

Do pigs suffer allergic reactions to straw?

SIR, – It has been reported (De Jong and others 1998) that pigs under experimental conditions have higher cortisol levels in enriched environments (that is, with straw) than in barren environments (no straw or other substrate). Similarly, we have recently found unexpectedly high cortisol levels in pigs housed in enriched conditions on commercial premises. The welfare of pigs in enriched environments would be assumed to be high and yet these animals can have high levels of cortisol. Why? A possible explanation is that high levels of cortisol may reflect an allergic response. Allergies cause increases in adrenal hormones to counteract the actions of histamine because cortisol (and other steroids) is anti-inflammatory.

Straw and associated factors (for example, dust, fungi, ammonia) are contributory factors in chronic obstructive pulmonary disorder in horses (Araya and Zaror 1995). While the clinical and pathological responses of pigs to atmospheric ammonia and dust have been investigated (for example, Hamilton and others 1999), the possibility that straw may cause allergic reactions in pigs seems to have been overlooked, yet the possible implications

are important because allergies can have serious repercussions on the health and welfare of an animal. Adrenal fatigue can lead to death if an animal is subjected even to a relatively modest stressful event. Furthermore, reducing exposure to allergens could reduce an animal's susceptibility to infection, thereby having potentially large effects on the frequency of use of antibiotics.

The DEFRA Code of Practice for pigs states that they should have some form of environmental enrichment, and the most commonly used method for addressing this requirement is the addition of straw to the housing areas. However, if the straw is causing an allergic reaction to the animals, this could have a negative impact on their health and welfare greater than that created in a barren environment. The possibility that straw could be causing allergic reactions in pigs should be considered, and we are currently investigating the relationship between salivary immunoglobulin E levels of pigs and the fungal loads of their environments.

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References

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