

No. 21-468

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IN THE  
**Supreme Court of the United States**

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NATIONAL PORK PRODUCERS COUNCIL, *et al.*,  
*Petitioners,*

v.

KAREN ROSS, *et al.*,  
*Respondents,*

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**On Writ of Certiorari to the  
United States Court of Appeals  
for the Ninth Circuit**

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**BRIEF OF *AMICUS CURIAE*  
AMERICAN ASSOCIATION OF SWINE  
VETERINARIANS IN SUPPORT OF PETITIONERS**

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**IDENTITY AND INTEREST  
OF *AMICUS CURIAE*<sup>1</sup>**

The American Association of Swine Veterinarians is a professional association of veterinarians who care for swine. The Association has approximately 1300 members involved in practice, industry, and academia in more than 40 countries. Its mission is to educate swine veterinarians; to promote the health and well-being of pigs; to advocate science-based approaches to veterinary, industry, and public-health issues; to help develop and distribute resources to support veterinary professionals; to create opportunities for personal and professional growth and interaction; and to mentor students and encourage lifelong careers as swine veterinarians. *Amicus* therefore has a direct interest in the welfare of pigs and the safety of pork—which is the stated goal of Proposition 12, the law at issue in this litigation.

Proposition 12, and other laws like it, were inspired in significant part by the belief that housing breeding sows in individual stalls must be harmful to the animals' welfare. The veterinary-science profession recognizes that any assessment of animal welfare requires "integrat[ing] moral views with biological facts."<sup>2</sup> In this context, "science has the important

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<sup>1</sup> This amicus brief is filed with the parties' consent. No counsel for any party authored this brief in whole or in part, and no monetary contribution intended to fund the preparation or submission of this brief was made by such counsel or any party.

<sup>2</sup> Barnett et al., *A Review of the Welfare Issues for Sows and Piglets in Relation to Housing*, 52 *Australian J. Agric. Res.*, at 1 (2001).

role of establishing the facts on how animals biologically respond to the practices under question.”<sup>3</sup> Unfortunately, in many respects “[t]he stall issue has been driven primarily by perception and not science.”<sup>4</sup> Putting perception aside, a well-established body of scientific literature assessing biological metrics of sow welfare in individual stalls and group pens shows that both housing methods can be important tools in managing a healthy herd. Categorically banning one of them, as Proposition 12 does, will likely harm rather than improve animal well-being.

A secondary justification for laws like Proposition 12 has been the contention that using individual stalls for sows creates a safety risk for humans in the form of contaminated food or disease resistance in bacteria. This contention is not supported by scientific evidence and is not plausible in light of the established practices of pig farms.

*Amicus* files this brief to provide the Court with this important scientific context.

### SUMMARY OF ARGUMENT

Any system for housing farm pigs must address sows’ natural tendency to establish a social order through aggression—with the animals suffering injuries in the process and the losers suffering food deprivation and related maladies. Extensive research

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<sup>3</sup> *Ibid.*

<sup>4</sup> Salak-Johnson, *The Reality of Sow Stalls*, at 1, 2007 Proc. of the Sow Housing Forum (National Pork Board, Des Moines).



has documented that individual stalls are the most effective way known to prevent aggression and protect sows at the bottom of the social order. Allowing sows to live in group pens gives them greater freedom of movement, but it requires the use of more elaborate—and less effective—management systems to limit injuries and food deprivation from social sorting.

There is a strong scientific consensus that, in order to maximize animal welfare, the choice between individual stalls and group pens must be made on a case-by-case basis, depending on the circumstances faced by each individual herd and farm. When this choice is made according to sound husbandry and veterinary principles, animal-welfare outcomes are similar between group housing and individual stalls. Farmers have also become more and more sophisticated about using blended stall and group-housing systems to achieve the best results. However, housing sows in a system that is inappropriate for their circumstances—whether due simply to a mistake of judgment or to legal constraints—can lead to reduced animal welfare.

Finally, there is no evidence that the use of individual stalls for sows poses any risk to human health, and there are several objective reasons why it would be unlikely to do so.

