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## **Application of the Welfare Quality<sup>®</sup> animal welfare assessment system in Finnish pig production, part I: Identification of principal components**

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### **Abstract**

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The Welfare Quality<sup>®</sup> (WQ) on-farm welfare assessment protocols for fattening pigs ( $n = 95$  farms) and sows, as well as suckling piglets ( $n = 103$  farms), were applied on Finnish farms. In order to identify distinct types of welfare problems (WPTs) Principal Component Analysis (PCA) was applied to the pooled animal-based items within both categories of animals. Measures describing suckling piglets did not contribute to the WPTs. The main WPTs (seemingly) reflected fighting in fattening pigs and lack of bedding in both fattening pigs and sows. The results imply that WQ includes biologically plausible shortlists of animal-based measures with decent to good internal consistency describing distinct types of welfare problems in growing pigs and in sows. The 20 descriptors of Qualitative Behavioural Assessment were analysed similarly to identify distinct mood types, which were named active positive, passive positive and passive positive behaviours. The different mood types had close to identical build-up in both fattening pigs and in sows and suckling piglets.

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**Keywords:** animal welfare, growing pig, internal consistency, Principal Component Analysis, sow, Welfare Quality<sup>®</sup>