Dog group feeding: a refinement rooted in the 3Rs

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Introduction

- The 3Rs principles include reducing the number of animals used in research, replacing animals with valid scientific alternatives, and refining research and testing methods to improve Animal Welfare.
- Over recent years, food consumption patterns in laboratory beagle dogs have seen a transformation by which dogs have become food grazers, this being the consequence of ad-libitum provision of food at breeding establishments.
- Whilst ad-libitum feeding regimes suit breeding establishment routines, they are not always practical at research establishments, due to study requirements of feeding at specific time points in relation to dosing times.
- Due to the previously mentioned feeding regime differences at breeding vs. research establishments, dogs may need long acclimatisation times to adjust to timed feeding when transferred from breeding to research premises. In this context, there seems to be a directly proportional relation between acclimatisation duration and dogs' age at time of transferring.
- Longer acclimatisation times might lead to study start delays in cases of low food intake and subsequent loss of bodyweight and body condition.
- Group feeding has the potential to improve welfare, meet nutritional needs and address behavioural issues due to reduced separation times, when compared to single feeding regimes.

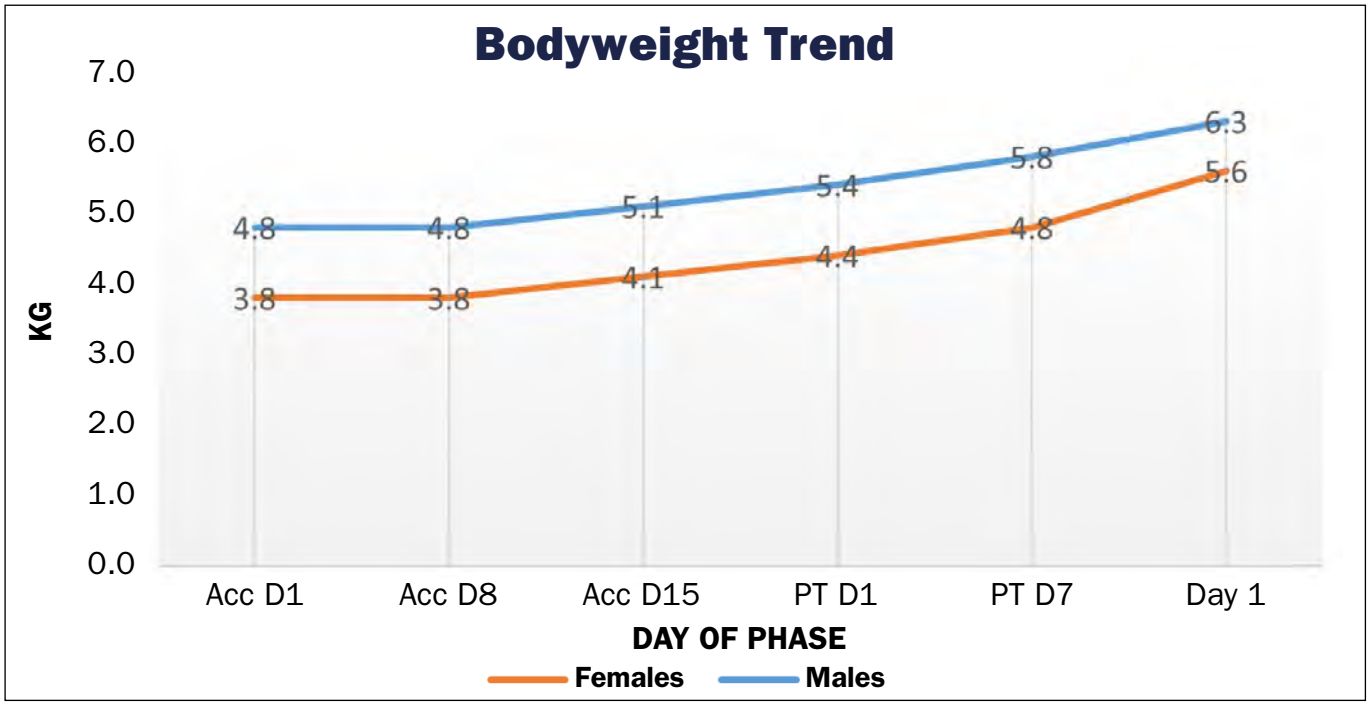

Figure 1. Bodyweight trend for dogs on a group feeding regime.
Acc D: Acclimatisation day; PT: Pretreatment day; Day 1: first day of treatment.

