initiative is intended to make the egg industry more humane, and yet many experts believe that bird health will decline and fatality rates will increase if Proposition 2 is passed and all layer facilities became cage free. Human health may also be in danger because the cage free system can lead to an increase in *Salmonella* outbreaks. This paper will outline the impact that Proposition 2 would have on Californians.

Economic Impact

The California egg industry has a significant role in California agriculture. It produces almost five billion eggs per year from almost 20 million laying hens. Value of production was about \$213 million in 2006, about \$337 million in 2007 due to much higher egg prices. Production in California has declined substantially since its peak of about nine billion eggs in 1971, when California was shipping eggs to out-of-state consumers. In 2008, California is a substantial net importer of eggs produced in other states, producing about six percent of the national total of table eggs and consuming about 12 percent, based on population shares. Shipments into California come from a broad portfolio of states including Iowa, Minnesota, Utah, Missouri, Michigan and several other important sources. The relative size and comparative position of the California egg industry are important factors in understanding the likely economic impacts of the initiative.

Non-cage production does occur now in California and in other U.S. states. However, the share of non-cage production is quite small, about five percent of the total, including non-cage eggs that also qualify as organic. The best evidence from a variety of sources suggests that (non-organic) non-cage systems incur costs of production that are at least 20 percent higher than the common cage housing systems. The source of these added costs per dozen range across the major categories including (a) higher feed costs (due to more feed consumption per laying hen and fewer eggs produced), (b) higher layer hen mortality, which leads especially to higher pullet cost per dozen eggs amortized over the life of the flock (c) higher direct housing costs per dozen eggs (because there are fewer hens per flock and fewer marketable eggs over the life of each hen in the flock), and (d) higher labor costs (due to fewer hens per flock, fewer eggs per hen, and more labor per dozen in gathering eggs). In making these assessments, we use cost information from farms that use both cage-free and typical cage systems. Such data allow more direct comparisons of costs than do data comparing specialized farms, which may have different scale economies and hence different costs per dozen eggs for reasons other than the housing system used.

Retail prices for non-organic non-cage eggs are at least 25 percent higher than those for eggs produced in cage systems, reinforcing the information from estimates of cost differentials. These retail price comparisons apply to cage and non-cage eggs of the same grade, size, color and brand of eggs and sold in the same supermarkets.

California Egg Industry in Danger

Despite transport costs of feed and eggs, there is now a national market for eggs in the United States. Based on the evidence we have examined, the California egg industry competes vigorously with other states. This competition is indicated by the fact that shipments of eggs out of California, as well as the dominate share of liquid egg use in food service and food processing. Thus, any regulation or any other factor that raises the costs of egg production in California relative to the cost of egg production in other states will strongly favor expansion of the share of out of state eggs in the California market. And, since the proposed restrictions on production methods apply only to eggs produced in California, the regulations implied by an successful initiative would raise costs of California producers by at least 20 percent relative to its out of state competitors.

Our analysis indicates that the expected impact would be the almost complete elimination of egg production in California within the six-year adjustment period. Non-cage production costs are simply too far above the costs of the cage system used in other states to allow California producers to compete with imported eggs in the conventional egg market. The most likely outcome, therefore, is the elimination of almost all of the California egg industry over a few years.

The majority of eggs produced in California come from one of several areas where the egg industry has grown. Major production comes from San Diego, San Bernardino and Riverside Counties in Southern California; Merced, Stanislaus and San Joaquin Counties in the Central Valley; and Sonoma County on the Northern Coast. The communities that are home to California's egg industry would suffer if the egg industry was driven out of California by the initiative.

Animal Health

In reviewing the Proposition, our Committee on Poultry Welfare found that there is no credible scientific basis to support the space requirement for laying hens detailed in the Proposition. Proposition 2 will not have a positive effect on hen welfare. In fact, Proposition 2 would ban new housings systems which research has shown to have favorable impacts on hen health and behavior.

Proposition 2 will result in birds that remain in the state being housed outside. Even modern cage-free housing using the best farming practices will be banned by the initiative. Hens living outdoors have increased exposure to wild birds carrying disease. In Europe and Asia hens living outdoors have been among the first to become infected with Avian Influenza. This puts human health, as well as hen health, at risk without justifiably increasing hen welfare.

Human Health & Food Safety

Avian Influenza is not the only threat to public health that could arise as a result of Proposition 2. The threat of *Salmonella* poisoning in humans is also increased as a result of the initiative.

