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Optimising enrichment use for commercial broiler chickens

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Higher welfare housing for broilers

- Higher welfare housing has been developed for broilers
  - Natural light
  - Straw bales
  - Bar perches

- Farm level research exploring:
  - The effectiveness of the current enrichments
  - Ways of improving current enrichments
  - Novel enrichments

Photo: De jong & Wijhe-Kiezebrink, 2014

Study 1: Natural light

(Bailie et al., 2013)

- Comparison of windowed vs. non-windowed housing
- Windows increased light intensity and UV levels
- Broilers reared in houses with windows:
  - Less time spent lying
  - Improved leg health
  - Better litter condition
  - Increased use of straw bales
  - No change in productivity

Study 2: Perch Preference

(Bailie et al., 2017)

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1) Step-up perch

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1) Step-up perch
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3) Suspended platform

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1) Step-up perch
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4) Flat-top ramp

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1) Step-up perch
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4) Flat-top ramp
5) Curved ramp

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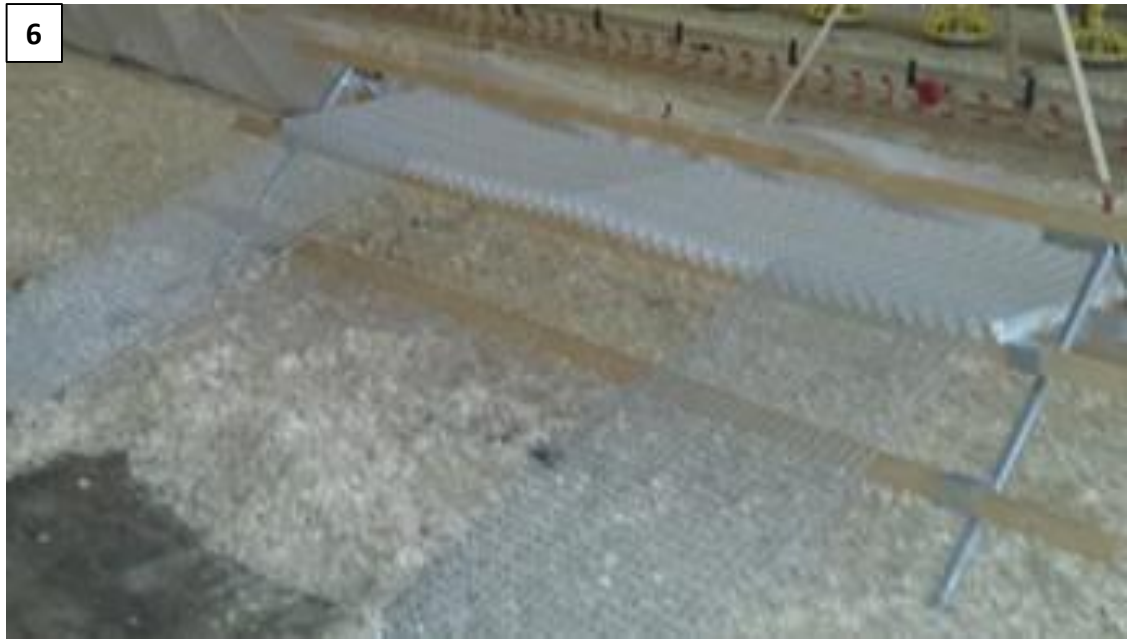
1) Step-up perch
2) Swinging bar
3) Suspended platform
4) Flat-top ramp
5) Curved ramp
6) A-frame ramp



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Results

- Suspended platforms had the highest % percentage occupancy
- More attempts were made to access the ramps than the bar perches
- There were more failed perching attempts for the bar perches than the curved ramp

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Study 3: Dustbathing Preference

(Baxter et al., 2018)

Peat

Oat hulls

Straw Pellets

Woodshavings

Well-Dry

Control

- Will broilers use a dustbathing substrate in commercial housing?
- Do they have a preference for materials?

Study 3: Dustbathing Preference

(Baxter et al., 2018)

Results

- Broilers did dustbathe
- Preference for peat
- Oat hulls also stimulated high levels of foraging and dustbathing
- The highest levels of sitting inactive seen in control, woodshavings and straw pellets
- More birds used central rather than edge rings

Study 4: Comparison of dust baths and straw bales

(Baxter et al., 2018)

Suitable as a replacement or supplementary enrichment to plastic wrapped straw bales?

[Oat hulls] vs [Oat hulls + Bales] vs [Bales] vs [Control]

Results

- Better gait scores for birds with oat hulls or oat hulls + bales
- Oat hulls were used for dustbathing; rings were impractical
- Straw bales appear to largely provide protective cover
- No effects of enrichments on productivity, dermatitis levels, litter

Study 5: Introducing platform perches & dust baths

(Bailie et al., 2018; Baxter et al., 2019)

- Testing platform perches and dustbathing areas in commercial housing
  - The effect of replacing a-frame perches with platform perches
  - The effect of using larger central dustbathing areas
- Treatments:
  - Platform perches
  - Platform perches and dust baths
  - Control

Study 5: Introducing platform perches & dust baths

(Bailie et al., 2018; Baxter et al., 2019)

Results

- Dustbathing areas attracted a high level of use, > smaller rings
- Lower levels of fearfulness (avoidance) in enriched housing
- No effect of perches or dustbaths on production parameters, or:
  - Dermatitis
  - Leg deformities
  - Walking ability
  - Litter quality

Study 6: Level of platform perch provision

(Baxter et al., in preparation)

How many perches should be installed in commercial housing?

- No perches
- 8 perches
- 10 perches
- 12 perches

Results

- Higher levels of perch provision led to a higher level of flock roosting, lower fearfulness and no impact on production levels.
  - But – no clear impact on activity or walking ability.

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Optimising enrichment use for commercial broilers

- Platform perches > traditional bar perches
  - More perches = higher level of flock roosting
- Dustbathing enrichments should be considered
  - Commercially suitable by-products of farming that could be used
  - These were more effective than bales at stimulating foraging/dustbathing
  - May have a positive effect on leg health
- Short-cut straw bales acted as protective cover and a pecking enrichment
- Perches and dust baths reduced fearfulness
- Enrichments stimulate broilers to perform normal behaviours and do not limit productivity

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Thanks for Listening

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