COMPARATIVE PRODUCTION PERFORMANCES OF CERTAIN PIC GENOTYPES IN SWINE COMMERCIAL FARMING

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Abstract

Official statistics referring to the Romanian swine industry performances in 2008 are still far from the average production figures in the main European countries. This seems to be rather a paradox considering the large amount on investments made by most of the farms both in technology and genetic. The present paper is focusing on some production performance of PIC genotypes during 2008, in several large scale commercial farms. Comparisons are made either between genotypes in the same farm or as difference to the average Romanian performances reported in 2008. In order to keep maximum objectivity each trait considered was assessed by attaching to it an estimated economical value.

Key words: pig genotypes, PIC, production results

INTRODUCTION

Preliminary statistic data available for 2008 [4] reveals that Romania is following the Global trend in reducing national herd due to the increased costs of cereals and protein feed [1], [2]. The main cause of this decrease is the bankruptcy of those farms where the cost of production was very high, from various reasons, one of them being the genetic level of the breeding stock, combined with a low health status of the herd. The main objective of this research work was to evaluate the production differences of different PIC pigs' genotypes and compare them to the national average performances of some commercial farms. We gave as well a financial value estimate of these differences to underline the need to focus not only on modern genotypes but also on high quality management and technologies, these being instrumental elements to survive on such a competitive market [3].

MATERIAL AND METHODS

Performances related to reproductive traits and the percent of mortality in the farrowing house and nursery resulted from monthly reports of the farms we have studied. Reports were generated by computer software designed for swine farms management – Pigtales.

This program, conceived by a specialized company allows the surveillance of the farm, linked to reproduction activities and generating reports and graphs that help the farmer to have a clear image of the actual performances versus targeted ones.

The figures on mortality in finishing, ADG and FCR resulted from own farm statistics and some further calculations.

The performances were analyzed in 6 farms cumulating 6654 PIC sows – approximately 6% of the Romanian commercial herd, bi- or tri-linear hybrids, data being collected in 2008.

RESULTS AND DISCUSSION

In the present study we took into consideration the average number of born alive and weaned piglets. Also we looked at the farrowings /sow /year, this parameter being influenced more by the production

flow and farm management skills. Unfortunately this parameter could not be compared to the national average because this trait was not presented by the official statistics.

Table 1
Reproduction performances in the farms with PIC genetics and average values

| Reproduction results	Farm 1	Farm 2	Farm 3	Farm 4	Farm 5	Farm 6	Average
Farrowing rate (%)	78.99	78.94	81.8	88.8	81.56	85	82.52
Born alive/ sow	10.41	11.40	10.79	11.43	10.43	10.8	10.88
Born alive/ sow/ year	20.74	27.51	24.82	23.59	23.36	25.06	24.18
Weaned / sow	9.24	10.55	10.45	10.64	9.92	9.6	10.07
Weaned/ sow/ year	18.41	25.47	24.04	21.96	22.22	22.27	22.39
Farrows/ /sow /year	1.99	2.41	2.30	2.06	2.24	2.32	2.22

In Table 1 we present reproduction performances of PIC sows in all 6 analysed farms. If we look at the farrowing rate we will see significant differences between the farms but also compared to the average of 82, 5%. It should be noticed that only Farm 4 is getting closer (88, 8%) to the target of 90% which would be the optimum farrowing rate in a good farm. This parameter is influenced by the management (heat detection and AI). The nutrition and the environment might influence however, fecundity as well.

Regarding the born alive/sow/year we can see there are major differences between farms despite the fact the genotypes used are similar. The 7 piglets difference between the Farm 1 and 2 is mainly due to poor management of empty days (heat detection, accurate insemination and timely manner detection of returns) because the intensity of sows utilisation in Farm 2 is much higher then in Farm 1 and also improper farrowing house technology, feeding and staff skills in farrowing house.

Same significant differences (7.06) between the farms can be seen regarding the number of piglets weaned/sow/year, fact that suggests major deficiencies of assuring optimum conditions in the nursery as well.

