ABSTRACT

Described is the importance of the integument in relation to well-being. Upto now lesions of the integument are primarily considered as deviations from the optimal health state. The importance of the lesions in relation to well-being depends upon the pathological severity of the lesions.

In this paper it is shown that the environment, the behaviour and the health state of the animal have an influence on the integument. This influence can be direct or through each other. It is discussed that while behaviour and health do reflect in the state of the integument, lesions of the integument are indicators of behaviour and health. As behaviour and health are prime indicators of well-being, the state of the integument is a derived indicator for well-being. Lesions of the integument still are pathological deviations of optimal health. Therefore it is concluded that the state of the integument is a multidisciplinary indicator related to well-being.

INTRODUCTION

One of the most cited, and apparently accepted definitions of well-being is formulated by Lorz (1973). In his comment on the German Animal Protection Act (Tierschutzgesetz) he defines well-being as a state of physical and psychical harmony of the animal within itself and with its environment. This harmony is difficult to measure, and therefore is well-being as such hard to assess. However, Lorz continues to say that indicators of well-being are good health and normal behaviour. Deviations in health and behaviour can be detected by a veterinary - or an ethological approach. Therefore these two disciplines are the two prime auxiliary sciences for the determination of well-being. According to Lorz good health and normal behaviour presuppose an undisturbed course of life's processes. Deviations in the course of these processes are indications of deviations in health or behaviour, and can therefore be considered as secondary indicators for well-being. Physiological data, including production figures, are such indicators.

Lesions of the integument are deviations from the optimal health state of the integument and therefore from the optimal health state of the indi-
vidual, and thus form an indication for decreased well-being of that individual. The integument is only a small part of the body, and the lesions are most often of little pathological importance. Therefore up till now lesions of the integument were considered to be an indication of well-being of minor importance.

These lesions however, do not occur spontaneously. Both the environment, and the physical and psychological state of the individual do influence the occurrence of lesions. Therefore the state of the integument might well be of more importance in respect to animal welfare matters then only because of its pathological significance. The purpose of this paper is to illustrate this relation between the occurrence of lesions of the integument and the environment, the animal's behaviour and its health status, and its potential value for assessing well-being.

The results on which this paper is based are obtained from a survey on lesions of the integument of dry sows. These sows were kept in different systems of individual housing (crates; or tethered by neck collar, neck harness, or shoulder girth). Approximately 5000 sows were systematically inspected for lesions of the integument according to an inspection routine. This inspection routine is part of the Ekesbo Method, which is intended to distinguish between different environments in relation to well-being, and is based on lesions of the integument.

THE INFLUENCE OF BEHAVIOUR, HEALTH AND ENVIRONMENT ON THE STATE OF THE INTEGUMENT

The state of the integument of these sows was influenced by three main factors: the environment; the behaviour of the sows; and the state of health of the sows.

1. Behaviour

Behaviour can affect the state of the integument directly (grooming automutilation) or indirectly. While behaving, the animal is in contact with its environment. This causes lesions. The nature of such lesions depends on the intensity of the behaviour, and on the point of contact of the integument and of the environment. Furthermore behaviour can change the environment and influence the health state of the animal. Figure 1 shows how the behaviour influences the occurrence of lesions on the neck of 80 sows which were tethered by a neck collar for the first time.