

HUSBANDRY AND ANIMAL HEALTH ON ORGANIC PIG FARMS IN AUSTRIA

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Abstract

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Expectations of retailers and consumers regarding animal health and welfare and meat quality are particularly high for organic products. The aim of this study was therefore to provide an overview of the health and welfare of pigs on organic farms in Austria. Eighty-four organic pig farms were investigated. The farmers were interviewed using a questionnaire. In addition to clinical examination, the pigs were monitored at slaughter to determine the prevalence of organ lesions. The average herd size was 20.1 productive sows in the sow units and 84 fattening pigs in the finishing units. All farms used indoor production systems and provided straw to the pigs. Pregnant sows and finishers had access to an outdoor run in more than 90% of farms, but less than 15% of farms had outdoor runs for lactating sows and weaners. In more than 75% of the herds, endoparasites were found in faecal samples. About 50% of slaughter pigs displayed milk spots on the liver, 24% had pneumonic lesions and 18% showed mange. The results indicate that preventive measures in husbandry, management and hygiene must be intensified to improve animal health and welfare on organic pig farms and to meet the expectations of the consumers.

Keywords: animal health, animal welfare, Austria, husbandry, organic farming, pig

Introduction

In Austria, about 38% of 19 031 organic farms keep pigs (BMLFUW 2001). Most of the pig-producing organic farms keep pigs in small herds mainly for private consumption and for on-farm sales. Sixty-eight per cent of farmers have 1–2 pigs. Only 75 farms keep more than 50 pigs (Schneeberger *et al* 1997). In the year 2000, about 13 000 slaughter pigs were sold to retailers. There is a growing demand for organic pork, and expectations of consumers regarding animal welfare, health and meat quality are particularly high for organic products. It therefore seemed appropriate for the Austrian organic farmers association 'Bio Ernte Austria' to conduct a survey on the most important issues for pig-producing organic farms. The aim of this study was to collect data on husbandry, management and health of pigs on organic farms as a basis for hazard analysis and quality-improvement programmes.

Materials and methods

Our field study included 84 organic farms in Austria. Forty-eight farms had sow units and 51 had finishing units (15 farms were breeding to finishing units). From 1999 to 2000, each farm was visited twice within an interval of one year. The farmers were interviewed using a

questionnaire, which covered data about farm organisation, husbandry, feeding, management, hygiene and animal health. In addition to clinical examination of the pigs, faecal samples, skin scrapings and blood samples were taken and examined for parasites and viral diseases. Furthermore, a total of 1497 slaughter pigs from the study farms were monitored at slaughter to determine the prevalence of organ lesions. The data were analysed using simple descriptive statistics. In order to improve animal health and welfare, each farmer, his veterinarian and his adviser received reports of the visits with results, a hazard analysis and recommendations about how to solve problems.

Results

Husbandry

The average herd size of the sow units was 20.1 productive sows (range 1–108); only four out of 48 farms kept more than 40 sows. Finishing units had an average herd size of 84 fattening pigs (range 8–280), and 16 out of 51 farms had more than 100 finishers. All farmers kept pigs in indoor production systems in old adapted buildings without mechanical air-conditioning. No farm had pens with a fully slatted floor, and all farms provided straw to the pigs for bedding and as manipulable material. Pregnant sows and finishers had access to an outdoor run in more than 90% of farms, but only a few farms had outdoor runs for lactating sows (15%) and weaners (11%). In most cases, the outdoor runs had a solid concrete floor and were not covered with a roof. In 26 out of 48 sow units (60%), the sows were confined from seven days before farrowing to 10 days after, which was permitted by the ‘*Österreichisches Lebensmittelbuch*’ (BMSG 1997). Only seven farms used farrowing systems without confinement of the sow as the ‘FAT pen’ (Weber & Schick 1996) or the ‘Schmid pen’ (Schmid 1992). In five sow units, lactating sows and their litters were kept in a multiple suckling system. Twenty-nine out of 48 farmers weaned the piglets at an age above 40 days. In 90% of sow units, pregnant sows were kept in group-housing systems, mainly in two-area pens (42%). Finisher pigs were kept in pens with a solid concrete floor (30 farms) or a partly slatted floor (five farms) with straw bedding, or in deep litter yards (10 farms).

Management and hygiene

All study farms used a continuous-flow production system. On 11 farms, piglets from their own sow unit were fattened; 12 finisher farms purchased piglets from only one source, and 28 finisher farms purchased piglets from two or more sow units. One third of farms had no hospital pens and in 90% of sow units there was no isolation pen. Only six farmers with sow units and three farmers with finishing units kept productivity data (eg number of piglets weaned per sow per year, piglet mortality, daily weight gain, feed efficiency) suitable for evaluation. About 50% of the study farms were members of an animal health service. Homeopathy did not play an important role in veterinary treatment on the study farms (Table 1). Sows on only a few farms had been vaccinated (mainly against erysipelas and parvovirus infection). Vaccination of piglets against porcine respiratory mycoplasmosis was more common. Only 10% of the farms took faeces samples at regular intervals in order to monitor endoparasites, but more of them treated pigs with chemically synthesised antiparasitics at regular intervals (Table 1).

