



Controlling feather pecking – how to minimise risks for birds with intact beaks

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The team



🌿 What is feather pecking?

- Gentle (GFP)
- Severe (SFP)
- Vent (VP)
- *Not* aggression



Great variation between farms



Birds at 70 weeks



Designing management strategies

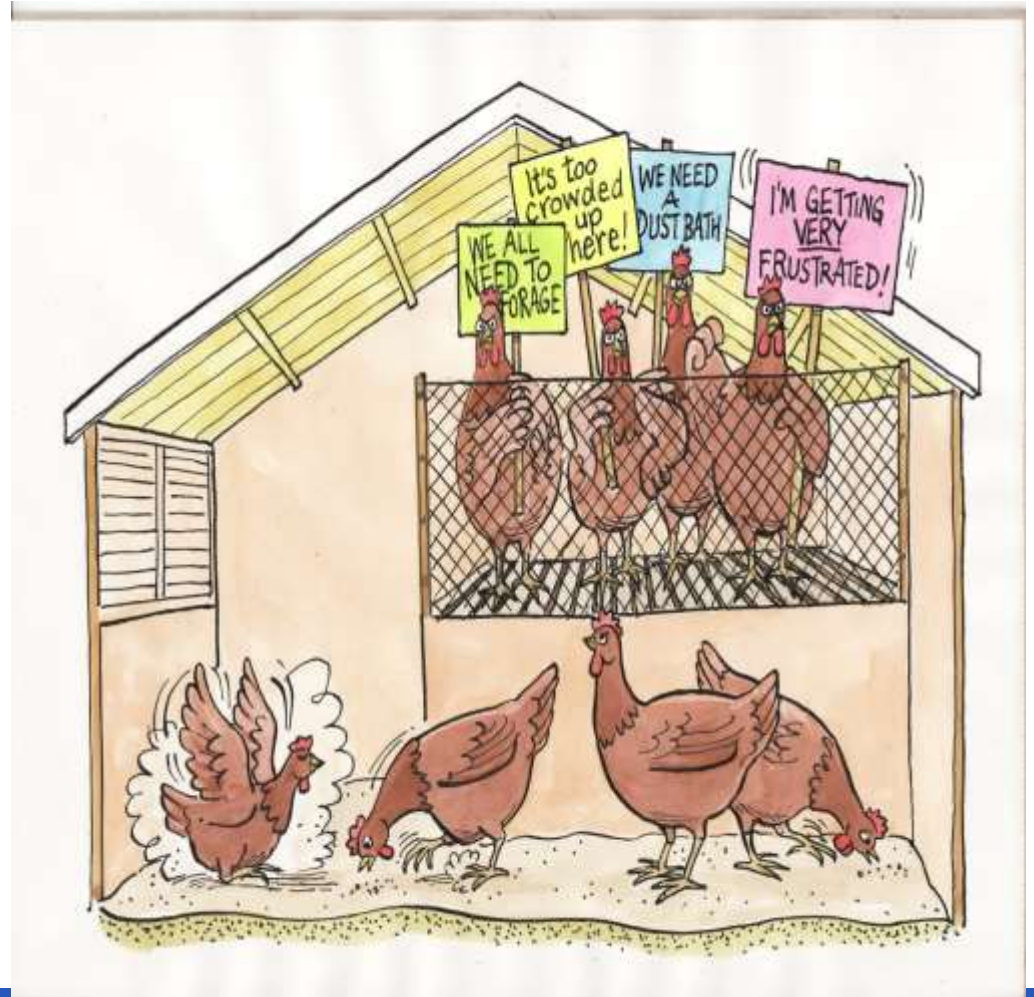


- Process
 - In 2002 we reviewed 300+ scientific studies
 - Identify relevant factors e.g. genetics, light, diet change
 - For each factor, rate studies for effect size, relevance, scientific soundness, significance.
- Discuss with steering group – included industry, government and NGOs
- Translate into Management Strategies

🌿 Strategies for lay



Early access to litter



Maintain litter quality

Access at all times to friable litter

Ongoing effort

- Popholes (windbreaks, feet 'wipers')
- Drainage outside
- Super-absorbent pellets for problem areas
- Ventilation
- Bales of straw
- Scattering grit or grain to encourage hens to 'work'
- Easy access (gently sloping ramps)



Promote foraging

- Provide a variety of opportunities in house and on range



Pecking blocks



Developed by us –

Sold by  **Vencomatic Group**
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Promote ranging



🌿 Promote ranging: the birds' eye view of the range



🌿 Ease of access



🌿 Is the range attractive?



