EGG PRODUCERS FEDERATION OF NEW ZEALAND (INC)

Furnished Colony Systems for the New Zealand Egg Market - 2 years on….

NZPIC 2010

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Why Furnished Cages in NZ?

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Background..

- European Laying Hen Welfare Directive 1999/74.
- NAWAC 2009 Review of Laying Hen Welfare Code.
- Majority of NZ consumers still purchase eggs produced from conventional cages (circa 88%).
- Ability for Industry to continue to deliver a least cost / high protein product for low income, high egg users.
- Furnished Colony systems…. can these provide a sustainable alternative for conventional cages for the New Zealand egg industry?

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Furnished Cage History

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1970's: Get-Away Cage developed in UK, Netherlands & Germany

1980's: Further development of Get-Away cage

1990's: Edinburgh Modified Cage with other designs in Sweden, Netherlands

Late 90's: Swedish Victorson modified cage in commercial use, other commercial cage manufacturers developing systems, industry trials in UK, Germany and other Northern EU countries.

2003 onwards: Any new cage system installed in EU had to be "enriched"

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Get Away Cages

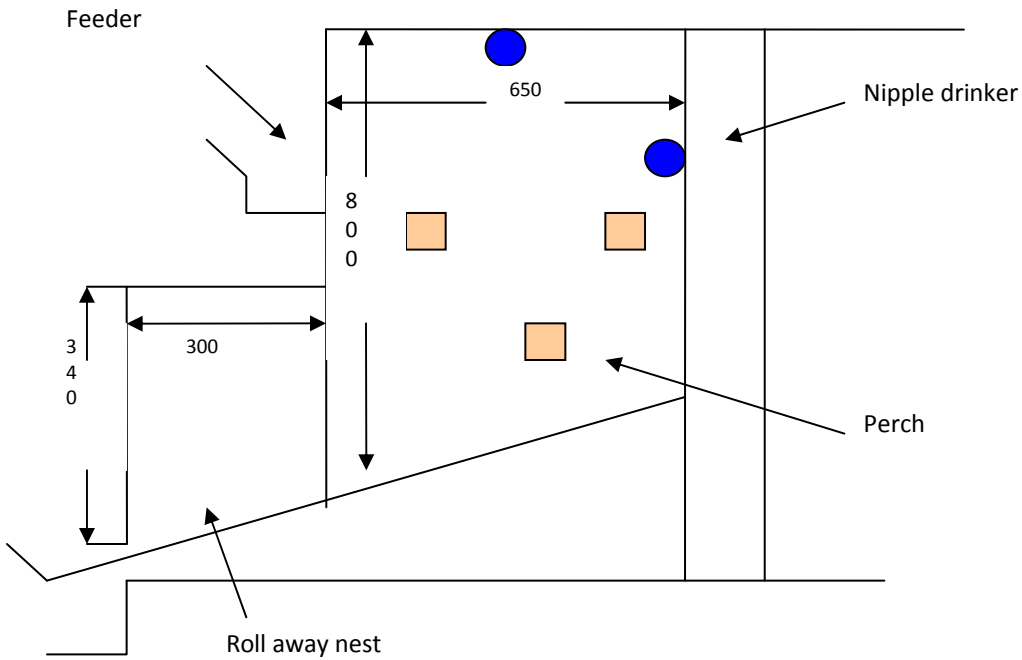
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- Development prompted by likes of " *Animal Machines*" (Harrison, 1964)
- Featured access to perches, feeders, drinkers at 2 levels with flat mesh wire floor & adjacent nest boxes. (Elson, 1976, Wegner, 1990)
- Gave similar performance to conventional cages.
- Downside was some management & hygiene problems e.g. dirty eggs, cracks, egg eating, plumage soiling, hard to inspect (Tauson, 1998)these were the main reasons they did not become commercialized.
- Experiments with designs in UK, Netherlands and Germany
- Two tier Get Away cages developed at Institute of Poultry Research in Celle with 7 experiments conducted between 1978 – 1988 (Wegner, 1990)

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Example of Get-Away Cage

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Modified Enriched Cages (MEC)

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- Developed to overcome problems with cannibalism, working conditions, labour requirements found in aviary systems with large groups of hens on litter.
- Aimed to retain the benefits of good control & stable social order found in small groups of 4-8 hens.
- Allow a greater range of behaviours by providing more space (height & area), perching, nesting, some with claw shortener & dust bath.
- Edinburgh MEC was the first (Appelby, 1993) developed in 1988 from 5 prototypes (Robertson et al, 1989) final version had a perch, nest box, dust bath & more height and area.
- Other workers in UK, Sweden and Netherlands also conducted studies on MEC's (Abrahamsson, 1996; Hughes, 1993; Reed, 1993)
- EU Directive enriched cage specification 99/74 based on MEC's.

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Edinburgh Modified Cage Recommendations

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FEATURE	REQUIREMENTS	POSSIBLE RECOMMENDATIONS
PERCH	Space for all birds Good grip for feet Space front & behind	14cm/bird (medium hybrids) Softwood, rectangular cross section Across middle of cage
NEST SITE	Enclosed, protected Limited competition Suitable substrate	Nest box Space for 2 birds in group of 4 or 5 (25 x 48cm) Litter or artificial turf
DUST BATH	Suitable material Availability Foraging possible	Sand Space for 2 (25 x 48cm) Door allowing pecking
AREA	Local freedom of movement Perching & feeding side by side	675cm^2 / bird (plus nest box etc) 14cm / bird (medium hybrids) x 48cm
HEIGHT	Clearance above perch	45cm at back

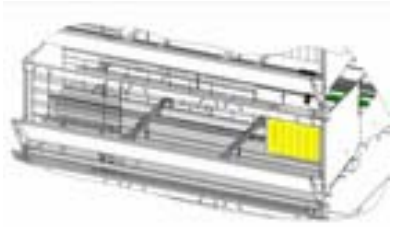
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Commercial Furnished Cage Choices

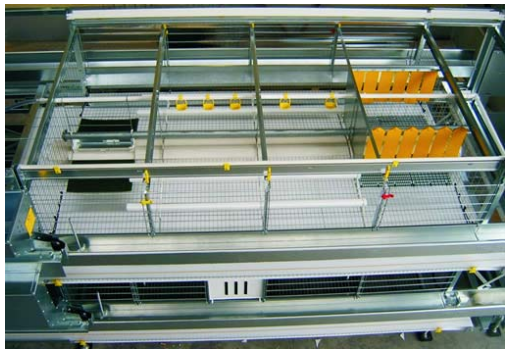
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A range of commercial furnished cages are now available with a range of small, medium and large groups sizes e.g. from 9 birds up to 72 birds.

