SACHSEN-ANHALT

Lehr- und Versuchsanstalt für
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Test report

Translated in English by INTERTEXT LEIPZIG

"Using the supplement Bioaktiv in pig feed" Part 1

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July 2001

1. Introduction

If pig-fattening is to be viable, the feeder pigs need to enjoy good biological efficiency. This in turn depends on a number of factors: in addition to the conditions in which they are kept, these chiefly include feed management and the animals' health. The prohibition of antibiotic additives marks the elimination of a stabiliser of animal health and hence biological efficiency. Therefore it is essential to make use of other measures in order to stabilise animals' health.

One way of doing so is (according to the manufacturer) to use the supplement "Bioaktiv". Bioaktiv is an oxygen-activated chalk powder manufactured in a bioresonant process, in which resonances are produced within the natural vibration of pure chalk powder from north-German chalk deposits and oxygen. This takes place in a physical manner, without chemical processing or mixing with other substances (Bioaktiv 1999).

The effects on animals and the sty are as follows (Bioaktiv 1999):

Sty:	Reduction of the level of ammonium in sty air
	Higher flowability of faecal matter
	Reduction of fly nuisance
Animals:	Reduced nervousness and aggressiveness
	Higher feed consumption
	Higher daily weight gain
	Lower animal losses

The aim of this study was to investigate how Bioaktiv affects the biological efficiency of feeder pigs.

2. Materials and methods

Animal material:

Two hundred feeder pigs of cross-bred origin (Pi x (DExDL)) were studied. The animals were divided into two groups of 100 animals each and fattened simultaneously in two identical sties (each with 4 pens housing 25 pigs). In the first sty, the pigs were fed on fodder containing the supplement Bioaktiv; in the second sty, no feed supplement was used. Owing to an acute APP infection which occurred in the last two fattening weeks, 5 acute mortality cases had to be removed from the control group and 8 from the Bioaktiv group. Hence the evaluation covered 95 and 92 animals respectively.

Fodder

Control group:	Two-phase feeding with standard fodder
Test group:	Two-phase feeding with standard fodder containing the feed supplement Bioaktiv (200 g/t)

Table 1: Feed ingredients

Feed (analysis values)	Energy (MJME/kg)	Raw protein (g/kg)	Lysin (g/MJME)	Calcium (g/kg)	Phosphorus (g/kg)
Initial feed	13.0	17.8	0.75	6.9	5.4
Final feed	13.0	17.4	0.7	7.2	4.9

The initial feed was administered to animals with a live weight of 28–60 kg. Afterwards the animals received final feed.

Study parameters:

The following parameters were calculated:

Feed efficiency: Initial weight, interim weights, final weight, daily gain, feed intake, feed conversion ratio.
Each animal was weighed individually.
Feed consumption was calculated for each of the four groups.

Carcass quality: Slaughter weight, lean percentage, commercial grade, backfat depth and loin eye area.

3. Results and discussion

Feed efficiency figures:

The feed efficiency figures are listed in Table 2 (below).