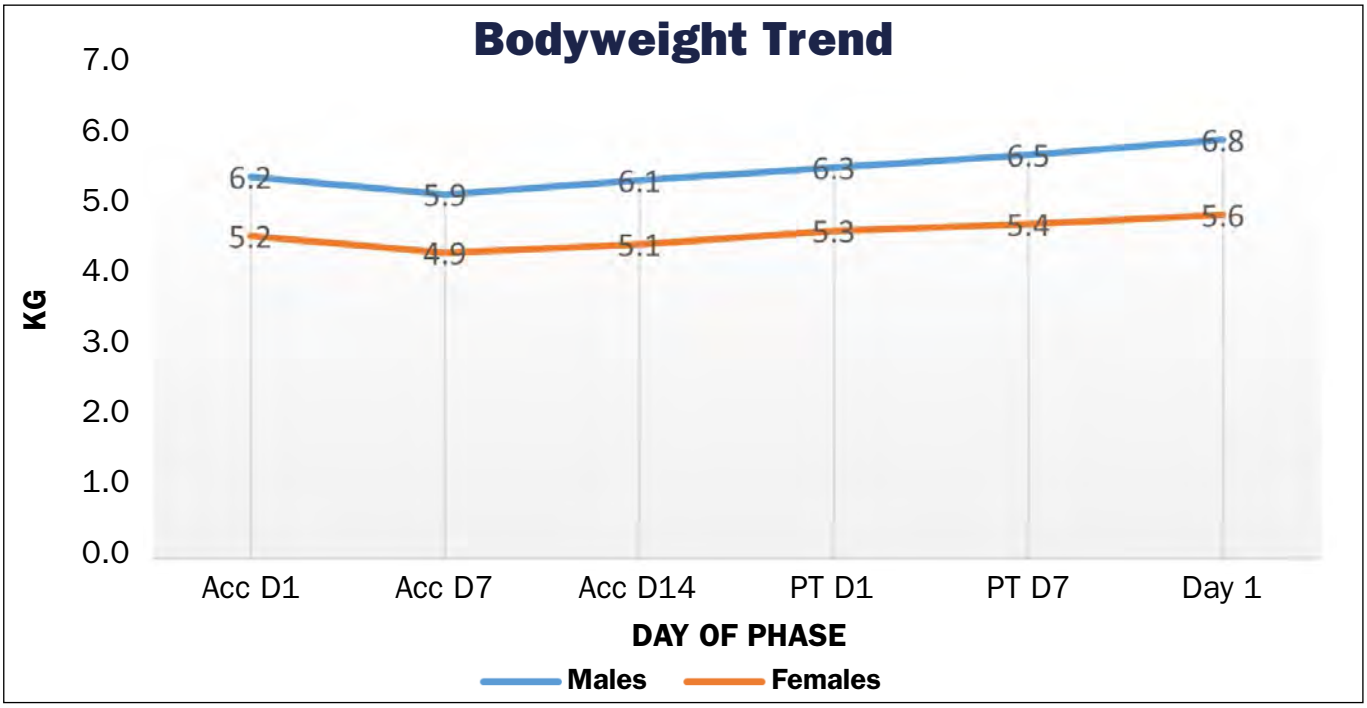

Figure 2. Bodyweight trends for dogs on single feeding regime.
Acc D: Acclimatisation Day; PT: Pretreatment Day; Day 1: first day of treatment.

Methods

- The implementation of group feeding required liaising with multiple stakeholders (scientific, veterinary, regulatory, operations, health and welfare).
- Several long-term studies were elected for group feeding trials due to the potential significant benefits to animal health and welfare over extended periods of time.
- Group feeding trials were specifically aimed at multiple types of regulatory toxicology studies (especially in relation to different routes of administration of test articles, as well as to different ages of dogs) with the objective of defining and establishing good practices across all study types/age groups.
- Two exemplificative data sets have been included in this poster. Figure 1 shows bodyweight trends for dogs on a group feeding regime; Figure 2 shows bodyweight trends for dogs on a single feeding regime. The data show how bodyweights in group-fed animals increase more significantly and consistently over time when compared to singly fed dogs.
- Food consumption was paired with bodyweight and body condition scoring to build a robust set of data indicative of animal health and welfare.
- Animal care and use was performed in accordance with applicable Animal Welfare regulations [United Kingdom National Law, Animals (Scientific Procedures) Act 1986], and at AAALAC International accredited animal programs.

Results

The implementation of group feeding enabled the following results:

- Reduced separation times between dogs (due to no need for separating animals for feeding purposes).
- Reduced aggression (and specifically food guarding aggressive behaviours that can sometimes be observed in singly fed dogs).
- Reduced stereotypical behaviours (due to reduced separation times).
- Increased food consumption.
- Better bodyweight and body condition trends over time.

The encouraging empirical results of the trials led to completing a reference guide on the advantages of group feeding.

Conclusions

The trial presented indicates that group feeding is a simple but powerful tool in improving the health and welfare of laboratory beagle dogs, thus representing a significant refinement according to the 3Rs of Animal Welfare.

Paramount milestones of Animal Welfare are represented by the reduction of aggressive and/or stereotypical behaviour, the decrease in separation time (as opposed to singly fed dogs), longer periods of access to food and better trends in food consumption, bodyweight and body condition fluctuations.

Increased Animal Welfare translates into better scientific outcomes. For this reason, group feeding will be consistently proposed to clients whenever compatible with the study objectives.