Suppliers are principally European e.g. Big Dutchman, Salmet, Valli, Facco, Jansen, but there are also American and Canadian suppliers e.g Chore Time



Salmet design can be pre-enriched



Valli rear nest design



Farmer Automatic

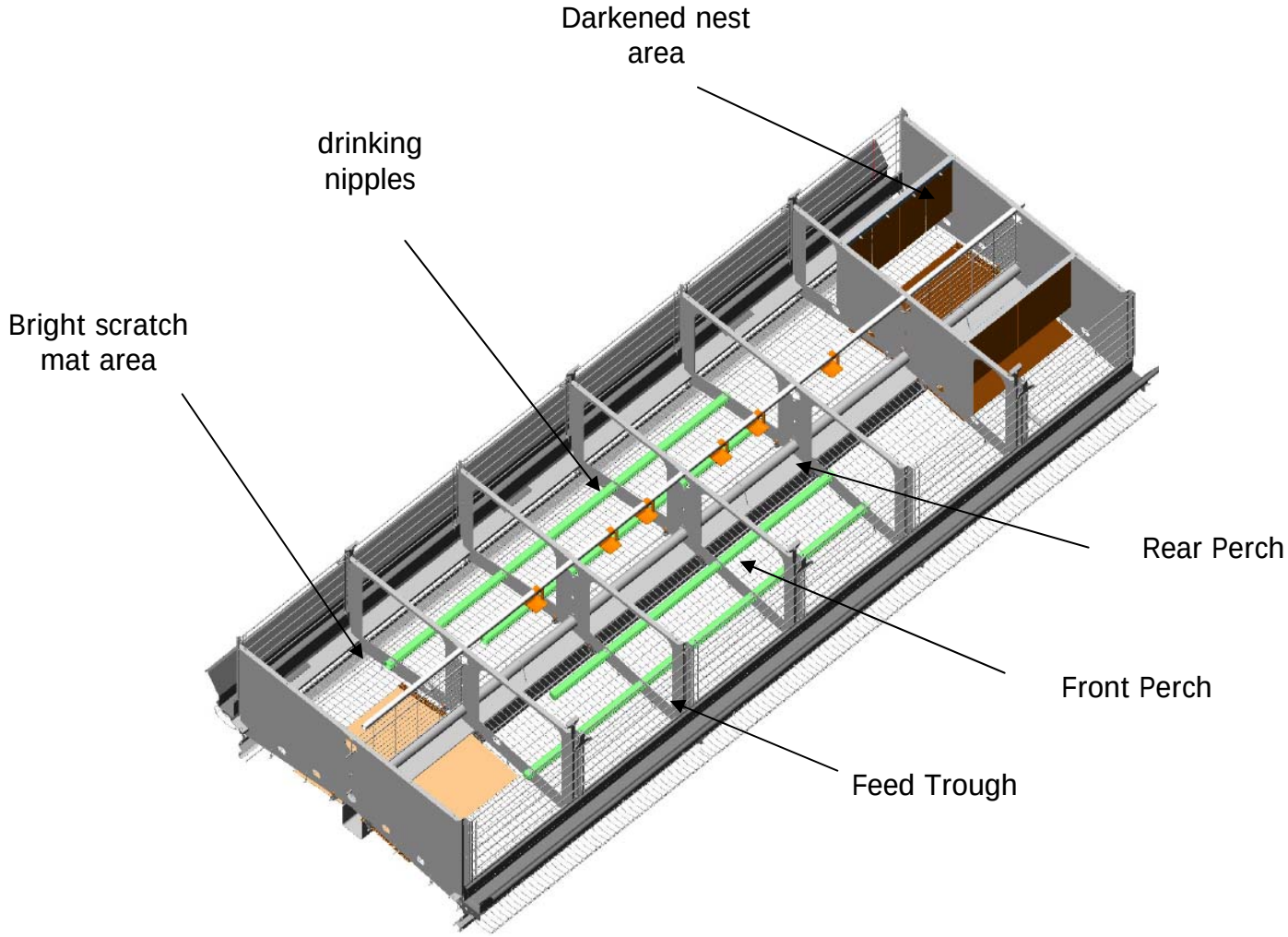


Jansen

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Furnished Colony Layout

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NZ Furnished Colony Study

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2007 – 2010 Deliverables

- An economic evaluation of an example of a furnished colony systems based on New Zealand farming conditions.

- An informal evaluation of whether beak trimming is necessary.

- Obtain objective data on the physical health & welfare of birds with access to nests, perches, scratching area within an example of a large furnished colony system.

- Provide MAF & NAWAC with NZ based data & experience with furnished colony systems to facilitate development of informed policy for the Layer Hen Welfare Code review.

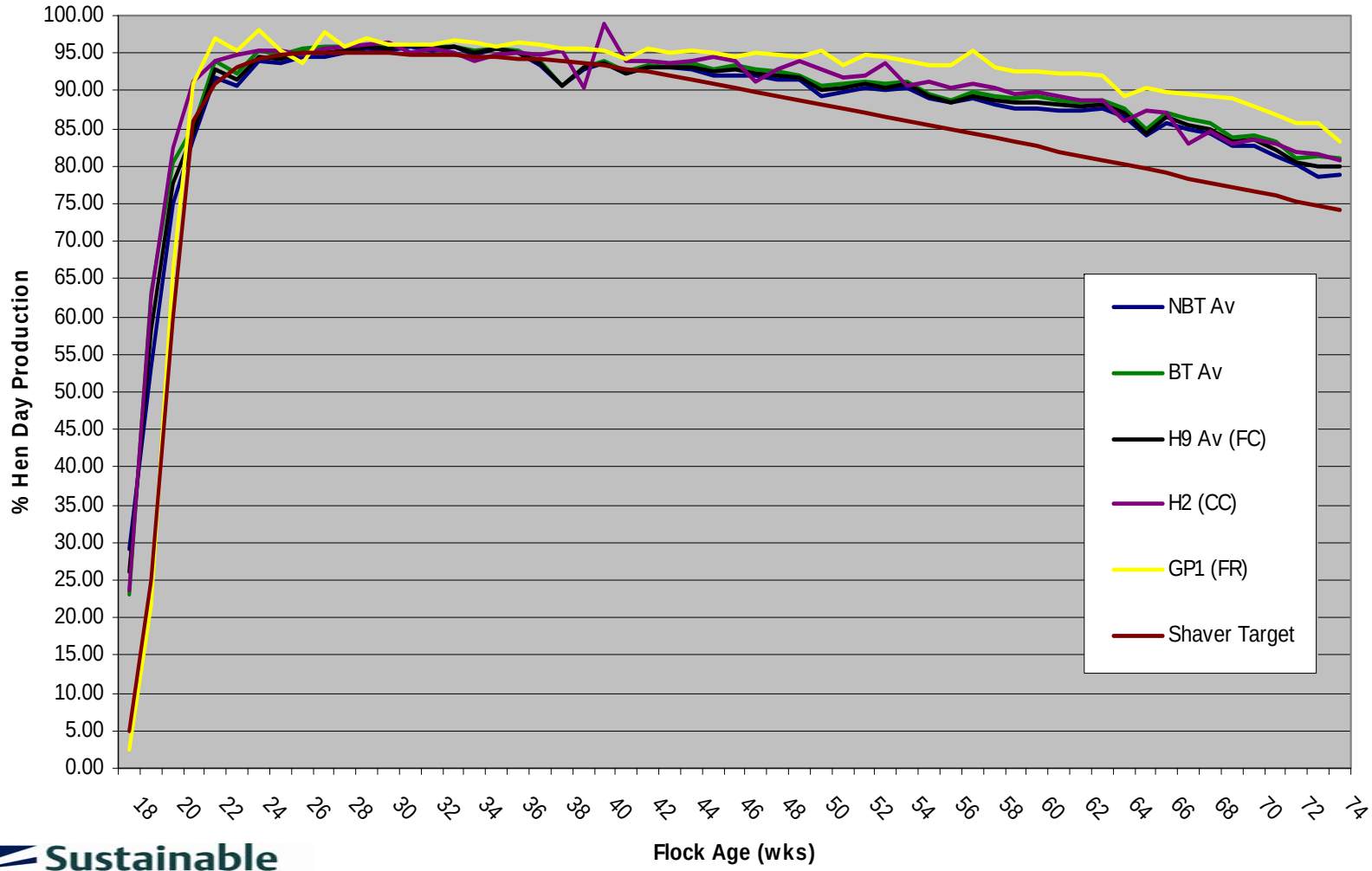
- Demonstrate commitment by the egg industry to layer hen welfare through evaluation of alternative production systems.