## ARGUMENT

### **I. Proposition 12 Will Deprive Farmers Of Important Tools For Maintaining A Healthy Herd.**

#### **A. The scientific evidence shows that both individual stalls and group pens are important tools for sow welfare.**

Farmers and veterinarians seek to manage their herds so that all the animals enjoy good health and productivity. A considerable obstacle to that goal is the natural social sorting that occurs in a herd of pigs.

Pigs are like any social animal: left in a herd, they fight to establish a dominance order, with all competitors suffering injuries and the losers getting less food and poorer breeding opportunities. Breeding sows kept on farms are no exception. Research has thoroughly documented that “a dominance order is formed with some sows becoming dominant, intermediate, and subordinate.”<sup>5</sup> “Aggression” is a necessary part of this process because sows “have to fight to establish a dominance hierarchy.”<sup>6</sup> “[S]ignificant stress and injuries occur as the animals fight to establish social order in the competition

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<sup>5</sup> Rhodes et al., *A Comprehensive Review of Housing for Pregnant Sows*, 227 JAVMA No. 10, at 1583. (Nov. 2005).

<sup>6</sup> Levis & Connor, *Group Housing Systems: Choices and Designs*, at 2 (National Pork Board 2013), <https://porkcheckoff.org/wp-content/uploads/2021/05/Group-Housing-Systems-Choices-and-Design.pdf>

for space and feed, which can lead to compromised animal welfare and reproductive failure.”<sup>7</sup> Frequent injuries from such fights include the maiming of sows’ reproductive organs and permanent harm to other body parts. And once the social hierarchy is established, “[l]ower ranking sows find it harder to compete” for food and other advantages, causing them and their offspring to suffer various health impairments.<sup>8</sup>

All of that is most true at times when sows are especially vulnerable: when they are newly pregnant, nursing, or recovering from nursing immediately after weaning their piglets. Research has suggested that sows are more vulnerable to fighting, stress, and injuries during the weeks immediately after they conceive piglets.<sup>9</sup> And “[d]uring parturition [i.e., birth] and early lactation, restriction of movement can help reduce the risk of sows injuring their pig-

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<sup>7</sup> Knox & Estienne, *Group Housing Systems: Forming Gilt and Sow Groups*, at 1 (National Pork Board 2013), <https://porkcheckoff.org/wp-content/uploads/2021/05/Group-Housing-Systems-Forming-Gilt-and-Sow-Groups.pdf>

<sup>8</sup> Stalder et al., *Gestation Sow Housing and its Implications on Health*, at 8, 2007 Proc. of the Sow Housing Forum (National Pork Board, Des Moines).

<sup>9</sup> Stevens et al., *Effects of Stage of Gestation at Mixing on Aggression, Injuries and Stress in Sows*, 165 *Applied Animal Behaviour Science* 40, at 40, 45 (2015). Other authors describe the evidence on this point as “conflicting.” Knox et al., *Effect of Day of Mixing Gestating Sows on Measures of Reproductive Performance and Animal Welfare*, *J. Anim. Sci.* 92:1698, at 169 (2014).

lets.”<sup>10</sup> (Proposition 12 itself recognizes this, as it exempts birthing and nursing sows from its square-footage requirements. App.45a.)

One of the central challenges of hog farming and veterinary practice, therefore, is maximizing animal welfare and productivity across the entire herd, not just for the socially dominant sows. There are two basic housing options for sows: individual stalls and group pens. The effects of these options on sow welfare have been studied extensively in recent decades, resulting in “widespread and multidisciplinary” data.<sup>11</sup> As a result, “there is a large body of information on housing systems that allows us to understand the relative benefits and constraints of each system better.”<sup>12</sup>

The longest-established method for preventing intra-herd aggression is to place sows in individual stalls, creating physical barriers that prevent dominant sows from harming others or taking their food. “Individual confinement systems” for sows “were introduced hundreds of years ago, particularly for far-

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<sup>10</sup> Rhodes et al, *Comprehensive Review of Housing, supra*, at 1583.

<sup>11</sup> McGlone et al., *Compilation of the Scientific Literature Comparing Housing Systems for Gestating Sows and Gilts Using Measures of Physiology, Behavior, Performance, and Health*, *Professional Animal Scientist* 20 (2004):105, at 106.

