



FLOCKMAN

Background

by

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Study chicken ancestor -Indian Jungle Fowl
Then learn and apply to modern Broilers



Behaviour of the Jungle Fowl (Gallus Gallus)

- ◆ Lives in Tropical Rain Forest in a hot humid environment.
- ◆ Forages rapidly as dawn breaks, before the temperature rises and fills its crop with berries, seeds, small insects.
- ◆ During the heat of the day, shelters in undergrowth and seeks damp wet patches to preen and assist cooling.
- ◆ Lives on the feed stored in the crop during this time.
- ◆ When the sun goes down, forages rapidly in the cool and fills its crop for the second time in 24 hours.
- ◆ Finds night roost safe from predators and sleeps.
- ◆ Crop again empties and bird awakes slowly but hungry!
- ◆ We can learn from above and our elders' ideas TODAY!!

Poultry Feeding in the UK (1940-1950)

- ◆ Kept in Night Arks or small sheds (50 - 100 max) at night.
- ◆ Feed was put out in troughs close to unit soon after dawn.
- ◆ All pop holes then opened quickly.
- ◆ Birds rush out and feed rapidly to fill crops.
- ◆ Stockman observed how quickly feed is eaten.
- ◆ Cut back next day if feed left or increased if eaten quickly.
- ◆ A scratch cereal feed (barley, wheat, etc) was fed 4-5 pm.
- ◆ All birds herded into housing at dark and pop holes closed.
- ◆ So, birds had full crops and active gizzards to digest feed.

Industry changes in the late 1950's

- ◆ Large numbers of birds kept in intensive houses with no access to pasture including seeds, grains, grit, etc.
- ◆ Mechanisation of feeding systems
 - Tube & Chain Feeders, Cable and Flight, now Feed Pans.
- ◆ Feed started to be fed ad-lib (new system).
- ◆ All feed components (including cereals) were ground.
- ◆ 23 hours of light/day common. So poor immune defence.
- ◆ So, no full crops and inactive gizzards. Poorer digestion.

Problems caused by Industry Changes

- ◆ Higher Mortality due to poor Immune Defence system.
- ◆ Ascites & Heart Attacks in some birds who eat too much.
- ◆ Higher variability from small birds not eating enough.
- ◆ Poorer LW & FCR due to digestive system not optimised.
- ◆ Bad litter from protein excretion. Crops & gizzards inactive.
- ◆ Higher coccidiosis risk, (Gizzards not destroying oocysts).
- ◆ Poor Health & Welfare from poor life-style. From long light periods & ad-lib feeding. No stimulating events in the day.

Wet foods for Poultry (JM Forbes 2003)

| 14 – 28 days | Dry Fed | Wet Fed |
|---------------------------------|-------------------------|-------------------------|
| Feed Intake, g DM | 1220 | 1204 |
| Weight gain, g | 689^a | 758^b |
| FCE g gain / g DM intake | 0.56^a | 0.63^b |
| FCR g DM intake / g gain | 1.78^a | 1.59^b |

David Filmer's history

Inventor of ***FLOCKMAN***

- ◆ Raised on a poultry farm.
- ◆ London/Cambridge Universities
- ◆ Nutrition, Poultry Husbandry, Statistics,
- ◆ Experiments and Computer modelling.
- ◆ Technical Director, Dalgety-Agriculture.
- ◆ Unilever Nutritionist, Poultry Marketing.
- ◆ 22 years MD of ***FLOCKMAN*** company.

FLOCKMAN

- ◆ Controls Meal-Time Feeding and Lighting.
- ◆ Birds' gizzards and crops can work properly.
- ◆ Improves bird welfare and cuts mortality.
- ◆ Feed and light programs are scheduled and then carried out on the due days.
- ◆ All is preset before the start of the crop.
- ◆ 10 Preset Profiles included to choose from.
- ◆ Daily entries by farm staff are zero.
- ◆ Repays it's cost in 2 – 3 crops of broilers.