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Flock Two Results

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FC v CC v FR
(Flock 2)
Egg Production Hen Day % Comparison



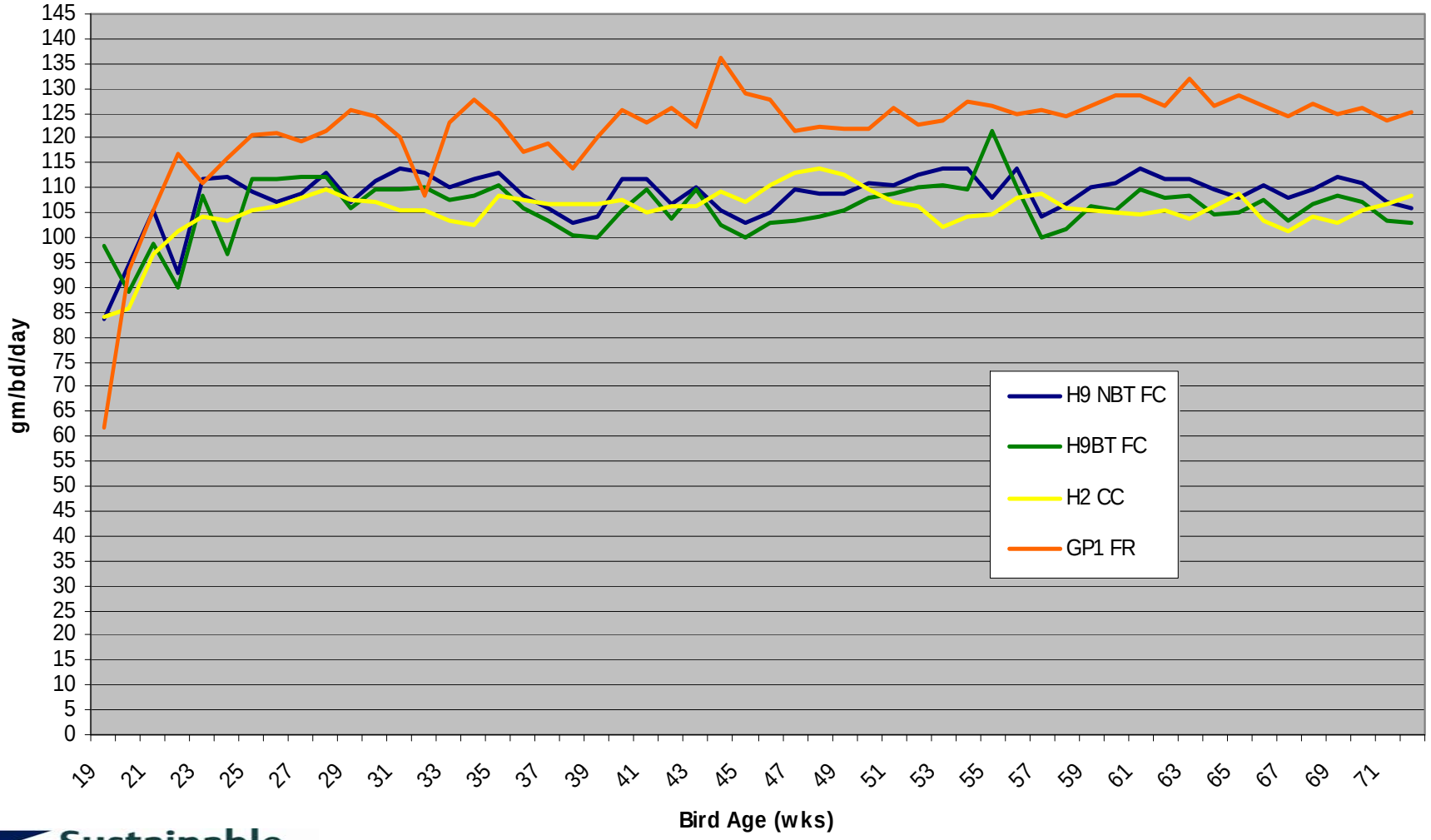
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Flock Two Results

