PigSys
NATIONAL PIG HERD PERFORMANCE REPORT 2010

Pig Development Department July 2011

teagasc
Agriculture and Food Development Authority

Pig Development Department Staff 2011

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Introduction

This report is the detailed analysis of the performance of herds that participated in the Teagasc PigSys recording system in 2010. The data available and included in this analysis is from a total of 103 herds representing over 64,000 sows or 42% of the national commercial sow herd. The average size of the herds included is 654 sows and ranged from less than 100 sows to over 2500 sows. The performance parameters in this report are the weighted (by herd size) average of the participating herds to take account of the large range in size of the participating herds

Herds participating in PigSys recording and engaging with the advisory support of the staff of the Teagasc Pig Development Department continue to demonstrate significant, year on year, improvements in technical performance. In 2010, improvements in the such Key Performance Indicators as Number of Pigs Produced per Sow per Year and Slaughter Weight continued while Growth Rates Weaning to Sale were broadly maintained at 2009 levels. Some of the apparent deterioration in Feed Conversion Weaning to Sale is related to the increased slaughter weights.

The report also includes detailed analysis of production costs in many of the participating herds. However, fuller participation in this aspect of the system may well provide a more accurate picture of actual costs across the sector. There are indications that those herds that routinely determine the full costs of production are the herds with the highest levels of technical efficiency. This would suggest that these herds have lower costs of production than herds which do not routinely check their costs of production. The Teagasc Pig Development Department would welcome more herds to participate in benchmarking using PigSys. Any herd that wishes to participate should contact any of the personnel listed under Knowledge Transfer on the inside front cover of this booklet.

Technical Performance 2010

Table 1: Sow Productivity 2010

Number of Herds	98
Average Herd Size	654
Average Number Maiden Gilts	84
Litters per Sow per Year	2.32
Average Weaning Age days	28
Empty Days per Litter	14
Number Born Alive per Litter	12.01
Number Born Dead per Litter	0.79
Piglet Mortality %	9.9
Weaner Mortality %	2.4
Finisher Mortality %	2.5
Number of Pigs Produced per Sow per Year	23.9
Sow Culling Rate per Annum %	46.3
Sow Mortality per Annum %	6.0
Feed per Sow per Year tonnes	1.24

Comment:This is the first year in which the Number of Pigs Born Alive per Litter exceeded 12. This, allied to 2.32 Litters per Sow per Year, resulted in an increase in the Number of Pigs Produced per Sow per Year to 23.9. This is a very significant increase from 23.3 pigs per sow in 2009.

Table 2: Growing Pig Performance 2010

Number of Herds	78
Average Weaning Weight kg	7.0
Average Live Weight at Sale kg	103.6
Average Dead Weight at Sale kg	78.9
Kill Out %	76.1
Lean Meat %	58.4
Daily Feed Intake g	1623
Average Daily Gain g	657
Feed Conversion	2.48

Comment: The average dead weight in recorded herds increased by 0.5 kg per pig compared to 2009. This is in line with the trend over more than a decade whereby average slaughter weights have increased by, on average, almost 1 kg per year.While there was no increase in growth rates from weaning to sale,there was a deterioration of 0.03 in the Feed Conversion from weaning to sale compared to 2009. Some of this is attributable to the increase in slaughter weights. The increased feed usage amounts to 2.9 kg per pig or 3550 tonnes feed for the 78 herds included. The average output of pig meat per sow per year in recorded herds was 1886kg. This amount of pig meat was produced using 6966kg feed or 3.69 kg feed per kg of pig meat. The Teagasc Pig Department have proposed a target for integrated herds to produce 2000kg of pig meat per sow per year from 7000 kg of feed.

