FLOCKMAN

Background

by

David Filmer MA (Cantab)

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

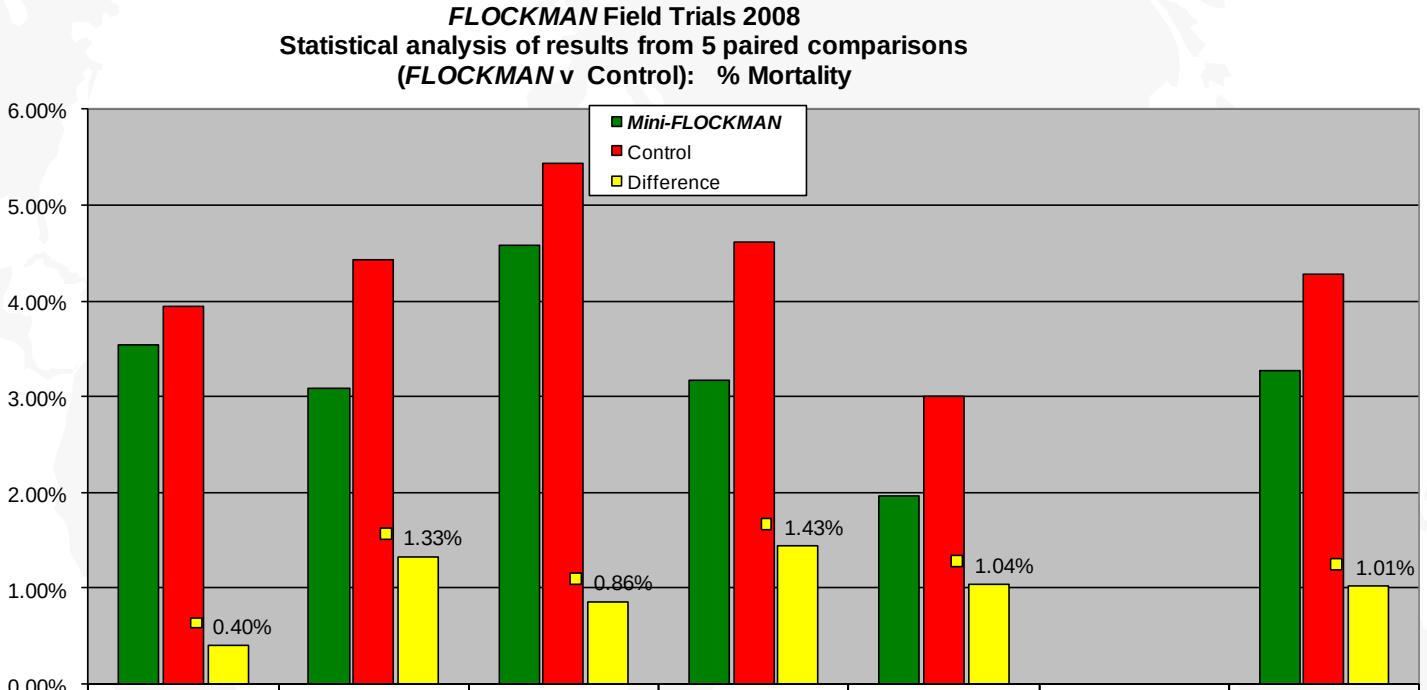
FLOCKMAN incorporates 5 ON/OFF/AUTO switches, so that each can be controlled directly from the box (ON or OFF position) or by the ***FLOCKMAN*** program (AUTO position).

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!