Feed Intake Comparison Flock 2

H9 FC v H2CC v GP1 FR

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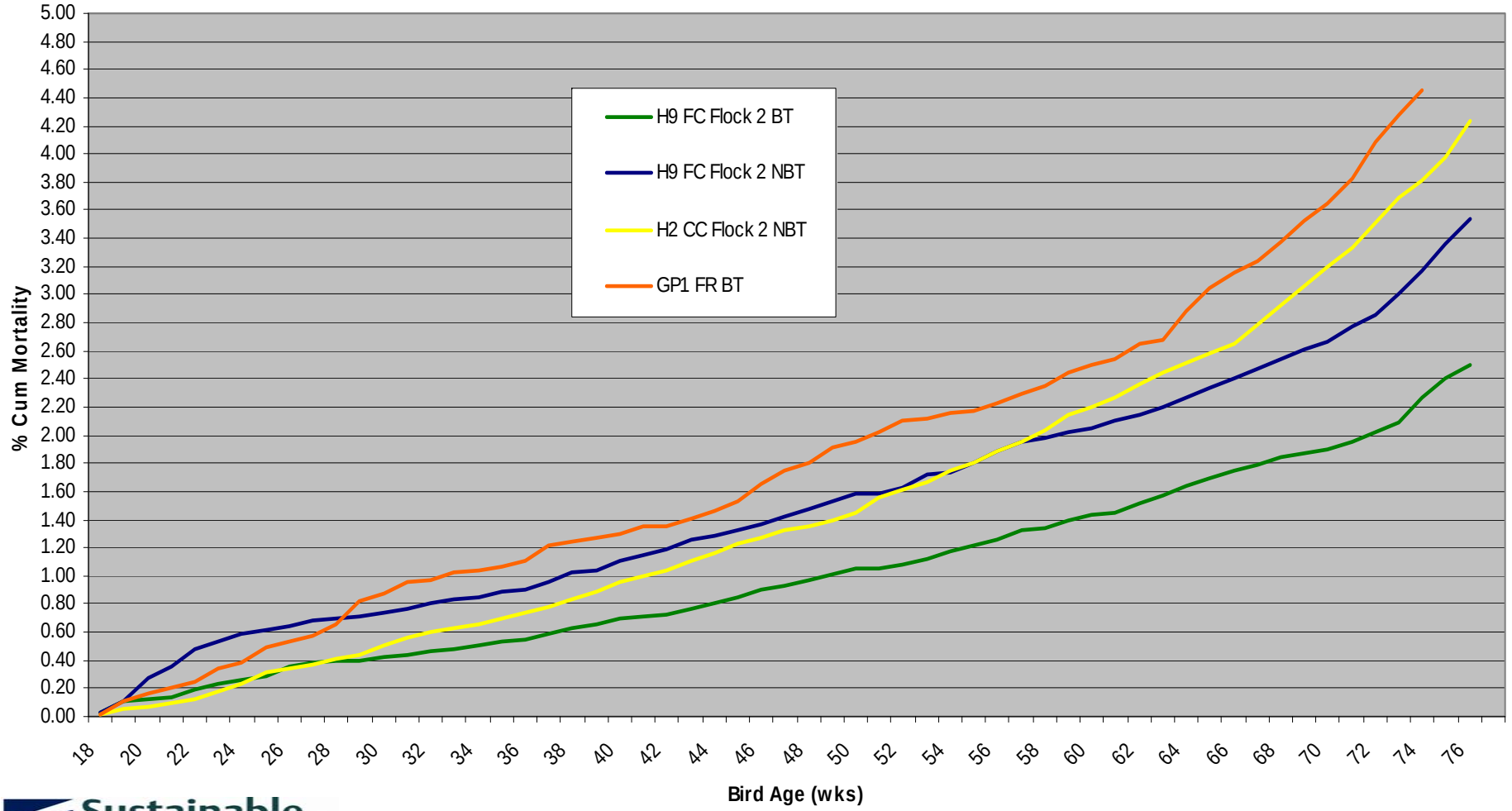
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Cum Mortality Comparison Flock 2
H9 FC v H2 CC v GP1 FR

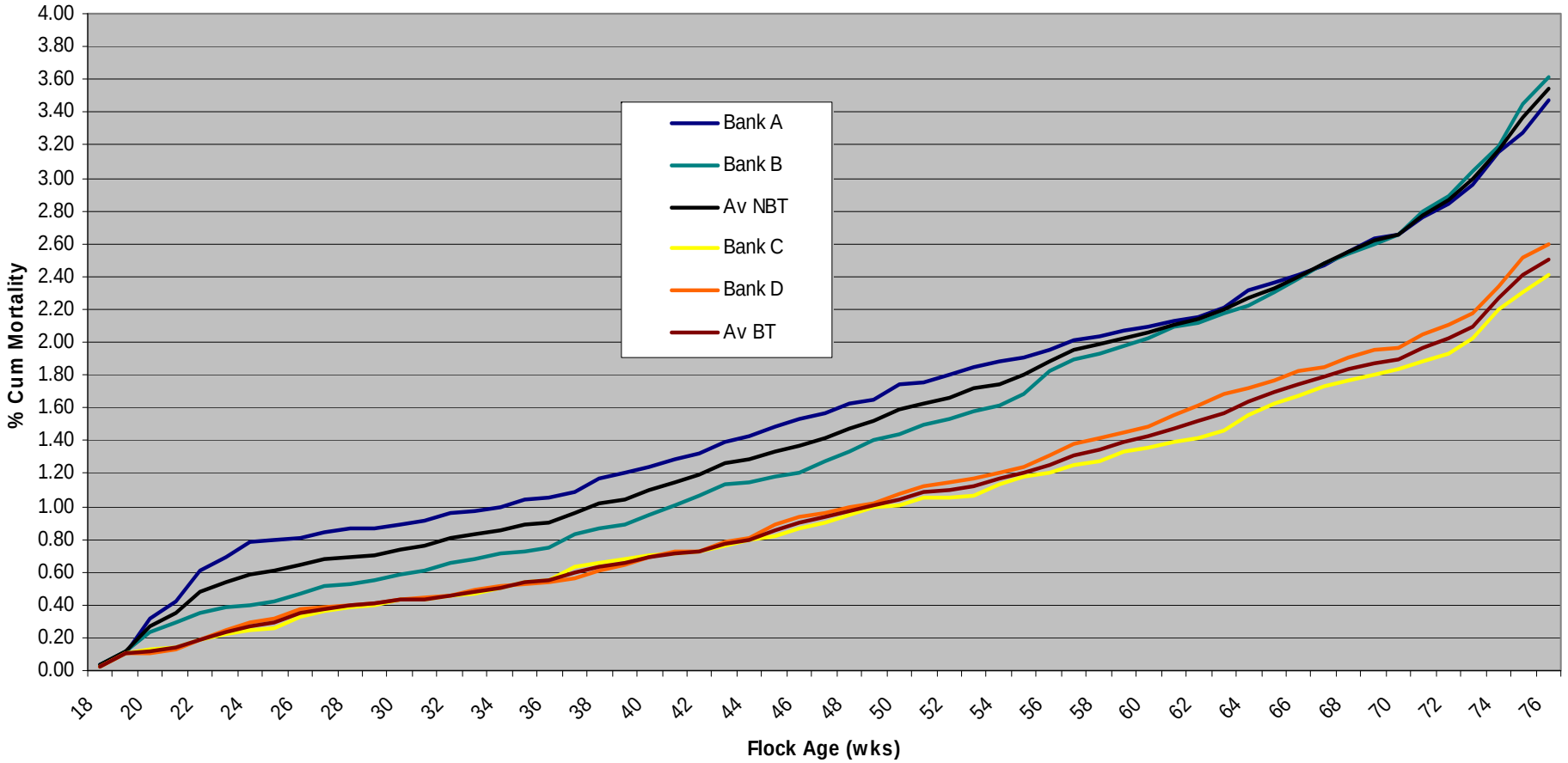


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Furnished Colony System Cumulative Mortality Comparison
Flock 2
Beak Treatment v Non Beak Treatment



