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Economic evaluation of high welfare indoor farrowing systems for pigs

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Abstract

New livestock housing systems designed to improve animal welfare will only see large-scale commercial adoption if they improve profitability, or are at least cost neutral to the farm business. Economic evaluation of new system developments is therefore essential to determine their effect on cost of production and hence the extent of any market premium necessary to stimulate adoption. This paper describes such an evaluation in relation to high welfare farrowing systems for sows where any potential system needs to reconcile the behavioural needs of the sow with piglet survivability, acceptable capital and running costs, farm practicality and ease of management. In the Defra-sponsored PigSAFE project, a new farrowing system has been developed which comprises a loose, straw-bedded pen with embedded design features which promote piglet survival. Data on this and four other farrowing systems (new systems: 360° Farrower and a Danish pen; existing systems: crate and outdoor paddock) were used to populate a model of production cost taking account of both capital and running costs (feed, labour, bedding etc). Assuming equitable pig performance across all indoor farrowing systems, the model estimated a higher production cost for non-crate systems by 1.6, 1.7 and 3.5%, respectively, for 360° Farrower, Danish and PigSAFE systems on a per-sow basis. The outdoor production system had the lowest production cost. An online survey of pig producers confirmed that, whilst some producers would consider installing a non-crate system, the majority of producers remain cautious about considering alternatives to the farrowing crate. If pig performance in alternative indoor systems could be improved from the crate baseline (eg through reduced piglet mortality, improved weaning weight or sow re-breeding), then the differential cost of production could be reduced. Indeed, with further innovation by pig producers, management of alternative farrowing systems may evolve to a point where there can be improvements in both welfare and pig production. However, larger data sets of alternative systems on commercial farms will be needed to explore fully the welfare/production interface before such a relationship can be confirmed for those pig producers who will be replacing their units in the next ten years.

Keywords: animal welfare, economics, farrowing, housing systems, husbandry, pig