The ***FLOCKMAN*** box



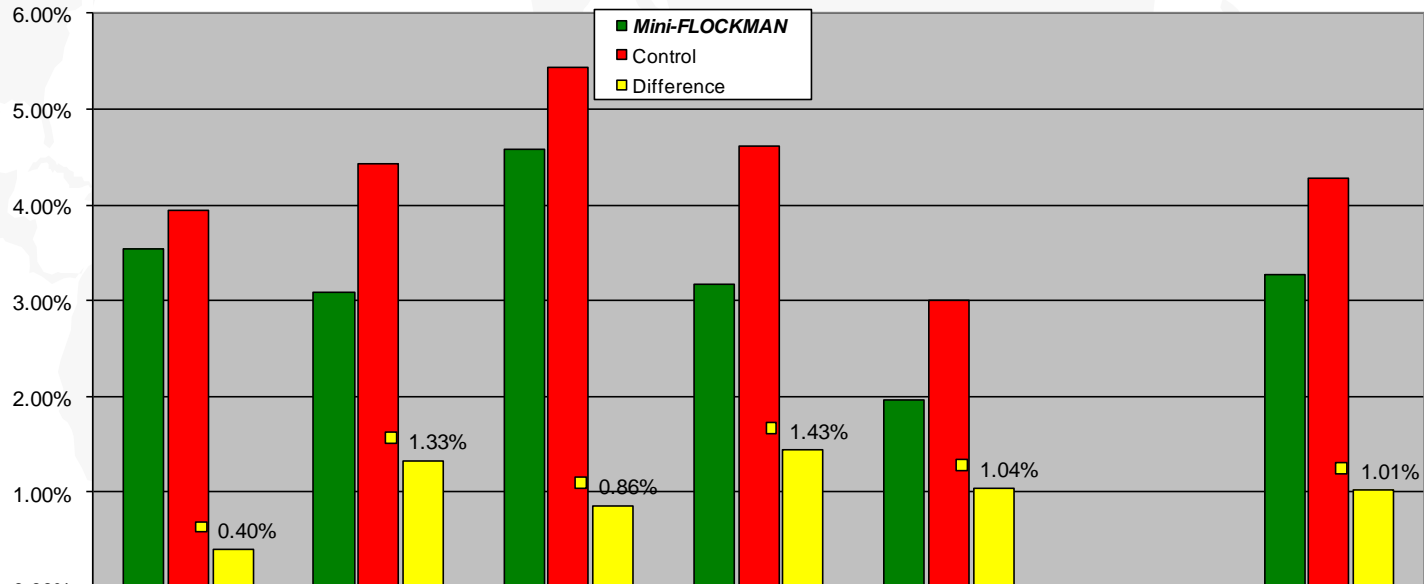
FLOCKMAN incorporates 5 ON/OFF/AUTO switches, so that each can be controlled directly from the box (ON or OFF position) or by the **FLOCKMAN** program (AUTO position).

For **FLOCKMAN** Control, ALL must be in the AUTO position. If so, a Green light is illuminated. If they are not **ALL** in the AUTO position, a Red light comes on. So weekend or infrequent workers need only to be told **FLOCKMAN** won't work unless the green light is ON!

LED lights show when augers run, pans are enabled, lights are on and if the feed hopper is full.