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Flock Two Results

Physical Health & Welfare

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30 week summary	Body Weight (Kg)	Av Tauson Feather Score	Keel Bone Deformity	Wound Score (4-1)	Comb Lesions (4-1)	Footpad Lesions (4-1)	Toe Lesions (4-1)	% Broken Claws	% Long Claws >2cm
FC NBT	1.91	3.85	3.89	3.99	3.78	3.96	3.87	26.0	0.00
FC BT	1.97	3.87	3.96	4.00	3.96	3.98	3.69	16.0	1.00
CC NBT	1.90	3.63	3.96	3.99	3.93	3.97	3.84	1.00	5.00
FR BT	1.95	3.95	3.96	4.00	3.82	4.00	4.00	9.00	0.00
60 week summary									
FC NBT	2.03	2.73	3.86	3.99	3.89	3.99	3.97	32.0	29.0
FC BT	2.11	3.13	3.92	4.00	3.96	3.99	3.94	28.0	18.0
CC NBT	2.06	2.62	3.94	4.00	3.93	4.00	3.88	34.0	51.0
FR BT	2.00	3.17	3.78	4.00	3.76	4.00	4.00	6.00	12.0

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Flock Two Results

Assessment of Keel Deformity, bone fracture & bone ash EOL hens

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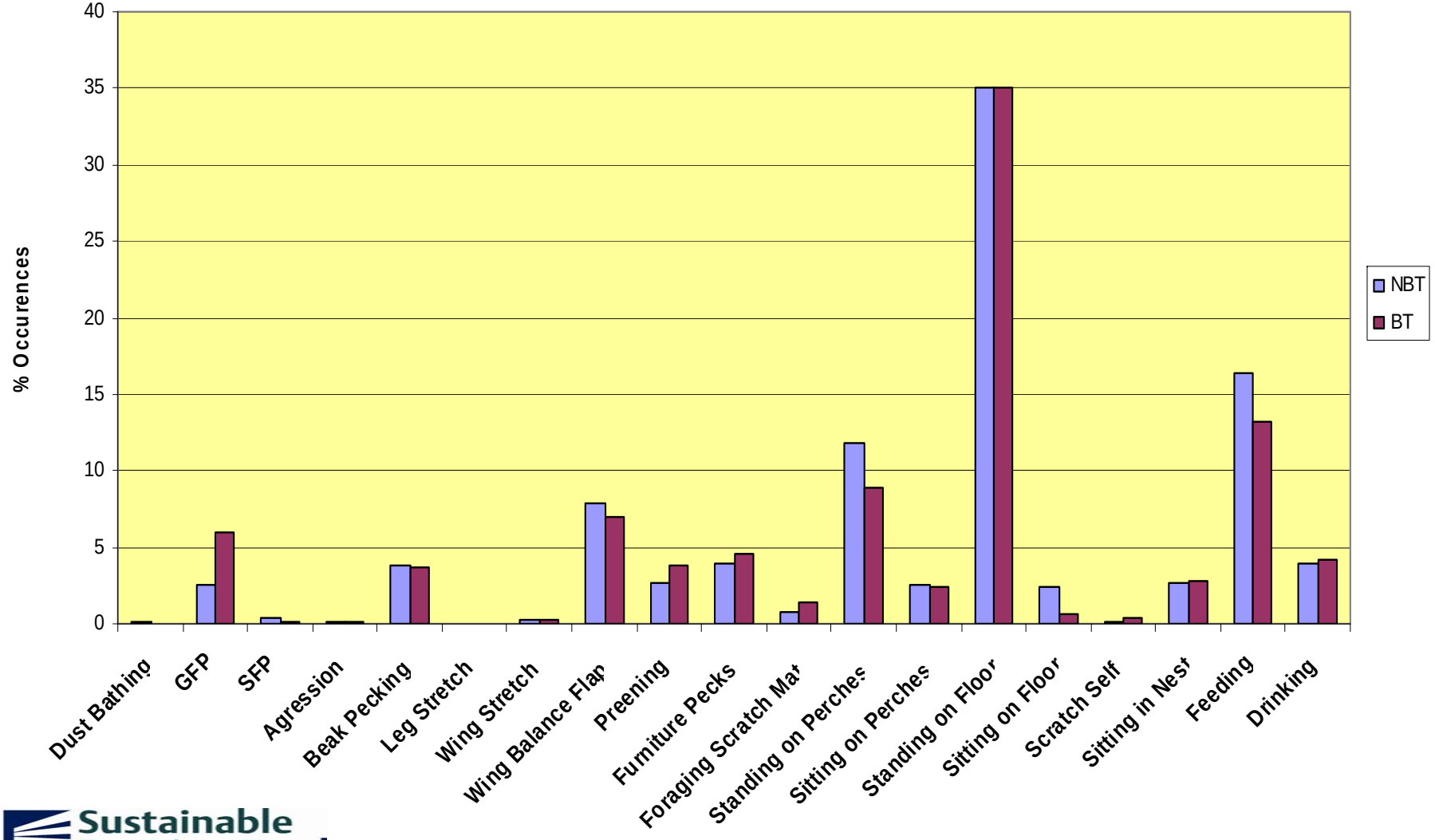
	Bird Weight (Kg)	Keel Deformity %	Keel Old Breaks %	Keel New Breaks %	Wing Old Breaks %	Furculum Old Breaks %	Pelvis Breaks %	Rib/Scapula Breaks %	Bone Ash %
FC NBT	2.00	10.0	3.00	0.00	0.00	15.0	0.00	0.00	45.1
AW1132	(1.80)		(31.7)	(3.63)					
FC BT	2.05	22.0	5.00	0.00	0.00	17.0	0.00	0.00	48.0
CC NBT	1.99	23.0	3.00	0.00	0.00	3.00	0.00	2.00	41.0
AW1132	(1.95)		(17.7)	(24.6)					
FR BT	2.06	18.0	2.00	2.00	0.00	22.0 (5.00 new)	0.00	0.00	54.1
AW1132	(1.86)		(59.8)	(1.33)					