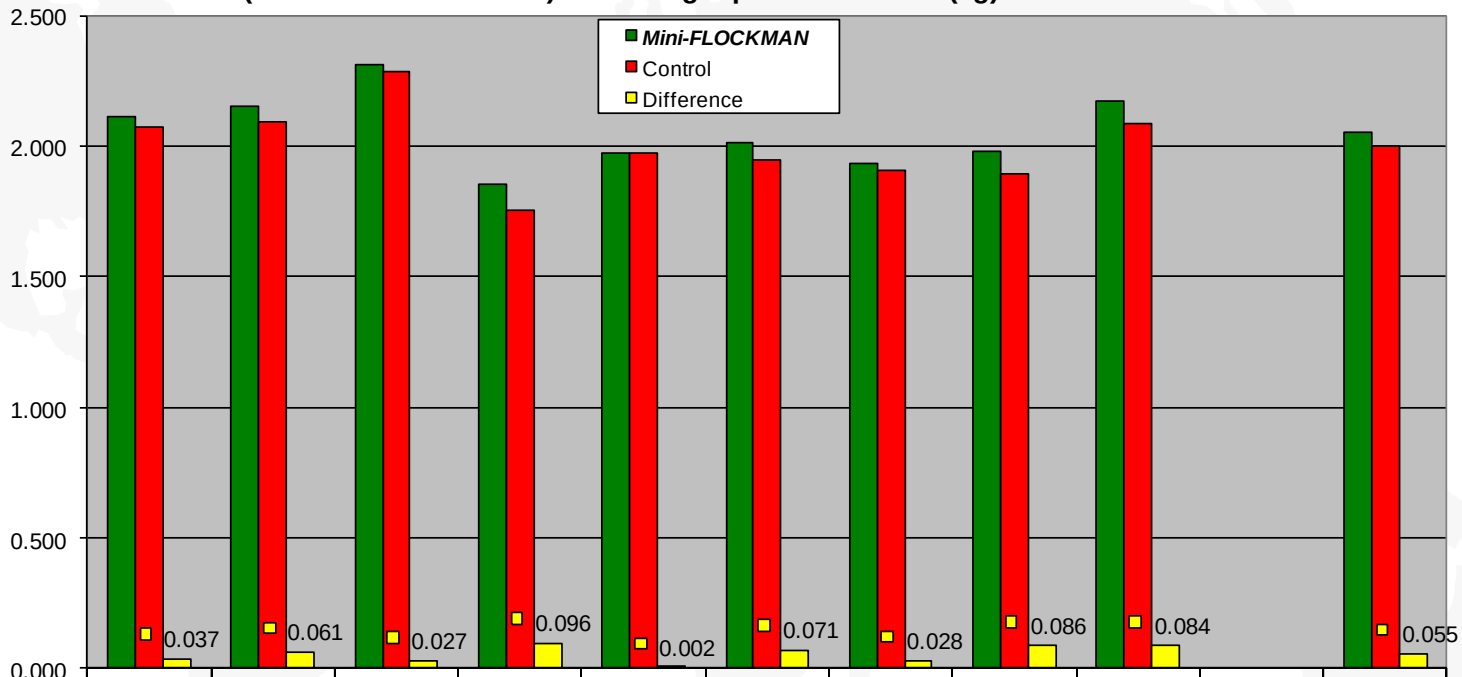
LED lights show when augers run, pans are enabled, lights are on and if the feed hopper is full.

