

Tumulus Trial Report

**Disease and parasite control in egg production at
Tumulus Farm, Fife, Scotland using Bioemitter
technology 2007/8**



Global Bioenergetics





Global Bioenergetics

Overview

Tumulus Farm trial was set up by Global Bioenergetics Ltd in collaboration with Deans Foods (later Noble Foods) at the request of Marks and Spencer to demonstrate the action of the Bioemitter system in a egg laying production unit with respect to parasite and disease control, bird health and welfare, egg production and quality.

The Bioemitter is a new paradigm technology for chemical free disease and parasite control invented and owned by Global Bioenergetics Ltd.

Over 50 weeks the trial has been exceptionally successful, taking a historically poor performing farm with endemic disease problems, to a very respectable level of production and profitability, with good bird health, disease and parasite control.

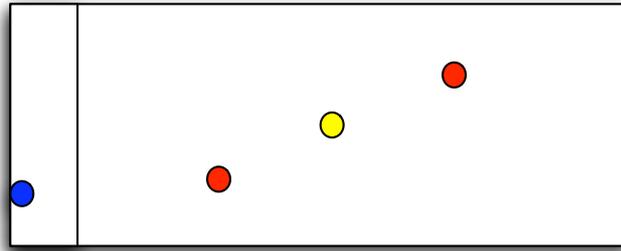


Of note the egg quality has been high and did not deteriorate with age of the bird at the end of the cycle.

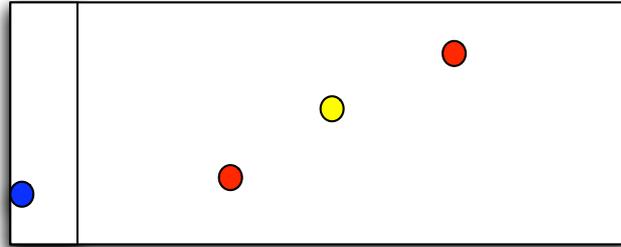
This is the latest result from a series of trials in units from 2,000 to 92,000 birds since 2004 by Global Bioenergetics using Bioemitter technology in commercial chicken production facilities.

This result is conclusive evidence of the benefits of Bioemitter technology and paves the way for the introduction of the Bioemitter within and throughout the egg production industry both as a commercial imperative and for the health and welfare of the birds, enabling high quality stress free profitable production.

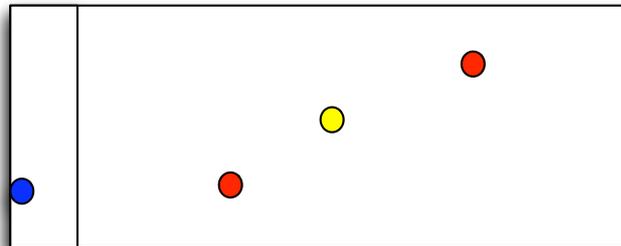
Protocol



Shed 3 : 12,000 Lohmann Free range



Shed 2 : 17,000 Hyline Barn



Shed 1 : 12,000 ISA Free range

Tumulus Farm Bioemitter Layout

-  RM Bioemitter
-  Central Field Bioemitter
-  Water Treatment Bioemitter

Notes to Layout

The RM (Red Mite) Bioemitters were powered from 240V supply within each shed. The units were timed to be off for 6 hrs out of every twenty four and synchronized to switch at the same time. The units were strapped to existing wooden pillar supports near to existing power supplies. The central Field Bioemitters are self contained and required no on site supervision.

The Water Treatment Bioemitters were fixed to the incoming mains water supply and battery powered. A removable data capsule is reprogrammed following feather analysis and sent to the farm for updating the device with treatments for the incident disease vectors on a monthly basis.

LEDS were on each active unit and checked daily for correct operation. None of the units failed during the trial period of 50 weeks.

Installation

Duration:

November 2007 - October 2008

Location:

Tumulus Farm, Leven, Fife, Scotland (Noble Foods Ltd)

House One :

12000 ISA Free Range (installed at 18 weeks) 6/11/07

House Two :

17000 Hyline Barn (installed 34 weeks) 21/2/08

House Three:

12000 Lohmann Free Range (installed 36 weeks) 21/2/08

Active Bioemitter units: 2 RM Bioemitter units per shed timed with 6hrs off in 24hrs. An additional experimental unit was added to shed one part way through the trial to enhance red mite control. 16/5/08

A Water Treatment Bioemitter was fixed to the incoming water mains supply pipe to each shed.