Note: CC had 33% pliable keels v 0% for other groups

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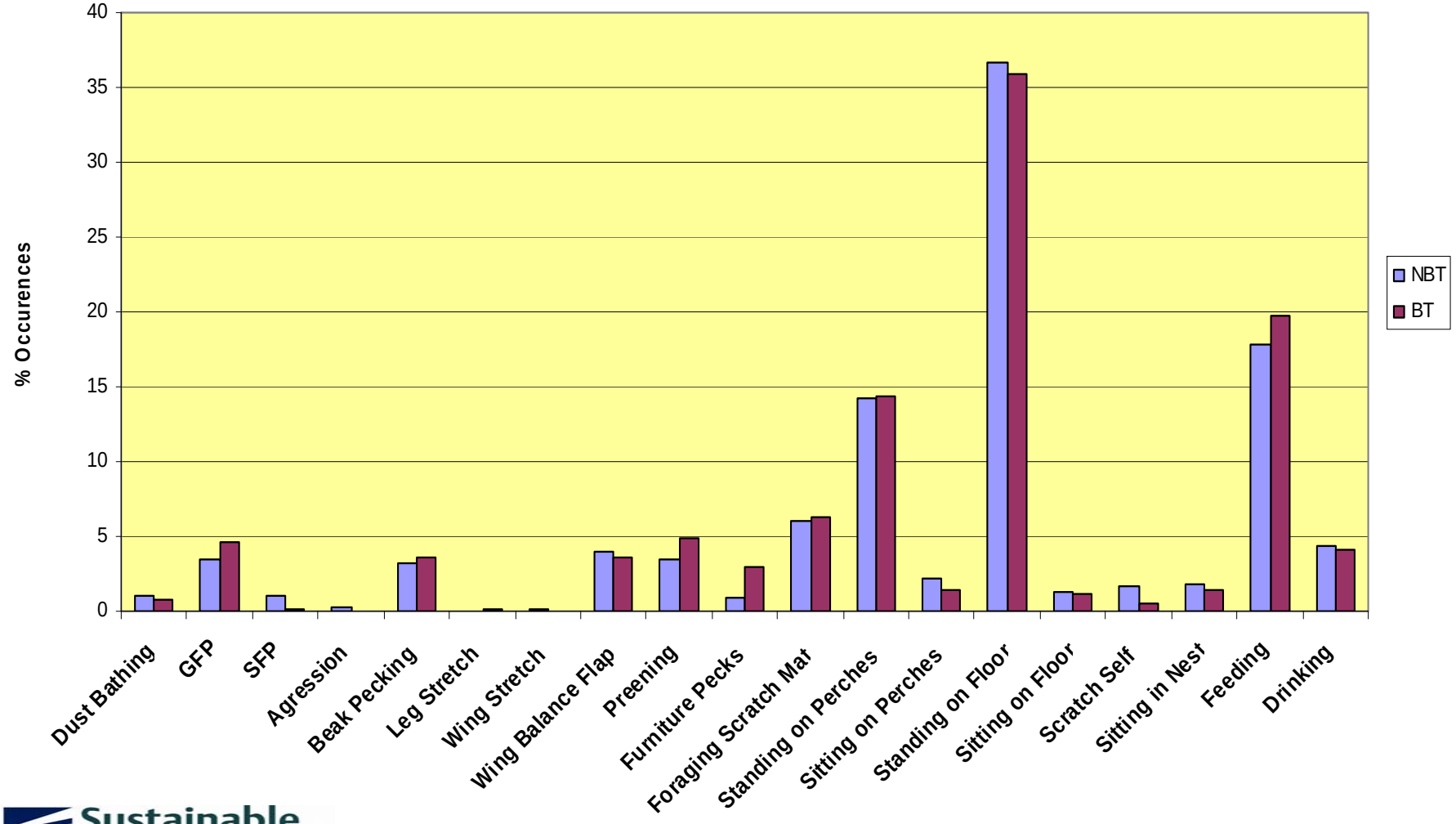


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Preening / Perching



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Nesting / Scratching/Dusting



