INTRODUCTION

This case report describes acute mortality of over 300 piglets in a 3200 sow farm. Cases occurred at 5 to 10 weeks of age in a barn with 10,000 weaned piglets. The animals were found dead early in the morning, spread across the units (figure 1). No visible health problems were seen in the other animals, which were active and had a good appetite.

Figure 1. Dead animals were found early in the morning scattered over the nursery pig facility.

MATERIALS AND METHODS

A differential diagnosis was quickly established: acute poisoning by environmental gases, water or feed, or an infectious disease. Necropsy was performed at the farm (figure 2) and 5 dead piglets were submitted to the laboratory of the Dutch Animal Health Service to establish the cause of death. Air quality was measured (Impact pro M3: NH3, O2, CO2 and H2S) and feed samples were taken and water was tested for nitrite (Merckoquant test strip).

RESULTS

First, poisoning by gases was excluded as a cause of death (NH3 10-12 ppm, O2 20%, CO2 0.1% and H2S 0.0%). Later necropsy at the Dutch Animal Health Service confirmed nitrite poisoning by the presence of chocolate brown colored blood (not visible in the picture) and the presence of 28% methemoglobin concentrations. The drinking water contained elevated levels of nitrite. Necropsy findings were in line with a nitrite intoxication: chocolate brown coloration of the blood and methemoglobin concentrations of 28%. Nitrite poisoning was confirmed by the presence of nitrite in the drinking water (test strip; >1 mg/ml). Laboratory analysis of the drinking water showed slight elevated levels of nitrite (0 mg/l - 0.37 mg/l). Based on these findings it was decided not to analyze the feed.

DISCUSSION AND CONCLUSION

Cause of mortality was proven due to nitrite intoxication. Further investigation revealed contamination of the drinking water with waste from the air washer. Due to occasionally negative pressure in the drinking water system at times of large water demands (e.g. cleaning of the units), waste water could be sucked into the drinking water system. The occasional flow back of waste water can explain the variable nitrite contents of the different water samples and the relative low morbidity of nitrite intoxication. These types of mistakes are also reported before in the Netherlands (1) and in Flanders (2). To prevent future nitrite intoxication an extra valve was installed between the drinking water system and the air washer: Prevention works!

REFERENCES

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Nitrite poisoning in weaned piglets

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PREVENTION WORKS
Shaping the future of animal health