<sup>12</sup> *Id.* at 113; accord McGlone, *Gestation Stall Design and Space: Care of Pregnant Sows in Individual Gestation Housing*, at 1 (National Pork Board 2013) (“Much has been written about the science of sows in gestation accommodations.”), [https://porkcdn.s3.amazonaws.com/sites/all/files/documents/2013SowHousingWebinars/Gestation Stall Design and Space.pdf](https://porkcdn.s3.amazonaws.com/sites/all/files/documents/2013SowHousingWebinars/Gestation%20Stall%20Design%20and%20Space.pdf)

rowing [i.e., giving birth],” and they became “common” by the early 20<sup>th</sup> century.<sup>13</sup> For pregnant sows, individual stalls were explored in earnest by farmers starting in the 1950s, became common in the ’60s, and became the most common practice by the late ’80s,<sup>14</sup> “predominantly” in order “to control feed intake and reduce aggression.”<sup>15</sup>

As explained further below, there is strong scientific consensus that individual stalls provide health benefits by protecting sows from aggression and social subordination. This reality was a major factor in the widespread adoption of gestation stalls. By the 1980s, early research had shown “that there was no physiological evidence that stalls (of certain designs) were associated with a risk to the welfare of pregnant pigs.”<sup>16</sup> And later researchers concluded that “[h]ousing sows in stalls throughout gestation has been shown to result in the highest farrowing rates, longevity, and welfare,”<sup>17</sup> and that “stall housing ... may have reproductive and welfare advantages.”<sup>18</sup> On the other hand, some researchers have concluded

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<sup>13</sup> *Ibid.*

<sup>14</sup> *Ibid.*; see also Stalder et al., *The Impact of Gestation Housing Systems on Sow Longevity*, at 1, 2007 Proc. of the Sow Housing Forum (National Pork Board, Des Moines).

<sup>15</sup> Barnett, *Review of Welfare Issues*, *supra*, at 5; see Stalder et al., *Impact of Gestation Housing*, *supra*, at 1 (individual stalls allow “individual feeding and health management”).

<sup>16</sup> Barnett, *Review of Welfare Issues*, *supra*, at 5.

<sup>17</sup> Knox & Estienne, *Group Housing Systems*, *supra*, at 5.

<sup>18</sup> Barnett, *Review of Welfare Issues*, *supra*, at 21.

that “[s]tereotypic behavior” suggesting “welfare problems” can be “more often observed in stall-housed sows than in pen-housed sows.”<sup>19</sup> And there is some evidence that allowing pregnant sows more exercise may offer limited improvement in the health of their offspring.<sup>20</sup> Farmers have attempted to address some of these issues by changing the design of sow stalls. Some farmers, for example, now use stalls with a “swing partition between the rear two-thirds of adjacent stalls” in order to “allow[] pigs to turn around.”<sup>21</sup> There is some evidence that this stall design leads to less stress in sows.<sup>22</sup> Other barns include multiple sizes of stalls for the comfort of sows of different sizes.<sup>23</sup>

The alternative to individual stalls is to allow sows to live together in a group pen. This, of course, allows animals to move more freely<sup>24</sup>—but it introduces the problems of fighting, injury, and competi-

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<sup>19</sup> Rhodes et al., *Comprehensive Review of Housing*, *supra*, at 1584; see McGlone, *Updated Scientific Evidence on the Welfare of Gestating Sows Kept in Different Housing Systems*, 29 *Professional Animal Scientist* 189, at 197 (2013).

<sup>20</sup> Vonnahme et al., *Placental Programming: How the Maternal Environment can Impact Placental Function*, 91 *J.Anim.Sci.* 2467, at 2476 (2013).

<sup>21</sup> Barnett, *Review of Welfare Issues*, *supra*, at 5.

<sup>22</sup> Knox & Estienne, *Group Housing Systems*, *supra*, at 3.

<sup>23</sup> McGlone, *Updated Scientific Evidence*, *supra*, at 2-3 & tbl.2.