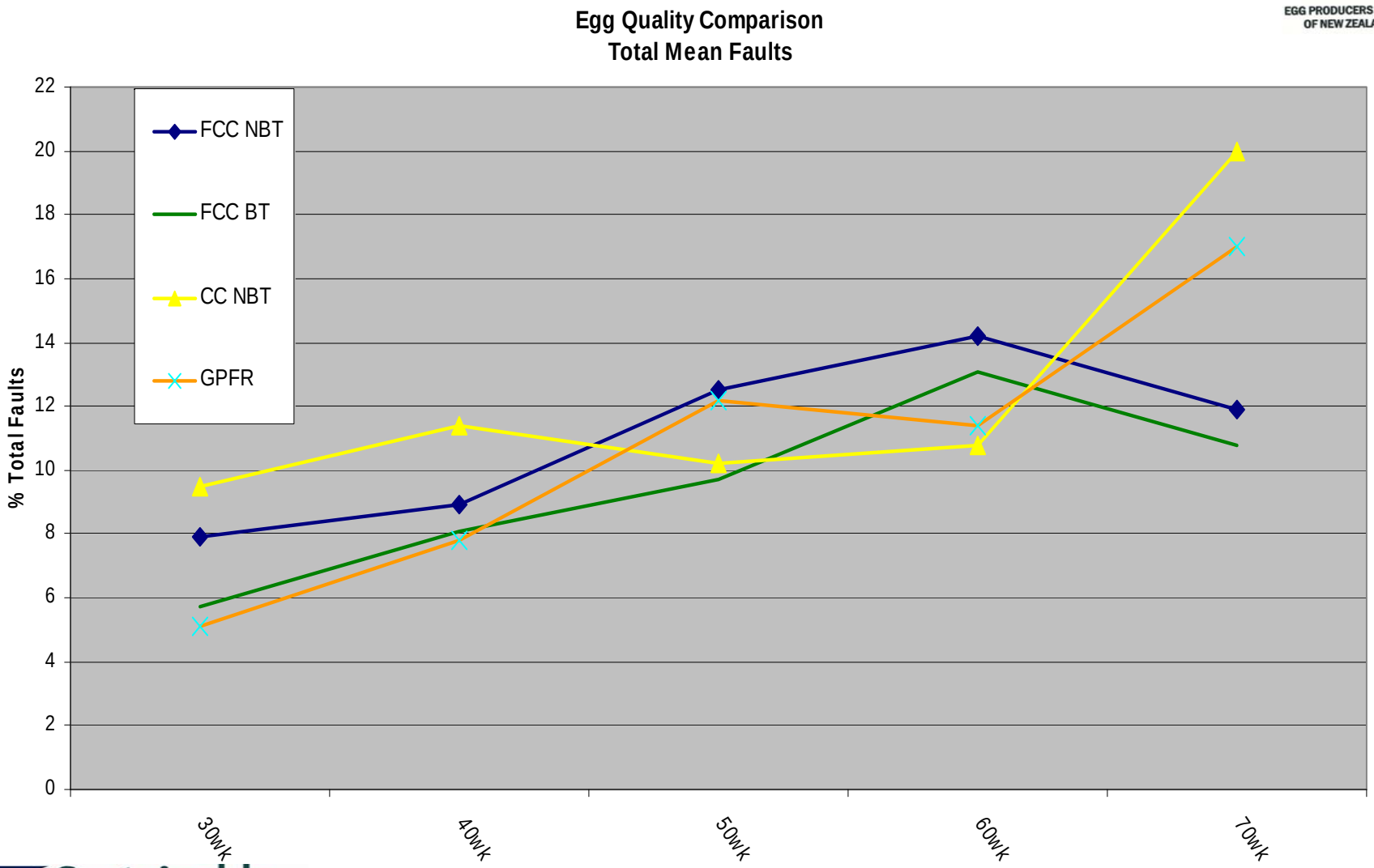


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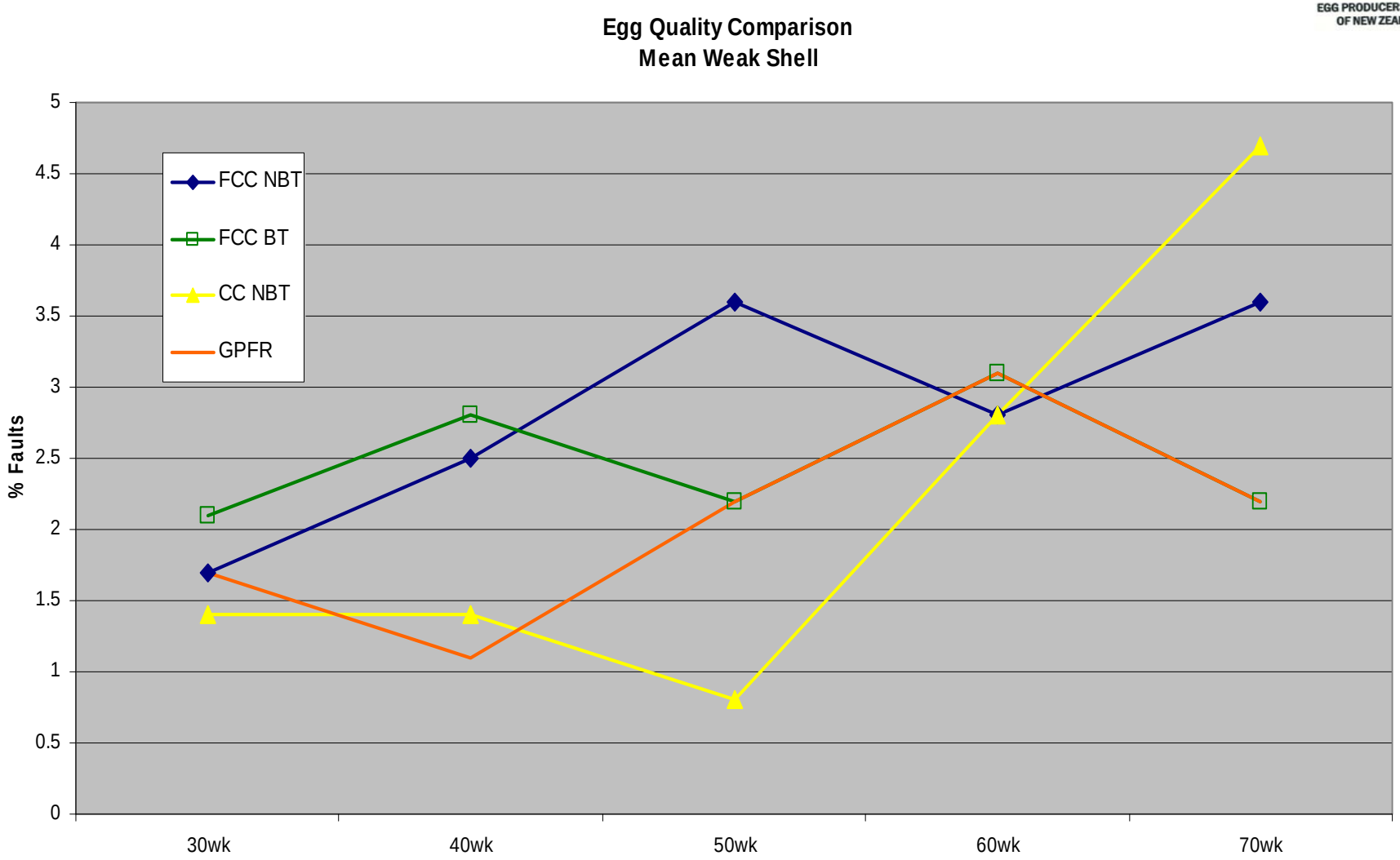
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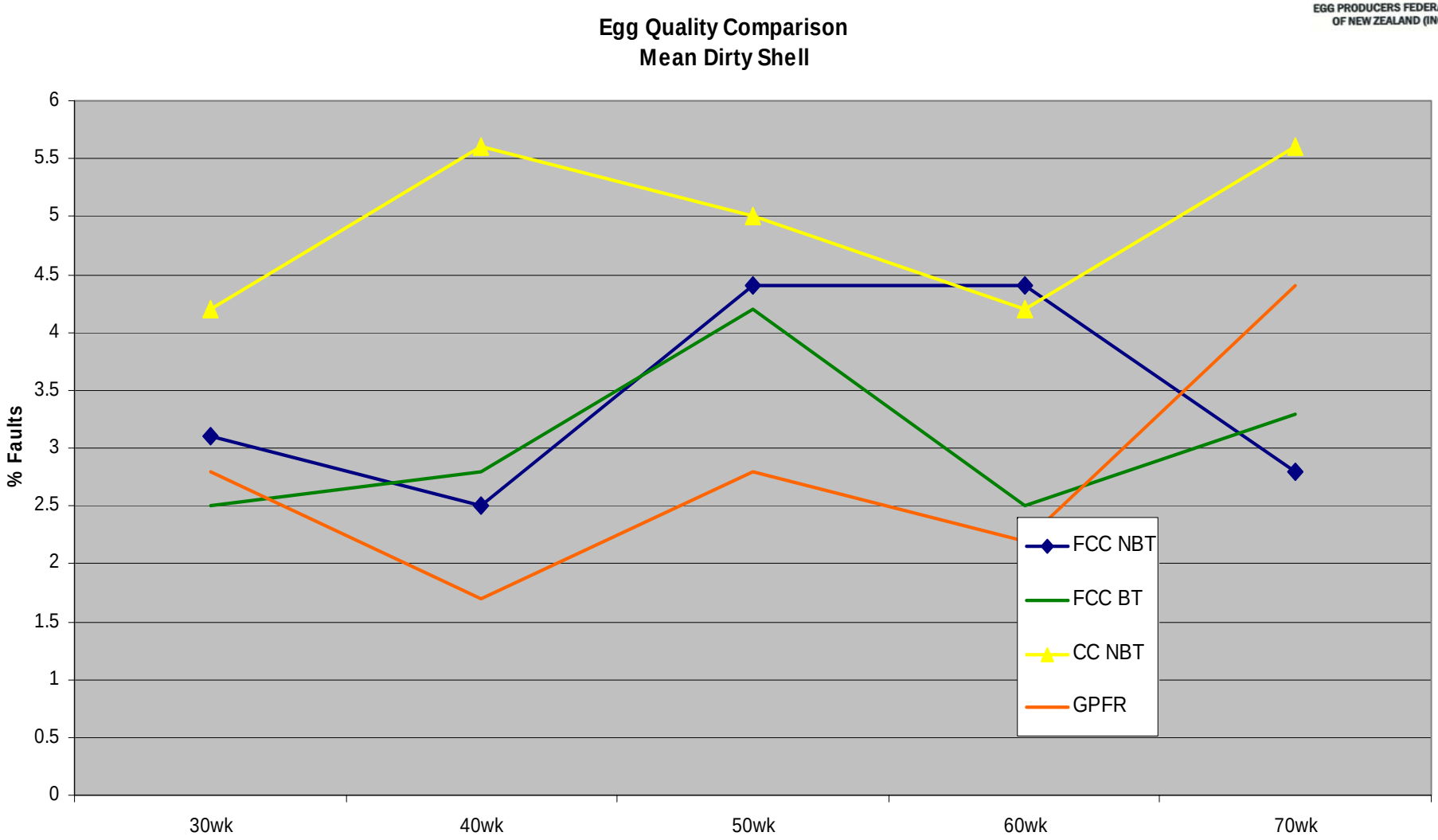
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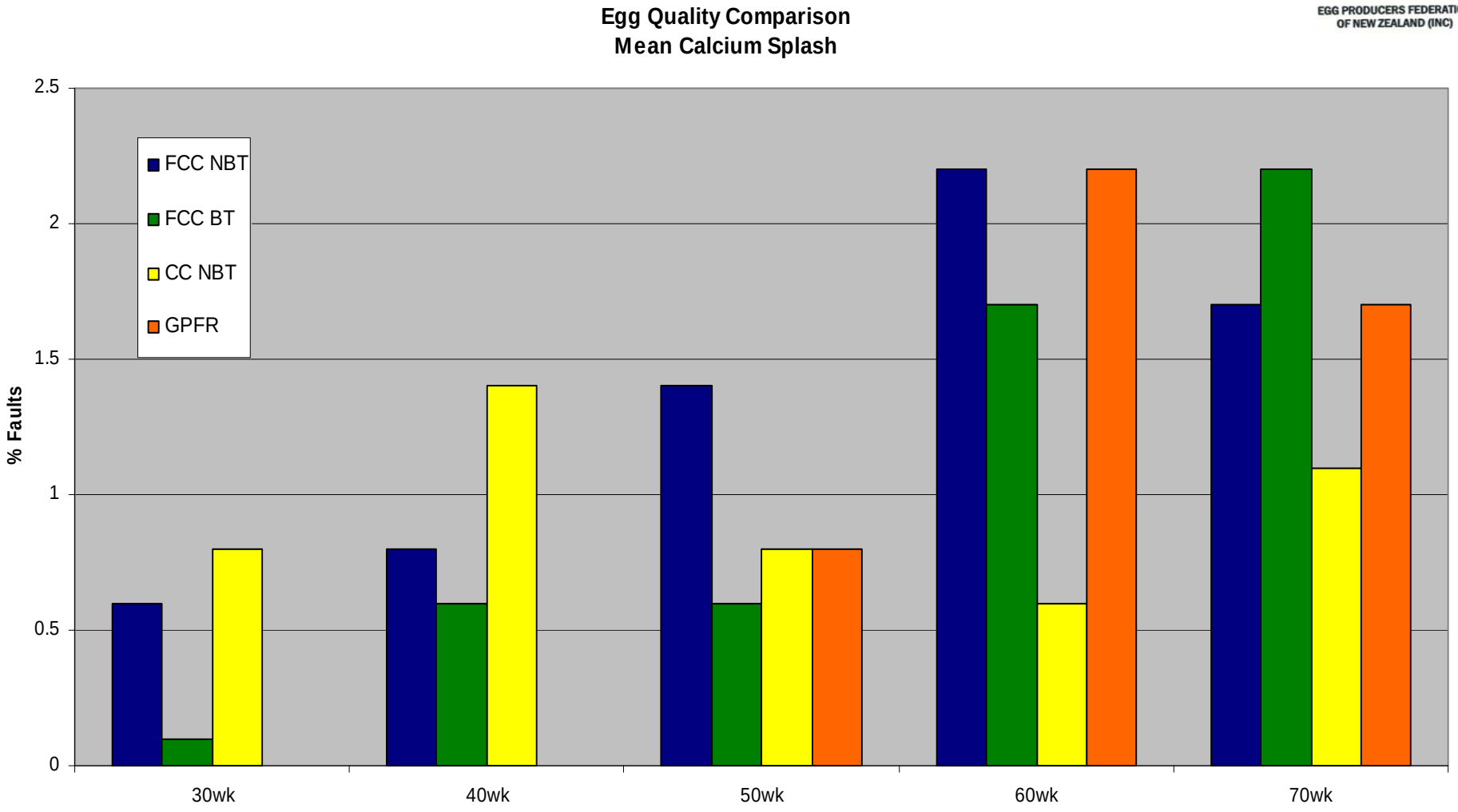
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Summary & Conclusions

