



The veterinary medicine in upgrading of competitiveness of Hungarian pig-production sector

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ABSTRACT

The Hungarian pig-breeding has achieved considerable results in 70's and 80's of the last century, but after the privatisation and the collapse of former integration structures a considerable differentiation begun between the pig-breeding plants. Based on a direct-question survey the article analyses some main features of the activities of veterinarians in large-scale Hungarian pig-breeding units in 2004. Under rather unfavourable economic conditions of pig-breeding farms in numerous cases the owners of these enterprises do not pay the sufficient attention to the prevention and the analysis of information, which could be obtained by systematic survey of veterinary status of farms. However, as it became obvious by analysing the structure of veterinary medication, the increasing attention to preventive veterinary medicine could contribute to the improvement of veterinary status.

(Keywords: swine, benchmarking, preventive medicine, veterinary strategy)

INTRODUCTION

The veterinary status exercises a direct effect on performance of swine farms. Contrary to the main trends of research in the EU states and the USA, the analysis of the micro-economic aspects of pig production, as well as the role of veterinary medicine in realization of strategic goals of enterprises are comparatively weakly developed in Hungary. While, e.g. in England, there are comprehensive works on the performance of pig-breeding (Ridgeon, 1993; Robertson *et al.*, 1991), in Hungary there are only some highly aggregated data on the cost-benefit relations and no quantitative information on effect of veterinary service on realization of strategic goals in pig production.

In market economies there are well-documented databases that emphasize the importance of quantifying the adverse economic effect of lack of preventive medicine. In his classic work, Muirhead (1987) has estimated the effects of various diseases on food conversion efficiency and days taken to reach 90 kg liveweight. The adverse effects in terms of both feed conversion efficiency (FCE) and growth rate are greater when a disease is introduced into a herd for the first time. This is illustrated in *Table 1*. The aim of current article is to determine some main features of veterinary practice in large-scale Hungarian pig farms.

MATERIALS AND METHODS

In framework of three focus-group interviews with experts working in pig farm management the basic directions of our questionnaire have been determined, aiming to

reveal the position and strategy of Hungarian pig producers. In the second phase, a pilot study has been conducted to test the questionnaire. For practical reasons the original questionnaire have been divided into three parts: the general, comprehensive questionnaire inquiring the main strategic directions of the farms, which was sent to the farm managers, another questionnaire analysing the breeding technology, environmental management and the building engineering problems of units, which was sent to farm managers, and a specific questionnaire concerning the animal health management and animal welfare status of the farm, which was sent to the veterinary specialist.

Table 1

The effect of various diseases on food conversion efficiency and days taken to reach 90 kg liveweight

Disease	Reduced FCE	Increased days to 90 kg	Reduced FCE	Increased days to 90 kg
TGE	0.1	4–10	0–0.05	0–3
Epidemic diarrhoea	0.1	4–10	0	no data
Aujeszky's disease	0.1–0.2	no data	0.1–0.2	6–14
Enzootic pneumonia	0.2–0.4	10–21	0.05–0.3	3–21
Haemophilus pneumonia	0.1–0.4	7–30	0.1–0.3	4–15
Atrophic rhinitis	0.1–0.2	4–15	0.1–0.2	4–15
Swine dysentery	0.05–0.2	15–20	0.05–0.1	4–8
Streptococcal meningitis	0.05	1–3	0.05	0
Mange	0.1–0.3	7–18	0.05–0.1	3–8
Internal parasites	0.1	7–18	0.1	3–6

Source: Muirhead, 1987.

Note 1. A deterioration in FCE of 0.1 is equivalent to a 3% increase in feed costs.

Note 2. Each extra day taken to grow from birth to slaughter at 90 kg liveweight is equivalent to reduce daily liveweight gain by 4 g.

After some improvement of the questionnaire, that was posted to more than 400 farms, representing approximately 90% of the large-scale pig farms in Hungary. 12% of the questionnaires were sent back, which could be increased up to 22.3% by a second call. In this way 103 questionnaires were achieved. Additional 47 questionnaires have been obtained by personal farm visits of the authors. The basic technical and technological indices of swine farms are summarized in *Table 2*. The survey was conducted from December 2003 to March 2004.