Modern housing systems provide optimal egg sanitation by creating a barrier separating fecal material from eggs and chickens. This separation dramatically reduces the risk of *Salmonella* contamination. The decreased risk of contamination leads to decreased human cases of Salmonellosis. In the past ten years, California consumers have not had a human outbreak of *Salmonella* enteritidis (SE) associated with eggs produced in California. Proposition 2 could compromise this record as eggs are imported from outside the state.

The food safety management practices of California egg producers are among the most successful in the United States and are directly credited for decreasing *Salmonella* prevalence at the consumer level. These management characteristics include the use of the California Egg Quality Assurance Plan (CEQAP). Initiated in 1994, CEQAP is a pathogen reduction program for *Salmonella* and in California, 98% of egg farms adhere to the toughest, most stringent food safety standards in

the U.S. under the program. California farmers' commitment to the highest level of food safety almost guarantees the safety of the eggs produced in California.

If Proposition 2 is passed, food safety will be threatened in two ways – 1) eggs will no longer be separated from hens and their waste, proven to be the best method to minimize the risk of *Salmonella* and 2) eggs production will move out of California and out of the hands of farmers and researchers who have built a cooperative system of responsible, scientific farm management. The eggs Californians eat will be imported from other states (and possibly Mexico) where the same level of quality cannot be ensured.

Conclusion

However well intentioned, Proposition 2 is risky, dangerous, and from a food safety and public health perspective, scientifically unfounded. It threatens to wipe out the California egg industry and puts the communities that are home to the egg industry in danger. The proponents of Proposition 2 say it is a “modest” measure, but quite the opposite is true. It is wide sweeping, onerous and extreme.

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**PEW COMMISSION ON
INDUSTRIAL FARM
ANIMAL PRODUCTION**

The Pew Commission on Industrial Farm Animal Production was established through a grant from The Pew Charitable Trusts to The Johns Hopkins Bloomberg School of Public Health to recommend solutions to the problems created by concentrated animal feeding operations in four primary areas: public health, the environment, animal welfare, and rural communities. The Commission heard approximately 54 hours of testimony from stakeholders and experts, received technical reports from academics from institutions across the country, and visited operations in Iowa, California, North Carolina, Arkansas, and Colorado, to gather information on each of the subject areas. In addition, each of the Commissioners brought his or her own unique experiences and expertise to bear during Commission deliberations.

Over the past 50 years, the production of farm animals for food has shifted from the traditional, extensive, decentralized family farm system to a more concentrated system with fewer producers, in which large numbers of animals are confined in enormous operations. While we are raising approximately the same number of swine as we did in 1950, for example, we are doing so on significantly fewer, far larger farms, with dramatically fewer farm workers. This production model—sometimes called industrial farm animal production—is characterized by confining large numbers of animals of the same species in relatively small areas, generally in enclosed facilities that restrict movement. In many cases, the waste produced by the animals is eliminated through liquid systems and stored in open pit lagoons.

The IFAP system, as it exists today, too often concentrates economic power in the hands of the large companies that process and sell the animal products, instead of the individuals who raise the animals. In many cases, the “open market” for animal products has completely disappeared, giving the farmer only one buyer to sell to, and one price to be received.

In addition to raising animals in closer proximity, steps were taken to streamline the process of raising animals for food, including standardized feed for rapid weight gain and uniformity; genetic selection to accentuate traits, such as leanness, that create uniform meat products; and mechanization of feeding, watering, and other husbandry activities. This streamlined processing and standardization is typical of the evolution of industrial pursuits, and is intended to be more economical by lowering the amount of input required to achieve a marketable product, as well as to ensure a uniform product. This process in food animal production has resulted in farms that are easier to run, with fewer and often less-highly-skilled employees, and a greater output of uniform animal products. However, there are unintended consequences of this type of animal production.

This transformation, and the associated social, economic, environmental, and public health problems engendered by it, have gone virtually unnoticed by many American citizens. Not long ago, the bulk of the fruit, grain, vegetables, meat, and dairy products consumed by the American people were produced on small family farms. These farms once defined both the physical and the social character of the US countryside. However, the steady urbanization of the US population has resulted in an American populace that is increasingly disassociated from the production system that supplies its food. Despite the dramatic decline in family farms over the past 50 years, many Americans, until very recently, continued to think that their food still came from these small farms.