Results from Field trials - Mortality



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

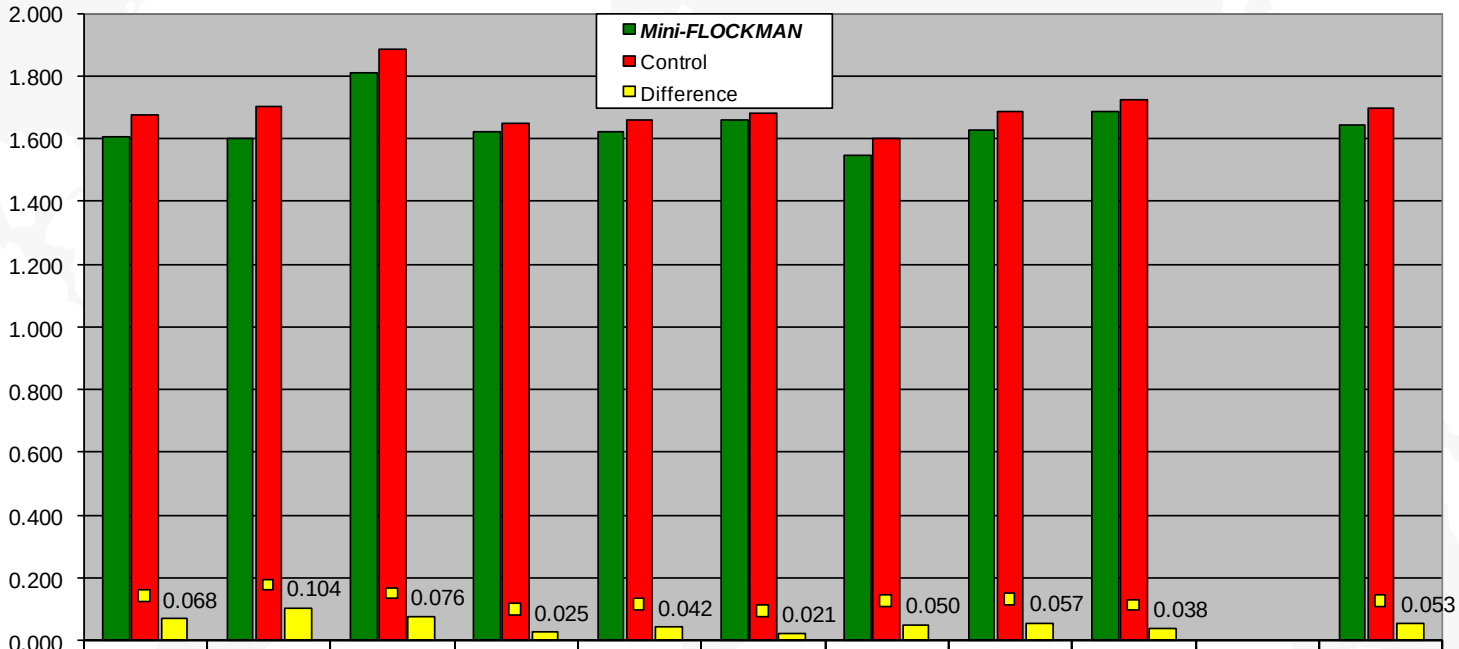
Results from Field trials - Liveweight



	Farm 1 Crop 1	Farm 1 Crop 2	Farm 2 Crop 1	Farm 3 Crop 1	Farm 3 Crop 2	Farm 4 Crop 1	Farm 4 Crop 1	Farm 4 Crop 2	Farm 4 Crop 2		Average p value = 0.0010
Mini-FLOCKMAN	2.112	2.156	2.316	1.854	1.976	2.017	1.933	1.980	2.174		2.057
Control	2.075	2.094	2.289	1.758	1.973	1.946	1.905	1.893	2.089		2.003
Difference	0.037	0.061	0.027	0.096	0.002	0.071	0.028	0.086	0.084		0.055