Results from Field trials - Mortality

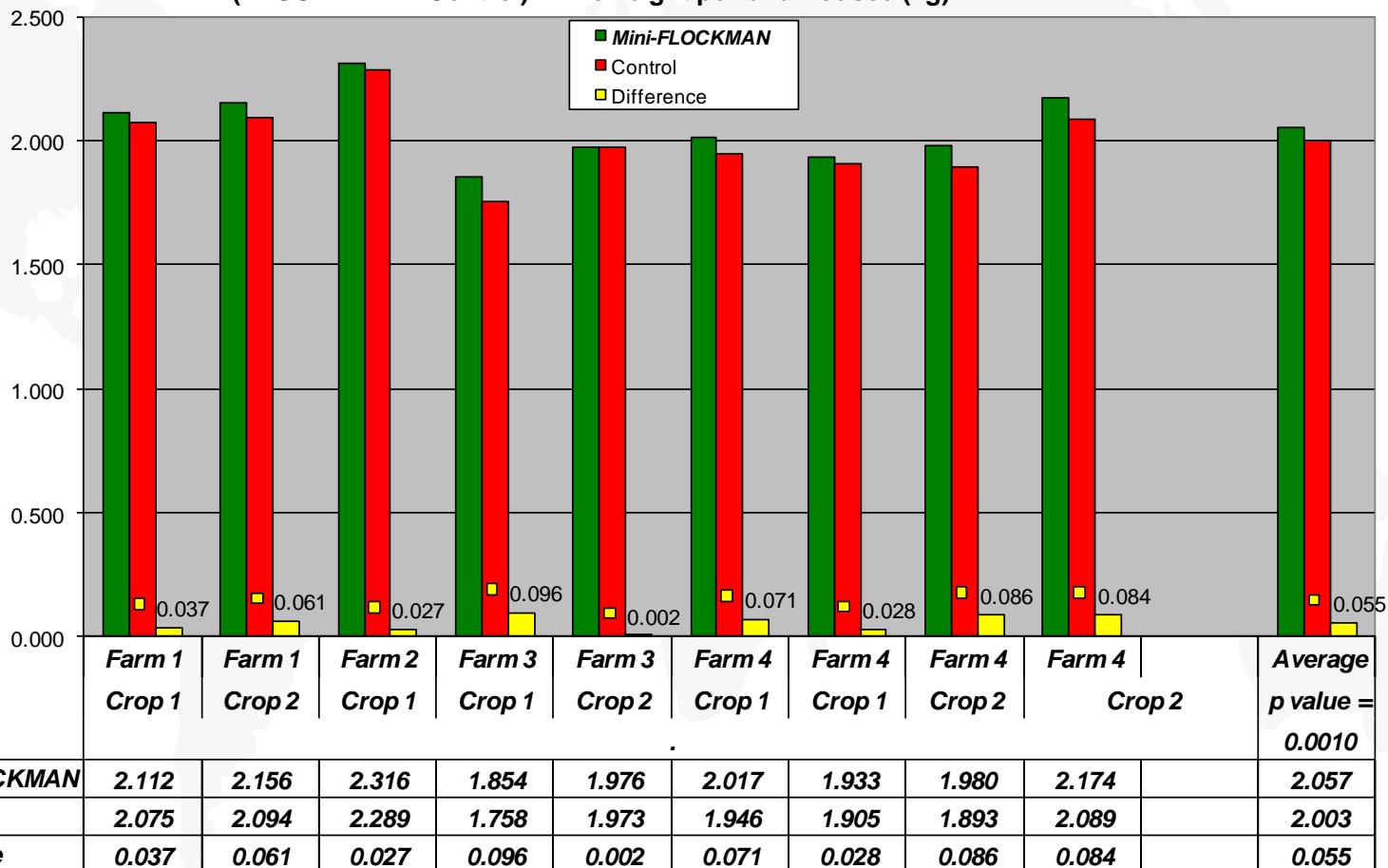
FLOCKMAN Field Trials 2008
 Statistical analysis of results from 5 paired comparisons
 (FLOCKMAN v Control): % Mortality



| | <i>Farm 1 Crop 1</i> | <i>Farm 1 Crop 2</i> | <i>Farm 2 Crop 1</i> | <i>Farm 3 Crop 1</i> | <i>Farm 3 Crop 2</i> | <i>Average p value = 0.0053</i> |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| ■ <i>Mini-FLOCKMAN</i> | 3.54% | 3.09% | 4.58% | 3.17% | 1.96% | 3.27% |
| ■ <i>Control</i> | 3.95% | 4.42% | 5.44% | 4.61% | 3.00% | 4.28% |
| ■ <i>Difference</i> | 0.40% | 1.33% | 0.86% | 1.43% | 1.04% | 1.01% |