A central unit was added on 21/3/08 in all three sheds to boost the power of the field within the sheds.

Feather Analysis

Periodic samples were taken from the birds in each shed to update the programming with incident disease vectors according to the schedule below. The feathers are analysed bio-energetically and a capsule programmed accordingly and replaced in the water treatment Bioemitter.

Feather Sampling	Shed 1	Shed 2	Shed 3
	09/01/2008		
	25/02/2008	25/02/2008	26/02/2008
	14/03/2008		
	19/03/2008		
	09/04/2008	09/04/2008	09/04/2008
	14/05/2008	14/05/2008	15/05/2008
	30/06/2008	27/06/2008	27/06/2008
	21/08/2008	21/08/2008	21/08/2008
	06/10/2008	07/10/2008	07/10/2008

How the Bioemitters work

The knowledge base supporting the development of the Bioemitters draws on not only recent technological advances but also age old wisdoms and understandings of the planet and its biological systems.

It is now generally appreciated that all substance is made up of packets of energy, the vibrational nature of which predicates form and function.

Every substance has its own peculiar and particular nature and hence its own unique vibrational rate and signature.

It is now possible to detect and determine enough of this signature to be able to address and interact with any substance or system, and therefore by extension any virus, bacteria, protozoa and so on.

With the understanding we have developed we can, by using relatively simple means, either enhance or deplete aspects of biological systems in a highly specific and precise manner.

Natural biological systems are benign and naturally cleansing and life enhancing. Thus in a toxin free organic/biodynamic farm set up with perfect nutrition and welfare you would have little or no disease at any time.

Commercial farming has often strayed far from this ideal, suffering from poor nutritional quality in feeds, crowding, stress and toxic environments producing compromised immune systems in a disease pool created by the previous inhabitants.

Bioemitters in Practice

The Bioemitter creates energetic structures (i.e. at a sub molecular level) and conditions (energy fields) to reduce the negative impacts on the crop or animals (such as stress and disease) and enhance the natural life-enhancing systems present in the environment.

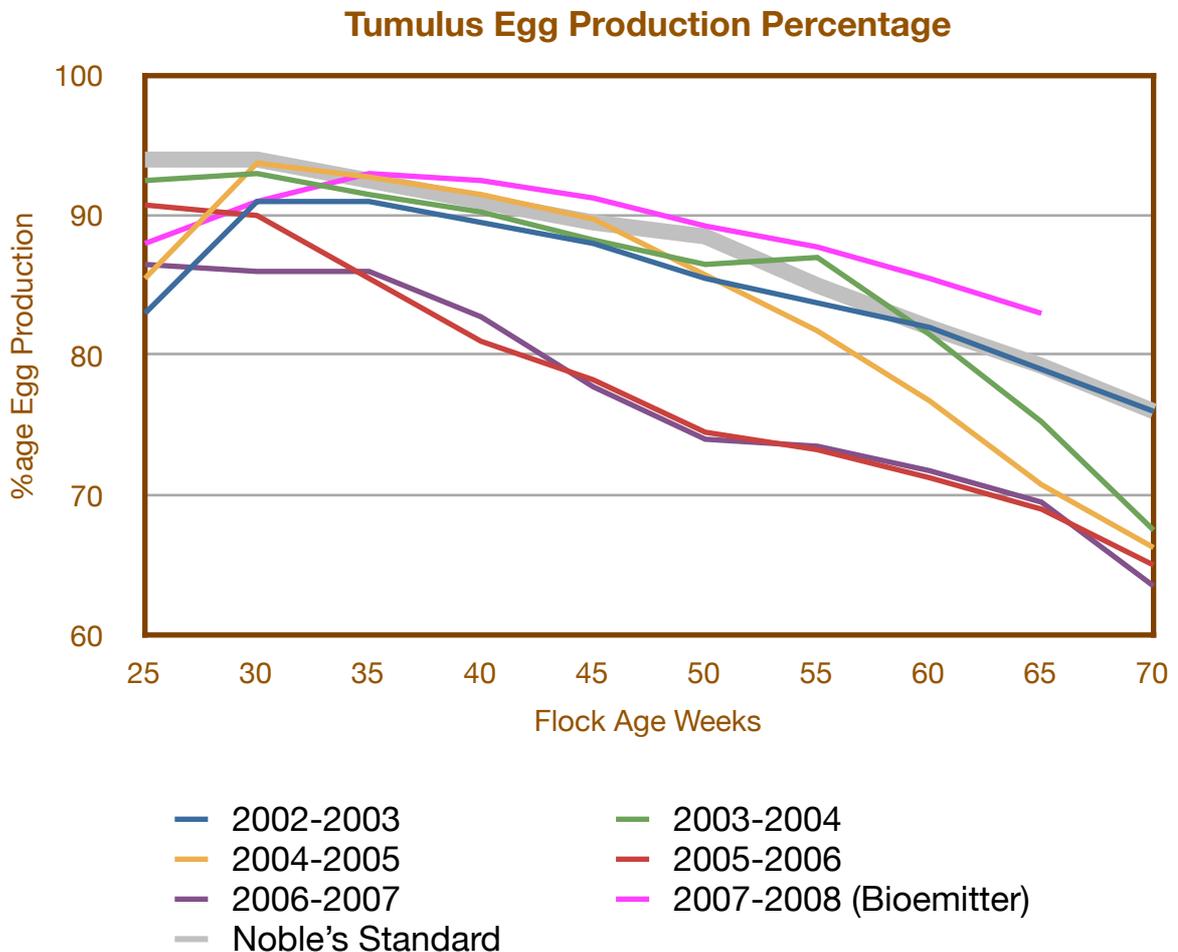
Practically speaking the Bioemitters are housed in waterproof plastic tubes about 2m long. The Bioemitters can be function specific, one dealing with the environment, one with disease and if necessary, one with toxins. Variants have been adapted for sea as well as land. Extra to the above is a model to treat the incoming water on the farm, to detoxify and make the water more palatable and biologically active for the animals and to carry specific treatment codes and frequencies.