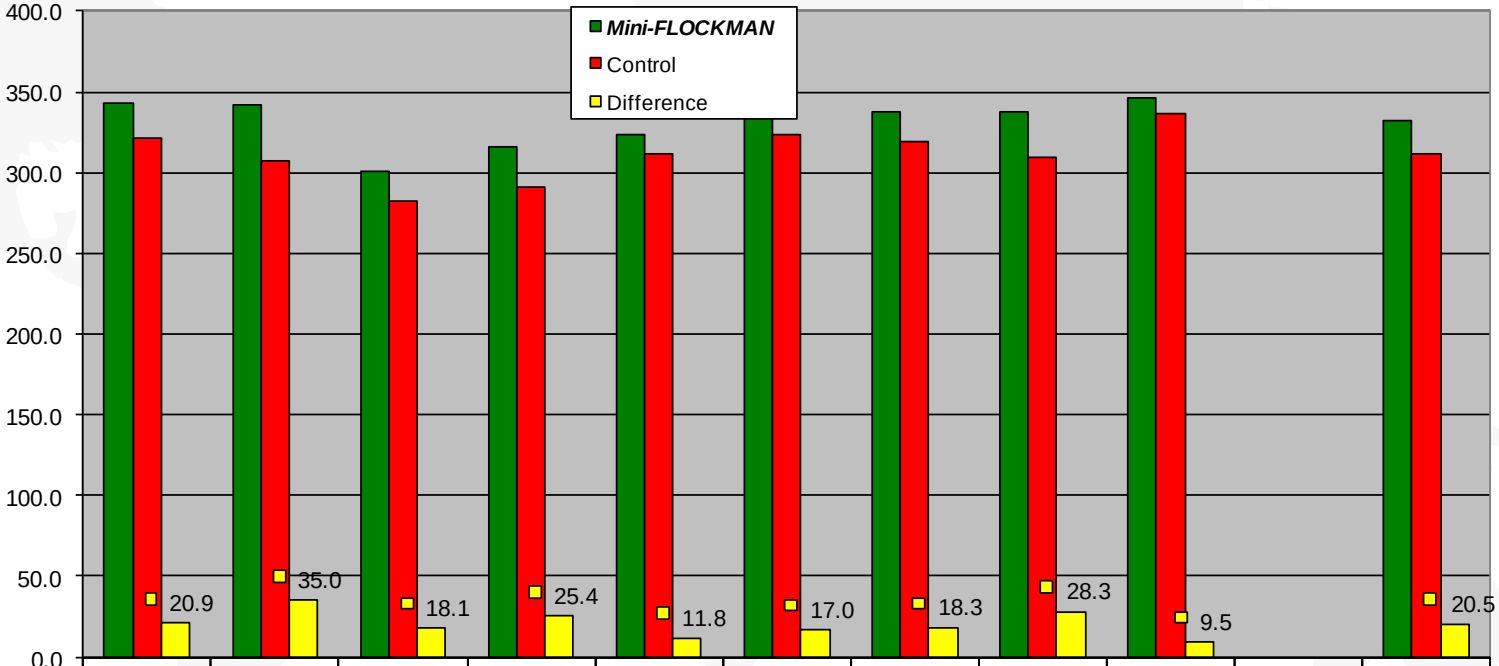
Results from Field trials - Feed Conversion

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



	Farm 1 Crop 1	Farm 1 Crop 2	Farm 2 Crop 1	Farm 3 Crop 1	Farm 3 Crop 2	Farm 4 Crop 1	Farm 4 Crop 1	Farm 4 Crop 2	Farm 4 Crop 2		Average p value = 0.00028
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