Graph 1. Farrowing rate in the farms with PIC genetic
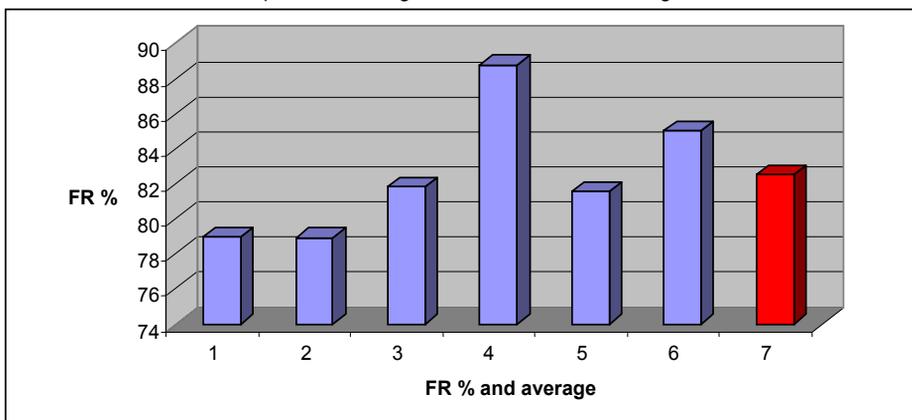
Differences in sow efficiency in terms of numbers of farrows/ year, reveals that this parameter is 2.41 in Farm 2 vs. 1.99 in Farm 1, revealing the fact that there are serious deficiencies in farm organization and quality control of the work in the Farm 1.

Table 2
Mortality in farm with PIC genotipes

Mortality (%)	Farm 1	Farm 2	Farm 3	Farm 4	Farm 5	Farm 6	Average
Pre-weaning mortality %	7.144	6.25	3.51	4.5	6.41	9.6	6.24
Mortality in nursery %	0.915	0.339	2.63	0.606	0.74	1.6	1.14
Mortality in finisher %	0.93	0.547	1.63	0.748	0.77	1.4	1.00
Total mortality %	8.989	7.136	7.77	5.854	7.92	12.6	8.38

Data in table 2 confirm that the managerial skills and farm environment have a dramatic influence on the production results of the analysed farms, considering that genetic combination in all farms was similar.

This would be the only explanation for the huge difference of over 100% in total mortality registered in Farm 4 by comparison to Farm 6.

Table 3
Comparison between some other parameters related to farms performances in the farms we have studied vs. national average and their economical value.

Parameters	RO (average)	PIC (average)	Difference	Value RON
Piglets alive/ sow/year	16.90	24.18	7.28	4695.6*
Weaned /sow/year	14.80	22.39	7.59	4895.5*
Total mortality (%)	12.90	8.38	-4.52	23.54**

* additional margin/ pig; ** additional margin/ sow

In Table 3 there are presented essential parameters for farms profitability that shows the superiority of PIC genotypes - average results from farms using PIC genetic - vs. the national average as it was published at the end of 2008. As it can be seen the difference is huge as so the statistical tool were not further needed. The difference of 7.28 pigs born alive/ year obtained form PIC sows do not need further comments. However the difference of 7.59 for the pigs weaned shows that in the Romanian farms there are major challenges related to their capacity to keep alive the piglets from birth to weaning. Also the difference in mortality 4.52%, between the farms with PIC genetics and the national average shows that the Romanian farms have a lot to improve and the investments in genetic, technology and management are absolutely crucial.

In graph 2 we show the average daily gain in nursery and finisher in farms with PIC genetics by comparison to national average.

Graph 2. Average Daily Gain in farms with PIC genetics vs. national average daily gain
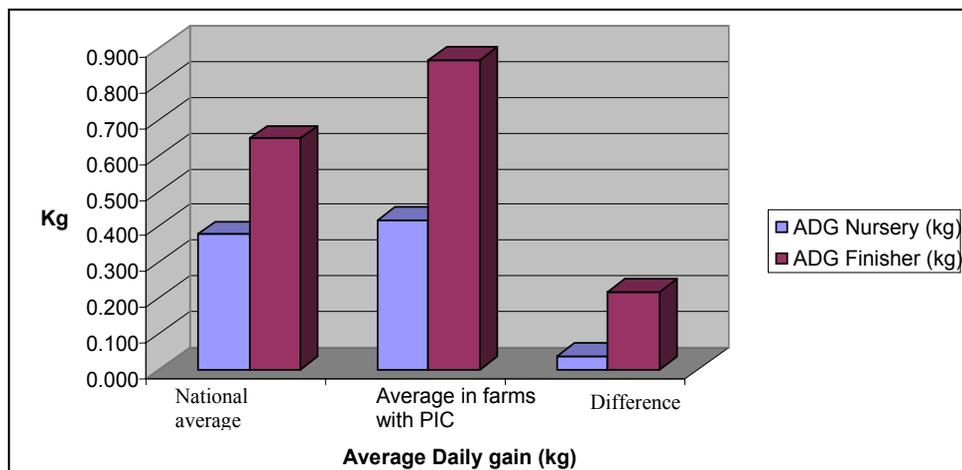