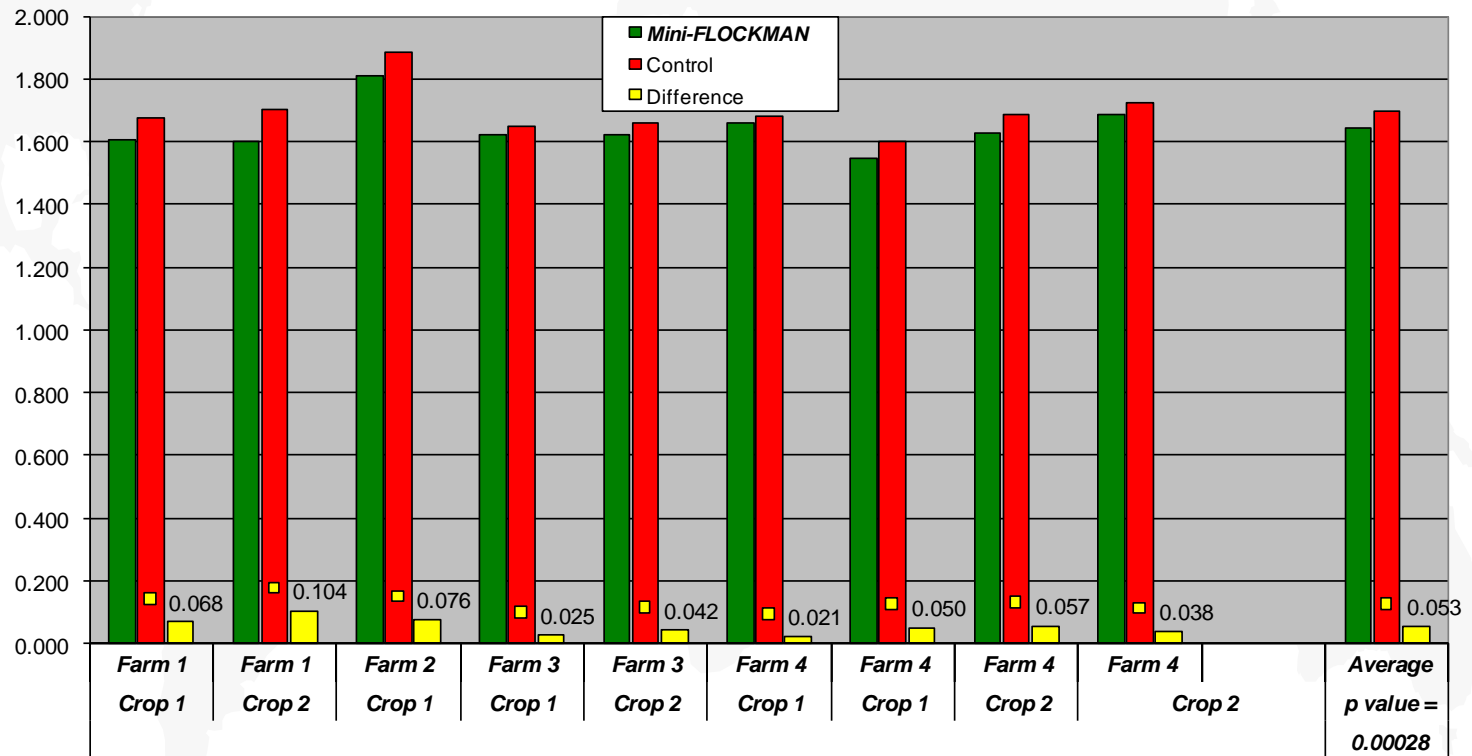
Results from Field trials - Liveweight

FLOCKMAN Field Trials 2008
Statistical analysis of results from 9 paired comparisons
(FLOCKMAN v Control): Liveweight per bird housed (kg)