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- FC cages performed as well as the CC flocks.
- The physical health & welfare attributes as assessed by Tauson method showed the FC BT hens to have comparable feather scores to the FR hens average 3.13 & 3.17 compared to the NBT FC & CC hens 2.73 & 2.62
- Minimal wound & foot damage across all systems far better than overseas.
- Investigate the causes for the % of hens with broken claws in FC at 30wk
- Claw shorteners have a positive effect at minimising claw length at 60wk
- Bone ash of FC hens to be intermediate between that of CC and FR hens & old breaks very much lower than overseas – MBM in our diets?

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- Beak treatment reduced mortality, and BT hens indicated less aggressive behaviour and SFP from the limited behaviour observations.

- Day time perch use comparable to overseas studies circa 25%(Abrahamasson & Tauson, 1993 ; Appelby, 1993) night time video footage and observations indicated almost all birds on perches.

- Egg quality comparable but need egg saver wires to help reduce cracks.

- FC *cost significantly* more than CC cages circa *40%* higher capital costs

- At least *27% less* hens are housed in a FC v CC and the reduction in hens if convert existing house can be up to 50% depending on shed dimensions.

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FAWC Opinion Nov 2007

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Advice to UK Government

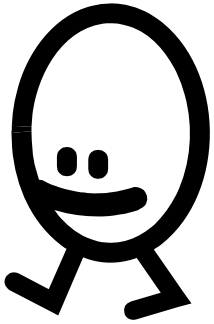
"FAWC considers that all commercial systems of production for laying hens offer some compromise in terms of the hen's welfare. However, well managed enriched cage systems are able to offer the potential for an acceptable balance between the requirements for the hen's health and welfare, and public health, in combination with economic and environmental considerations."

The sustainability of New Zealand's egg industry is key if continued availability of a high quality/low cost protein food source is to remain affordable for all consumers.

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THANK YOU....



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