<sup>24</sup> Bates & Ferry, *Group Housing Systems: Production Flow and Management*, at 9 (National Pork Board 2013), <https://porkcheckoff.org/wp-content/uploads/2021/05/Group-Housing-Systems-Production-Flow.pdf>

tion for food. These problems are serious ones. It is very well documented that “aggression is a major challenge when group-housing pigs.”<sup>25</sup> Thus, “without adequate management of aggression, group housing can severely impact the well-being of subordinate sows,”<sup>26</sup> since “aggressive interactions ... can have long-term consequences on animal physiology, lesions, and lameness.”<sup>27</sup>

For this reason, injury rates for sows tend to be higher in group housing than in individual stalls.<sup>28</sup> “[O]ne of the most common and serious aggressive interactions” between sows is “vulva biting.”<sup>29</sup> “Vulva bites occur when a sow approaches another sow from behind and uses her incisors to bite the vulva, resulting in a deep cut, partial removal, or complete amputation of the vulva. These wounds can bleed severely, are highly susceptible to infection and may attract further biting from other sows.”<sup>30</sup> Vulva injuries can permanently impair the sow’s ability to mate or give

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<sup>25</sup> Stalder et al., *Gestation Sow Housing and its Implications on Health*, at 3, 2007 Proc. of the Sow Housing Forum (National Pork Board, Des Moines); accord Rhodes et al, *Comprehensive Review of Housing, supra*, at 1584 (“Aggression and resulting physical injury can be a severe problem in group-housed sows.”)

<sup>26</sup> Stalder et al., *Gestation Sow Housing, supra*, at 3.

<sup>27</sup> Knox & Estienne, *Group Housing Systems, supra*, at 3.

<sup>28</sup> Rhodes et al, *Comprehensive Review of Housing, supra*, at 1585.

<sup>29</sup> *Id.* at 1584.

<sup>30</sup> Stalder et al, *Gestation Sow Housing and its Implications on Health*, at 4, 2007 Proc. of the Sow Housing Forum (National Pork Board, Des Moines).

birth.<sup>31</sup> “Vulva biting is a major problem with some group-housing systems,”<sup>32</sup> and “vulva lesions” can occur “in over 15% of group-housed sows.”<sup>33</sup> The problem “can be reduced, but apparently not eliminated, by improved management” in group housing, but “is eliminated by housing sows in individual stalls.”<sup>34</sup>

Fighting in group sow pens creates other ailments as well. “Body lesions” and “claw lesions” are also “associated with aggression between pen mates in group housing systems,”<sup>35</sup> and group housing “[o]ften” requires “routine treatment of feet and claws.”<sup>36</sup> Fighting “during the time of fetal implantation[] has been shown to decrease litter size and increase pregnancy loss.”<sup>37</sup> And aside from physical injuries, physiological “[s]tress” also “causes detrimental effects on [sow] health, immune function, and reproduction,” and “[a] major problem that causes stress in pigs is the aggression that occurs when

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<sup>31</sup> Stalder et al., *Group Housing Systems: Genetic Considerations*, at 6 (National Pork Board 2013), <https://porkcheckoff.org/wp-content/uploads/2021/05/Group-Housing-Systems-Genetic-Considerations.pdf>

<sup>32</sup> McGlone et al., *Compilation, supra*, at 113.

<sup>33</sup> *Ibid.*

<sup>34</sup> Rhodes et al., *Comprehensive Review of Housing, supra*, at 1584.

<sup>35</sup> *Id.* at 1585.

<sup>36</sup> Bates & Ferry, *Housing Systems, supra*, at 7.

<sup>37</sup> Stalder et al., *Gestation Sow Housing, supra*, at 6.



sows or gilts are commingled.”<sup>38</sup> Perhaps for this reason, there is evidence that sows in group housing can take longer than sows in individual stalls to recover from birth and nursing and come back into estrus, and that they conceive fewer piglets on average when they do.<sup>39</sup>

This is not to say that fighting and injury problems in group pens are insurmountable. Although “[n]o management techniques have been identified that reliably eliminate aggression” in group housing, farmers have developed various ways to “help minimize aggressive interactions.”<sup>40</sup> Evidence shows that these techniques are effective when properly implemented—but they tend to be complex and require careful planning. Such management strategies include using “static groups” and avoiding the introduction of new sows; following elaborate multi-stage processes that allow animals to gradually acclimate to each other; exposing pigs to social mixing early in life or repeatedly; or structuring the group pen into multiple “bays” to allow each sub-group of sows to have “its own ‘territory.’”<sup>41</sup> Each of these strategies

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<sup>38</sup> Knox & Estienne, *Group Housing Systems*, *supra*, at 2-3; accord McGlone, *Updated Scientific Evidence*, *supra*, at 189.

