Automated monitoring of behavioural-based animal welfare indicators

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Abstract

On-farm scoring of behavioural indicators of animal welfare is challenging but the increasing availability of low cost technology now makes automated monitoring of animal behaviour feasible. We discuss some of the issues with using automated methods to measure animal behaviour within the context of assessing animal welfare. Automated feeders (eg for dairy calves) can help measure the degree that animals are hungry and have potential to identify sick animals even in group housing. Such equipment is best used for longitudinal studies of individual animals rather than making comparisons between farms. Devices attached to animals (eg accelerometers or GPS devices) can help measure the activity levels of animals with a high degree of accuracy and can easily be transported between farms, making them best suited for welfare assessment at the group level. Automated image analysis has great potential to assess movement within groups of animals, but following individual animals can be difficult. The techniques have been validated against traditional methods (eg direct observation). The accuracy of measures taken automatically varies between methods but can be increased by combining measures. Technological developments have provided us with a variety of tools that can be used to monitor behaviour automatically, and these have great potential to improve our ability to monitor animal welfare indicators on-farm. However, it is important that methods be developed to measure a wider range of behaviour patterns. Animal welfare assessment schemes should not place undue emphasis on behavioural indicators solely on the basis that they can be monitored automatically.

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