Table 3: Weaner Performance 2010

Number of Herds	98
Average Weaning Weight kg	7.0
Average Transfer / Sale weight kg	36.7
Creep Feed per Weaner kg	3.7
Link Feed per Weaner kg	5.9
Weaner Feed per Weaner kg	45.2
Total Feed per Weaner kg	54.8
Average Daily Feed Intake g	846
Average Daily Gain g	464
Feed Conversion	1.83

Comment: On most farms the weight of weaners transferred to finishing accommodation is estimated. This means that the accuracy of the weaner performance data is not considered to be very reliable.There has been a significant increase in the total feed fed to weaners compared to 2009. A reduction in Link feed fed per pig has been offset by increases in Creep and Weaner feed usage.The apparent deterioration in Feed Conversion could be due to an underestimation in transfer weights although weaner transfer weights were estimated to be 0.5 kg higher than in 2009.

Table 4: Finisher Performance 2010

Number of Herds	78
Average Weaner Transfer Weight kg	37.3
Average Live Weight at Sale kg	103.6
Average Dead Weight at Sale kg	78.9
Kill Out %	76.1
Lean Meat %	58.4
Average Daily Feed Intake g	2286
Average Daily Gain g	831
Feed Conversion	2.76

Comment: The same qualification applies to finisher performance data as to weaner performance data because weaner transfer weights are usually estimated on pig units. Both finisher Growth Rates and Feed Conversion are similar to those in 2009.Pig slaughter weights continued to increase – up 0.5 kg compared to 2009. Lean meat percentage data is from a limited number of herds as not all slaughter plants provide that information to producers.

Total feed per pig from weaning was 239.4 kg consisting of:

Creep	3.7
Link	5.9
Weaner	45.2
Finisher	184.6

Production Costs 2010

Table 5: Feed & Common Costs

Cost	Cost per kg dead c	No. Herds
Feed	90.4	75
Common		
Healthcare	5.2	78
Heat, Power, Light	4.3	76
Transport	1.0	60
Artificial Insemination	1.6	80
Manure	2.3	49
Labour / Management	13.6	75
Repairs	2.3	71
Administration	0.6	69
Environment	1.1	53
Insurance	0.6	68
Stock Depreciation	0.3	86
Miscellaneous	1.6	68
Total Common Costs	34.5	
Total	124.9	

Comment: Most of the common costs are very similar to 2009. Healthcare costs were up by 0.7c to 5.2c per kg dead weight. Energy cost also increased by 0.5c per kg dead weight.

Table 6: Herd Specific Costs

Cost	Cost per kg dead c	No. Herds
Herd Specific		
Interest	1.7	27
Building Depreciation	3.8	31
Total Herd Specific		
Costs	5.5	

Too few farms include data on Interest payments and Building Depreciation to obtain a very reliable indication of Herd Specific Costs. The cost of production per kg as calculated is limited in the absence of more data on these two costs. More importantly, too few herds are having their actual cost of production calculated. A building depreciation cost of 3.8c per kg corresponds to that on a building to the value of €1000 based on 55% structure depreciated over 20 years and 45% equipment depreciated over 10 years. Low building depreciation costs reflect a lack of capital investment in many units over the last decade or so.

Table 7: Total Cost of Production 2010

Cost	Cost per kg dead c
Feed	90.4
Common	34.5
Herd Specific	5.5
Total	130.4

Substantially more farms provide information on Loan Repayments. With a repayment (capital + interest) of 8c per kg pig producers needed 132.9 c per kg dead weight to cover all payments in 2010. Excluding feed, producers were required to meet payments of 42.5c per kg dead weight.