<sup>39</sup> Stalder et al., at *Gestation Sow Housing*, *supra*, at 6; Knox & Estienne, *Group Housing Systems*, *supra*, at 6.

<sup>40</sup> Rhodes et al., *Comprehensive Review of Housing*, *supra*, at 1585.

<sup>41</sup> Stalder et al, *Gestation Sow Housing*, *supra*, at 9.

requires detailed planning, careful implementation,<sup>42</sup> and extensive training for staff.<sup>43</sup>

Another challenge for group housing systems, however, is the reality of the pigs' social order itself: left on their own, sows that are weaker or that eat more slowly get less food than the dominant or faster-eating animals. Again, this challenge can often be met in group pens, but doing so is a complex undertaking. Perhaps the simplest way to address the problem is to increase “the overall feeding level ... to prevent under conditioned sows from becoming even thinner”—but doing that means that “most sows are overfed to accommodate the thin sows.”<sup>44</sup> More sophisticated systems to “reduce the competitive nature of” sow feeding “includ[e] trickle feeding, interval dropping of feed[,] or staging feeding within different areas of the pen which are divided by extra penning.”<sup>45</sup> These systems can become quite elabo-

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<sup>42</sup> See Bates & Ferry, *Group Housing Systems, supra*, at 2 (elaborate guidelines for group housing), *id.* at 3-4 (describing careful planning needed to lessen “the risk of injury and culling”).

<sup>43</sup> DeRouche & Tokach, *Group Housing Systems: Nutritional Considerations* (National Pork Board 2013), <https://porkcheckoff.org/wp-content/uploads/2021/05/Group-Housing-Systems-Nutritional-Considerations.pdf>; Bates & Ferry, *Group Housing Systems, supra*, at 6 (“improved and refined observational skills among stockpersons are needed so that they will be able to identify sows whose health may be deteriorating,” but developing these skills “is a challenging task”).

<sup>44</sup> Levis & Connor, *Group Housing Systems, supra*, at 6; see *id.* at 7-10 (describing systems in more detail).

<sup>45</sup> Harmon, *Group Housing Systems: New and Conversion Construction*, at 6 (National Pork Board 2013),

rate, involving multiple zones and traffic-control mechanisms intended to ensure that each sow gets a sufficient chance to eat.<sup>46</sup> Most elaborate of all is an electronic sow feeding system or “ESF,” in which each sow can receive a unique electronic identifier that causes an automated system to customize the amount of feed she is provided.<sup>47</sup>

To summarize, then, the scientific consensus is that the choice between group pens and individual stalls for breeding sows involves inherent trade-offs. “Group housing systems ... allow the animals to express social behaviors and sows can turn around,” but “group pens also pose welfare problems due to fighting of sows to compete for limited resources and in the establishment of a social hierarchy.”<sup>48</sup> On the

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<https://porkcheckoff.org/wp-content/uploads/2021/05/Group-Housing-Systems-New-and-Conversion-Construction.pdf>

<sup>46</sup> See Levis & Connor, *Group Housing Systems*, *supra*, at 7-9.; Gonyou et al., *Group Housing Systems: Floor Space Allowance and Group Size*, at 5-7 (National Pork Board 2013) (describing complex choices between feeding systems required to limit aggression in group pens), <https://porkcheckoff.org/wp-content/uploads/2021/05/Group-Housing-Systems-Floor-Space-Allowance-and-Group-Size.pdf>

<sup>47</sup> See Stalder et al., *Impact of Gestation Housing Systems*, *supra*, at 3 (describing an elaborate, but successful, group-management system involving “computer controlled entrance and exit gates” for individual feeding area, along with “a moving electric gate” and “electrical impulse[s]” to ensure sows use the feeders properly); Levis & Connor, *Group Housing Systems*, *supra*, at 3-4 (describing the complex choices involved in ESF systems).

