THE HUMANE SOCIETY OF THE UNITED STATES

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An HSUS Report: The Economics of Adopting Alternative Production Systems to Gestation Crates

Background

In the United States, 6 million breeding sows are maintained in commercial production, making up 10 percent of the U.S. pig population.(1) When pregnant, most of these sows are kept in individual stalls, called gestation crates, that typically measure 7-feet long by 2-feet wide.(2) Sows are unable to turn around in these crates and suffer from a number of welfare problems. Crates were criticized by the European Union Scientific Veterinary Committee (SVC), whose 1997 report, *The Welfare of Intensively Kept Pigs*, concluded: "No individual pen should be used that does not allow the sow to turn around easily."(3) The European Union is phasing out the use of crates on animal welfare grounds, and they are already banned in Sweden and the United Kingdom.(4)

Alternatives to Gestation Crates

Alternatives to conventional gestation crates are in use. Larger individual crates exist that permit sows to turn around. In group housing systems, as many as several dozen sows are kept together in large pens, allowing the animals mobility and the opportunity to socialize. Pregnant sows tend to become aggressive towards other sows when being fed. A modern solution to this problem is the electronic sow feeder (ESF)—a feeding station that allows entry of one sow at a time, identifies the sow through an electronic tag or collar, and distributes the appropriate ration. Lastly, there are group housing systems that allow outdoor access, typically known as "free-range" systems.

In Europe, more than 4 million sows are raised in group housing.(5) In its review, the SVC concluded, "Since overall welfare appears to be better when sows are not confined throughout gestation, sows should preferably be kept in groups."(6) The report notes that when sows are housed in groups rather than in crates, "sows have more exercise, more control over their environment, more opportunity for normal social interactions and better potential for the provision of opportunities to root or manipulate materials.…As a consequence, group housed sows show less abnormality of bone and muscle development, much less abnormal behaviour, less likelihood of extreme physiological responses, less of the urinary tract infections associated with inactivity, and better cardio-vascular fitness."(7)

Sow productivity is higher in group housing than in individual crates, as a result of reduced rates of injury and disease,(8,9) earlier first estrus,(10,11) faster return to estrus after delivery,(12) lower incidence of stillbirths,(13,14) and shorter farrowing times.(15,16) Group systems employing ESF are particularly cost-effective.(17) These systems are being widely adopted in Europe and their welfare advantages have been well-documented in scientific reviews.(18-21)

Effects on Production Costs

Conversion from gestation crates to group housing with ESF marginally reduces production costs and increases productivity. The adoption of group housing has been slow in the United States, probably because of economic inertia and producers' lack of familiarity with ESF.

In a detailed economic analysis, the SVC found that shifting from gestation crates to group housing with ESF decreases housing costs per sow by 2 percent.(22) Other reviews have similarly found that group housing reduces building investment costs relative to crates.(23-25) These savings more than offset the cost of ESF equipment. The SVC report states, "Extra investment is needed for the Electronic Feeding System within group housing, but...the total investment per sow decreases for the group housing system under consideration. The main reason for this decrease is that the expensive crates are not needed anymore."(26) Converting to group housing at the end of the productive life of crates minimizes switching costs.

The SVC further estimates that the total cost per piglet sold is 0.6-percent lower in group ESF systems, while the income to the piglet farmer is 8-percent higher, because of increased productivity.(27) Similarly, a Dutch study found that, compared to gestation crates, group housing with ESF decreased labor time 3 percent and marginally increased income per sow per year.(28) Results from Sweden suggest similar net savings.(29) Savings at the sow farm can be passed onto the fattening farm, where the cost per unit weight decreases 0.3 percent.(30) It is only this cost change that would be reflected in the retail price of pork.

Effects on Consumption and Profits

Assuming constant percentage margins along the marketing chain, a 0.3-percent decrease in the cost of producing pork would decrease retail prices 0.3 percent. Assuming constant percentage margins at the farm level, but fixed margins at the retail level, retail prices would decrease only 0.09 percent, given the 31 percent farm value share of retail price for pork.(31) The own-price elasticity of demand for pork in the United States is –0.69.(32) Thus a 0.09- to 0.3-percent decrease in retail price would increase demand by .06 to 0.2 percent —an insignificant amount.

It is likely that producers who adopt group housing with ESF could increase demand for their products or earn a market premium. A 2003 poll found that 77 percent of Iowa consumers would buy pork products from food companies whose suppliers raise and process their hogs only under humane and environmentally sound conditions.(33)

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