Top 25% of Herds

Table 8: Selected on the basis of the Number of Pigs Produced per Sow per Year

	Top 25%	Average
Number of Herds	26	98
Average Herd Size	663	654
No. Pigs Produced per Sow per Year	26.1	23.9
Litters per Sow per Year	2.36	2.32
Average Weaning age days	28	28
Empty Days per Litter	12	14
No. Born Alive per Litter	12.45	12.01
No. Born Dead per Litter	0.78	0.79
Piglet Mortality %	8.3	9.9
Weaner Mortality %	1.6	2.4
Finisher Mortality %	1.7	2.5
Sow Culling Rate per Year %	45.0	46.3
Sow Mortality per Year %	5.2	6.0
Feed per Sow per Year tonnes	1.28	1.24

Comment: The herds in the top quartile of herds selected on the basis of the number of pigs produced per sow per year produce 2.2 pigs per sow per year more than the average of all herds. The herds in the top quartile produce 3 pigs per sow per year more than the remaining 75% of recorded herds. These extra 3 pigs produced per sow per year by the herds in the top quartile would have increased the margin over feed per sow per year by about €145. Each extra pig produced would have increased the margin over feed per sow by €48 if pig sale weights were maintained

All the herds in the top quartile produce at least 25 pigs per sow per year. These top performing herds perform better in the various factors that determine sow productivity

- litters per sow per year,
- number born alive per litter
- mortality at all stages of production.

The herds in the top quartile farrowed 0.04 litters per sow per year compared to the average of all herds. On a 650 sow unit this translates into an extra 26 farrowings per year.The herds in the top quartile of recorded herds sell 11.04 pigs per litter compared with 10.3 pigs per litter average for all herds or just 10.02 pigs for the other 75% of herds. This is due not alone on the higher number born alive per litter but also on lower mortality at all stages of production.It is significant that the Feed per Sow per Year, adjusted to take account of Maiden Gilt numbers, is higher in the Top 25% herds compared with that in all recorded herds.

Table 9: Selected on Feed Conversion Weaning to Sale

	Top 25%	Average
Number of Herds	20	78
Average Herd Size	508	561
Average Weaning Weight kg	7.1	7.0
Average Live Weight at Sale kg	103.3	103.6
Average Dead Weight at Sale kg	78.4	78.9
Kill Out %	75.9	76.1
Average Daily Feed Intake g	1549	1623
Average Daily Gain g	694	657
Feed Conversion	2.23	2.48
Average Feed Price per tonne €	241.45	244.23
Feed per Pig Weaning to Sale kg		
Creep	5.0	3.7
Link	5.5	5.9
Weaner	43.5	45.2
Finisher	161.9	184.6
Total	215.9	239.4

Comment: The top quartile of herds selected on the basis of Feed Conversion Weaning to Sale use 23.5 kg feed less per pig than the average of all recorded herds. When compared with the remaining 75% of recorded herds the difference in feed used per pig is 32 kg. All the herds in the top quartile have a Feed Conversion Weaning to Sale of 2.36 or better. Based on an average price for finisher feed alone in 2010 of €222.65 per tonne, this difference of 32 kg feed represents €7.12 per pig or 9c per kg dead weight in feed cost .In practice, this difference is likely to be somewhat greater when account is taken of the different diets fed from weaning and their cost per tonne.The top quartile herds have significantly higher growth rates from weaning (+37 g per day) but there is only a small difference in slaughter weights.The top quartile herds used more creep feed but used less link and weaner feed per pig. Creep feed per pig was 3.3 kg per pig on average in the herds not in the top quartile while link feed was 6.0kg per pig. The top quartile herds used 2.2 kg less weaner feed per pig than the remaining recorded herds (45.7 kg).

Table 10: Selected on the basis of the Number of Pigs Produced per Sow per Year

	Top 10%	Average
No Herds	10	98
Average Herd Size	581	654
No. Pigs Produce per Sow per Year	27.5	23.9
Litters per Sow per Year	2.40	2.32
Average Weaning Age: days	28	28
Empty Days per Litter	10	14
No. Born Live per Litter	12.91	12.01
No. Born dead per Litter	0.79	0.79
Piglet Mortality %	7.4	9.9
Weaner Mortality %	2.0	2.4
Finisher Mortality %	2.1	2.5
Sow Culling Rate %	41.9	46.3
Sow Mortality	5.1	6.0
Feed per Sow per Year tonnes	1.37	1.24

Comment: The top 10% of recorded herds selected on the basis of the Number of Pigs Produced per Sow per Year produced, on average, 3.6 pigs more than the average for all recorded herds.Compared with the other 90% of recorded herds which produced,on average, 23.5 pigs per sow per year, these herds produced 4 pigs more per sow per year.