Results from Field trials - Feed Conversion

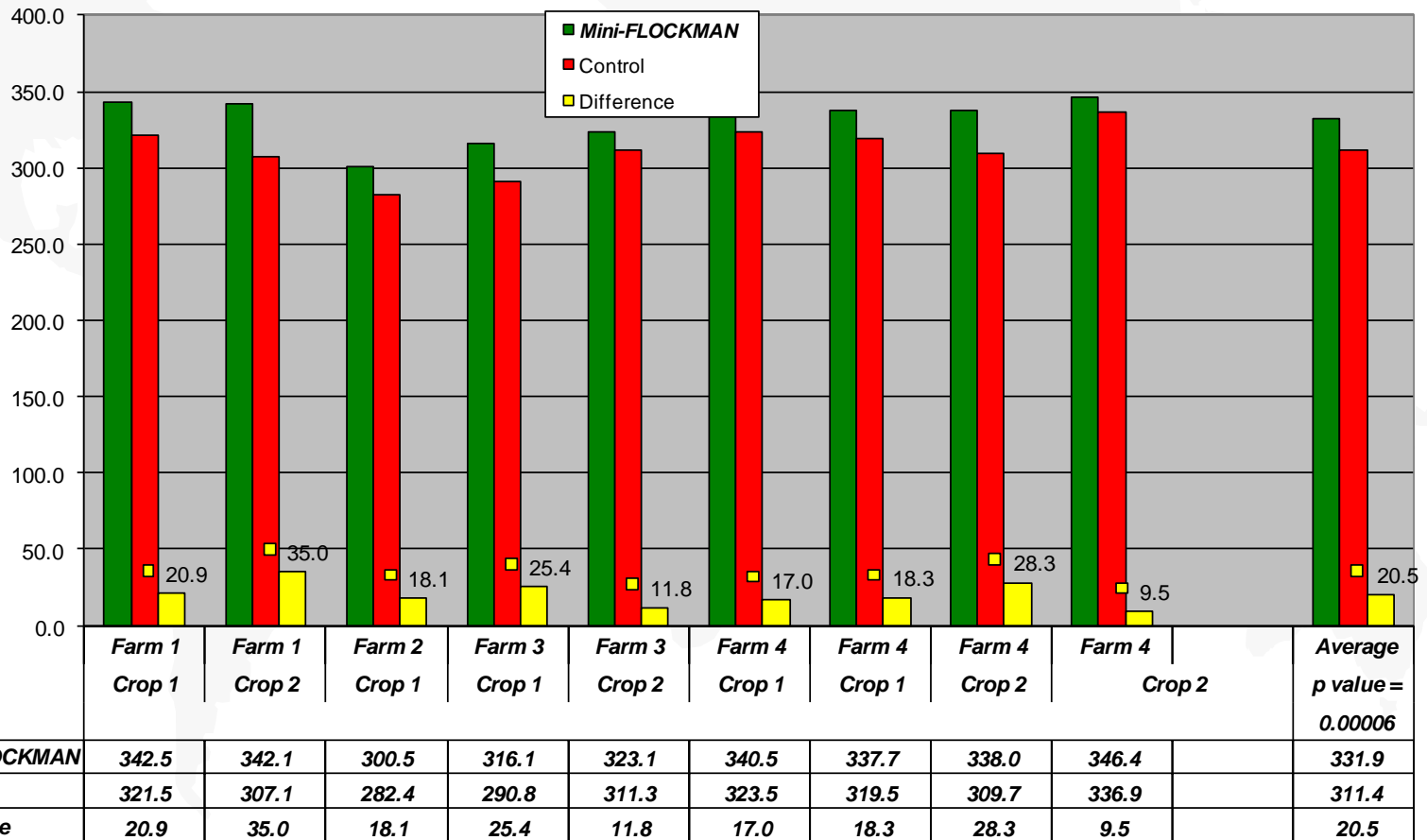
FLOCKMAN Field Trials 2008
 Statistical analysis of results from 9 paired comparisons
 (FLOCKMAN v Control): Feed Conversion Ratio



| | | | | | | | | | | |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| ■ Mini-FLOCKMAN | 1.608 | 1.599 | 1.809 | 1.623 | 1.620 | 1.661 | 1.548 | 1.629 | 1.685 | 1.642 |
| ■ Control | 1.676 | 1.703 | 1.885 | 1.648 | 1.662 | 1.682 | 1.598 | 1.686 | 1.723 | 1.696 |
| ■ Difference | 0.068 | 0.104 | 0.076 | 0.025 | 0.042 | 0.021 | 0.050 | 0.057 | 0.038 | 0.053 |