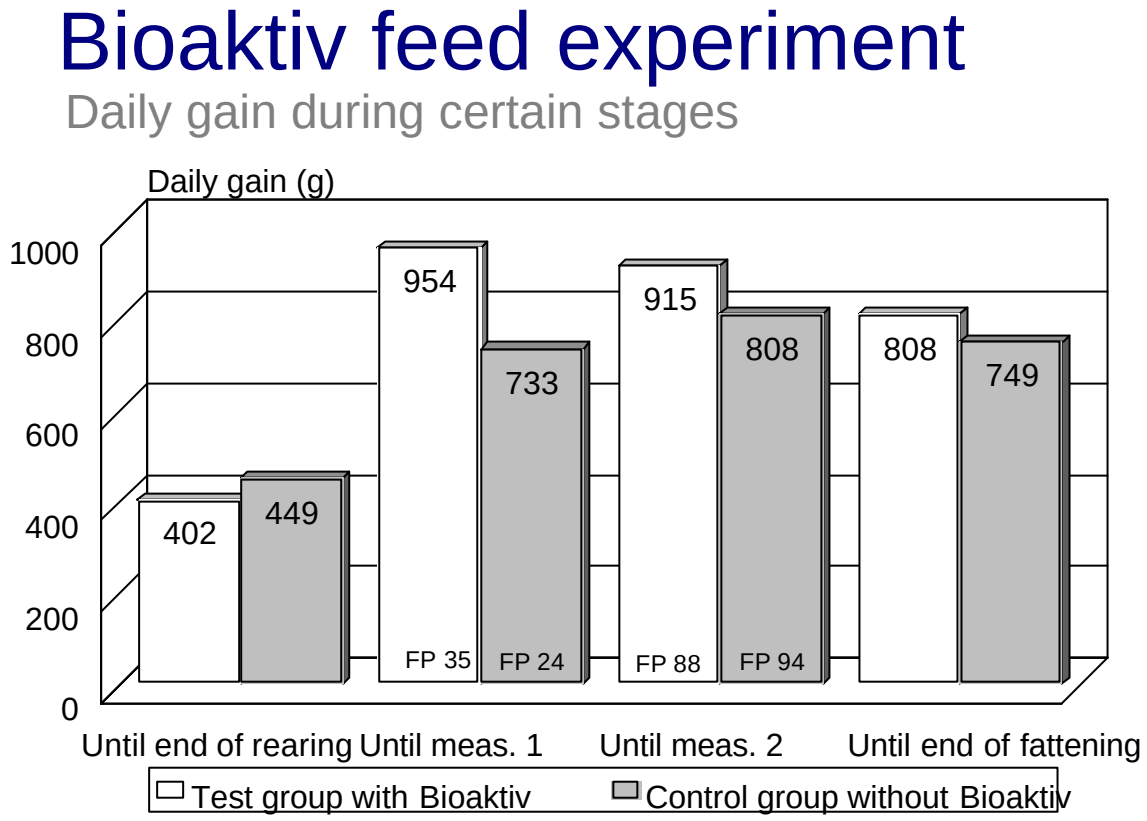
Table 2: Feed efficiency data

Parameter		Test group with Bioaktiv	Control group without Bioaktiv
Initial weight	(kg)	27.4	28.5
Final weight	(kg)	110.3	110.9
Fattening period	(days)	102[a]	111[b]
Feed consumption/animal	(kg/day)	2.31	2.30
Feed conversion ratio	(kg/kg)	2.84[a]	3.09[b]
Daily weight gain	(g/day)	808[a]	749[b]

Level of significance: $p < 0.05$

The length of fattening period (102 days compared to 110), fodder exploitation (1:2.84 compared to 1:3.09) and the daily increase in weight (808 g compared to 749 g) indicate a statistically validated difference between the test group and the control group. The 50 g higher daily gain when using Bioaktiv was also demonstrated in Gaughan's study (2001), although he reported an even higher increase. The same tendency was also observed for the feed conversion ratio.

It can be seen from the following graph that the basis for improved daily weight gain was established in the initial feed. It is clearly evident that in the first 4–5 weeks the animals in the Bioaktiv group experienced much higher daily weight increases. This difference then declined somewhat as the feeding period progressed. This very good start also had a very good effect on the carcass quality.



FP = Fattening period (days)

It is also striking that the Bioaktiv group achieved this efficiency in the initial feeding period, even though the efficiency in the rearing period was significantly poorer.

Slaughter quality

The two groups also differ in terms of carcass quality traits. The 1.3% higher lean percentage mainly results from the larger loin eye area, which was more than 4 cm² bigger. This difference is statistically substantiated, unlike the differences in backfat depth. This higher loin eye area may be directly attributable to the very good development of the young pigs in the Bioaktiv group. At any rate, a better slaughter yield of 79% for the test group was recorded, compared to 77% for the control group.

The relatively low percentage (in both groups) doubtless results from the fact that the animals did not have empty stomachs.

Table 3: Slaughter quality data

Parameter		Test group with Bioaktiv	Control group without Bioaktiv
Slaughter weight	(kg)	86.6	84.6
Slaughter yield	(%)	79	77
Lean percentage	(%)	57.6	56.3
Backfat depth	(mm)	15.6	16.3
Loin eye area	(cm^2)	65.1	60.9

Financial aspect:

Administering Bioaktiv caused additional costs of about DM1.50 per pig. In effect it paid for itself several times over owing to the higher revenue achieved (the average increase in revenue achieved being DM13 per feeder pig).

4. Summary

In an experiment, the impact of the feed supplement Bioaktiv was studied on pigs' development. Two identical sties each containing 100 animals were observed, with Bioaktiv being added to the feed consumed by the pigs in one sty.

The feed efficiency data indicate statistically validated improvements in the Bioaktiv group for the following parameters: length of fattening period, feed conversion ratio and daily gain. Moreover, in the area of carcass quality traits, the Bioaktiv group exhibited statistically validated better results in terms of lean percentage and loin eye area.

All in all, using Bioaktiv clearly had a positive effect. It is proposed that the experiment be repeated in order to verify the results.

5. Literature

Bioaktiv (1999): Das Pulver mit der großen Wirkung
Informationsschrift Bioaktiv GmbH

Gaughan, John (2001): The Effect of BioActive
On the Health and Growth Performance of Pigs
University of Queensland Gatton / Queensland
School of Animal Studies