

Summary

The combination of behaviour analysis and neurohormonal indicators can help determine the emotional state of the animal, connected with feeling stressed. The main aim of the dissertation was to determine how behavioural and neuroendocrine indicators can be used to assess stress in alpacas kept in Poland. The study was conducted on a total of 90 alpacas. The first stage examined the relationship between the alpacas' flight distance at pasture and behavioural (escape attempts, vocalizations, spitting) and physiological (saliva cortisol level) reactions during the lying-down shearing method. In the second stage, the cortisol level in alpaca wool collected during shearing from the shoulder and the rump was determined to indicate the organism's reaction to changing conditions throughout the year. In the third stage, observations of the alpacas' behaviour (observations without intervention and during standing method shearing) and collection of blood samples (determination of the level of cortisol, noradrenaline, dopamine, serotonin and thyroxine) were carried out three days before shearing, on the day of shearing, and 5 and 10 days after shearing. In the first stage, after shearing, there was a significant increase in salivary cortisol levels. The cortisol level was positively correlated with the number of observed stress behaviours, but the level of the human-alpaca relationship based on flight distance did not significantly affect the behaviour of alpacas during shearing. In the second stage, the wool cortisol level was higher in the distal segment, originating from the summer period. The region of the body (shoulder /rump) significantly differentiated the cortisol level results in wool. In the third stage of the study, it was found that shearing did not significantly affect the behaviour of alpacas after shearing. However, an increase in noradrenaline levels was observed 5 days after shearing and a decrease in thyroxine on days 5 and 10 after shearing. Shearing can induce a strong behavioural and physiological response in alpacas, especially in the lying-down method, and behavioural observation can be useful for assessing their stress reactions. Shearing induces acute behavioural stress in alpacas, but this stress is not related to their flight distance or greater behavioural reactivity in the periods before and after shearing. Determining cortisol in alpaca wool may be a non-invasive method of assessing stress levels in the long term. Determining the cortisol level in saliva may be useful for assessing acute stress in alpacas, noradrenaline and thyroxine as the indicators of mid-term stress.

Keywords: alpaca, behaviour, stress, neuroendocrine indicators