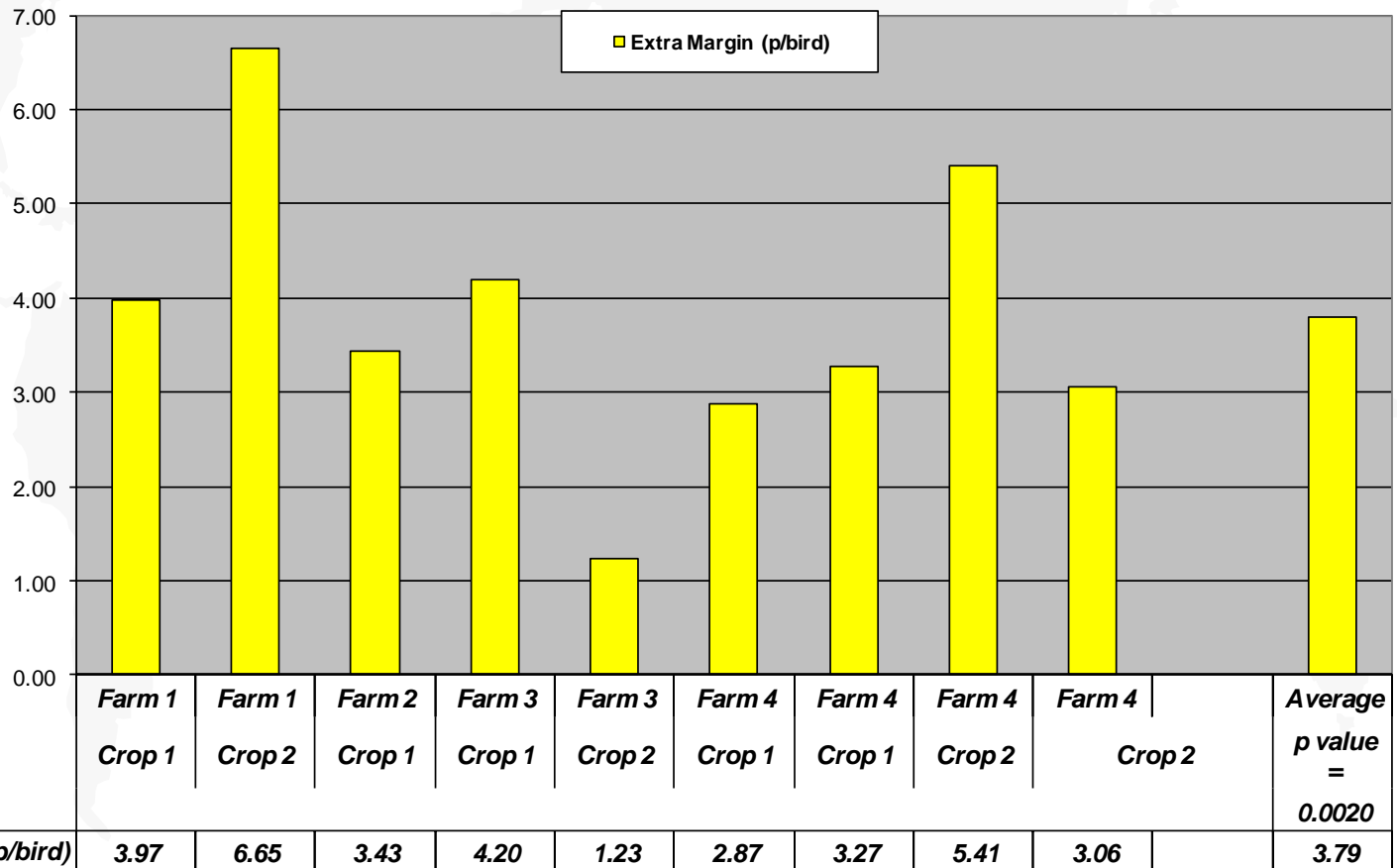
Results from Field trials - Efficiency Factor

FLOCKMAN Field Trials 2008
Statistical analysis of results from 9 paired comparisons
(FLOCKMAN v Control): EPEF