These top performing herds had
- More litters per sow per year: 0.08
- Higher number of pigs born alive per litter: 0.9
- Lower mortality among piglets, weaners, finisher: 3.3%
- Lower annual sow replacement rate: 5.3%

These top 10% of herds reported significantly higher annual usage of sow feed per sow suggesting a strong link between overall sow nutrition / feeding levels and sow productivity.The average carcass weight of the pigs sold in these high producing herds was 80.1 kg. This means that these herds, despite the very high sow productivity, were able to maintain sale weights at a satisfactory level.As a result of maintaining sale weights, the value of each extra pig produced in margin over feed was €48—an advantage of €192 per sow per year over the average of the remaining recorded sows.

Table 11: Top 10% of herds selected on the basis of Feed

	Top 10%	Average
No. Herds	10	78
Average Herd Size	516	561
Average Weaning Weight kg	7.3	7.0
Average Live Weight at Sale kg	102.7	103.6
Average Dead Weight at Sale kg	78.0	78.9
Kill Out %	76.0	76.1
Average Daily Feed Intake g	1455	1623
Average Daily Gain g	681	657
Feed Conversion	2.14	2.48
Average Feed price per tonne €	240.08	244.23
Feed per Pig Weaning to Sale kg		
Creep	6.9	3.7
Link	5.7	5.9
Weaner	41.3	45.2
Finisher	152.1	184.6
Total	206.0	239.4

Comment: The Top 10% of recorded herds selected on the basis of Feed Conversion Weaning to Sale have slaughter weights monly slightly lower than the average of all recorded herds. Despite this the Feed Conversion Weaning to Sale (2.14) is considerably better than the average for all recorded herds (2.48). Over the weight range 7-103 kg this difference amounts to 32.6 kg feed per pig. Based on finisher feed price of €214 per tonne for 2010 this amounts to €6.98 per pig or 9c per kg dead weight. The pigs in the herds in the Top 10% had a Growth Rate Weaning to Sale 24g per day higher tan the average of all herds.While they used more creep feed per pig (2.2kg) they used slightly less Link (0.2kg) and significantly less Weaner feed (3.9kg) per pig.

Trends in Herd Performance

Table 12: Pig Meat Produced per Sow per Year

	2006	2007	2008	2009	2010
No Pigs Produced per Sow per Year	22.2	22.5	23.4	23.3	23.9
Average Slaughter Weight kg	74.0	74.9	78.9	78.4	78.9
Pig Meat Produced per Sow per Year kg	1643	1685	1846	1827	1886

Comment: The quantity of pig meat produced per sow per year has increased by 15% since 2006 due to a combination of increased number of pigs produced per sow per year (+7.7%) and increased average pig carcass weights (+6.6%). A target of 2000kg of pig meat produced per sow per year for every integrated unit has been proposed by the Teagasc Pig Department. This is based on producing 25 pigs per sow per year with an average carcass weight of 80kg.

Table 13: Growing Pig Performance

	2006	2007	2008	2009	2010
Average Daily Gain g	591	615	657	660	657
Feed Conversion	2.47	2.44	2.48	2.45	2.48
Sale Weight Live kg	97.4	98.6	103.6	102.9	103.6

Comment: Since 2006 growth rates weaning to slaughter have increased by 11%. Feed Conversion weaning to slaughter has fluctuated but has improved when the higher pig slaughter weights are taken into account.