Table 4
Comparison of growing performances of farms with PIC genetic vs. national average and their economical values

Growing performances	RO (average)	PIC (average)	Difference	Value RON
Average Daily Gain – nursery (kg)	0.380	0.419	0.039	4.97**
Average Daily Gain – finisher (kg)	0.648	0.866	0.218	27.8**
FCR - nursery	2.40	2.01	-0.39	37.5**
FCR – finishing	3.20	2.90	-0.30	28.5**
Weight to slaughter (kg)	100.00	101.34	1.34	3989.5***
Meat */ sow / year (kg)	1465.0	2202.9	737.9	

* live weight meat sold ; ** additional margin / pig; *** additional margin / sow

Looking at the numbers Table 4 that shows the difference between feeding and growing efficiency in the farms with PIC genetic vs. national average we can conclude the followings:

a) The differences in the nursery are not very big, this meaning Romanian farmers pay a better attention to this department, but the differences in the finisher department are high at 33.6%. The clear conclusion is that beside the genetic potential of their animals, majority of the farms are behind with technology and nutrition improvements. The other aspect we can see is that the age to slaughter (cca. 100 kg) is still over 200 days in Romania while in majority of EU countries this value is under 180 days.

b) If we should comment the differences in FCR we can see that in farms with PIC genetics, the FCR is better with 0.3 kg (less feed consumed for each kg of meat) and this have a major impact on profitability.

c) The biggest difference between PIC genetics and national average is coming from the meat quantity delivered per sow per year. In 2008 the advantage was at 738 kg of meat this meaning in this moment an added margin of 3690 RON/ year/sow. At national level this difference would mean over 413.000 t of life meat produced in Romania/ year, and around 290.000 t of carcass (double of the quantity delivered to slaughterhouses between January and September 2008)

Graph 4. Production results of PIC genetic vs. national average
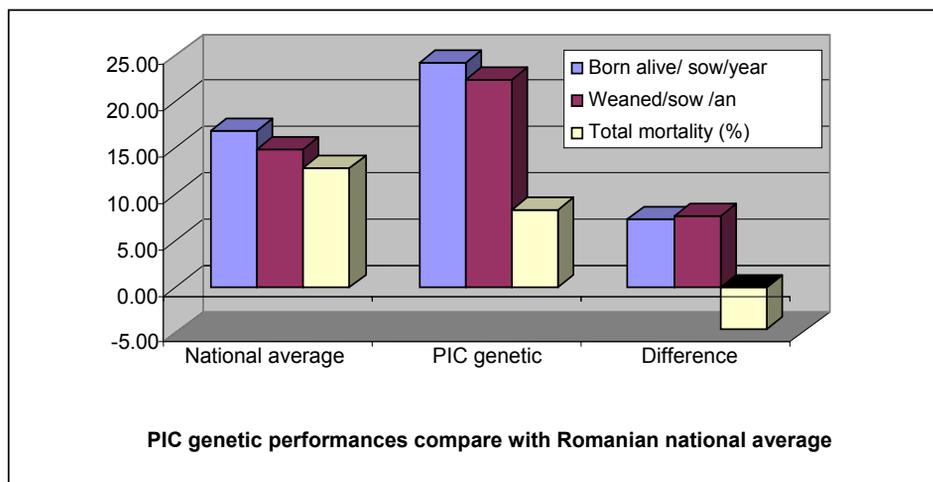
CONCLUSIONS

Pig industry in Romania is still behind in terms of results, when related to genetic potential available in some of the Romanian farms. This is a major disadvantage for Romania when compete with farmers from other European countries.

Comparisons made in this paper also proofs that there are major deficiencies in terms of technology and nutrition in all farm departments.

Last but not least the majority of data presented shows a lack of skilled workers, trained to limit or annihilate the differences in performance reported by Romanian farms.

REFERENCES

Journal articles
[2] Ladoşi I.: Producţia suină: optimism sau incertitudine, Revista Ferma, 2009, 19
[3] Ladoşi I: Livestock production – future challenges and available breeding solutions, Bulletin USAMV-CN, 65(1-2)/2008 (-) ISSN 1454-2382
Books
[1] ec.europa.eu/eurostat - 2008
[4] www.insse.ro