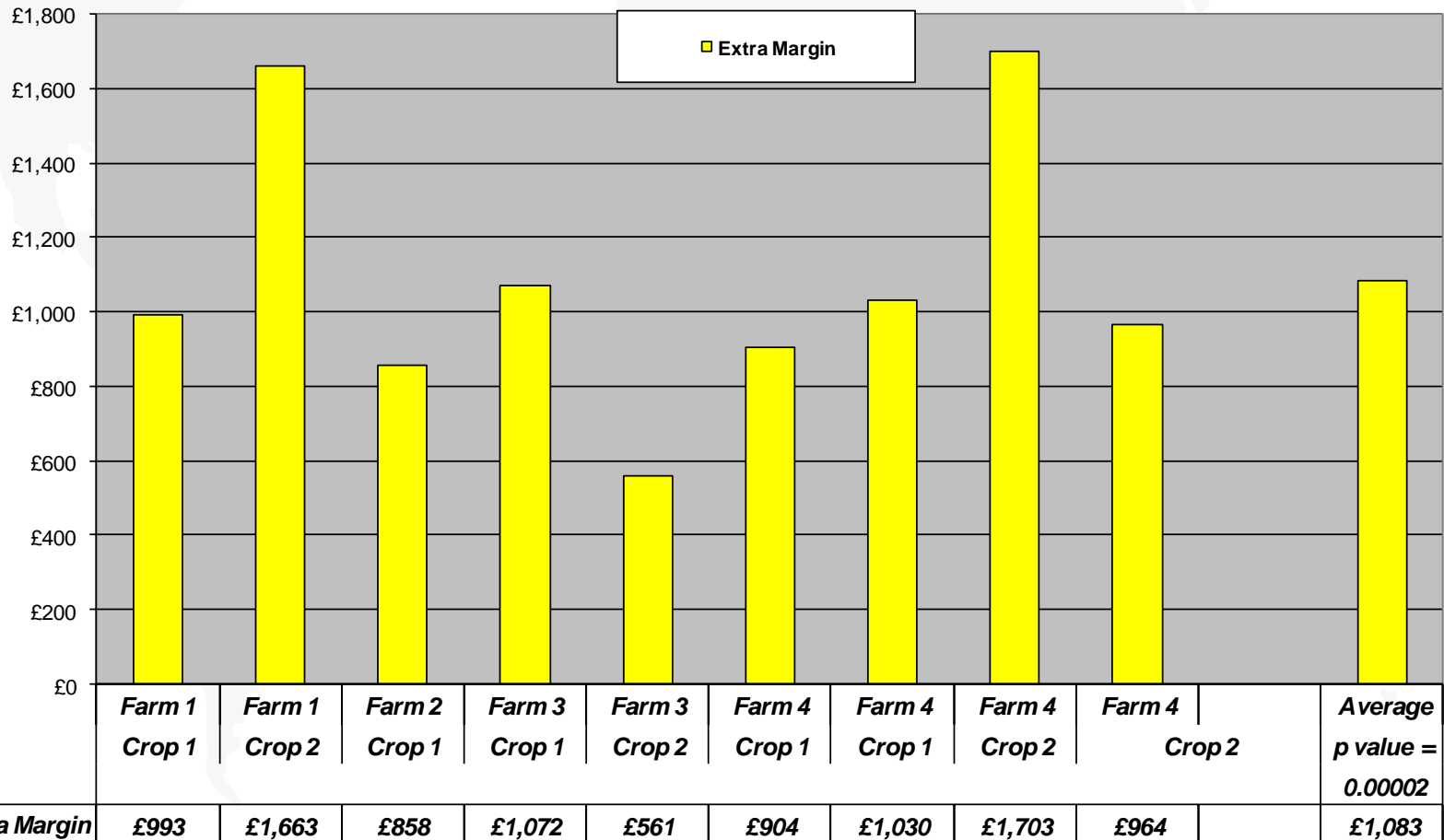
Results from Field trials – Extra Margin p/bird

FLOCKMAN Field Trials 2008
 Statistical analysis of results from 9 paired comparisons
 Extra Margin from *FLOCKMAN*: (pence / bird housed)



Results from Field trials – Extra Margin £/House/crop

FLOCKMAN Field Trials 2008
 Statistical analysis of results from 9 paired comparisons
 Extra Margin from *FLOCKMAN*: (£ per house per crop (minimum 25,000 birds housed))



Results from Field trials – Interpretation

- ◆ 95% Confidence limits of the benefits for the various parameters

| Parameter | Minimum Expectation | Average Expectation | Maximum Expectation |
|------------------|---------------------|---------------------|---------------------|
| ◆ % Mortality | 0.50% | 1.01% | 1.52% |
| ◆ Liveweight | 30 gram | 55 grams | 80 grams |
| ◆ FCR | 0.033 | 0.053 | 0.073 |
| ◆ EPEF | 14.3 | 20.5 | 26.6 |
| ◆ Margin p/bird | 2.59 | 3.79 | 4.98 |
| ◆ Margin / house | £ 798 | £1,083 | £1368 |

Interpretation

- ◆ Growers will get the Average benefits over many crops on similar farms.
- ◆ There is 95% certainty growers will get the Minimum benefits over several crops.

Conclusion

- ◆ **FLOCKMAN** improves Health, Welfare, Liveweight, FCR and EPEF.
- ◆ An extra Margin of £1,083 per crop gives a payback within two crops.
- ◆ You can be 95% certain of payback within three crops.

Benefits of FLOCKMAN



- ◆ **Less Feed Used**
- ◆ **Better Feed Conversion**
- ◆ **Lower Mortality: Less Leg Culls**
- ◆ **Heavier Birds**
- ◆ **Improved Health and Welfare**
- ◆ **More Profit**
- ◆ **FLOCKMAN = Improved Productivity and more Profit**