Type WH67® humic acids improve the health of birds, growth performance and the feed conversion of turkeys

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Abstract

The aim of this trial was to investigate the effects of **WH67®** in turkey feed. Six trial rounds were considered, involving three experimental and three control rounds conducted on 8,500 birds in each case. Birds in the trial rounds also received 750 g of **WH67®** per tonne of compound feed from the first day of life until and including P3/4 feed. It was demonstrated that use of **WH67®** reduces feed consumption and can improve feed conversion by an average of nine percentage points. In addition, it was determined that **WH67®** improves the health of birds, enabling a saving of over 30 % of medication costs. This has a positive effect on profitability. It proved possible to achieve an additional yield of almost € 0.90 per bird in the trials. This trial demonstrated that **WH67®** added to turkey feed improves performance, the health of birds and profitability.

1. Introduction

The most important prerequisite for optimum health of poultry when rearing and fattening turkeys is the development of a healthy gastrointestinal tract. Birds are at a particular risk from pathogens in their early lives where the immune system is still developing. The consequence can be intestinal dysbiosis which encourages the development of illnesses. The results can be growth and performance depressions and enormous economic losses. Feed costs play a decisive role when it comes to efficiency in turkey fattening (STRÜVE et al. 2016). The aim is to improve the health of birds, reduce costs and, consequently, increase profits. The most significant criteria are good feed uptake and feed conversion by the birds. It is well known that illnesses caused by pathogens such as diarrhoea weaken the immune response, reduce feed uptake and performance of birds and increase the use of medication.

Operating details of Bever Puten GbR	
Location	North Rhine-Westphalia
Operating focus	Rearing and fattening of turkeys
No. of spaces	8,500, 17-week rhythm
Genetic variant	BIG/BUT 6
Feed	Compound feed (6-phases)

2. Material and methods

Three experimental and three control rounds were examined over a two-year period on a turkey farm in the Münsterland region (Germany). The rounds encompassed a rafter of approx. 8,500 female and male birds of the BIG/BUT 6 genetic variant. The turkeys in the experimental →

rounds received an additional 750 g of **WH67®** per tonne of compound feed from the first day of life until and including P3/4 feed. The aim was to aid intestinal development. Dosing was realised using a commercially available additive dispenser on the feed auger. Data was collected from abattoir findings and statements and documentation provided by the manager.

Fig. 1: Additive dispenser on the feed auger

3. Results

3.1 Impact on performance

It proved possible to reduce feed consumption on average by more than one kilogramme per bird and trial and improve feed conversion by nine percentage points (see Fig. 2). This can be traced back to the fact that **WH67®** improves the nutrition passage in the intestine and, consequently, resorption of nutrients can be enhanced. In addition, the astringent and regenerative effect of **WH67®** as it coats the mucous membrane forms a healthy intestinal epithelium and stabilises the positive gastrointestinal microbiota (flora). It also proved possible to increase average daily weight gains as a result. The turkeys in the trial groups gained 2.30 % in weight on average. Moreover, the fattening period for cocks was reduced by four days on average (see Table 1).