🌿 Manage the range

- Area outside popholes clean and well-drained
- Predator control
- Pasture management



🌿 Verandahs – useful but not adopted in our study



Extra foraging materials and dustbaths can be placed in the “winter garden”

There is greater flexibility in managing the birds and coping with bad weather



Diet



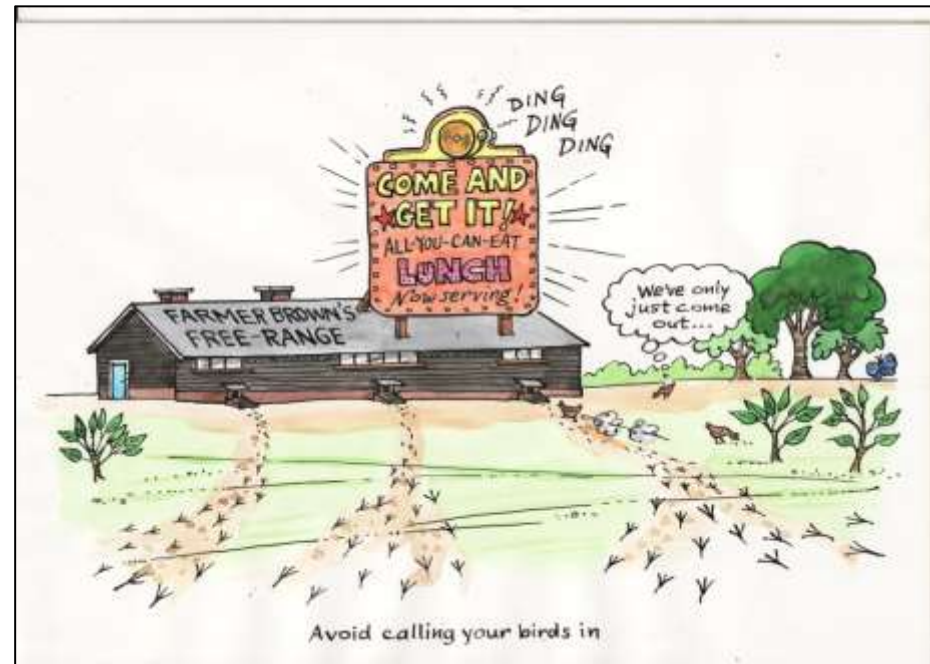
- Maintain good quality rations
- Change from high protein to low protein diets is risky
- Supplementing with fibrous foods can reduce IP
- Minimise the number of diet changes
 - Where diet changes are necessary then ensure there are other things to do in the house at the same time

Diet



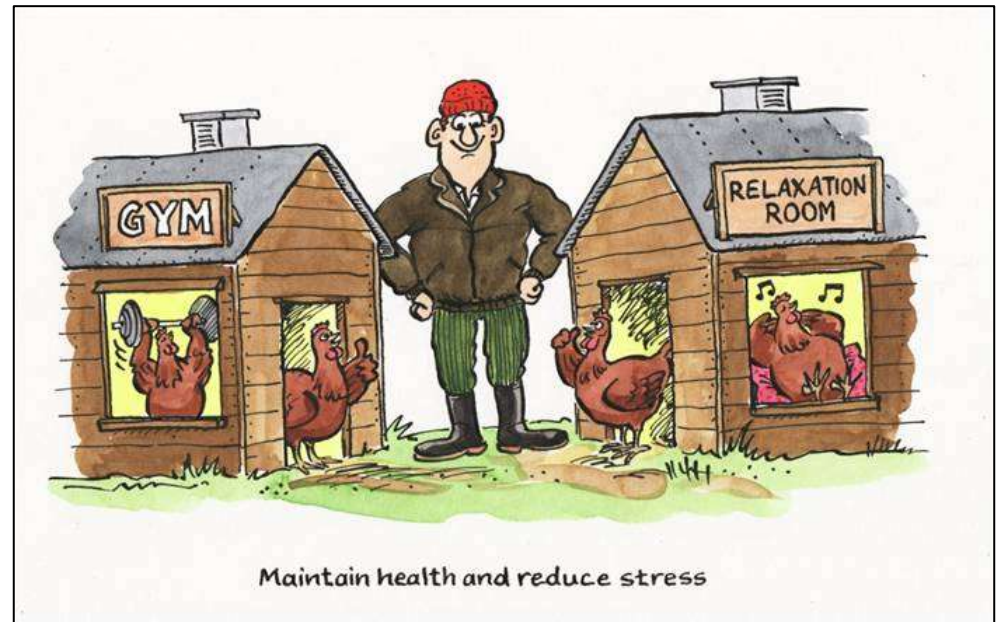
Feeding mashed feed rather than pellets, increases the time spent eating and decreases IP

Reduce the number of chain feeder runs, particularly during the **middle of the day**, when birds should be ranging.



