Effects of gentle interactions on the relationship with humans and on stress-related parameters in group-housed calves

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Abstract

Although the relationship between farm animals and humans has strong implications for animal welfare and productivity, there have been few experimental studies on the influence of gentle interactions in group-housed calves. In the present study, Austrian Simmental calves were housed in groups of four under standard management conditions. Fourteen calves experienced 40 min of additional gentle interactions in the form of stroking and gentle talking during the first four weeks of life, whereas the remaining eleven calves did not. The animals’ fear of humans was measured by avoidance distance tests on 33 and 76 days of age and by an arena test that comprised three phases — isolation, presence of a human, isolation — at 34 days of age. The very low avoidance distances did not differ significantly between the groups. In the arena test, there was less behaviour indicative of stress in the presence of the experimenter compared with the isolation phases. Heart-rate measurements showed a corresponding pattern. Control calves showed more tail-flicking than stroked calves and had higher concentrations of salivary cortisol before and after the test. There were no other significant differences between the groups. The minor number of behavioural differences may result from the control animals’ good relationship with humans, ie there is a ceiling effect. If the general contact between stockpeople and calves is gentle and negative experiences are minimised, it is possible to achieve a good calf-human relationship without additional efforts.

Keywords: animal welfare, avoidance distance, calves, cortisol, heart rate, human-animal relationship

Introduction

Research on the relationship between cattle and stockpeople has gained importance in recent years, as it impacts upon economics as well as animal welfare. Not only is productivity higher on farms with a good relationship between animals and humans (Hemsworth et al 2000, 2002; Waiblinger et al 2002), there are also lower occurrences of disease (for mastitis: Ivemeyer et al 2011; for lameness: Chesterton et al 1989) and a lower risk of injury to the animals and to stockpeople because of reduced fear reactions (Rushen et al 1999; Waiblinger et al 2004). Some of the economic aspects are also relevant to animal welfare, which is itself becoming an economic factor due to rising consumer demand for ethically produced food (Bayvel et al 2012; Buller 2013) and provides possibilities for label production. In improving animal welfare, it is important to go beyond merely reducing aversive experiences and work on creating situations in which animals can experience rewards and pleasures (Boissy et al 2007; Balcombe 2009; Green & Mellor 2011). Establishing a good relationship between animals and humans not only decreases the animals’ fear of humans but also increases their quality of life by inducing positive emotions in situations where animals have contact with humans. The animals’ relationship with humans is defined as their perception of humans in terms of the relative strength of positive and negative emotions elicited during interactions (Waiblinger et al 2006). Under specific circumstances, animals may perceive humans as conspecifics and form bonds with them (Estep & Hetts 1992; Raussi et al 2003) and social bonds are considered a source of positive emotions, for instance by facilitation of positive tactile contact between individuals (Balcombe 2009). Stroking, as a gentle form of tactile stimulation, not only reduces animals’ fear of humans (in calves: Lensink et al 2000; Probst et al 2012; in cows: Schmied et al 2008a) but also has the potential to decrease heart rate (Schmied et al 2008b), which may be indicative of further physiological anti-stress effects (Waiblinger 2010).

There is a substantial body of literature pertaining to the relationship between calves (Bos primigenius taurus) and humans, both in beef suckler herds (eg Probst et al 2012) and in individually housed veal calves (eg Lensink et al 2000).