The Bioemitter treatment regime is modified by regular feather samples taken from the birds. This biofeedback mechanism has been very effective dealing with all sorts of incident disease, whether diagnosed or not.

Results - Egg Production

The graph shown below depicts the production figures from Tumulus Farm from 2002/3 to 2007/8. Each line represents a different flock and year. The **Magenta** line shows the production for the 2007/8 Bioemitter installation on the farm. The **Magnesium** line shows the average of the 10 top performing Noble Foods farms over the last five years. The data has been taken from the Noble Foods production data shown in the appendix. On the graph higher is better.

From the graph it can be seen that the trend of decreasing production over the period analysed has not only been radically reversed and improved but also taken the farm from week 35 to a sustained level of production exceeding Noble Foods target production standard.



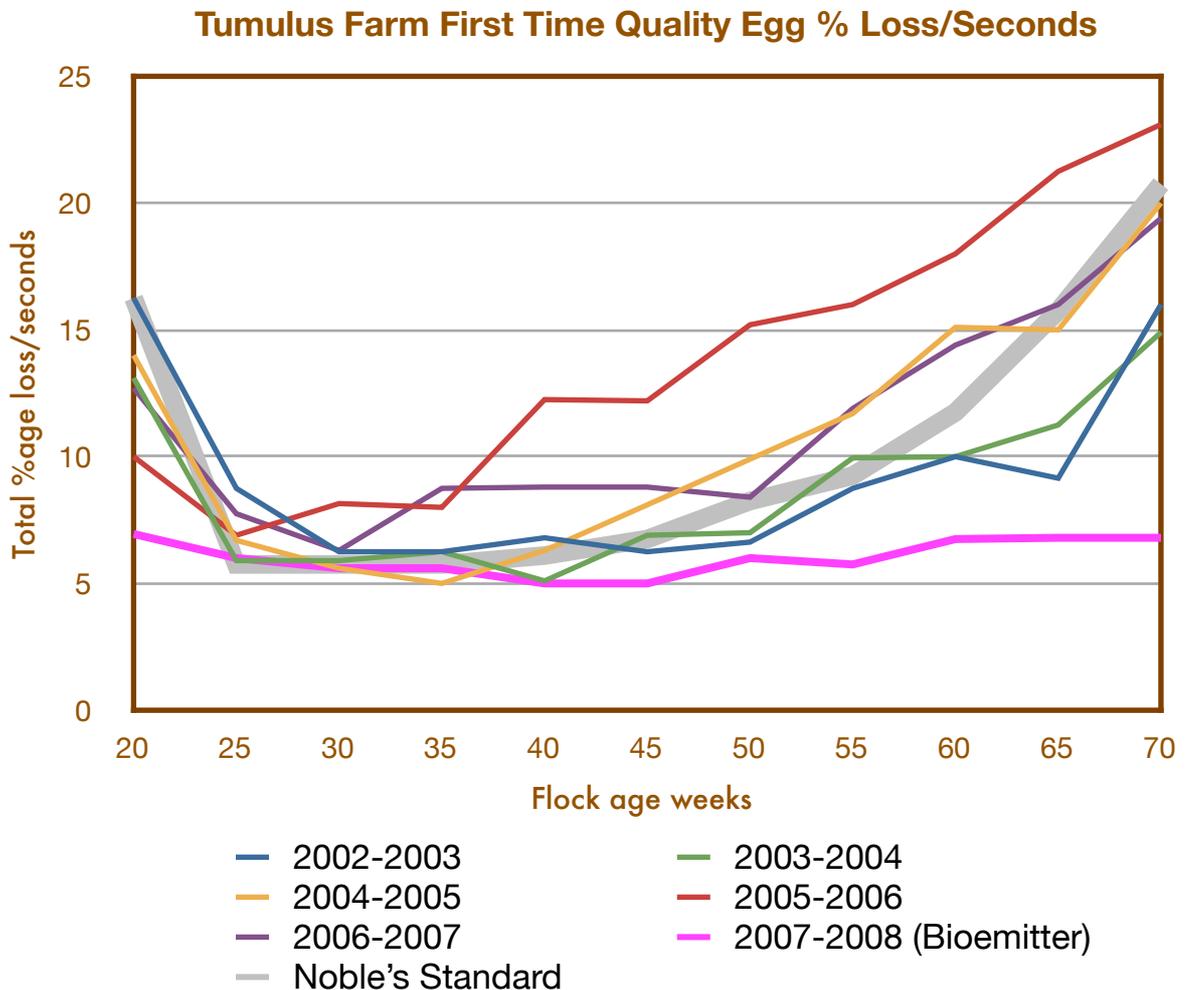
Conclusion

The Bioemitter technology installed 2007/8 in Tumulus Farm has significantly improved egg production compared to the recent historic performance of the farm and exceeded the company standard target for production.

Results - First Time Quality Egg

The graph shown below depicts the percentage reject/seconds eggs from Tumulus Farm from 2002/3 to 2007/8. Each line represents a different flock and year. The **Magenta** line shows the period for the 2007/8 Bioemitter installation on the farm. The **Magnesium** line shows the average of the 10 top performing Noble Foods farms over the last five years. The data has been taken from Noble Foods production data shown in the appendix. On the graph lower is better.

From the graph it can be seen that the trend of decreasing quality over the period analysed has been radically reversed and egg quality significantly improved beyond Noble Foods target standard quality. It can be seen that the egg quality has hardly varied throughout the production cycle, which is beyond expectation.