Other factors

- Variation in temperature, humidity and air quality
- Ammonia levels
- Bright shafts of light
- Disease
- Worm burdens
- Mites
- Fearfulness



House Design

- Wide ramps give easy access between levels, reducing the risk of injury.
- Avoid perches which present the vent at bird eye-level



🔥 House design

- Providing nipple drinkers reduces the risk of feather pecking.
- Nestbox lights may be linked with vent pecking



Chicks and pullets

- Fibre levels are often too low
- Diet changes are risky: with every diet change at rear, the risk of injurious pecking **increased 62 fold.**
- Train young birds to use pecking blocks



🌿 Dark brooders

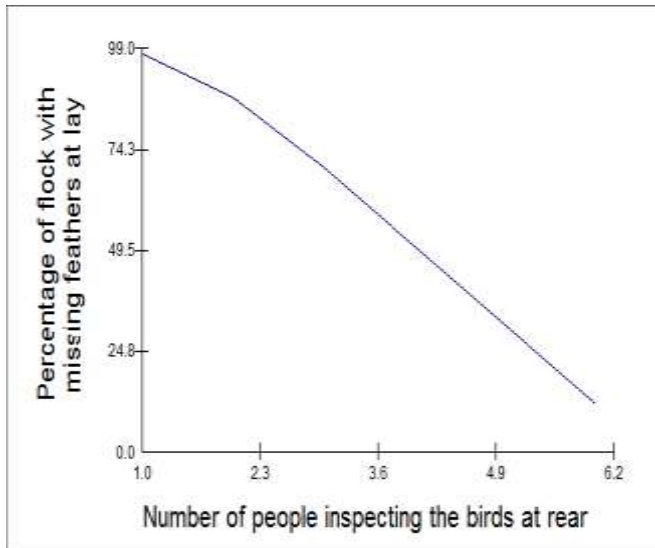


Mimics natural situation
Separates active and inactive chicks



Rearing environment

- Access to perches by 4 w
- Hanging
- Pecking blocks throughout the house
- Variation in routine



🔥 Managing other stressors at rear



Talk to the person rearing your birds, and match conditions

- Inspect the flock at least 3 x a day varying the route and with different people/clothes
- Accustom the birds to changes and noises such as intermittent radio playing





www.featherwel.org

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🌿 Do these strategies really work?

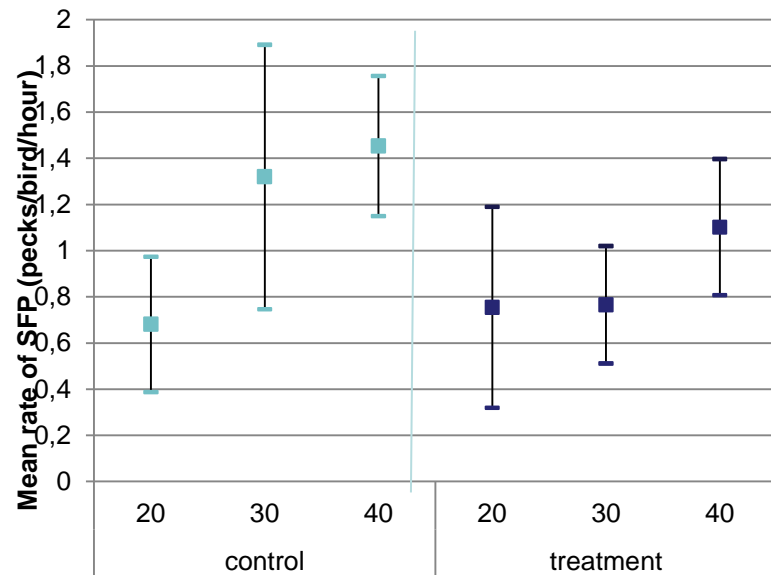
- Nice ideas but what about *evidence*?
- 100 commercial flocks were recruited to take part in the study.
- Managers of 53 of those flocks agreed to try new strategies (treatment flocks)
- Farm-specific strategies were agreed during visit to previous flock.
- The other 47 flocks continued with normal practice (control flocks)
- Most of these flocks were beak-trimmed.