<sup>48</sup> McGlone, *Updated Scientific Evidence*, *supra*, at 192.

other side of the coin, individual stalls result in “different behavior” in sows as a result of “restricted movement,” but they also reduce the “[r]ate of sow injury.”<sup>49</sup> The research demonstrates that, with proper management, these animal-welfare differences between the systems are not large on average, although they of course can be significant for individual animals.

**B. The scientific consensus is that farmers and veterinarians should have flexibility to use individual stalls when the circumstances suggest it.**

The above discussion should make plain that farmers and veterinarians cannot avoid the need to address the problem of social conflict in herds of breeding sows. The only question is whether animal welfare and productivity can be maximized by preempting the problem with individual stalls, by keeping animals in group housing using complex methods to manage the problem, or by some combination of the two. On that question, decades of research on observable indicators of animal welfare has yielded a settled scientific consensus: there is no one-size-fits-all answer to this question; each management option has its own strengths and weaknesses; and the choice between them should be made on a farm-by-farm basis in light of all the circumstances. By legally barring one option, Proposition 12 is likely to harm animal welfare rather than help it.

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<sup>49</sup> Rhodes et al., *Comprehensive Review of Housing*, *supra*, at 1587.

Research has established that, on average, “well-managed group pens and well managed stalls” result in very similar observable levels of sow welfare.<sup>50</sup> Various studies have concluded that:

- “[G]enerally accepted physiologic measures of stress are similar for sows housed in individual gestation stalls and in group pens.”<sup>51</sup>
- “Sows in stalls or pens have similar mean values across all measures” of well-being.<sup>52</sup>
- “Overall, group penning and individual crating of pregnant sows support about the same level of measurable sow welfare.”<sup>53</sup>
- Outcomes are “similar” as between “individually or grouped sows during gestation.”<sup>54</sup>

This consensus, combined with the inherent tradeoffs between systems described in the previous section, has led to a virtually unanimous conclusion in the literature that neither stall nor group housing is unambiguously better than the alternative:

- “There apparently are ... positive and negative features of all systems that have been studied.”<sup>55</sup>

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<sup>50</sup> McGlone, *Gestation Stall Design*, *supra*, at 1.

<sup>51</sup> Rhodes et al., *Comprehensive Review*, *supra*, at 1582.

<sup>52</sup> Salak-Johnson, *Reality of Sow Stalls*, *supra*, at 1.

<sup>53</sup> McGlone, *Updated Scientific Evidence*, *supra*, at 197.

<sup>54</sup> McGlone et al., *Updated Scientific Evidence*, *supra*, at 189.

<sup>55</sup> Salak-Johnson, *Reality of Sow Stalls*, *supra*, at 1.

- “[T]here is no clear cut advantage to any sow gestation housing system.”<sup>56</sup>
- “It is quite clear that there are advantages and disadvantages of all housing systems.”<sup>57</sup>
- “[B]oth gestation stalls and gestation pens can be managed to obtain good results,” and “both systems have advantages and disadvantages.”<sup>58</sup>
- “[A]ll sow housing systems in current use have advantages and disadvantages for animal welfare\*\*\*\* Because the advantages and disadvantages ... are qualitatively different, there is no simple or objective way to rank systems for overall welfare.”<sup>59</sup>

Indeed, in light of the inherent tradeoffs between stalls and pens, it is increasingly common for farms to adopt hybrid systems, keeping sows in group pens some of the time and in individual stalls at other times when they are especially vulnerable. “[M]any systems,” for instance, use individual stalls only for “35 to 42 days” after breeding.<sup>60</sup> Another prominent

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<sup>56</sup> Stalder et al., *Impact of Gestation Housing Systems*, *supra*, at 4.

<sup>57</sup> Barnett, *Review of the Welfare Issues*, *supra*, at 13.

<sup>58</sup> Moreno, *Pen Gestation Experience*, at 1, 2007 Proc. of the Sow Housing Forum (National Pork Board, Des Moines).

<sup>59</sup> Rhodes et al., *Comprehensive Review*, *supra*, at 1587.

