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# Small ruminants' welfare assessment—Dairy goat as an example



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#### ABSTRACT

Welfare assessment has become one of the main targets of research in animal welfare science. To build a comprehensive and useful tool, welfare and health indicators should be valid and replicable and the protocol application should be feasible in field conditions. A good protocol is a powerful instrument for certification schemes but also for health monitoring, and should be used regularly by veterinarians and farmers. As an example we present in this paper the two-step AWIN welfare assessment protocol for dairy goats in intensive systems, that has been tested in over 60 farms in Portugal and Italy.

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### 1. Introduction

Animal welfare has grown as a science in recent years with welfare indicators being one of the main targets of research (Fraser, 2008; Veissier et al., 2008), and the development of species-specific protocols for on-farm welfare assessment the ultimate objective. Consumers expect animal welfare to be part of the core of farm animal production and will avoid products which they view as not fulfilling minimum conditions (Blokhuis et al., 2003; Rushen et al., 2011). This demand leads to an increasing requirement for scientifically valid and feasible welfare assessment systems (Waiblinger et al., 2001; Main, 2009). Additionally, assessing welfare has shown to be not only essential in certification schemes and in legislation enforcement, but also a useful tool in clinical, management and economical decision making. Most, if not all, indicators used in these assessments should be scientifically validated and proven to be truly associated with physical and mental wellbeing of the animals.

#### 2. Welfare assessment

Measurement is a fundamental component of scientific research (Streiner and Norman, 2008), and one of the rules before measuring something is having a clear definition and knowledge of the target. As Temple Gradin says "you can only manage what you can measure" (Grandin, 2010).

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Numerous definitions for "animal welfare" have been suggested and many attempts to elect the most important and useful indicators or measures, have been made. It is easy to accept the idea of physical welfare—no pain or no disease—but mental well-being in animals, although perhaps less obvious, is arguably the most important aspect. So sentience, as a synonym of being able to feel, and also its adverse effect on mental well-being, are key concepts of welfare. However, this mental wellbeing is not always easy to demonstrate.

One of the first and most broadly accepted definitions of animal welfare, initially delineated by the Brambell Committee in 1965, are based on the 'Five Freedoms' (Farm Animal Welfare Council, 2009): Freedom from hunger and thirst; Freedom from discomfort; Freedom from pain, injury and disease; Freedom from fear and distress; Freedom to express normal behaviour. In 2008, the Welfare Quality® project re-elaborated the concept of the "Five Freedoms" and defined four main areas of animal needs (Welfare Principles), which were then split into twelve criteria (Welfare criteria) (Blokhuis et al., 2010; Rushen et al., 2011), each of which corresponded to a key welfare dimension (Table 1). Criteria should be independent of each other and the list should be 'exhaustive, but minimal' (Blokhuis et al., 2010; Botreau et al., 2007).

More recently (from 2011 to 2015) a new European project named AWIN—Animal Welfare Indicators, studied the welfare of small ruminants. From the work of these teams welfare assessment protocols for extensively kept sheep and for intensively kept goats, were produced and made public (for goats see http://www.animal-welfare-indicators.net/site/flash/pdf/AWINProtocolGoats.pdf and for sheep go to http://www.animal-welfare-indicators.net/site/flash/pdf/AWINProtocolSheep.pdf).

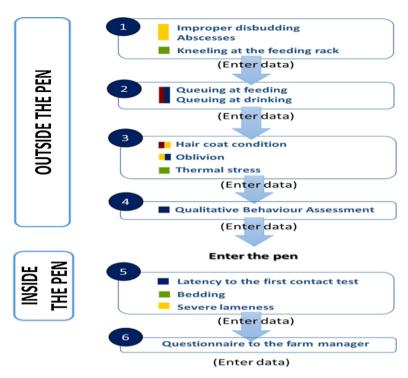


Fig. 1. Indicators and collection flowchart for the first step assessment (in AWIN Welfare Protocol for goats).

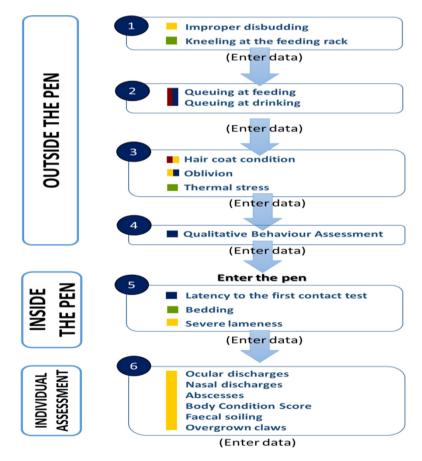


Fig. 2. Indicators and collection flowchart for the second step assessment (in AWIN welfare Protocol for goats).

Assessing welfare at farm level has shown to be essential in many ways. Firstly, the societies we are building have increasingly ethical concerns for the way we keep our production animals. An increasing number of consumers wants to be informed and are reluctant to purchase those animal derived products that do not fulfill minimal criteria. Overlooking these demands should be interpreted by farmers as 'shooting your own foot'.

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