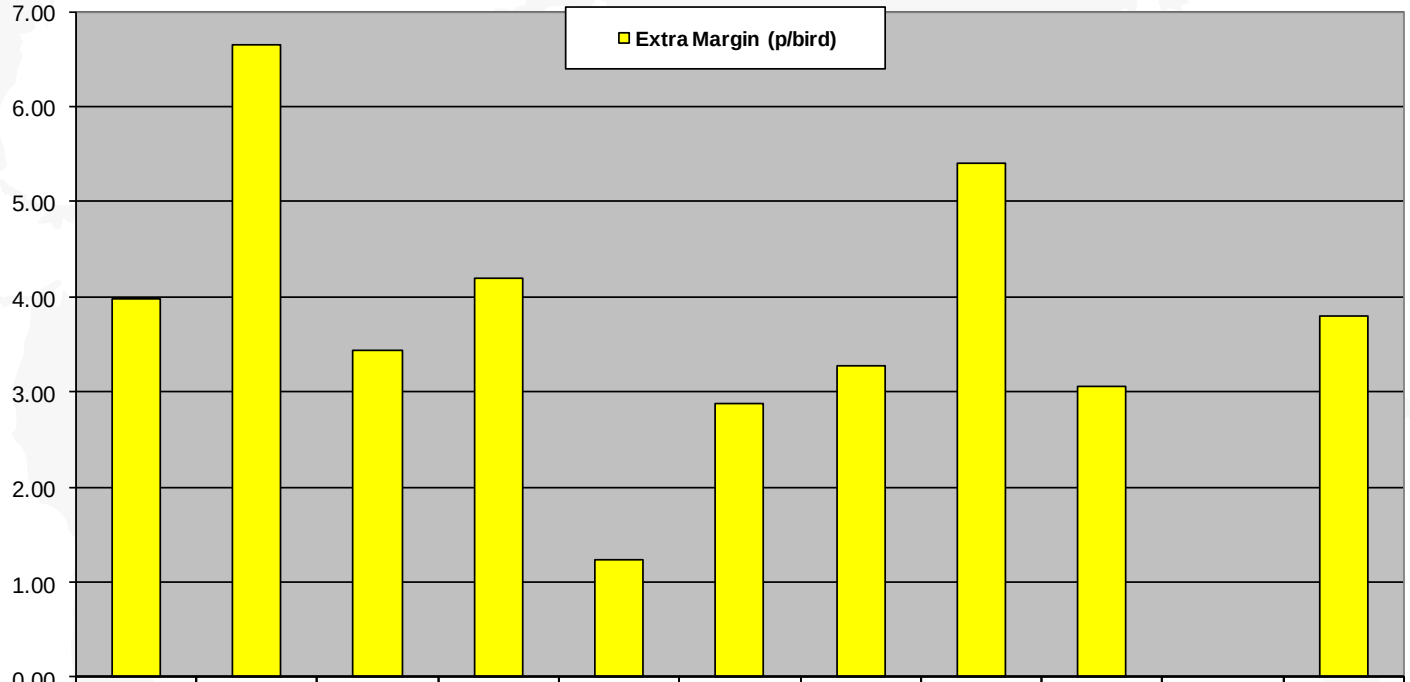
Results from Field trials - Efficiency Factor



	Farm 1 Crop 1	Farm 1 Crop 2	Farm 2 Crop 1	Farm 3 Crop 1	Farm 3 Crop 2	Farm 4 Crop 1	Farm 4 Crop 1	Farm 4 Crop 2	Farm 4 Crop 2		Average p value = 0.00006
Mini-FLOCKMAN	342.5	342.1	300.5	316.1	323.1	340.5	337.7	338.0	346.4		331.9
Control	321.5	307.1	282.4	290.8	311.3	323.5	319.5	309.7	336.9		311.4
Difference	20.9	35.0	18.1	25.4	11.8	17.0	18.3	28.3	9.5		20.5