Animal health

In more than 75% of the herds endoparasites were found in faecal samples. In two thirds of sow units *Oesophagostomum spp.* were detected. In the finishing units roundworm (*Ascaris*

suum) was the most common endoparasite. *Coccidia* and *Trichuris suis* were also found. In approximately 30% of farms, lice (*Haematopinus suis*) were found and mange (*Sarcoptes suis*) was detected in skin scrapings (Table 2).

As well as parasites, porcine reproductive and respiratory syndrome (PRRS), Parvovirus and *Leptospira* were detected in some sow herds. In more than 60% of farms, one or more sows suffered from actinomycosis of the udder (Leeb 2001). One third of farmers with sow units stated diarrhoea in piglets as a problem (Table 3).

The examination for prevalence of organ lesions of 1497 slaughter pigs from the study farms gave the following results: about 50% of slaughter pigs displayed milk spots on the liver (*hepatitis interstitialis parasitica multiplex*), 18% showed mange and 24% had pneumonic lesions.

Table 1 Percentage of farms with specific measures for disease prevention and veterinary treatment.

| Treatment | Sow units (n = 48) | Finishing units (n = 51) |
|------------------------------------|-----------------------|-----------------------------|
| Valuable productivity data | 15 | 6 |
| Regular samples of faeces | 8 | 10 |
| Regular antiparasitic treatment | 37 | 22 |
| Regular treatment against mange | 15 | 8 |
| Vaccination of sows | 27 | — |
| Vaccination against mycoplasmosis | 46 | 30 |
| Homeopathy by farm veterinarian | 31 | 18 |
| Homeopathy by farmer | 27 | 20 |
| Member of an animal health service | 65 | 47 |

Table 2 Percentage of farms with specific endoparasites detected in samples of faeces and ectoparasites detected in skin scrapings.

| Parasites | Sow units (n = 48) | Finishing units (n = 51) |
|-----------------------------|-----------------------|-----------------------------|
| Endoparasites | 79 | 78 |
| <i>Oesophagostomum spp.</i> | 66 | 43 |
| <i>Ascaris suum</i> | 30 | 59 |
| <i>Coccidia</i> | 21 | 31 |
| <i>Trichuris suis</i> | 11 | 27 |
| Ectoparasites | | |
| <i>Haematopinus suis</i> | 29 | — |
| <i>Sarcoptes suis</i> | 29* | 59** |

* detection of *Sarcoptes suis* in skin scrapings (n = 24 farms)

** mange suspected in clinical inspection

Table 3 Percentage of sow units with bacterial and viral infections or diseases.

| Infection/Disease | Sow units (%) |
|---|---------------|
| Porcine reproductive and respiratory syndrome* (n=45 farms) | 36 |
| Parvovirus* (n=45 farms) | 26 |
| <i>Leptospira</i> * (n=44 farms) | 14 |
| Actinomycosis** (n=32 farms) | 62 |
| Diarrhoea of piglets*** (n=32 farms) | 34 |

* blood samples

** clinical inspection

*** farmer response

Discussion and conclusions

In our study we found that on most organic pig farms in Austria, straw and outdoor runs are provided and pregnant sows are group-housed. We conclude that organic husbandry systems provide housing conditions more appropriate to the biological function of pigs than do conventional husbandry systems in Austria. However, in 60% of sow units the sows were confined during the farrowing and lactation period, which may not be acceptable for good pig welfare. Also, 90% of sow units do not provide outdoor runs for lactating sows and will therefore have to adapt their farrowing system before the end of 2010 according to regulation (EC) No 1804/99 (CEC 1999). In our opinion, the best farrowing pen currently available for organic sow units with indoor production systems is the 'FAT2 pen' (Weber & Schick 1996) but with an added outdoor run. To share costs, multiple suckling systems should also be taken into account.

We conclude that herd size on most organic pig farms in Austria is too small to enable the farmers to carry out effective management and hygiene procedures, for example 'all-in-all-out' production. The results of the clinical examinations and the monitoring of slaughter pigs for prevalence of organ lesions give rise to considerable concern. The main health problems in organic pig herds are endoparasites and ectoparasites, actinomycosis and diarrhoea of piglets. Nevertheless, compared with the results from a study carried out on slaughter pigs from conventional Austrian farms (Wiskott 1998), organic slaughter pigs had less pneumonic lesions, nearly the same percentage of milk spots, but more cases of mange. Because many organic pig farmers did not collect and analyse data, they were not even aware of the health problems and the deficiencies in productivity of their herds. Homeopathy still does not play the important role in veterinary treatment that is described in regulation (EC) No 1804/99 99 (CEC 1999). In order to improve animal health and welfare on organic pig farms in Austria, preventive measures in husbandry, feeding and hygiene and veterinary treatment must be intensified. The organic farmers should be motivated to collect valuable productivity data. The health status of the pig herds should be monitored at regular intervals (faeces samples, blood samples and skin scrapings), and a feedback system from abattoirs installed. Cooperation between sow units and finishing units concerning health planning should also be intensified. Pig herds with health problems must be treated comprehensively and systematically.

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