IPVS & ESPHM
JUNE 4-7, 2024 LEIPZIG, GERMANY

A SUMMARY OF THREE STUDIES TO ASSESS THE EFFECT OF AN ALGAE β-1,3-GLUCAN ON COLOSTRUM QUALITY AND PIGLET IMMUNITY AND HEALTH

R. Neto[1], P. Bukowska[1], E. N´guetta[1], S. Ravichandran [1], A. Wealleans [2], S. Kirwan [2], M. Costa [3], V. Van Hamme[1]

[1] Kemin Europa NV, [2] Kemin Industries, USA, [3] Kemin South America, Brazil
email: ricardo.neto@kemin.com

INTRODUCTION

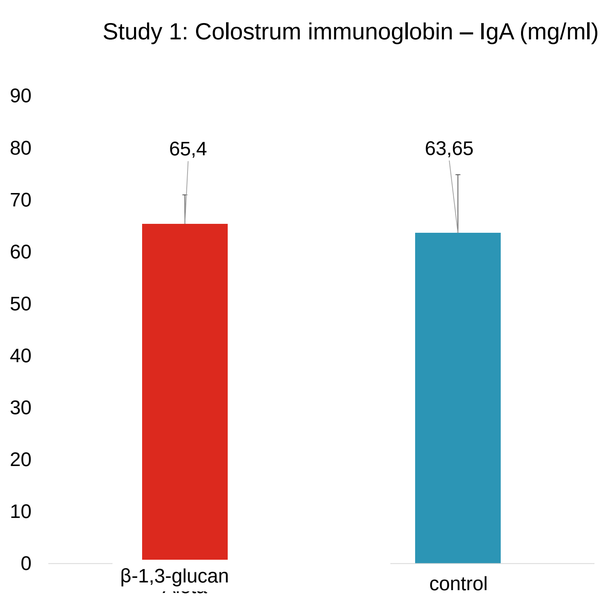
With hyperprolific sows, colostrum management is paramount, piglets that ingest less colostrum and have lower levels of IgG are more likely to die early. It is key to increase colostrum quality and quantity. Three studies were designed to evaluate the effect of an algal β-1,3-glucan (B1,3G) (Aleta™, Kemin) on colostrum quality, piglet immunity, and health.

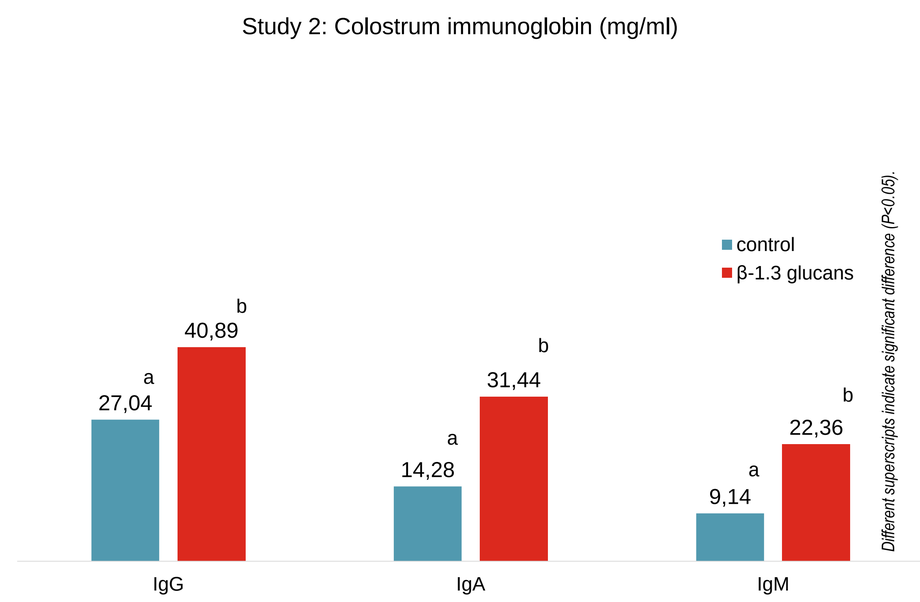
MATERIAL AND METHODS

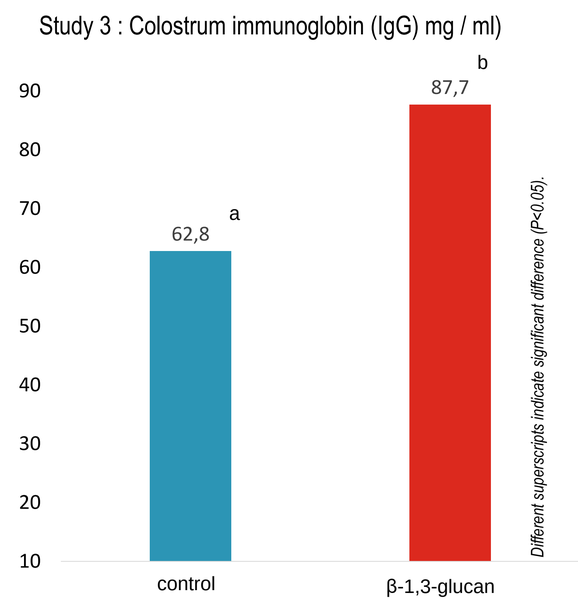
In the 3 studies, sows from commercial herds were randomly allotted to either a control (C) or treatment (BG) group:

	Study 1	Study 2	Study 3
Location	France	Brazil	Portugal
Sows	400	2500	190
Of which control group	31	20	18
Of which beta-glucan group	37	20	18
Treatment design	1 g of β1,3G/sow/day from 85 days of pregnancy-weaning (P-W).	200 g/t of feed of B1,3G from day 85 of P-W (21 days).	1 g of B1,3G /sow/day, entry to farrowing room to weaning (28 days).
Measurements*	Birth weights (PBW), 18h Piglet blood sampled between 4-7 days to measure IgA	Birth weights (PBW), 18h	Birth weights (PBW), weight at 21 days
Colostrum harvested	Yes	Yes (n=20)	Yes, all sows
Piglet blood samples 4-7 days	Yes, n=30, IgA	Yes, n=20, IgG, IgA & IgM	No

Data were analysed in the Fit Model function of JMP, differences considered a trend at P>0.05 and <0.1.







RESULTS

Increase in Immunoglobulins in study 2, IgA (31.4 and 14.3), IgG (40.9 and 27.0), IgM (22.4 and 9.1), and IgG for study 3 87.7 and 62.8 mg/mL for BG and C respectively (P<0.05). Improved PBW in study 1 1.38 (C) to 1.5 kg (BG) (P<0.05). In study 2, improved early growth (18h), from 68 g to 102g (P<0.05) due to an increase in colostrum intake, 235 and 294g respectively, for C and BG (P<0.05). Mortality was reduced in study 3 from 10.1 to 6.0% for BG and C respectively (P=0.078).

DISCUSSION AND CONCLUSION

Results of these studies support that algal β-1,3-glucan improves the immunological quality of colostrum and therefore the serological levels of immunoglobulins, having a very positive impact on the health of piglets, especially from hyperprolific sows.

KEMIN®
Compelled by Curiosity™

References: Available on request