Conclusion

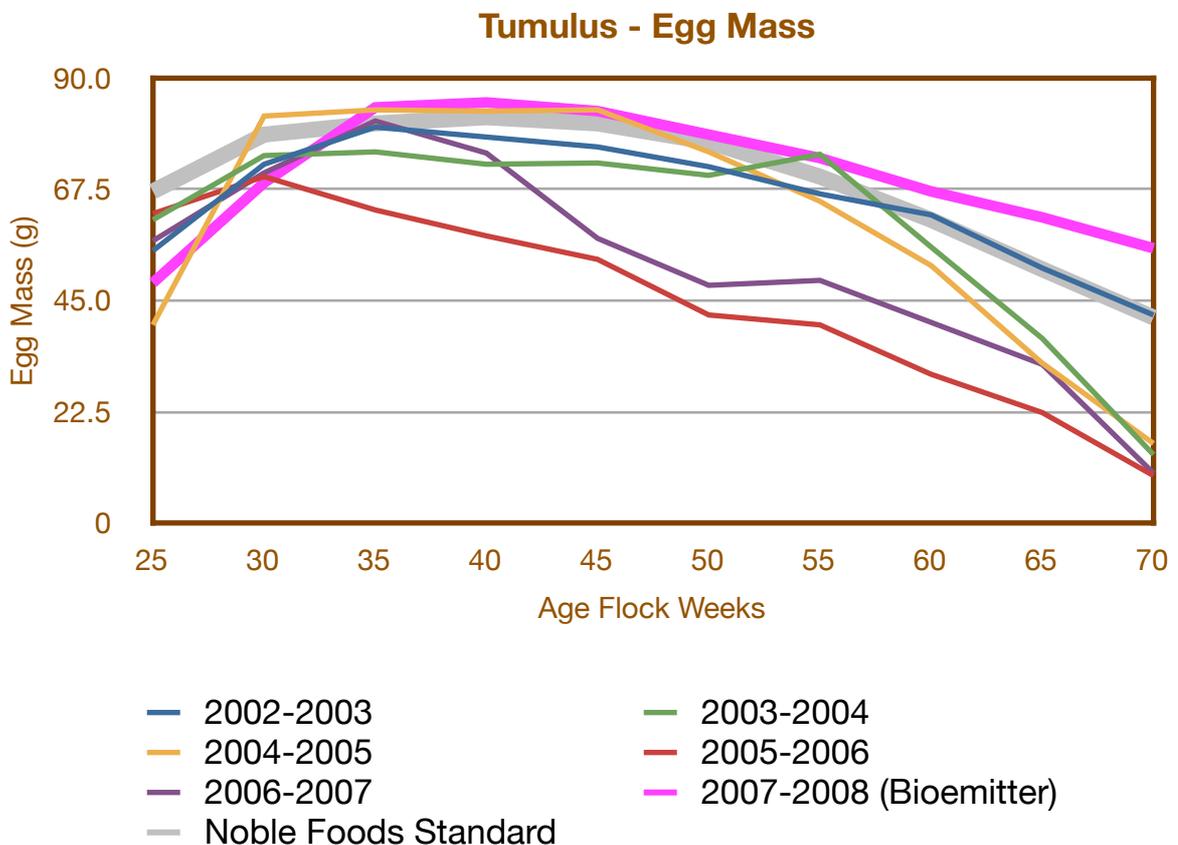
The Bioemitter technology installed 2007/8 in Tumulus Farm has significantly improved egg quality over the recent historic performance of the farm and to a level superior to the company standard target for production. The Bioemitter technology has enabled consistent and uniform high quality egg production.

Results - Egg Mass

The graph shown below depicts the egg mass figures from Tumulus Farm from 2002/3 to 2007/8. Each line represents a different flock and year. The **Magenta** line shows the percentage mortality for the 2007/8 Bioemitter installation on the farm. The **Magnesium** line shows the average of the 10 top performing Noble Foods farms over the last five years. Higher is better on the graph.

The data has been taken from Noble Foods production data shown in the appendix.

From the graph it can be seen that the trend to decreasing egg mass over the period analysed has been reversed. From week 35 egg mass consistently exceeds the Noble Foods standard target.



