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SUMMARY OF THE RESULTS OF THE EXPERIMENT ON THE EFFECT OF COLOVIT COMPARED TO THE ADDITIONAL ADMINISTRATION OF SOW COLOSTRUM AS A PROMOTER OF GROWTH IN NEWBORN PIGLETS

Master's Thesis in Animal Health and Pig Production, 2016



COLOVIT

**IMMUNITY
+
PERFORMANCE**



INCREASED PERFORMANCE AT WEANING

www.hokovit.ch



Results of the experiment COLOVIT

Master's Thesis in Animal Health and Pig Production, 2016
Universities: Lleida, Zaragoza and Complutense Madrid



The experiment was conducted on 1,900 piglets on a farm with 7,800 sows.

Live weight on first day: **COLOVIT** = 1.376 kg **COLOSTRUM** = 1.379 kg **CONTROL** = 1.378 Kg

Total growth:

78 g more per piglet in the COLOVIT group after 7 days compared to the COLOSTRUM group.
112 g more per piglet in the COLOVIT group after 21 days compared to the COLOSTRUM group.

148 g more per piglet in the COLOVIT group after 7 days compared to the CONTROL group.
428 g more per piglet in the COLOVIT group after 21 days compared to the CONTROL group.

Results of the COLOVIT group relative to the COLOSTRUM AND CONTROL groups:

| WEIGHT GAIN IN COLOVIT GROUP [BY BIRTH CYCLE] | | | | |
|---|--------------------------|----------|---------------------------|------------|
| BIRTH CYCLE | WEIGHT GAIN AFTER 7 DAYS | | WEIGHT GAIN AFTER 21 DAYS | |
| | COLOSTRUM | CONTROL | COLOSTRUM | CONTROL |
| 1 | 103 gr + | 182 gr + | 98 gr + | 280 gr + |
| 2 | 75 gr + | 261 gr + | 51 gr + | 810 gr + |
| 3 | 57 gr + | = | 185 gr + | 196 gr + |
| WEIGHT GAIN IN COLOVIT GROUP [BY PIGLET SIZE] | | | | |
| PIGLET SIZE | WEIGHT GAIN AFTER 7 DAYS | | WEIGHT GAIN AFTER 21 DAYS | |
| | COLOSTRUM | CONTROL | COLOSTRUM | CONTROL |
| Normal | 149 gr + | - 19 gr | 182 gr + | 88 gr + |
| Small | 423 gr + | 524 gr + | - 359 gr | 110 gr + |
| Total | | | 852 gr + | 1.158 gr + |
| WEIGHT GAIN IN COLOVIT GROUP [BY PIGLET BIRTH WEIGHT] | | | | |
| PIGLET BIRTH WEIGHT | WEIGHT GAIN AFTER 7 DAYS | | WEIGHT GAIN AFTER 21 DAYS | |
| | COLOSTRUM | CONTROL | COLOSTRUM | CONTROL |
| < 1 kg LW | 159 gr + | 101 gr + | 257 gr + | 464 gr + |
| 1.1 – 1.3 kg LW | = | 243 gr + | 110 gr + | 535 gr + |
| 1.3 – 1.7 kg LW | = | 144 gr + | - 90 gr | 335 gr + |
| > 1.7 kg LW | 148 gr + | 96 gr + | 170 gr + | 380 gr + |

THE RESULTS OF ALL MEASUREMENTS SHOW CLEARLY THE EFFECT OF **COLOVIT** AS A NATURAL GROWTH PROMOTER FOR NEWBORN PIGLETS. ITS USE IS ESPECIALLY RECOMMENDED IN THE FIRST AND SECOND BIRTH CYCLES, SINCE THIS IS WHERE IT IS MORE DIFFICULT TO OBTAIN GOOD RESULTS.

150 g more at weaning= 3 days shorter fattening period

(J. Gadd – Pig Production, What the textbooks don't tell you – Nottingham University Press 2014)

= 6.2 kg less feed = €1.5 less in feed costs/pig

**ASSESSING THE EFFECT OF A
COMMERCIAL PRODUCT (COLOVIT®)
AND THE ADDITIONAL
ADMINISTRATION OF SOW
COLOSTRUM AS A PROMOTER OF THE
NEWBORN PIGLET.**



Author: Laia Sobrevia Ortega

Master's in Animal Health and Pig Production

Master's thesis

Course 2016

This article is a summary of a Master's thesis, which was realized for the Master's program in Animal Health and Pig Production at the University of Lleida, the University of Zaragoza and the Complutense University of Madrid. The thesis was written by Laia Sobrevia Ortega. The thesis was supervised by Professor Daniel Babot Gaspa, University Lleida.

Introduction

With modern high-performance breeding, the problem of piglets with low body weight increases, because they cannot absorb enough colostrum in the first phase of life. As the reader will know, piglets have to take in 150-280 g colostrum in the first hours of life, because they do not receive any antibodies through the placenta of the mother. It is only through colostrum that the piglet receives antibodies, a process known as passive immunization.