While increasing the speed of production, the intensive confinement production system creates a number of problems. These include contributing to the increase in the pool of antibiotic-resistant bacteria because of the overuse of antibiotics; air quality problems; the contamination of rivers, streams, and coastal waters with concentrated animal waste; animal welfare problems, mainly as a result of the extremely close quarters in which the animals are housed; and significant shifts in the social structure and economy of many farming regions throughout the country. It was on these areas that the Commission focused its attention.

Public Health

As previously mentioned, one of the most serious unintended consequences of industrial food animal production (IFAP) is the growing public health threat of these types of facilities. In addition to the contribution of IFAP to the major threat of antimicrobial resistance (Smith et al., 2002; Smith et al., 2007), IFAP facilities can be harmful to workers, neighbors, and even those living far from the facilities through air and water pollution, and via the spread of disease.

Workers in and neighbors of IFAP facilities experience high levels of respiratory problems, including asthma (Donham and Gustafson, 1982; Donham et al., 1989; Donham et al., 1995; Donham et al., 1985 a; Donham et al., 2007; Merchant et al., 2005; Mirabelli et al., 2006 a; Mirabelli et al., 2006 b; Sigurdarson and Kline, 2006; Thu, 2002). In addition, workers can serve as a bridging population, transmitting animal-borne diseases to a wider population (Myers et al., 2006; Saenz et al., 2006). A lack of appropriate treatment of enormous amounts of waste may result in contamination of nearby waters with harmful levels of nutrients and toxins, as well as bacteria, fungi, and viruses (Nolan and Hitt, 2006; Peak et al., 2007), all of which can affect the health of people both near and far from IFAP facilities.

Antibiotics are one type of antimicrobial. Antimicrobials are substances that kill bacteria or suppress their multiplication or growth, and include antibiotics, some minerals, metals, and synthetic agents. The use of antibiotics for growth promotion began with the poultry industry in the 1940s when it discovered that the use of tetracycline-fermentation byproducts resulted in improved growth (Stokstad, 1954; Stokstad and Jukes, 1958-1959). Since then, the practice of adding low levels of antibiotics and growth hormones to stimulate growth and improve production and performance parameters has been common among IFAP operations for all species.

Because any use of antibiotics results in resistance, this widespread use of low-level antibiotics in animals, along with use in treating humans, contributes to the growing pool of antimicrobial resistance in the environment. The threat from antimicrobial resistance became more apparent in the 1990s as the number of cases of drug resistant infections increased in humans. A World Health Organization (WHO) Report on Infectious Diseases published in 2000 expressed alarm at the spread of multi drug – resistant infectious disease agents, and pointed to food as a major source of antimicrobial-resistant bacteria.

Since the discovery of the growth-promoting and disease fighting capabilities of antibiotics, farmers, fish-farmers, and livestock producers have used antimicrobials. This ongoing and often low-level dosing for disease prevention and growth inevitably results in the development of resistance in bacteria in or near livestock because a selective pressure that does not kill fosters resistance (WHO, 2000).

While it is difficult to measure what percent of resistant infections in humans are caused by antimicrobial use in agriculture as opposed to other settings, it can be assumed that the wider the use of antimicrobials, the greater the chance for the development of resistance. Reports on the amount of antibiotics used in animals range from 17.8 to 24.6 million pounds per year. The Union of Concerned Scientists estimates that 70% of the antibiotics used in the United States annually are used in farm animals (Mellon et al., 2001). As the amount of antimicrobials present in the general environmental pool becomes greater, so too does the chance of resistance developing within many different bacterial populations. This is due, in part, to the way resistance is spread between capable bacteria. For example, many bacteria live in the human digestive tract or on human skin. These are not normally harmful (and are often helpful). However, these harmless bacteria may still be capable of passing resistance to other bacteria that are harmful, or could then become harmful.

Feed formulation further influences risks because the feeds supplied to confined animal populations are significantly different from the foraged feeds traditionally available to poultry, swine, or cattle. IFAP not only causes concerns about the health of the animals present, but the basic production model creates concerns with respect to human health, as well. Health risks are a function of exposure, with those engaged directly in livestock production typically having more frequent

and more concentrated exposures to chemical or infectious agents, and others, such as those involved in support services, having lower rates of exposure. Health risks may extend far from the IFAP facility, however.

Groundwater contamination, for example, can extend throughout the aquifer, affecting drinking water supplies far from the source of contamination. Infectious agents arising in IFAP facilities may be transmissible from person to person in a community setting and well beyond. An infectious agent that originates at an IFAP facility may persist through meat processing and contaminate a consumer meat product, resulting in a serious disease far from the IFAP facility.