🔥 Results

- Treatment flocks adopt 5 more strategies than before
- Significant *reduction* in GFP in Treatment flocks
- Age-related SFP and plumage deterioration *reduced* in Treatment flocks

- SFP

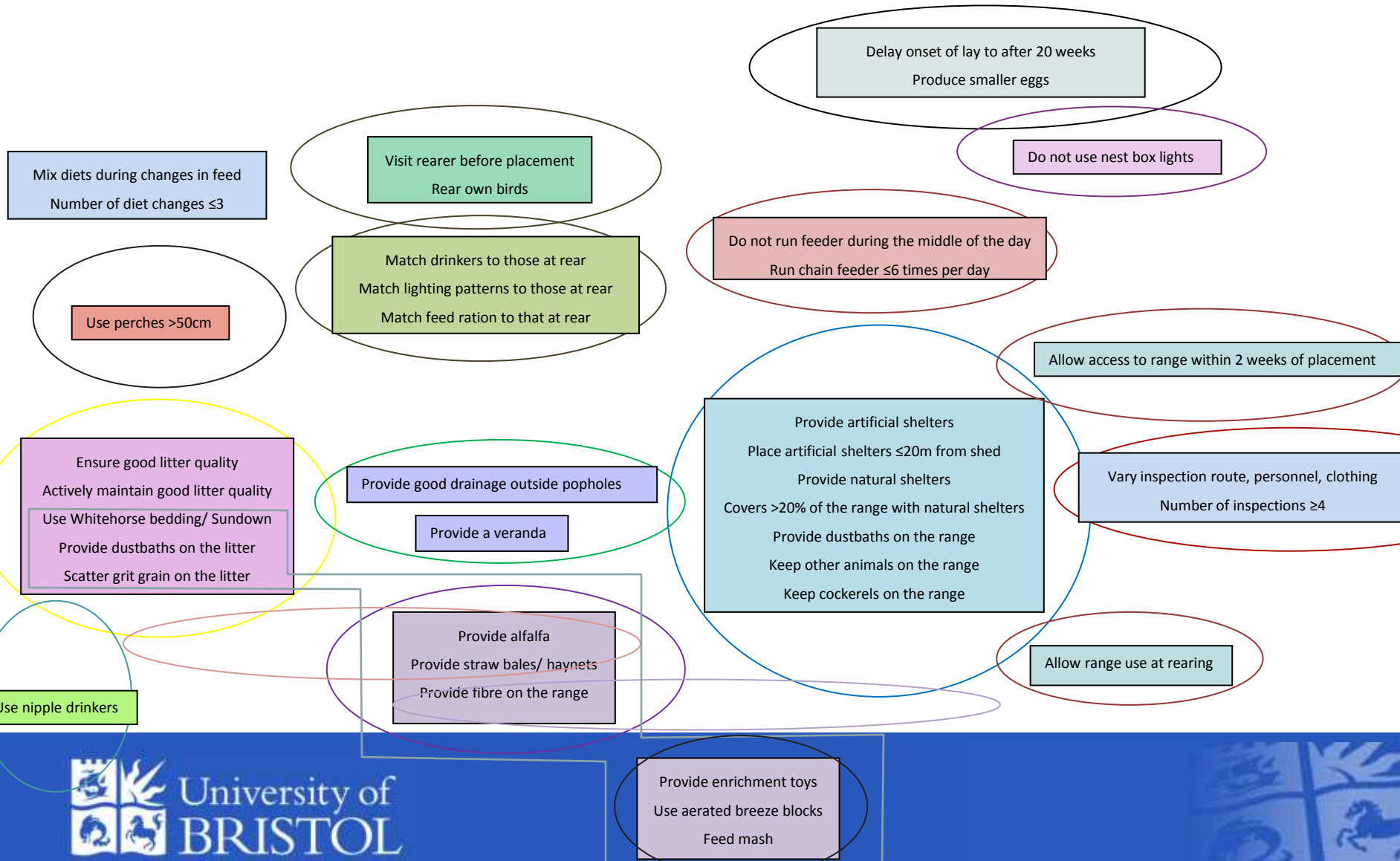


🌿 The more strategies used, the better

- Flocks which used more MS had lower rates of **gentle feather pecking** ($p < 0.05$)
- Flocks which used more MS had lower rates of **severe feather pecking** ($p = 0.021$)
- Flocks which used more MS had lower rates of **vent pecking** ($p = 0.015$)
- Flocks which used more MS had lower rates of **mortality at 40 weeks** ($p=0.025$)



🔥 Grouping the strategies



🔥 The most effective strategies

- SFP was lower in flocks which implemented frequent precautionary worming ($p = 0.016$).
- Group:

Match drinkers to those at rear
Match lighting patterns to those at rear
Match feed ration to that at rear

 - matching rearing conditions tendency to lower SFP ($p = 0.08$)
- Group:

Ensure good litter quality
Actively maintain good litter quality
Use Whitehorse bedding/ Sundown
Provide dustbaths on the litter
Scatter grit grain on the litter

 - litter care strategies lower SFP ($p = 0.04$)
- Group:

Provide artificial shelters
Place artificial shelters $\leq 20\text{m}$ from shed
Provide natural shelters
Covers $>20\%$ of the range with natural shelters
Provide dustbaths on the range
Keep other animals on the range
Keep cockerels on the range

 - range use strategies lower SFP ($p = 0.01$)
- Group:

Provide enrichment toys
Use aerated breeze blocks
Feed mash

 - alternative pecking strategies lower SFP ($p = 0.01$)



🌿 What about intact beak birds?

