Development and testing of a novel instrument to measure health-related quality of life (HRQL) of farmed pigs and promote welfare enhancement (Part 1)

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Abstract

Health-related quality of life (HRQL) was defined for farmed animals and identified as an appropriate focus of integrative welfare measurement for farmed pigs that embraces measurement of positive welfare. The instrument for HRQL measurement was developed specifically for use by farmers and stockpersons, the prime carers of pigs, to increase ownership of welfare improvement amongst those groups. Using a psychometric approach to instrument development, relevant observations were determined by consultation with experienced farmers and stockpersons. These observations included causal variables (cause changes in HRQL) and indicator variables (manifest changes in HRQL). The variables selected as items in the structured questionnaire instrument were those most commonly applied by farmers and stockpersons and also were assigned similar quality-of-life impact by a range of experts including pig veterinary specialists and welfare scientists. The prototype instrument comprises a questionnaire with 98 causal variable items (covering five domains of welfare according with the Five Freedoms) and 30 indicator variable items. It was pre-tested with farmers and stockpersons on commercial farm units and was found to have content (face) validity and high utility. This tool is a novel measure of HRQL in farmed pigs that encompasses the measurement of positive welfare and promotes a move from welfare assurance to welfare enhancement. Further validation of the instrument is described in a companion paper in this issue.

Keywords: animal welfare, farmed pigs, health-related quality of life, measurement, positive welfare, psychometric

Introduction

Increasingly, there is a focus on animal-based measures for welfare assessment, moving away from traditional resource- and management-based measures. All animal-based welfare measures, to-date, have been developed for use by visiting farm assessors: there have been limited attempts to develop welfare assessment tools for use by farmers or stockpersons despite their central role in maintaining and improving farm animal welfare on a daily basis. Moving from a culture of welfare assurance to welfare enhancement requires that these groups take ownership of the process of improving farm animal welfare.

Previous tools using animal-based measures have been developed primarily for Farm Assurance purposes, eg that developed by Smulders and colleagues (2006) which was based on pig behaviour, lesions and cleanliness. Good inter-rater reliability was demonstrated, and correlations shown with measurements of stress hormones. A range of animal-based outcome measures (eg lesions, lameness, soiling, behaviour) were evaluated for use in assessment of impact on finishing pigs of an existing Farm Assurance scheme (Whay et al 2007). Again, designed for use by visiting assessors, the assessment protocol was undertaken to maximise inter-rater reliability, however validation studies were not undertaken. The Bristol Welfare Assessment Protocol for pigs has also been designed for use by a visiting assessor and incorporates a range of animal-based parameters relating to behaviour (Goossens et al 2008). A range of welfare-outcome measures (eg lameness, oral behaviour) have been tested for their feasibility as part of the UK Pig Farm Assurance Schemes (Mullan et al 2009), while a recently published animal-based pig welfare assessment method designed for use by trained technicians was used to determine the effects on welfare of age and floor type, although no prior evidence for validation or reliability of the assessment method was provided (Courboulay et al 2009). The Welfare Quality® project has presented methods for the overall assessment of pig welfare by visiting assessors using animal-based measures, and, to a lesser extent, resources or animal management (Botreau et al 2009; Scott et al 2009). All Welfare Quality®