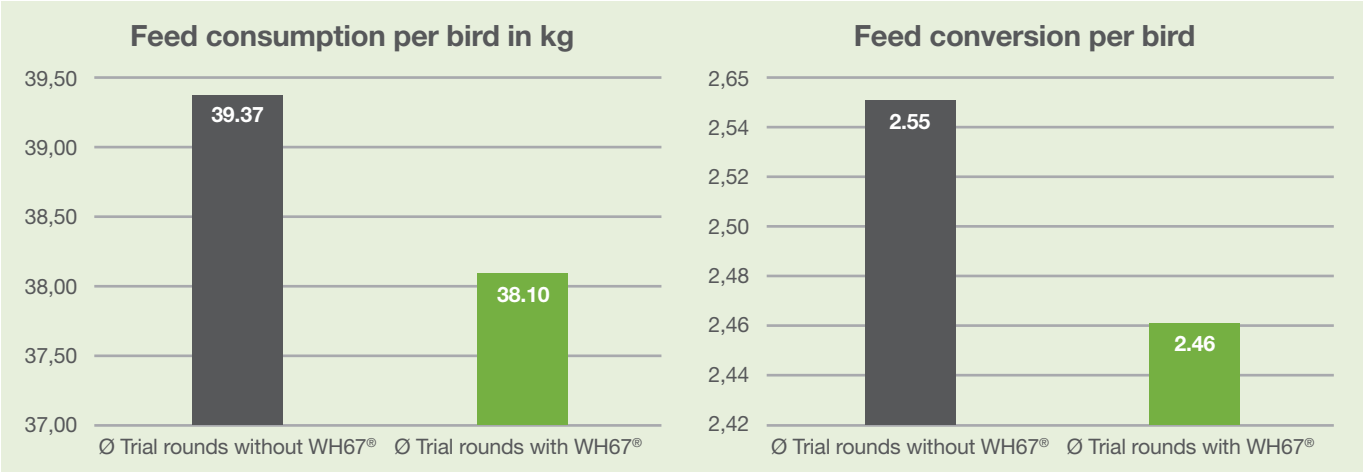

Fig. 2: Results of average feed consumption and feet conversion per bird

Table 1 – Averaged performance analysis of hens and cocks in a 17-week rhythm

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
	Control groups (without WH67®)			Trial groups (with 750 g/tonne WH67®)		
Fattening period in days*	154	148	148	146	147	145
Ø Daily weight gain (in g)	103.51	113.49	108.10	112.52	107.82	112.17
Ø Abattoir rejection rate (in %)	2.50	2.00	2.40	1.70	1.80	2.00
Ø Feed conversion ratio (FCR)	2.52	2.56	2.57	2.47	2.45	2.47
Ø Feed consumption (in kg)	37.79	40.98	39.35	38.58	37.17	38.55

** The fattening period applies to cocks, while hens left the housing after 112 days (16 weeks).*

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3.2 Impact on health

Use of **WH67®** led to a clear improvement in the health of the birds. One indicator of this is an improved carcass quality which can be discerned through an examination of the abattoir rejection rate. The rejection rate in the case of the control groups averaged 2.30 %. By comparison, it was 1.80 % in the trial rounds with **WH67®**. Consequently, feeding with **WH67®** reduced the rejection rate by 22 % (see Fig. 3). The positive impact of **WH67®** on the health of birds meant that fewer organs needed to be rejected, and an additional yield of 720 kg net calculation weight was achieved. This leads to an improved commercial profit of € 0.10 per turkey on average (see Table 2). The improvement in the health of the birds is reflected in the reduced use of medication. The average saving in medication costs per turkey was € 0.54 or 31.8 %.