Agricultural workers may serve as a bridging population between their communities and animal confinement facilities. Because it is categorized as an agricultural process, IFAP is largely exempt from state and federal industrial exposure monitoring, inspection, injury– disease reporting, and surveillance. Without monitoring, it is extremely difficult for public health officials to reduce the occupational health risk associated with IFAP. The toxic gases and organic dusts associated with IFAP facilities have the potential to produce upper respiratory irritation in confinement facility workers.

The emissions from confinement facilities, however, may affect communities proximate to those facilities, as well as populations far away from these operations. In particular, the elderly, those with compromised respiratory systems or chronic conditions that limit their mobility, and children are at most risk of asthma and other respiratory illnesses. Depression and other symptoms have also been attributed to emissions from such facilities (Schiffman et al., 1995).

Recommendations:

Phase Out and Then Ban the Non therapeutic Use of Antimicrobials

The use of antibiotics and other antimicrobials as growth promoters and in the absence of a diagnosed illness in industrial animal operations is a common practice. In 1998, the National Academies of Science (NAS) estimated that antibiotic-resistant bacteria increased health care costs by a minimum of \$5 billion annually, or approximately \$13 per person, per year (IOM, 1998). The next year, the NAS estimated that eliminating all antimicrobials as feed additives would cost each American consumer less than \$10 per year (NAS, 1999).

The Commission recommends phasing out and then banning the non-therapeutic use of antimicrobials in food animal production. The Commission defines non therapeutic as any use of antimicrobials in food animals in the absence of clinical disease or documented disease exposure.

The Commission recommends that the first step in this process should be an immediate ban on any new approval of antimicrobials for non-therapeutic uses in food animals and retroactive investigation of antimicrobials previously approved.

Improve Disease Monitoring and Tracking

A voluntary animal tracking system, called the National Animal Identification System (NAIS), has been implemented by the Animal Plant and Health Inspection Service (APHIS) of the United States Department of Agriculture. The goal of the NAIS voluntary system is a 48-hour track back to identify exposures, since that time frame is vital to containing the spread of infection (USDA and APHIS, 2006).

The first two phases of the NAIS are the registration of premises and individual animals or units of animals using a US Animal Identification Number (USAIN) (USDA, 2005). According to the USDA, the USAIN will evolve into the sole national numbering system for the official identification of individual animals in the United States. The Commission views animal identification as an important public health issue. The need for a rapid, accurate trace back system to protect public health in the event of a disease outbreak is critical.

The Commission recommends the implementation of a disease monitoring program for food animals with a 48-hour track

back of those animals at every stage of production in a fully integrated and robust database. A mandatory premise and individual animal or lot registration should be in effect by 2009, with an animal tracing capability in place by 2010. The tracking system should follow food animals from birth to consumption, including movement, illness, breeding, feeding practices implemented, slaughter condition and location, and point of sale.

Rural Life

Life in rural America has long been challenged by persistent poverty. The causes are many, but among them is the lack of economic diversity in rural economies. Workers have few options in the event of a plant closure or other dislocation, and unemployment rates are high. Consequently, local economic development officials frequently consider IFAP an attractive new source of economic opportunity. But higher rates of poverty are equally prevalent in areas of high IFAP concentration, an association confirmed by Durrenberger and Thu's finding of higher rates of food stamp use in Iowa counties with industrialized hog production (Durrenberger and Thu, 1996).

The industrialization of American agriculture has transformed the character of agriculture itself and, in so doing, the face of rural America. The family-owned farm producing a diverse mix of crops and food animals is largely gone as an economic entity, replaced by ever larger industrial farms producing just one animal species or growing just one crop, and rural communities have fared poorly. Industrialization has been accompanied by increasing farm size and gross farm sales, lower family income, higher poverty rates, lower retail sales, lower housing quality, and lower wages for farm workers.

As the food animal industry shifted to a system with a reduced number of companies for livestock producers to sell to, as well as one controlled by production contracts, economic power shifted from farmers to livestock processors. Farmers relinquished their once-autonomous animal husbandry decision-making authority in exchange for contracts that provide assured payment but require substantial capital investment. Once the commitment is made to such capital investment, many farmers have no choice but to continue to produce until the loan is paid off. Such contracts make it nearly impossible for there to be open and competitive markets for most hog and poultry producers, who must enter into contracts with the so-called integrators (meat packing companies) if they are to sell their product.