Conclusion

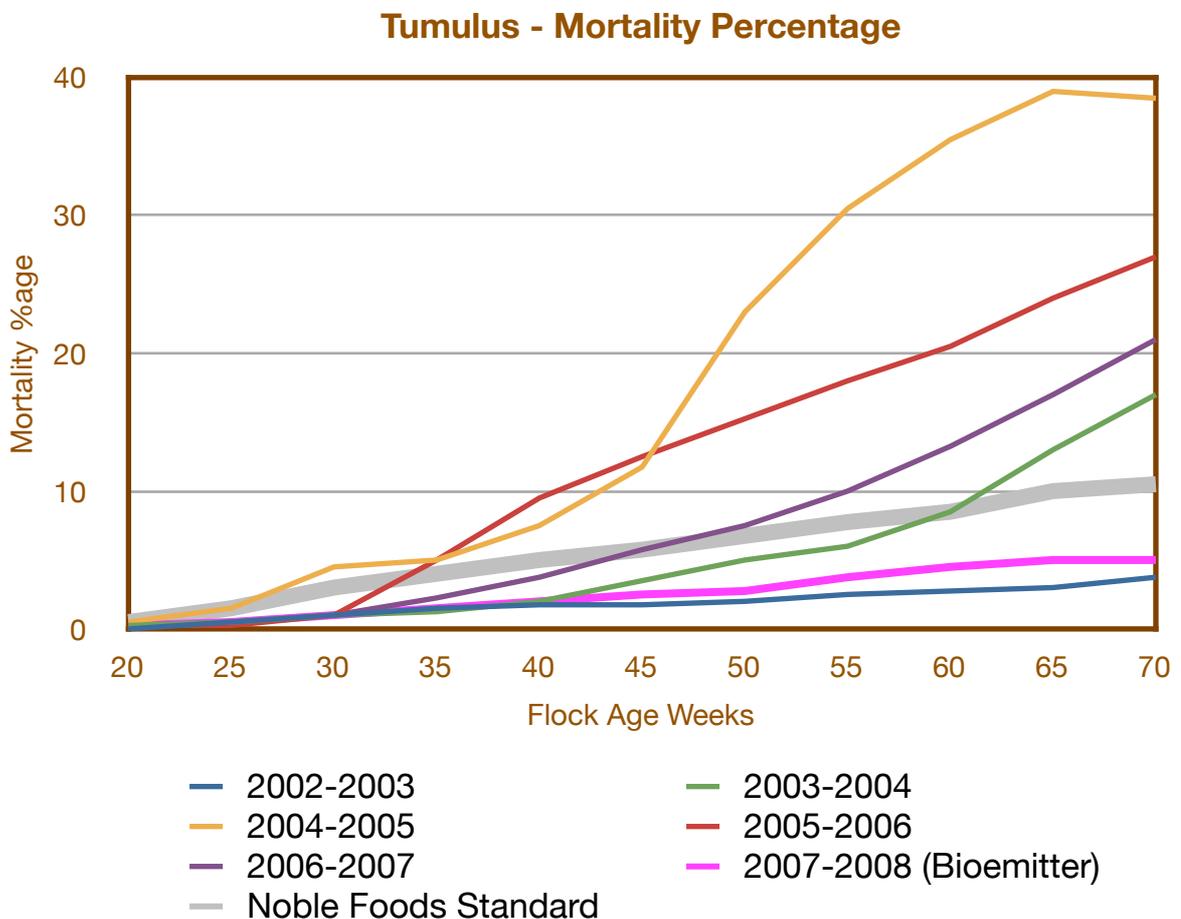
The Bioemitter technology installed 2007/8 in Tumulus Farm has significantly improved egg mass over the recent historic performance of the farm and then exceeded the company standard target for production.

Results - Mortalities

The graph shown below depicts the percentage mortality figures from Tumulus Farm from 2002/3 to 2007/8. Each line represents a different flock and year. The **Magenta** line shows the percentage mortality for the 2007/8 Bioemitter installation on the farm. The **Magnesium** line shows the average of the 10 top performing Noble Foods farms over the last five years. Least is better on the graph.

The data has been taken from Noble Foods production data shown in the appendix.

From the graph it can be seen that the trend to high mortality over the period analysed has not only been reversed but that mortality has been kept to a level approximately half the target standard. Arguably this predicates a much higher level of flock health and immunity throughout, which is backed up by observation (see below) and the quality and quantity of production.