<sup>60</sup> DeRouchey & Tokach, *Group Housing Systems*, *supra*, at 2.

system uses individual stalling between weaning and a new pregnancy, followed by group housing.<sup>61</sup>

The scientific evidence thus indicates that both individual stalls and group pens are valuable management options for sow housing. Which of them is best to use, in what proportions, and at what times in a sow's reproductive cycle, are questions that depend on the individual circumstances of a farm and its herd. Maximizing animal health and welfare therefore requires housing arrangements for sows in farm herds to be determined on a case-by-case basis, by farmers and veterinarians considering all the circumstances of each individual herd and farm. By contrast, "[u]niform housing directives" that impose a one-size-fits-all solution "could ... result in reduced sow welfare and herd reproductive performance."<sup>62</sup>

**C. Proposition 12 mandates group pens in circumstances when the science supports flexibility to use stalls.**

Proposition 12 legally mandates a one-size-fits-all solution and is therefore scientifically ill advised. As relevant here, Proposition 12 bars selling pork from a pig whose mother was "confin[ed] ... with less than 24 square feet of usable floorspace per pig," except from five days before birth until the sow stops nursing her piglets. Pet. App. 40a, 45a. As a practical

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<sup>61</sup> Ivey, *Sows Can Flourish in Pen Gestation*, 2007 Proc. of the Sow Housing Forum (National Pork Board, Des Moines).; see DeRouchey and Tokach, *Group Housing Systems*, *supra*, at 2 (stating that such a system can be "advantageous")

<sup>62</sup> Knox et al., *Effect of Day of Mixing*, *supra*, at 1699.

matter, this requirement will prevent the use of individual stalls at most times in most sow barns—thus narrowing the options farmers and veterinarians have to manage herd aggression and exposing animals to injury.

This is the result of simple operational and commercial realities. As Petitioners' brief well explains, virtually no current sow-housing systems comply with the 24-square-foot requirement. Thus, complying with Proposition 12 will require reducing the number of sows in any sow barn, which may impair the farm's financial viability. But creating Proposition-12-compliant *stalls* would pose an additional, significant up-front burden that would not be present for group pens. For a group pen to comply with the 24-square-foot requirement, no physical reconfiguration is necessary—the farm can simply reduce the size of its herd until the density level of sows is low enough. By contrast, existing individual stalls simply are not physically large enough to satisfy Proposition 12. Compliance would require tearing out existing stalls and purchasing new, larger ones. But no traditional stalls that large are commercially available—and economic realities mean that none are likely to become commercially available, even under Proposition 12. Buying individual stalls has always been a significant financial outlay for a farm. Requiring stalls to be larger, as Proposition 12 would, significantly increases the price per stall. It is unlikely that the number of farmers willing to incur that cost will be sufficient to support a commercial market in Proposition 12-compliant stalls.

For this reason, under Proposition 12 it is unlikely that many, if any, farms that serve the California



market will be able to afford to use individual stalls (except during the relatively brief periods when the square-footage requirement does not apply). The inevitable result will be that some animals for whom individual stalls would have been the best option will be forced into group pens instead—which may cause them injuries or even death.

## **II. Using Individual Stalls For Sows Has No Negative Effect On Human Health.**

Certain advocacy groups have advanced a secondary justification for abandoning individual stalls: that of protecting humans from disease. But there is no scientific evidence to support a claim that requiring group pens for pregnant sows would serve that goal, and there are multiple scientific reasons to doubt such a claim.

First, scientific evidence suggests that the use of individual stalls in a sow herd does not correlate with disease spread even in that herd itself. There are “relatively well-recognised” risk factors for infectious disease among pigs, which include “on-farm hygiene,” contamination in “feed and water,” and “[p]oor biosecurity.”<sup>63</sup> Indeed, it is commonly recognized that disease transmission among pigs is most common with nose-to-nose contact or shared watering or feeding systems—phenomena that the use of separate stalls reduces or even eliminates. Thus, “in slaughter pigs,” the practice of “holding in groups ...

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<sup>63</sup> European Food Safety Authority, *Scientific Opinion Food Safety Aspects of Different Pig Housing and Husbandry Systems*, The EFSA Journal 613, page 15-20 (2007).

may” actually “increase risks of ... food-borne pathogens.”<sup>64</sup> There is no reason to think it would have the opposite effect in sow barns.