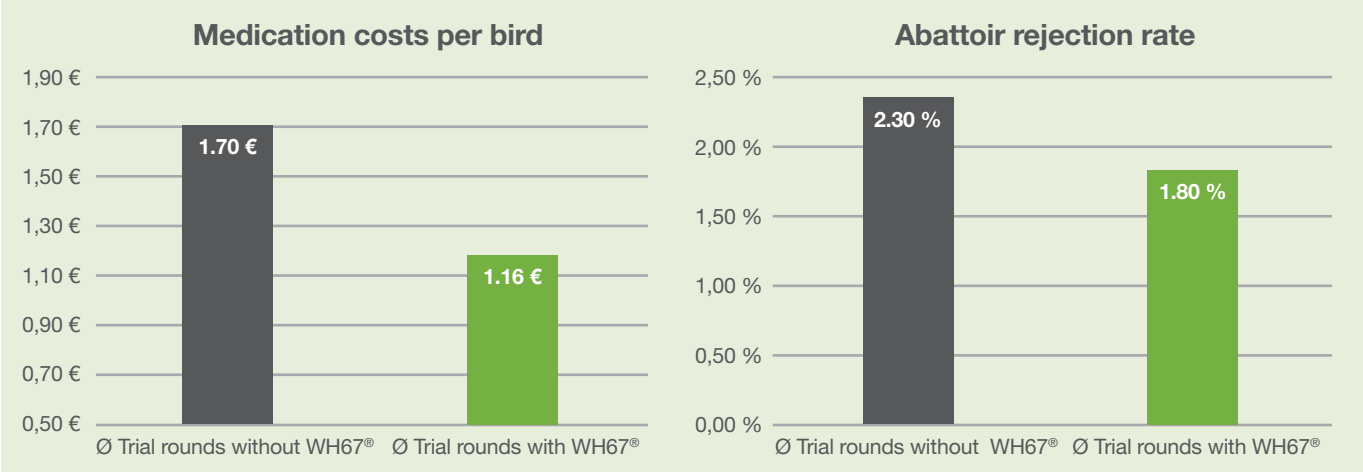

Fig. 3: Results of average medication costs per bird and the average abattoir rejection rate

3.3 Impact on profitability

It proved possible to save 31.8 % of medication costs (Ø € 0.54/ turkey) (see Table 2) and somewhat more than one kilogramme of feed per bird (Ø € 0.38/ turkey) (see Table 1). An examination of the additional expenditure for **WH67®** indicates that costs are € 0.13 per bird for a dosage of 750 g per tonne of compound feed. It can generally be determined that, less the additional costs, an additional profit (see Table 2) of € 0.90 per bird (€ 14.13 - € 13.23 = € 0.90) was realised. In addition, litter is, on the whole, much drier, reducing the fresh bedding requirement. This also has a positive effect on profitability and improves the health of the birds' feet (e.g. reducing ulcerative pododermatitis).

Table 2 – Averaged cost analysis of hens and cocks in a 17-week rhythm

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
	Control groups (without WH67®)			Trial groups (with 750 g/tonne WH67®)		
Medication costs per bird	1.97	1.73	1.41	1.20	1.23	1.04
Feed costs* per bird	11.49	12.46	11.97	11.73	11.30	11.72
Rejection rate** per bird	0.49	0.41	0.46	0.34	0.34	0.39
WH67® costs per bird***	0.00	0.00	0.00	0.13	0.13	0.13
Overall costs per bird	13.95	14.60	13.84	13.40	13.00	13.28
Ø overall costs per bird	14.13			13.23		

* *Feed costs levied by Chamber of Agriculture Lower Saxony (sales price to agriculture, free silo 15 July 2019, Weser-Ems)*
** *Prices levied (15 July 2019) Chamber of Agriculture Lower Saxony (average price of cocks (as of 19 kg € 1.25/kg) and hens (as of 9 kg € 1.19/kg) (mean value € 1.22/kg)*
*** *WH67® price for farmer ex stock*

4. Conclusion

A health gastrointestinal tract is a prerequisite for optimum rearing of turkeys, as it is of major importance when it comes to vitality and performance and, consequently, commercial success. This test series involved examination of six consecutive turkey fattening rounds, three of which involved the addition of 750 g of **WH67®** per tonne of compound feed (P1-P3/4). The results of **WH67®** usage are as follows:

- Feed consumption reduced by approx. 1 kg per bird and testing round
- Improvement of feed conversion by 9 percentage points
- Daily weight gain increased by 2.3 %
- Shortening of fattening period for cocks by four days
- Reduction of rejection rate by 22 %
- Improved foot health (less bumblefoot)
- Medication costs reduced by 31.8 %
- Drier litter and reduced fresh bedding quantity
- Additional profit of € 0.90 per turkey

This indicates that use of **WH67®** can improve the performance and health of turkeys. It proved possible to increase profitability as a consequence, meaning its use is highly efficient.

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