

Report :Test M 206

Effect of the dosing of treated water(BioQuel®) to the drinking water of broilers

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Summary

In this trial, the effect of the dosing of activated water (BioQuel®) will be tested (Bioquel®) on broilers

The trial was made between April 13th until Mai 22nd 2006 in barn no 3 of Aviforum Zollikofen with Ross / PM3- broilers. The chicken were kept under the usual practice. The feed used was supplied by UFA AG., Sursee as starter-, fattening and finisher feed

The following test were conducted:

Water additive : A: No additive
 B: 4% BioQuel® / AnoQuel

The following results were found:

The animals with Anoquel® additive had a higher end weight in tendency with a significantly higher feed conversion than the animals with no additive . The BioQuel® additive resulted in a lower water consumption in tendency

1 Target

The effect of the dosing of activated water (BioQuel®) and the performance of broilers shall be tested

2 Material und Methods

The test was carried out between April 13th and Mai 22nd 2006 in test barn no 3 of Aviforum Zollikofen with Ross PM3-Broilers. The duration of the fattening was 39 days.

The day phase was 16 hours The temperature was 34°C at start and was reduced to 23°C within the first three weeks. The relative humidity was in between 40 - 70 %.

The 4400 Hybrid chicken of Ross-PM3 were kept in mixed gender in Groups of 220 Animals and divided "as hatched" in 20 boxes .

The starter feed (1.-10. day), as well as fattening and finisher was supplied by UFA AG, Sursee, . (Without medication against coccidiosis)

The water additive „ AnoQuel®“ was produced every other day with the Machine supplied by BioQuel and dosed with a AQUADOS dosing pump

2 Results

2.1 FeedAnalysis

Chart 1: Analysis of Starter- and fattening feed

	Unit	Starter	Fattening
dry matter	%	88.6	88.2
ash	g/kg	56.2	50.0
raw protein	g/kg	223	204
Raw fiber	g/kg	28	29
Raw fat (by Berntrop)	g/kg	53	72
sugar	g/kg	49	44
starch	g/kg	389	393
energy ¹	MJ/kg	12.4	12.8

2.2 Results

In this test at the Aviforum good results were achieved (chart2)

The live weight achieved were around 2.3 kg per animal.

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The trial with water additive AnoQuel® showed the animals to be heavier in tendency than the one without water additive

the feed uptake was lower in tendency at the same time towards the end of the trial.

This in combination led to a significantly better feed conversion than the trial without additive of AnoQuel®

Chart 2: Results on feed uptake, live weight and feed conversion ratio (FCR)

Test	Additive		Significance
	A (no addit.)	B (Anoquel)	
No of animayls	2200	2200	
Feed uptake (g/animal)			
11. day	297	292	n.s.
21. day	1095	1100	n.s.
28. day	1993	1997	n.s.
35. day	3226	3220	n.s.
39.day	3887	3877	n.s.
Live weight (g)			
11. day	256	258	n.s.
21. day	799	809	n.s.
28. day	1389	1404	n.s.
35. day	2007	1990	n.s.
39.day	2282	2292	n.s.
FCR (kg Feed per kg weight gain)			
11. da	1.365	1.331	n.s.
21. day	1.440	1.427	n.s.
28. day	1.477	1.461	n.s.
35. day	1.641	1.647	n.s.
39.day	1.737	1.721	*

† *=p< 0.05, +=p<0.1, n.s. = not significant

The mortality was around 2% after 39 days and did not differ significantly between the two groups the average slaughtering weight was 1,62 kg (chart 6) In tendency the slaughtering weight and yield was better with AnoQuel® additive than the trial without.

In Quality, very litte difference could be determinated.

Chart 3: average slaughtering weight and quality at the the slaughterhouse

Additive	Slaughtering weightØ g/animal	Slaughtering yield %	Quality %		
			I.	II.	III.
A (non)	1'617	70.96	91.6	7.8	0.6
B (Anoquel)	1'621	71.12	91.9	7.6	0.5

2.3 Results on feathers and feet

At day 36 an assessment of the feathers and health status of the feet was carried out on five animals per group. The assessment showed that most of the animals had very few feathers at the breast. No significant difference was detected between the groups

2.4 water uptake and climatic data

the accumulated water uptake per animal was 6.79 l at the group with AnoQuel[®] additive and slightly higher at the group without additive with 7.04l (chart 9) This slight difference was noticeable over the whole duration of the trial. The uptake of water was parallel according to the development in temperature.

chart 9: accumulated water consumption per animal (l) and water to feed ratio

trial	Accumulated water demand per animal (l)		water / feed ratio (l/kg)	
	A (no addit.)	B (Anoquel)	A (no addit.)	B (Anoquel)
Day 1. - 11. g	0.42	0.44	1.42	1.50
Day 12. - 21.	1.51	1.46	1.89	1.80
Day 22. - 28.	1.60	1.55	1.79	1.73
Day 29. - 35.	2.18	2.05	1.77	1.67
Day 36. - 39.	1.33	1.29	2.01	1.97
Total, day 1. to 39.	7.04	6.79	1.81	1.75

3 Discussion

In this trial good fattening results have been achieved overall.

The test on water additives showed that the animals with AnoQuel® additive were heavier in tendency than the animals without additive. At the same time the feed uptake was lower as the control group. This in combination led to a significantly higher feed conversion ratio of the AnoQuel® group in comparison to the control group without additive.

Better feed conversion could already be recognized in an earlier trial, fattening broilers with 4% additive, carried out at the Aviforum. (Schäublin et.al.2006)

The use of AnoQuel® additive had no significant influence on the quality of the bedding, anyway, it was recognised that with AnoQue®, the straw was less encrusted in tendency.

Having no significant influence on the quality of bedding there was a tendency of lesser encrusted bedding in the group with additive.

In judgement of the feathers of the breast, the animals getting AnoQuel® showed a better covering of feathers in tendency than the control group

By evaluation of the water consumption, the AnoQuel® group showed a lower uptake of water than the ones without. As a result of this, the bedding was less encrusted and the feathers were less soiled. This could be assessed as a positive aftereffect

The use of AnoQuel® showed to be positive on the weight gain, better feed conversion and yield

4 Literature

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Comment

BioQuel wishes to thank Aviforum for the results and work carried out.

BioQuel recommends by experience with large farms that a dosing rate of at least 5% should be applied. In order to get optimal results in terms of FCR and weight gain and health status.

Cold weather presumed, the dosing rate should be even higher, as animals tend to take up less water.

Note : The trial was carried out originally as a combined trial with four groups of animals.

Group 1 and 2 have been for trials on bedding material (strawdust blocks and wood shaving)
Group 3 and 4 have been for water with and without the additive of AnoQuel®. The differences and interactions between all variants have been evaluated. As the results showed no or very little interaction between water and bedding, the bedding trials have not been translated in this paper. Some charts and diagrams have not been translated and /or taken into this translated paper. However BioQuel will be happy to send you the complete test report in German language on request via e-mail to pfeffer@bioquel.de.