Although the proponents of the industrialization of livestock agriculture point to the increased economic efficiency of IFAP operations, the Commission is concerned that the benefits may not accrue in the same way to the rural communities where these operations exist. The Commission's technical report on economics in swine production showed that the current method of intensive swine production is only economically efficient due to the externalization of costs associated with waste management. In fact, industrialization leading to corporate ownership actually draws investment and wealth from the communities in which specific IFAP facilities are located (Abeles-Allison and Connor, 1990).

Merely tweaking our mono-culture confinement farm animal production methods is not likely to reverse the negative impacts on public health, environment, animal welfare, and rural America. At the same time, the Commission believes that there are practical solutions to these problems that can start immediately that will ensure that the productivity of farm animal production can be maintained well into the future. Recommendations address criteria for proper siting of IFAP facilities, increasing market competition, and fairness in production contracts in an effort to improve life in rural America. The Commission does not believe that the nation's demand for food can be met by turning back the clock to the 1950s. At the same time, there is much that can be done to address the problems that industrialization of agriculture has brought. The system of the future may be a mix of small and medium-sized extensive operations as well as large, more humane, sustainable intensive operations such as hoop barns in swine production and intensive rotational grazing in beef production.

There is increasing urgency to chart a new course. Our energy, water, and climate resources are undergoing dramatic changes that, in the judgment of the Commissioners, will require agriculture to transition to much more biologically diverse

systems, organized into biological synergies that exchange energy, improve soil quality, and conserve water and other resources.

Recommendations:

Increase Competition in the Livestock Market

The transformation of rural society and the farm economy in many agricultural regions of the country over the past three or four decades has been profound. With the increasing consolidation of agriculture, including livestock production, and the transition to ever larger units of production, small to mid-size family farms in which agricultural activities account for the bulk of family income have rapidly disappeared throughout the nation.

Each year, the number of people engaged in agriculture in America grows smaller. What was once a richly textured way of life supported by countless small town businesses and a corresponding network of health, education, and social services that were once prevalent throughout many rural areas, has been dramatically altered. Quite literally, rural life in many parts of the nation has withered, leaving once thriving farm communities with an increasingly ghostlike appearance.

There are multiple factors behind the changing face of rural American society, the rise of industrialized agriculture being only one. However, the increasing concentration and integration of the livestock production process from breeding and insemination to slaughter, processing, and the distribution and sale of meat and dairy products raises issues associated with competitive fairness and economic life in rural areas that continue to spark passionate debate throughout rural America, and which are the subject of increasing rancor and confrontation.

The Commission believes that vigorous market competition is of vital importance to consumers and the overall health of the American economy. The nation benefits from an open, competitive, and fair market where the values of democracy, freedom, transparency, and efficiency are in balance.

The Commission recommends the vigorous enforcement of current federal antitrust laws to restore competition in the farm animal market. If enforcing existing anti-trust laws is not effective in restoring competition, further legislative remedies should be considered, such as more transparency in price reporting and limiting the ability of integrators to control the supply of animals for slaughter.

Improve Research in Animal Agriculture

IFAP can have a dramatic impact on health, on the environment, and certainly on the lives of the animals themselves. As the Commission traveled across the country, meeting with experts in animal agriculture, the general public, and stakeholders, it heard the recurring theme of the need for independently funded research. The strongest comments came from the academic research community.

The three main areas of concern were:

- 1) The lack of public funding for research into IFAP issues. The increase in research funding by members of the animal agriculture industry. The lack of transparency in funding sources in much agricultural research. With declining public research dollars, investigators turn to other funding sources. Increasingly, those sources are the giant multinational agricultural companies that have a vested interest in positive findings. Certainly, companies may want to fund research to help them improve their business, but if such funding is the major source for research, that funding source should be reported. The same may be said if an advocacy organization is the majority funder.
- 2) This transparency is particularly important with university extension programs. These programs are the “on the ground” location where research is “translated” into practice. Often, a farmer may be told that something is

“best”, without any awareness of who funded the research that backs that statement. They may then employ, in good faith, a practice that is not “best,” but instead contributes to the environmental, public health, animal welfare, and community issues.

- 3) Increasing public research dollars into IFAP should be a major focus, since this form of animal agriculture impacts so many aspects of life. The Commission’s effort to gather unbiased information was affected by the industry’s undue influence on academic researchers. It is extremely unfortunate that this is the case, because with appropriate independent funding, science may be able to solve many of the problems resulting from IFAP.

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