- Beak trimming currently limits the damage inflicted when laying hens peck conspecifics
- Will availability and uptake of new knowledge be sufficient for (riskier) intact beak flocks to be managed with good welfare?



Table 1. Characteristics of Study Flocks

Flock No.	Breed	Flock Size	System	Placed	"Matched" beak-trimmed flock	Previous flock had intact beaks	Breed of Previous Flock
1	BBT	3,000	FR	Nov 2012		Yes	BBT
2	BBT	4,000	FR	Dec 2012		Yes	BBT
3	Hyline	8,400	FR	Feb 2013	Yes		Hyline
4	Rural	8,400	FR	Feb 2013			Lohmann
5	BBT	3,000	FR	July 2013		Yes	BBT
6	BBT	3,000	FR	July 2013		Yes	BBT
7	BBT	4,350	FR	Feb 2013		Yes	BBT
8	BBT	3,000	FR	Feb 2013		Yes	Cotswold/BB
9	Dekalb	1,200	FR	July 2014		Yes	Cotswold/BB
10	Novo Brown	2,000	FR	May 2013			Shaver
11	Shaver	3,000	FR	Mar 2013			Lohmann
12	Hyline	6,000	FR	April 2013			Hyline
13	Bovan Brown	4,500	FR	April 2013	Yes		Amberlink
14	Lohmann	6,000	Barn	Oct 2013	Yes		Lohmann
15	Novo Brown	8,000 ^a	FR	Nov 2013			N/A
16	Bovan Brown	10,000	FR	Aug 2012			Bovan Brown
17	Hyline	16,000	FR	June 2013	Yes		Hyline
18	ISA Warren	16,000	Multi-tier	Oct 2013	Yes		ISA Warren
19	Bovan Brown	16,000	Multi-tier	Dec 2013	Yes		Lohmann
20	BBT	3,000	FR	Feb 2014		Yes	BBT



🌿 Initial transition was difficult for large farms

Table 12. Total mortality in the previous beak-trimmed flocks compared with current intact-beak flocks

	Previous Flock Total Mortality (n=11)	Intact Study Flock Mortality (n=11)
Mean	7.88	13.12
Standard Deviation	3.21	10.59
Median	7.90	8.00
Min	4.0	4.20
Max	13.2	34.91



✦ But adoption of MS improved results for farms that had kept intact beak flocks before

Table 11. Total mortality in the previous intact-beak flocks compared with current intact-beak flocks

	Previous Flock Total Mortality (n=6)	Intact Study Flock Mortality (n=6)
Mean	12.07	6.55
Standard Deviation	6.43	2.89
Median	10.4	6.17
Min	5.0	4.7
Max	23.5	10.3



How much did it cost?

Table 21. Additional management strategies (MS) employed at lay.

	Number of extra MS used	Cost per thousand birds (£) (method 1)	Cost per thousand birds (£) (method 2)
Mean	5.4	260	313
SD	1.5	181	
Median	6.0	284	
Min	1.0	38	
Max	8.0	734	



Initial transition from beak-trimmed birds may reduce profit

Table 25. Annualised gross margins (£/bird) in the previous beak-trimmed flocks compared with the current intact beak flocks, accounting for the costs of management strategies in intact flocks.

	Previous Flock (n=10)	Intact Study Flock (n=10)
Mean	4.45	2.97
Standard Deviation	1.68	2.44
Median	4.94	3.38
Min	1.43	-3.32
Max	6.13	5.79



✨ But with experience, profits improve

Table 24. Annualised gross margins (£/bird) in the previous intact-beak flocks compared with the current intact beak flocks, accounting for the costs of management strategies in intact flocks.

	Previous Flock (n=6)	Intact Study Flock (n=6)
Mean	1.25	4.19
Standard Deviation	3.31	2.71
Median	0.58 -	4.37
Min	- 1.81 -	0.83
Max	6.33	8.58

Profit for *experienced* intact beak flock is the same as for a traditional beak-trimmed flock



🌿 Bird welfare and consumer perception also improve!