Second, it bears emphasis that Proposition 12’s 24-square-foot requirement does not apply to slaughter pigs themselves, but instead arbitrarily mandates the amount of space that must have been offered to the slaughter pigs’ mother *sows*. *See* Pet. App. 40a. There is no evidence that disease prevalence in mature slaughter pigs has any relationship whatsoever to whether their mothers were housed in stalls. If sows were at increased risk of disease (though no evidence shows this), it is plausible that their piglets would also be at greater risk while nursing and for a short time after weaning. But any such risk would not be likely to last for the offspring’s entire lives. After piglets are weaned, farms typically raise them to maturity separately from other age cohorts—including their mothers—precisely in order to reduce the risk of disease transmission.<sup>65</sup> Unsurprisingly, then, for most “pig production stage[s],” “the closer to slaughter ... a food safety hazard occurs, the greater is the food (pork) safety risk it poses.”<sup>66</sup> Therefore, “the most direct, and [greatest], impact on pork safe-

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<sup>64</sup> European Food Safety Authority, *Food Safety Aspects, supra*, at p.2-20.

<sup>65</sup> Hoar & Angelos, *Production Cycle of Swine* at 6-7 (U.S. Food and Drug Admin.), [https://www.wifss.ucdavis.edu/wp-content/uploads/2015/FDA/feed/animalclass\\_swine\\_FINAL.pdf](https://www.wifss.ucdavis.edu/wp-content/uploads/2015/FDA/feed/animalclass_swine_FINAL.pdf).

<sup>66</sup> European Food Safety Agency, *Food Safety Aspects, supra*, at p.7-20.

ty” comes not from sow housing, but from the “status of finishing/slaughter herds.”<sup>67</sup>

Third, it is even less likely that sow housing arrangements could correlate with any risk of disease transmission from their offspring’s meat to humans. As this Court has observed, federal law “establishes an elaborate system of inspecting live animals and carcasses in order to prevent the shipment of impure, unwholesome, and unfit meat and meat-food products.” *Nat’l Meat Ass’n v. Harris*, 565 U.S. 452, 455-456 (2012). So, even if a housing arrangement for sows somehow created a lifelong risk of illness in their offspring, there is no reason to think that such illness would be at all likely to evade detection and contaminate the human food supply.

Finally, some advocacy groups have argued that the alleged overuse of antibiotics in pig herds can promote the development and spread of antibiotic-resistant disease in humans. But there is no evidence that this claim is connected with housing arrangements for pregnant sows. There is no evidence that the choice between individual stalls or group pens for breeding sows has any effect on the need for, or use of, antibiotics in connection with those sows or their offspring. That is not surprising in light of the lack of evidence, described above, that the choice of sow housing arrangement has any effect on the rate of disease transmission.

To sum up: like any other grouping of any animal, a herd of pigs of course can experience disease

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<sup>67</sup> *Ibid.*

transmission between animals. But we are aware of no evidence that the rate or risk of transmission is related to the use of individual stalls or group pens to house sows. Like any mammal, piglets can catch diseases from their mothers. But it is unlikely that a mother sow would pass on an infection risk to her offspring on a lifelong basis—and this likelihood certainly is not correlated to the sow’s housing system. Like any food animal, some slaughter hogs fall ill as they mature. But there is a large-scale regime of regulations and inspections in place to deal with that very possibility—and again, there is no correlation between the risk of illness and the method of housing the hogs’ mother sows. All of these realities warrant great skepticism of any claim that preventing the use of individual stalls to house sows can affect the safety of the human food supply.

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All in all, the American Association of Swine Veterinarians wishes to emphasize to the Court that there is no one-size-fits-all housing type that is best for all sows in all situations. For all sow housing systems, careful husbandry, facility maintenance, and farm-worker training are important to maximizing sow well-being. The best solution for animal welfare is for each team of farmers and veterinarians to have flexibility to determine the housing arrangements that are best for their animals in their circumstances. Because Proposition 12 would take away that flexibility, it places at risk the well-being of many animals.

## CONCLUSION

The judgment should be reversed.

Respectfully submitted,

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