

**TITLE**

**THE ECONOMICS OF IRON DEFICIENCY ANEMIA ON US SWINE PRODUCTION: AN ANNUAL IMPACT OF UP TO 335 MILLION US DOLLARS**

Chris Olsen<sup>1</sup>

<sup>1</sup> *Pharmacosmos Inc.*

**CONTENT**

Without treatment, piglets are prone to developing severe iron deficiency anemia (IDA) within the first weeks of life. And, despite nearly ubiquitous use of injectable iron, >75% of piglets in the USA are anemic at weaning. Studies show that a piglets hemoglobin status at weaning can significantly impact post-weaning growth. Therefore, the current project aimed to evaluate the economic impact of IDA on swine production in the USA.

Blood hemoglobin was measured at the time of weaning in 235 healthy piglets and classified as follows; >110g/L (optimal), 90-110g/L (sub-clinical) and < 90g/L (deficient). To determine wean-finish average daily gain (ADG), each baby pig was weighed individually at weaning and again at 131 days post-weaning. Ordinary Least Squares linear regression was used in RStudio to fit a regression model to predict the outcome of ADG using Hb Status, sex and weaning weight as covariates.

Using this model, herd ADG was predicted for herds giving a single 200mg dose of Uniferon® compared against the improvement in Hb status and hence ADG, resulting from a second 200mg dose of Uniferon® by day 12 of the baby pigs life. The model was built so that daily cost of production, labor and product cost can be replaced by farm-specific data to reflect the impact improvement in Hb Status would have for both a fixed-weight or fixed-time marketing strategy.

This study clearly demonstrates that despite long-standard recommendations to use a single 200mg dose of injectable iron for prevention of IDA, a tremendous economic potential remains untapped by a failure to maximize Hb status at weaning. Depending on farm-specific inputs and the marketing strategy used, the total economic impact of IDA in the US swine herd is up to 335.7 million US dollars despite long-standing iron injection practices.