

### Research facilities Broilers

Wageningen University & Research has several facilities for broiler research. We can perform research on small scale or on large (semi-practical) scale. For the small scale research we have facilities up to 240 pens with 10 broiler each, or 120 pens with 20 broilers. Small scale trials are suitable for performance studies or tolerance studies for testing / registration of feed additives.

Wageningen also has the opportunity to perform large scale studies with broilers. For this type of studies we collaborate with (inter)national partners. Large scale trials are suitable for testing feed additives, feed formulation, feeding strategies, water supplements under near practical conditions.

Besides performance studies Wageningen has facilities for digestibility studies or challenge studies. In each facility the following standard measurements are done: growth, feed intake, mortality and feed conversion ratio. Besides these standard parameters other measurements, like digestibility of feed stuffs, slaughter yield, litter quality, external quality (e.g. footpad lesions, breast irritations, hock burns), blood/tissue sampling can be performed depending on the aim of the trial.

### Type of studies

- Performance – efficacy – tolerance studies (small scale)
- Performance – efficacy (semi-practical scale)
- Apparent faecal or ileal digestibility (small scale)
- Infection/challenge studies (necrotic enteritis, Salmonella, Campylobacter)

Small scale: birds will be housed in floor pens with wood shavings or on balance cages. Number of birds/pen: 10 – 20; Number of pens: up to 120.

Large scale: birds are housed in floor pens with bedding material (e.g. white wood shavings). Number of birds / pen: up to 820. Number of pens: up to 32 (47.5 m<sup>2</sup>)

### Measurements

Standard observations: feed intake, body weight gain, feed conversion ratio and mortality.

Additional observations:

- Water consumption (standard for large scale trial)
- Litter quality: visual scoring system and/or dry matter content
- Foot pad dermatitis, hock burn, lameness (gait score): visual scoring system (Welfare Quality® protocol)
- Bone quality: chemically (bone ash, Ca, P) or physically (breaking strength)
- Carcass quality: visual scoring system (breast cleanliness, breast irritations/blisters, scabby hips)
- Processing yields: griller, breast, thighs, legs, wings, cloacal fat, remaining carcass
- Intestinal health: viscosity, lesions, microflora
- Blood samples: hormones, metabolites, etc.
- Tissues sampling: skin, meat, abdominal fat, intestine, organs
- Body composition: chemical analysis
- Gross pathology and Histopathology

### Design

#### Performance studies

Experimental Design	n- exp. units	n-birds per exp. unit	n-treatments	n-replicates
15 x 8	120	10	15	8
10 x 6	60	20	10	6
4 x 8	32	820	4	8

#### Digestibility

Wageningen University & Research has up to 120 pens available for digestibility studies. The number of cages gives the opportunity to test 20 treatments × 6 replicates at once.



Performance study with 120 pens (0.75 m<sup>2</sup>) and 10 broilers per pen



Performance study with 30 pens (3 m<sup>2</sup>) and 40 broilers per pen



Digestibility cage



Digestibility study



Large scale trial - Performance study