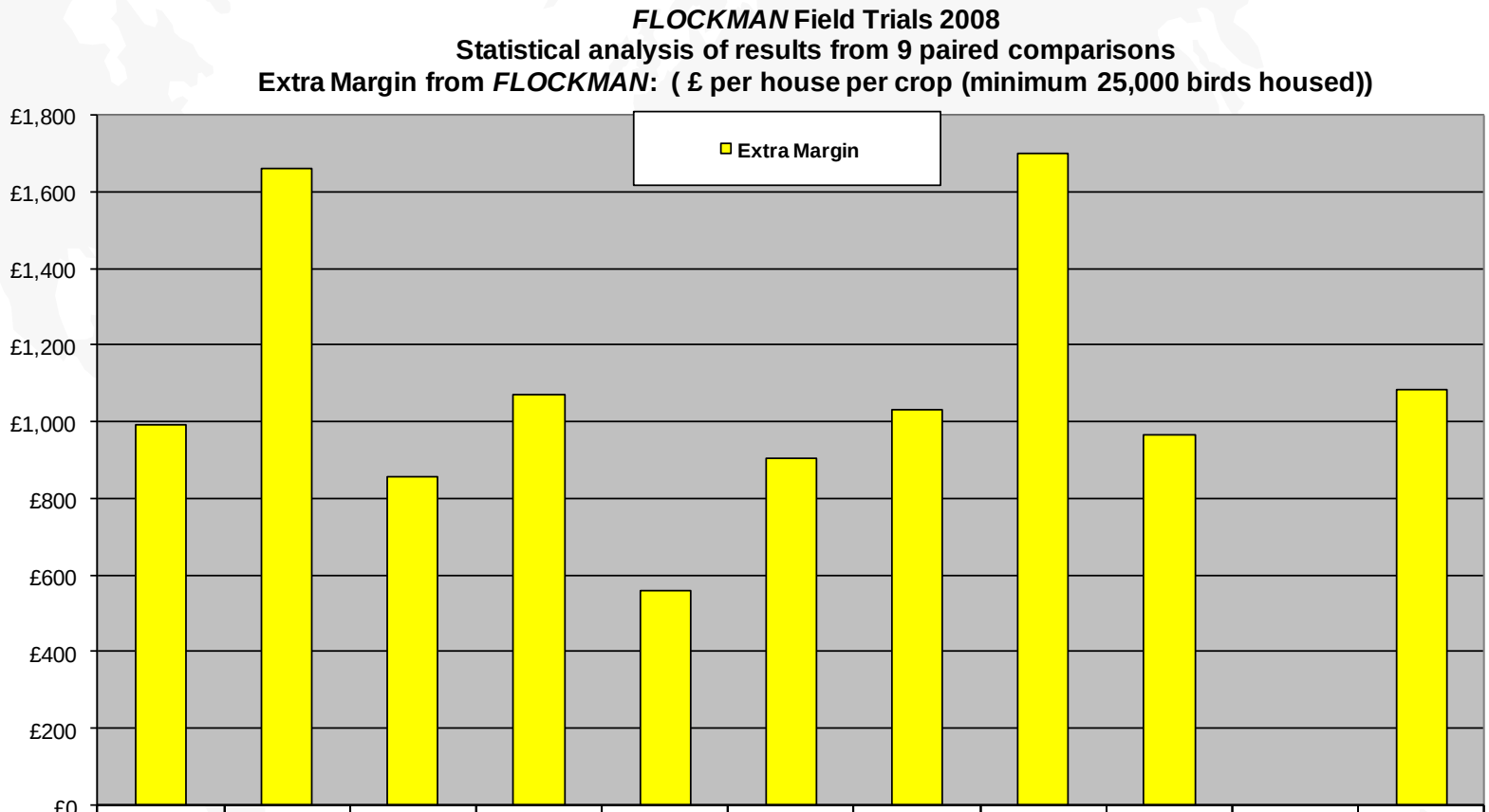
Results from Field trials – Extra Margin p/bird

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



	Farm 1 Crop 1	Farm 1 Crop 2	Farm 2 Crop 1	Farm 3 Crop 1	Farm 3 Crop 2	Farm 4 Crop 1	Farm 4 Crop 1	Farm 4 Crop 2	Farm 4 Crop 2		Average p value = 0.0020
Extra Margin (p/bird)	3.97	6.65	3.43	4.20	1.23	2.87	3.27	5.41	3.06		3.79

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



	Farm 1 Crop 1	Farm 1 Crop 2	Farm 2 Crop 1	Farm 3 Crop 1	Farm 3 Crop 2	Farm 4 Crop 1	Farm 4 Crop 1	Farm 4 Crop 2	Farm 4 Crop 2	Average p value = 0.00002
Extra Margin	£993	£1,663	£858	£1,072	£561	£904	£1,030	£1,703	£964	£1,083

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