IgG uptake in piglets takes four hours and is not affected by age at feeding

Flemming Thorup[1], Peter Mikael Helweg Heegaard[2], Mai Britt Friis Nielsen[1]

[1]SEGES Innovation, Livestock, Copenhagen. [2] DTU Health Technology, Kongens Lyngby.

Conclusion

Maximum IgG concentration is achieved 4 hours after feeding.
Feeding at birth, 2 or 6 hours after birth resulted in the same uptake of IgG.

Objective

Piglets need IgG from maternal colostrum before being transferred to a nurse sow. Colostrum uptake can be measured by IgG in serum using ELISA. The level of IgG measured depends on the time for IgG uptake from ingested colostrum. Increased time from birth to IgG uptake increases mortality. Is this because time to colostrum uptake reduces IgG uptake?

Material and Methods

This trial was performed under permit 2015-15-0201-00673.
67 newborn piglets were randomized to 9 groups and fed sow colostrum at different times and volumes (see table 1).

Every 2 hours for 12 hours after feeding, piglets were bled and serum was tested for porcine IgG by ELISA.

After the last test, piglets were returned to the farrowing unit. Piglet survival was registered until day 8.

Results and discussion

Maximum IgG level was achieved 4 hours after feeding.
IgG uptake was linearly correlated to volume of colostrum administered to the piglets.

Age from 0 to 6 hours at first feeding did not affect IgG uptake.

Table 1. Sow colostrum volume	10 ml			25 ml			25 + 25 ml		
Time at feeding, hours after birth.	0	2	6	0	2	6	0+3	2+5	6+9
Piglets in trial, no.	8	8	6	8	8	9	6	7	7

Table 2. Piglet survival	10 ml	25 ml	25 + 25 ml
Piglets treated, no.	22	25	20
Live piglets d 8, no.	20	24	15

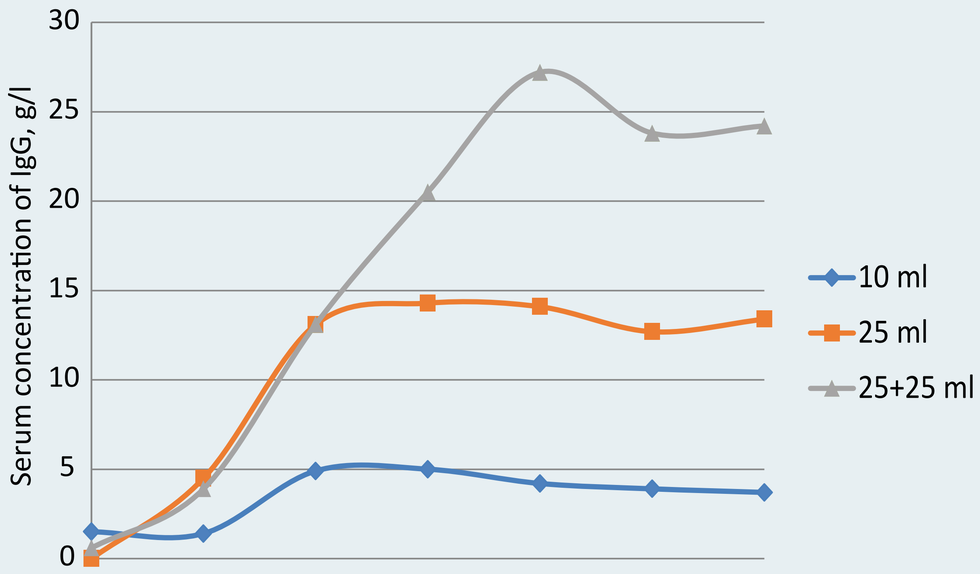

Figure 1. IgG in piglet serum. Hours after feeding.

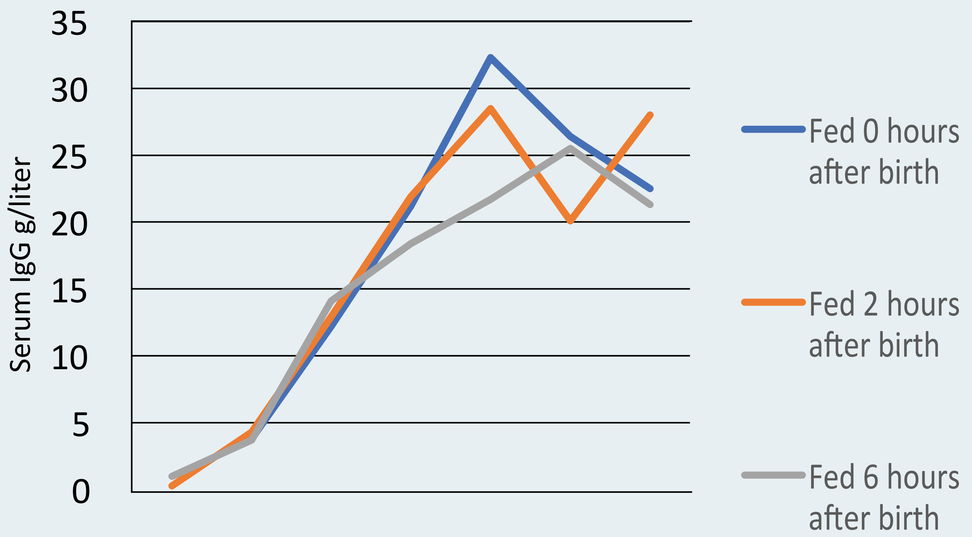

Figure 2. Serum IgG in piglets fed 2x25 ml sow colostrum 0, 2 or 6 hours after birth, and 3 hours later

CONTACT: Flemming Thorup | +45 2274 8233 | ft@seges.dk

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