Trends in Production Costs

Table 14: Production Costs per kg Dead Weight c

	2006	2007	2008	2009	2010
Feed	79.6	94.3	106.7	91.9	90.4
Common	36.8	37.8	37.0	32.9	34.5
Herd Specific	6.6	8.5	9.3	7.0	5.5
Total	123.0	140.6	153.0	131.8	130.4

Comment: Feed normally represents about 70% of production costs as reported in PigSys recorded herds. Feed Costs per kg fluctuate in line with the cost of feed ingredients which determines the price of pig feed.Total non-feed costs recorded have declined to 39.9 c per kg deadweight in 2009 and 40.0 c in 2010. The reductions from higher nonfeed costs of 44-46c per kg is attributable in part, at least, to the increased sow productivity and increased pig slaughter weights in recent years.

Table 15: Pig Prices, Production Costs and Margins per kg Dead Weight c

	2006	2007	2008	2009	2010
Finisher Pig Price	145.0	140.5	151.9	144.0	140.3
Production Costs	123.0	140.6	153.0	131.8	130.4
Margin	22.0	-0.1	-1.1	8.2	9.9

Comment: The margin over production costs as recorded in herds participating in PigSys over the last 5 years has fluctuated widely due mainly to wide variation from year to year in feed costs and also to the variation in pig prices.

Benchmarking

Table 16: Sow Productivity

	Average	Top 25%	My Herd
Average Herd Size	654	663	
Litters per Sow per Year	2.32	2.36	
Empty days per litter	14	12	
Average Weaning Age days	28	28	
No. Born Alive per Litter	12.01	12.45	
No. Born Dead per Litter	0.79	0.78	
Mortality % Piglet	9.9	8.3	
Weaner	2.4	1.6	
Finisher	2.5	1.7	
No. Pigs Produced per Sow per Year	23.9	26.1	
Sow Culling Rate %	46.3	45.0	
Sow Mortality %	6.0	5.2	
Adjusted Feed per Sow per Year tonnes	1.24	1.24	

Table 17: Growing Pig Performance

	Average	Top 25%	My Herd
Average Weaning Weight kg	7.0	7.1	
Average Live Weight at Sale kg	103.6	103.3	
Average Dead Weight at Sale kg	78.9	78.4	
Kill Out %	76.1	75.9	
Daily Feed Intake g	1623	1549	
Average Daily Gain g	657	694	
Feed Conversion	2.48	2.23	
Average Feed Price per Tonne €	244.23	241.45	

Notes:

Table 18: Production Costs and Pig Price c per kg Dead Weight

	Average	My herd
Feed	90.4	
Common Healthcare	5.2	
Heat, Power, Light	4.3	
Transport	1.0	
AI	1.6	
Manure	2.3	
Miscellaneous	1.6	
Labour	13.6	
Repairs	2.3	
Office	0.6	
Environment	1.1	
Insurance	0.6	
Stock Depreciation	0.3	
Sub-Total	34.5	
Herd Specific Costs		
Interest	1.7	
Building Depreciation	3.8	
Sub-Total	5.5	
TOTAL	130.4	
Finisher Pig Price	140.3	

Herd Size and Sow Productivity

Table 19: Herd Size and its Effect on Sow Productivity

Quartile	1	2	3	4
No Herds	25	26	26	26
Average Herd Size	197	391	627	1353
No. Pigs Produced per Sow per Year	23.1	23.6	24.3	24.0
Litters per Sow per Year	2.29	2.31	2.36	2.32
No. Born Alive per Litter	11.87	11.95	11.90	12.11
No. Born Dead per Litter	0.87	0.80	0.74	0.81
Piglet Mortality %	10.6	10.6	9.1	10.2
Weaner Mortality %	2.3	2.4	2.3	2.4
Finisher Mortality %	2.6	2.3	2.4	2.6
Sow Culling %	40.7	45.5	45.7	46.3
Sow Mortality %	6.0	5.9	5.3	6.3
Feed per Sow per Year tonnes	1.22	1.22	1.23	1.28

Comment: While herds of above average herd size produce more pigs per sow per year than smaller herds the herds with the highest sow productivity are those in the second largest quartile ofherds. This is due to having more litters per sow per year and lower mortality. Feed usage per sow is significantly higher in the largest herds.

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