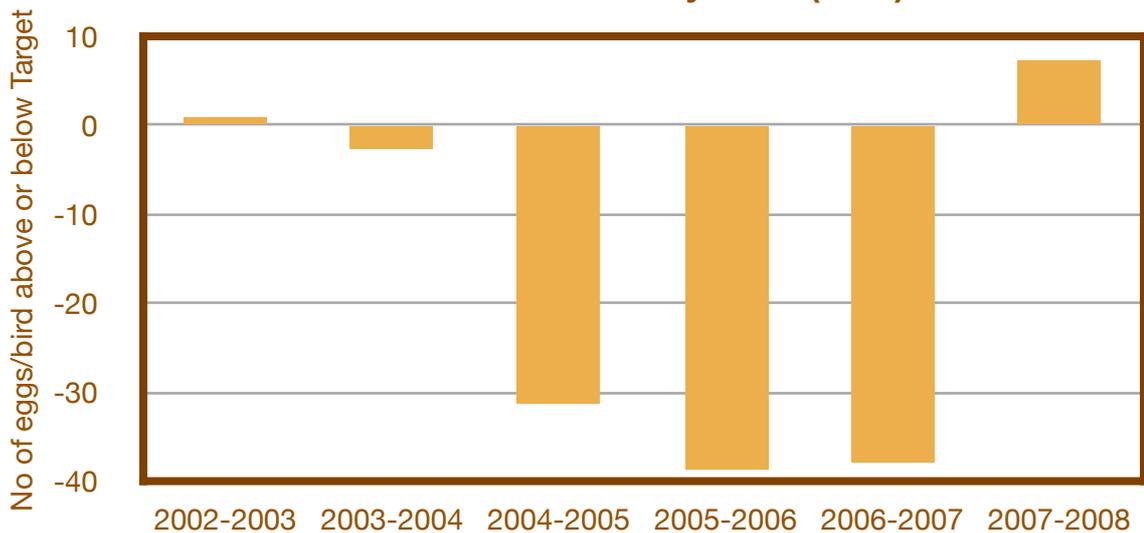
Conclusion

The Bioemitter technology installed 2007/8 in Tumulus Farm has significantly improved bird mortality compared to the recent historic performance of the farm and below the company standard target for mortality.

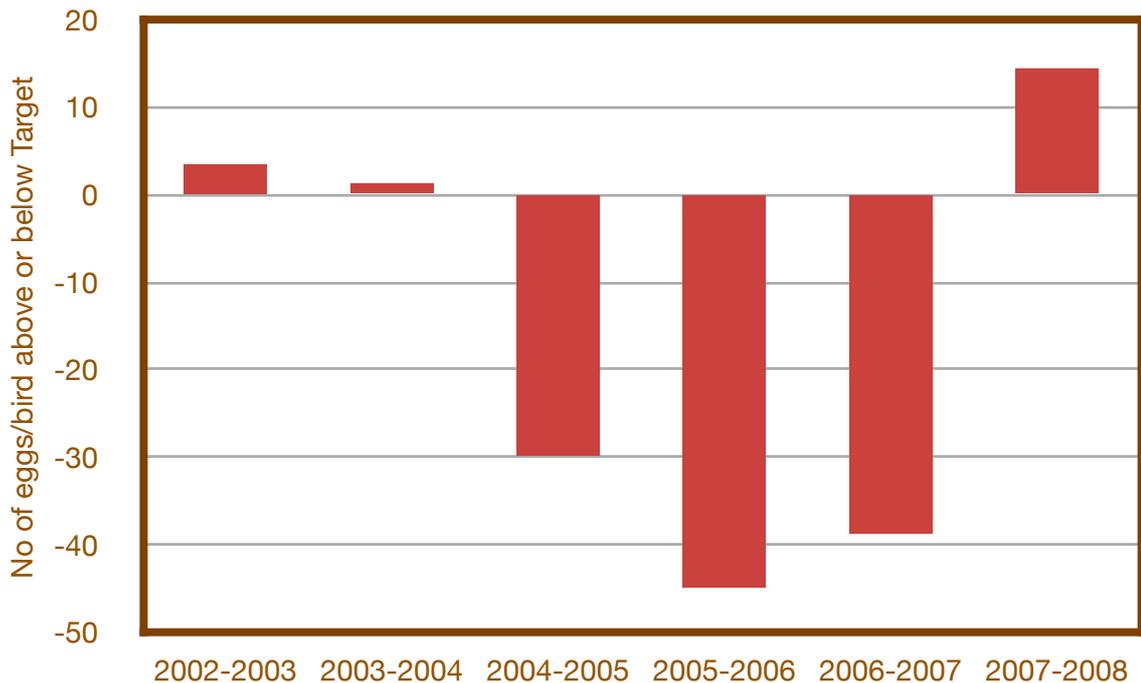
Results - Productivity

The graphs show the deviation year to year (Bioemitter installed 2007/8) of egg production numbers from Noble Foods company standard target (ie 0 on graph). The first shows the “raw” egg production figures on the farm, the second the adjusted figures after subtraction of the seconds and unsaleable eggs, i.e. these are the First Quality going to market. The data has been taken from Noble Foods production data shown in the appendix.

