

Comparison of the welfare of laying hens in different housing systems

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What should a housing system provide?

- Meet the behavioural needs of the hens
- Maintain the birds in good health
- Protect the hens from risks
- Safe and easy to manage for humans
- Meet the expectations of society

Do any housing systems do all of this?

- No (and yes)
- No system is perfect and most tick many boxes
- Wide variation within systems
- Laywel project compared systems

www.laywel.eu


WP7 Welfare risk assessment in different housing systems

The 'traffic light' system:


- **GREEN** = low risk of poor welfare
- **ORANGE** = med/variable risk of poor welfare
- **RED** = high risk of poor welfare

Risk of poor welfare	Conventional cage	Furnished cage			Non-cage		Outdoor
		small	medium	large	single level	multi level	
Behaviour							
nest box eggs at peak lay (%)	Red	Green	Green	Green	Green	Green	Yellow
hens on perch at night (%)	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
use of dustbath	Red	Yellow	Yellow	Yellow	Green	Green	Green
foraging	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
social	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
behavioural restriction	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Green
injurious pecking	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Extract from table showing one aspect



Mortality

- Quantitative, easy, clear-cut
 - Needs good inspection and record keeping
 - Honest reporting
 - Only indicative
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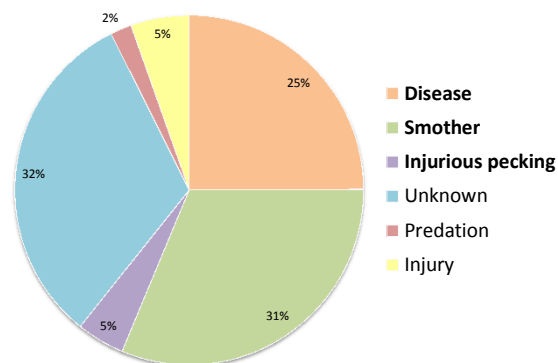
Mean mortality levels for end of lay hens in 2009 by housing system (from farmer records on FCI forms)

System	Number of flocks	*Mortality (%)	Standard deviation
Cage	375	5.4 ^a	3.0
Barn	66	8.6 ^{bc}	8.9
Free range	831	9.5 ^b	7.4
Organic free range	138	8.7 ^b	6.3

- High mortality in non-cage flocks
- Wide variation between flocks in all systems

* Different superscripts denote significant differences ($p < 0.001$) between systems

Principal causes of mortality



Data from 8 week student project on 8 farms – 15 Free Range UK flocks. Scrase et al 2014

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Behavioural needs

- Nesting
- Perching
- Foraging
- Dustbathing
- Space / social
- Freedom from fear and abnormal behaviour (e.g. injurious pecking)

Potential to meet behavioural needs in practice

- Free range (FR)
- Aviary
- Barn
- Furnished cage (FC)

Potential to avoid fear and IP

- Small FC
- Large FC
- FR
- Aviary
- Barn

Ease of maintaining good health

- Small FC
- Large FC
- Aviary
- Barn
- FR

Protect the hens from risks (weather, injury, predation)

- Small FC
- Large FC
- Barn
- Aviary
- FR

Safe and easy to manage for humans

- FC
- Barn
- Aviary
- FR

Meet the expectations of society

- **Free Range**
- Barn
- Aviary
- Large FC
- Small FC

Conclusions

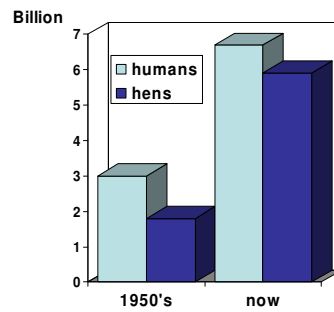
- Society likes free range (non-cage) systems
- Farmers find FR very hard to manage
 - Huge variation between farms/flocks
- It is very difficult to protect the birds from
 - Injury (including pecking & keel damage)
 - Extreme weather
 - Predators and parasites
 - Disease
 - Smothering and fear

Further considerations

- How to manage large groups of hens with intact beaks
- Consumers like cheap food
- The 2-3 breeding companies prioritise efficient birds for cage systems (global)
- Training / knowledge exchange
- Availability and motivation of stock carers

Dynamic situation

- Growing population
- Different consumer demands
- Sustainability
- Climate change
- Emerging diseases
- Genetic progress



Where do we go from here?

1. New systems like the Dutch Rondeel

“The Roundel has been designed and equipped to allow all the birds to indulge in their natural behaviour, while also taking into account the fact that practices, such as beak-trimming, will not have to be applied.”

www.rondeel.org



Image taken from www.rondeel.org

Where do we go from here?

2. Training / knowledge exchange
3. Motivating / incentivising farmers
4. Licensing / enforcing carer:stock ratios
5. Monitoring bird welfare:
 - Self audits
 - Assurance (welfare outcomes)
6. Influencing breeders / matching genotypes to housing systems

Where do we go from here?

7. Address the economics

- Discuss/educate consumer to pay more
- Retailer margins/trust

8. Sustainability – intensive (cage) systems may be more sustainable?

Take home messages

- No current systems are perfect
- Good stock carers and managers achieve good welfare and production in all systems
- Society prefers systems that allow the birds freedom but these are the hardest to manage and often do not protect the hens from poor welfare
- So, do we find new systems or support farmers to manage existing ones better?