The order of birth is crucial to the supply of colostrum. The first piglets get more colostrum, because they can choose the front teats with the highest milk yield.

Birth weight is a key factor in the survival rate of piglets. Thus, the mortality of piglets with a birth weight of under 1 kg is much higher than that of piglets with a higher birth weight.

Objectives

The purpose is to compare the additional administration of colostrum via a feeding tube to the application of a commercial product (Colovit®). Colovit® contains colostrum, vitamins, iron, herbal extracts and glucose, and is administered via a hand pump directly into the mouth of the piglet. To this one must add a control group that receives neither colostrum nor Colovit®.

Materials and methods:

The experiment was conducted on 1,900 piglets on a farm with 7,800 sows, with 1,748 piglets surviving to the end of the experiments. The animals were divided as follows.

| Number of litters | Piglets at the end | Piglets at the beginning | Treatment |
|-------------------|--------------------|--------------------------|----------------------|
| 59 | 706 | 765 | COLOVIT® |
| 58 | 717 | 756 | Control |
| 27 | 325 | 379 | Additional colostrum |
| 144 | 1748 | 1900 | Total |

The first treatment was performed immediately after birth. The COLOVIT® group was given 1.25g orally per piglet. The colostrum group received 10 mL colostrum by feeding tube from the respective mother sow. All three groups were initially given a dose of iron.

All piglets were weighed after 1, 7 and 21 days. The weight of the lightweight piglets was recorded, too.

The daily feed intake of sows was constantly monitored as well.

Results:

Influence of treatment (COLOVIT®, colostrum and control group) on the weight of each piglet during lactation:

| | Weight after 1 day | Weight after 7 days | Weight after 21 days |
|-----------|--------------------|---------------------|----------------------|
| Treatment | Average | Average | Average |
| COLOVIT® | 1.3760 | 2.2579 | 5.4894 |
| Colostrum | 1.3791 | 2.1836 | 5.3810 |
| Control | 1.3781 | 2.1142 | 5.0630 |

The clear trend is that from day 7, the piglets given COLOVIT® were heavier than those that received colostrum. Both treatment groups were also heavier than the control group.

78 g more weight gain per piglet with COLOVIT® after 7 days than with COLOSTRUM additive

112 g more weight gain per piglet with COLOVIT® after 21 days than with COLOSTRUM additive

148 g more weight gain with COLOVIT® after 7 days than the control group

428 g more growth with COLOVIT® after 21 days than the control group

If the weight gain with COLOVIT® over the three birth cycles is compared, one obtains the following results. Compared to the other two groups, COLOVIT® produces the following deviations in weight gain.

| Cycle | Growth after 7 days | | Growth after 21 days | |
|-------|---------------------|---------|----------------------|---------|
| | Colostrum | Control | Colostrum | Control |
| 1 | + 103 g | + 182 g | + 98 g | + 280 g |
| 2 | + 75 g | + 261 g | + 51 g | + 810 g |
| 3 | + 57 g | = | + 185 g | + 196 g |

When sorting the piglets by size and comparing the weight gain of the COLOVIT® group with the other two groups, the following results are obtained.

| Category | Growth 7 days | | Growth 21 days | |
|----------|---------------|---------|----------------|----------|
| | Colostrum | Control | Colostrum | Control |
| Normal | + 149 g | - 19 g | + 182 g | + 88 g |
| Small | + 423 g | + 524 g | -359 g | + 110 g |
| Total | | | + 852 g | + 1158 g |

When the results of the piglets are grouped by birth weight, the following differences in the weight gain of the COLOVIT® group relative to the other two groups become apparent:

| Birth weight | Growth 7 days | | Growth 21 days | |
|--------------|---------------|---------|----------------|---------|
| | COLOSTRUM | CONTROL | COLOSTRUM | CONTROL |
| <1kg | + 159 g | + 101 g | + 257 g | + 464 g |
| 1.1-1.3 kg | = | + 243 g | + 110 g | + 535 g |
| 1.3-1.7 kg | = | + 144 g | -90 g | + 335 g |
| >1.7 kg | + 148 g | + 96 g | + 170 g | + 380 g |

Conclusion

The evaluation of all measured results allows for the following conclusion.

- 1) The use of COLOVIT® or the addition of extra colostrum in piglets of first- and second-time mother sows favors the weight gain of piglets between the ages of 7 and 21 days.
- 2) The piglets of primiparous sows exhibit a higher weight gain when they are fed COLOVIT®.
- 3) The use of COLOVIT® in litters with small and normal piglets promotes weight gain of piglets positively, as opposed to the administration of additional colostrum, which does not result in any additional gains.
- 4) The use of COLOVIT® is safer and easier to handle than the addition of colostrum, since it does not require the use of a feeding tube.