

Review of the use of Blood Plasma in piglet diets.

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Summary

When used during the early post-weaning period (up to 35 days of age), Spray Dried Blood Plasma (SDBP) supplementation positively influenced the average daily gain and feed conversion.

Background

- Plasma is an important bio-functional protein source for (weaned) piglets
- Effects of blood plasma in piglets are generally:
 - Improved feed intake
 - Significantly higher daily gain
 - Improved health
 - Better feed conversion
- In order to guarantee the functionality of plasma following parameters are important:
 - Protein solubility!
 - Immunoglobulin G content (solubility is a good indicator for IgG)

Despite blood plasma's excellent characteristics, the results observed for the performance of piglets fed diets containing SDBP may be viewed as contradictory by some. Part of the variability observed in published studies can be related to the range of influential factors investigated on the response to supplementation with animal plasma. To overcome this confusion, the use of a meta-analysis is useful to provide a clear explanation of the results despite the diversity in experimental procedures. Due to its analytical power, the meta-analysis increases the number of observations and detects differences that would not be noticeable in smaller populations.

A meta-analytical study about the relation of blood plasma addition in diets for piglets in the post-weaning and productive performance variables A. Remus a , I. Andretta a , M. Kipper a , C.R. Lehnen a , C.C. Klein a , P.A. Lovatto a , L. Hauschild b

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The meta-analysis was used to evaluate the performance of piglets in post-weaning period, without imposition of sanitary challenge and fed diets containing blood plasma, obtained by spray-dried process (SDBP). Piglets are faced with normal challenges in post-weaning period such as environmental stress and the substitution of the liquid diet to a solid one. References regarding sanitary challenges were disregarded in this study. Only data regarding normal and expected challenges were considered. Data were obtained from indexed journals with information extracted from the material, methods and results sections of pre-selected scientific articles. First, the database was analyzed graphically to observe the distribution of data and presence of outliers. Afterwards correlation analysis and variance–covariance analyses were carried out. The database contained a total of 23 articles. The average initial weight of the piglets was 8.02 kg (4.00–9.28 kg) and the average initial age was 27 days (14–32 days). The average duration of feeding diets containing spray-dried blood plasma (SDBP) was 9 days (6–28 days). SDBP increased the feed conversion by 20.2%

($P < 0.05$) during the initial period. Feed conversion during the total period was 10.2% higher ($P < 0.05$) for animals fed with SDBP. Average daily weight gain and daily feed intake were not affected ($P > 0.05$) during the entire period, but average daily gain was higher ($P < 0.05$) for animals fed with SDBP during the initial period. The initial age of supplementation influenced the average daily weight gain and average daily feed intake of animals fed with SDBP. Better results were obtained than those obtained for animals up to 35 days of age fed diets without added SDBP supplementation. In early postweaning period for piglets weaned up to 35 days of age, the SDBP supplementation positively influenced the average daily weight gain and feed conversion.