

# THE WELFARE-SURVIVAL PARADOX: A COMPARATIVE ANALYSIS OF PRE-WEANING PIGLET MORTALITY IN TRADITIONAL FARROWING CRATES VERSUS MODERN FREE-FARROWING SYSTEMS

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## **Abstract**

*The current global swine industry finds itself at an intersection between a shift towards animal welfare, alongside the economic demand of maximising neonatal survival. Traditional farrowing crates have historically been used to restrict maternal movement, mitigating the primary cause of pre-weaning mortality. However, the ethological restrictions that arise from the use of this method has created an intense 109 public debate leading to regulatory scrutiny. This scrutiny in turn pushes the industry towards modern free-farrowing pens, which consequently reintroduce the risk of accidental crushing. The following paper provides a comprehensive comparative analysis of pre-weaning piglet mortality, between the modern free-farrowing systems and the traditional farrowing crates. As a primary objective, we seek to deconstruct the multifactorial causes of neonatal death, focusing on crushing, hypothermia, and starvation. Evaluating how these aetiologies change depending on different farrowing systems. The study also seeks to critically examine the mitigating effects of modern farrowing paradigms, such as temporary confinement, advanced microclimate control and genotypic selection for heightened maternal ethology.*

**Key words:** *farrowing, sow behaviour, welfare, piglets, neonatal survival*