The survey on veterinary practice management, physical condition of buildings, breeding technology and veterinary status has been based on principles and suggestions of the current references (*Deen et al., 2001*). Results of the basic technical and technological indices of swine farms are partly similar or equal to the findings of the survey done on commission of the Ministry of Agriculture and Rural Development in 2001 (*Ráki, 2003*).

RESULTS

Participation of veterinarians in the management of farms

In majority of cases (64%) the veterinarians are working as entrepreneurs at swine farms. The proportion of veterinarians among managers of swine farms is relatively high, 12%.

In other cases, the veterinarians are working as part- or (in some cases) as full-time employees.

In general, it can be stated, if the owner is a veterinarian, the number of weekly hours, spent on surveying herds is higher. This relationship has been proven by chi-square test (*Table 3*).

Table 2

Basic indices of the pig farms

Indices	Value and range
Average age of buildings	26.5 (\pm 8.2) year
Average time from the latest reconstruction	5.3 (\pm 4.8) year
Average number of sows in 2003	587.2 (\pm 487)
Rate of fattening farms	42%
Rate of breeding farms	6%
Rate of mixed farms (for both breeding and fattening)	52%
Legal framework of the pig-breeding activity	
Family farm	12%
Private entrepreneurship	10%
Limited partnership	8%
Limited liability company	28%
Incorporated company	27%
Co-operative	15%

Table 3

Distribution of average weekly hours spent on surveying the herd*

Number of hours	Positive answers (%)
Less than 5 hours	14.3
5–10 hours	25.0
11–20 hours	38.6
21–30 hours	15.0
More than 30 hours	7.1

*Question: How many hours do you spend on surveying the herd?

It was positive, that the majority (88%) of respondents carries out regularly a post mortem examination; 40% of respondents dissects each fresh dead animal, except the sucking piglets. The scope of authority of veterinarians was rather diverse (*Table 4*).

Besides compulsory surveys the farms made regular diagnostic examinations (*Table 5*). It can be evaluated as a rather negative fact, that the majority of respondents does not have any record system for mortality statistics, neither in breeding, nor in fattening phase. This means, that they deprive themselves from numerous information, which could be very useful in strategic planning of different programs for preventive veterinary medicine, or in modernisation of technology and/or housing.

Table 4

The level of independence in decision-making of veterinarians

Statement	Positive answers (%)
Independent decision-making in problems influencing directly the veterinary status	100
I often make suggestions for conditions influencing indirectly the veterinary status of the herd (e.g. feeding technology, housing)	54
Independent decision-making in ordering medicaments (choosing supplier, cost of medication)	71
I have no independent decision-making right except in controlling infectious diseases	28

Table 5

The frequency of diagnostic examinations carried out beyond the compulsory tests

Frequency	Positive answers (%)
Monthly	41
Quarterly	47
Half-year	12

Evaluation of veterinary status from veterinarians' point of view

The majority (nearly two-third) of respondents stated that the current veterinary situation is not an efficient tool for a considerable development of efficiency in pig production. At the same time, 5% of respondents argued that the current veterinary status can be considered as a rather unfavourable one, and 29% of the veterinarians argued that the current veterinary status is acceptable, but there is room for considerable improvement. It is worth to emphasize that the rather negative opinion has been declared by veterinarians working in units of former cooperatives, where the question of ownership was not satisfactorily settled yet.

The next question tried to determine, what the most important obstacles to the improvement of veterinary status are by the respondents. The distribution of answers are summarised in *Table 6*.

Table 6

Causes of veterinary problems in the breeding units

Causes	Positive answers (%)
Lack of capital	73
Unfavourable epidemiological situation	15
Unskilled blue-collar workers	29
Neglectful attitude of managers	9
Undeveloped housing technology	55

According to the veterinary practitioners the most important obstacle to further development of veterinary status is the unfavourable housing technology. It can be explained by the fact, that the majority of animal breeding units has been built in the first years of 70's, following and adapting the most modern and sophisticated technological principles of that time, but, especially during the last two decades, there was not enough financial fund for the reconstruction of these plants.

Use of veterinary drugs

The use of medicaments shows a rather mixed picture. Within the total cost of drugs the antibiotics and vaccines have the highest share with considerable variance. In an explorative data analysis the boxes show the 50% (interquartile range) of values, and the mode do the thick lines (*Figure 1*).