Overall Productivity Farm (HHA)



Productivity to Market (FTQHHA)



Conclusion

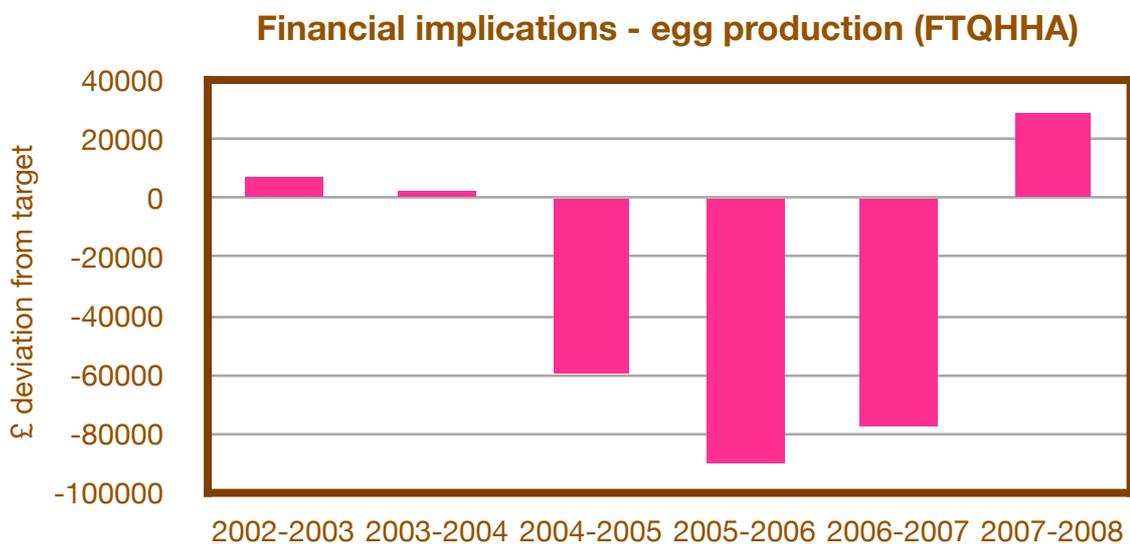
The Bioemitter technology installed 2007/8 in Tumulus Farm has significantly improved productivity and thereby profitability compared to the recent historic performance of the farm and above the company standard target for production.

Financials - Income

This graph demonstrates the financial implications of the trial compared to recent years production. It shows the deviation from Noble Foods target profit level (zero on graph), data supplied by Noble Foods. A full analysis is beyond the scope of this report, what we are considering here is simply the change in profitability due to increased egg production, all other costs remaining the same.

Assumptions are:

eggs valued @ £0.60 per dozen for first quality off of the farm. No account has been made for added value, decrease in costs due to reduced medications, improvements in FCR, increased packing costs, incurred costs due to mortalities. etc etc.



Financials - Savings

The most substantial savings were made on medication and veterinary compared to that necessary in previous years. This is estimated to be in the region of several thousand pounds.

Financials - Conclusion

The introduction of the Bioemitter system into Tumulus farm has resulted in turning a non - profitable operation into one giving an excellent return.

It must be noted that there is an opportunity to develop an unique added value egg product based on “chemical, drug toxin and disease free production coupled with high welfare and health” that will command the middle and higher end of the egg market and provide substantial additional returns and to eventually set the standard for all production.

Additional Notes

Feathering -

The birds have maintained good feathering throughout, compared to previous years.

Red Mite -

Red mite has been maintained at a level consistent with good welfare and good production, with additional routine spraying of populated areas with detergents (Agrycom). By taking into account the production achieved it could be said that the red mite have had little or no negative effect on the flocks.

Husbandry -

It is noted that attention has been paid to : improving the water supply, regulating ventilation and lighting compared to the regime in previous years. Litter may be improved through adding biologically active compounds into the litter.

The Future -

Nobles have elected to continue the use of the Bioemitters for the next flock in Tumulus. This is due to start late November 2008. Additional farms are selected for further trials.

Improvements -

The Bioemitter system is most efficient when used from hatching and on the brood stock, to eliminate parasite and disease at the earliest possible stage. Work needs to be done to eliminate negative effects of vaccination programmes on the birds - both with careful selection of vaccines and using bio-energetics to ameliorate the undesirable effects.

Contacts		
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