Analysing the practice of choosing veterinary drugs a rather contradictory situation can be observed; on one hand the relatively high frequency of resistance tests can be evaluated as a positive characteristic, on the other hand the majority of veterinarians prefers the cheaper products (*Table 7*).

Figure 1

The share of different veterinary drugs within the total cost structure of veterinary pharmaceuticals

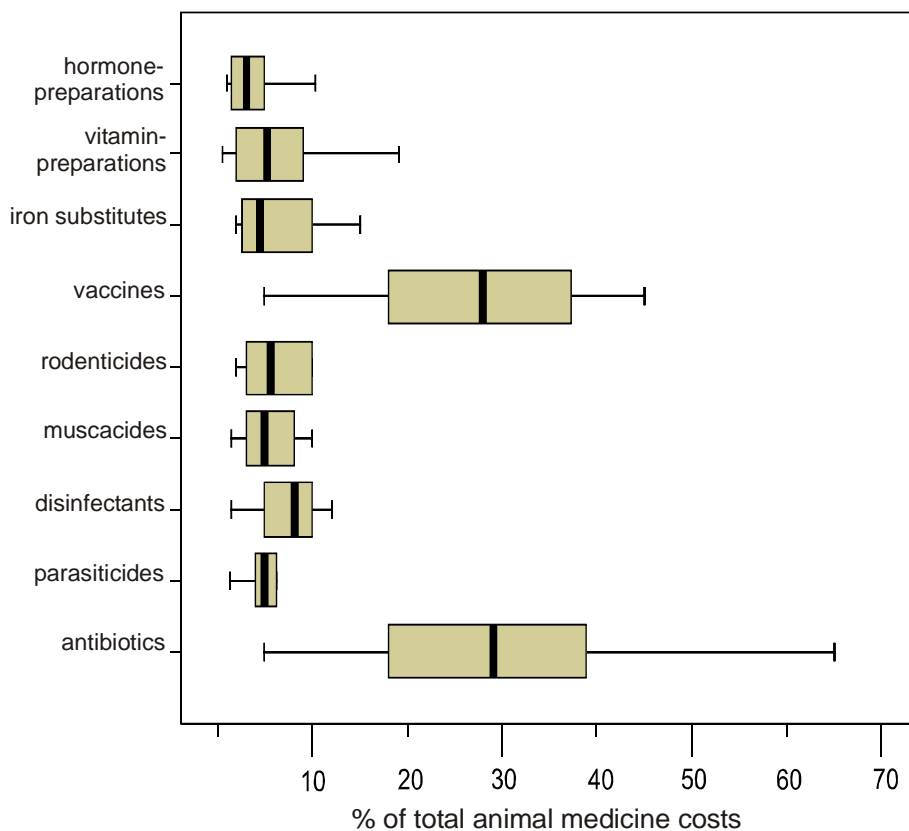


Table 7

Some features of attitudes and behaviour of veterinarians in choosing and using veterinary drugs

Statement	Positive answers (%)
I choose the antibiotics - at least partially by the resistance test	55
I choose the antibiotics by my former experiences	49
I choose the antibiotics on the basis of suggestions of advisors from pharmaceutical companies	61
When I choose a preparation, the most important factor is the price	59
When I choose a preparation, the origin of preparation (generic / original) has only a secondary importance	68
We often accomplish antibiotics/vaccine tests in our farm	14

The relatively low cost of medication per finishing pig could be explained by this thriftiness of veterinarians or owners (*Table 8*). However, this strategy seems to be a rather short-sighted one, because this could lead to a shift towards a more negative veterinary status of pig herds.

Table 8

Distribution of herds according to the cost of medication per finishing pig

Cost/finishing pig (Euro)	Distribution (%)
<2.0	53
2.1–4.0	31
4.1–6.0	9
>6.1	7

CONCLUSIONS

Based on our survey, it can be stated that the Hungarian pig-breeding is in a contradictory situation. There are large differences between the pig-breeding farms. As a consequence of agricultural transition and privatisation numerous new owners appeared in pig-breeding, often with any background knowledge on animal husbandry. These managers often try to follow a minimum cost strategy. As a consequence of that, they often neglect the veterinary considerations. That's why the further education and post-gradual training courses should play an outstanding role to improve the collaboration between specialists with different background.

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