

# ANALYSIS OF PRODUCTIVITY IN SELECTED DANBRED HERDS - 2020

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## Main conclusion

Analysis of DanBred herds in Denmark revealed high productivity in all categories. The top 5 sow farms achieved 40.9 pigs weaned/sow/year.

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## Abstract

This analysis showed that productivity in DanBred herds was level with the national average [1]. However, due to the low number of herds represented in the analysis, the estimated KPIs for weaners and finishers are somewhat less certain. Nevertheless, analyses of the top 5 herds demonstrated a very high level of productivity: the top 5 sow herds weaned almost 41 pigs/sow/year in average with a farrowing rate of 91.6, and the average DanBred finisher herd achieved a daily gain of more than 1,000 g/day.

## Background

This analysis of productivity in DanBred herds in Denmark outlines the productivity among the top sow-, weaner- and finisher farms.

## Materials and methods

Data included in of this analysis originates from the data used in the National Average Productivity of Danish Pig Farms 2020 [1] and from lists of DanBred herds supplied by DanBred P/S. The data material is based on a subset of the herds identified as DanBred customers in 2020. Some of the herds in the original data material were anonymized and could therefore not be confirmed as DanBred herds.

Data validation and calculation of KPIs are based on the method used in the National Average Productivity of Danish Pig Farms 2020 [1]. Medians are the best method for describing average productivity KPIs when random samples are few and when very high or very low KPIs in individual herds could therefore heavily impact the average KPIs. Consequently, KPIs are determined as medians when fewer than 150 herds are represented and as weighted average according to herd size when more than 150 herds are represented. As the number of herds included in 2020 differs from previous years, some KPIs are based on a different method than previously. Appendix provides an outline of KPIs comparable with 2019 and 2018. Average KPIs in top 5 herds are calculated as simple average with no weighting relative to herd size or production scope.

## Results and discussion

The data material comprised very few weaner herds and finisher herds and a fairly low number of sow herds compared with the estimated DanBred market share. Out of a total of 821 sow herds, 550 weaner herds and 859 finisher herds, 304 sow herds (37%), 160 weaner herds (29%) and 62 finisher herds (7%) were identified as DanBred customers. These numbers are attributed partly to the fact that the data material included anonymized herds and partly to the fact that it is far more difficult to establish the genetics used on an annual basis in weaner herds and finisher herds. The percentage of herds identified as DanBred herds is thereby not an indication of market shares in Danish pig production.

### Productivity – sows

Table 1 shows the productivity of sow herds as weighted average of all herds and as top 5 of selected herds. Results show that top 5 herds weaned 6.5 more pigs per sow/year than the average. KPI for pigs weaned/sow/year is numerically 0.3 higher than in 2019 [2], and the average in top 5 herds was 0.7 higher in 2020 compared with 2019. Note that more than 300 sow herds are included and this increased the certainty of the 2020 KPI estimates compared with 2019.

**Table 1.** Production level in all sow herds and average for 5 sow herds selected according to pigs weaned/sow/year.

	All (weighted average)	Top 5 Average
Herds included	304	5
Herds with feed records	277	5
<b>KPI</b>		
Sows/year, head	883	804
Feed units, sow/year	1515	1602
<b>Litter results</b>		
First parity litters, %	22.8	22.1
Liveborn/litter, head	18.0	19.4
Stillborn/litter, head	1.9	1.9
Weaned/litter, head	15.3	17.8
Lactation period, days	31	31
Weaning weight, kg	6.3	6.6
Pre-weaning mortality, %	15.0	8.5
Total piglet mortality, %	23.0	16.8
<b>Reproduction</b>		
Non-productive days/litter	14.2	10.6
Weaning to first service, days	5.9	5.2
Return rate, %	5.6	3.2
Farrowing rate, %	87.7	91.6
Weaned pigs/sow/year, head	34.4	40.9
Litters/sow/year	2.25	2.30

### Productivity – weaned pigs

In DanBred weaner herds, the analysis showed that the level of daily gain is comparable to that of the entire Danish pig industry [1]. Productivity among selected top 5 herds (with the highest daily gain) was 66 g higher than the average of all herds (table 2). KPIs in 2020 are determined as weighted average and is therefore not comparable with previous years when medians were used due to the low number of herds included.

**Table 2.** Production level, all weaner herds and average of 5 herds selected according to a high daily gain.

	All (weighted average)	Top 5 Average
Herds included (total in data material)	160	5
Herds with feed records	144	5
<b>KPI</b>		
Pigs produced/year, head	24,828	38,388
Daily gain, g	458	524
Reference daily gain (7-30 kg), g <sup>1</sup>	464	528
Feed conversion ratio (FCR) /kg gain, feed units	1.80	1.79
Reference FCR (7-30 kg), feed units/kg gain <sup>1</sup>	1.80	1.78
Mortality, %	3.8	2.7
<b>Other information</b>		
Initial weight, kg	6.3	6.2
Weight per sold pig, kg	30.8	31.8

<sup>1</sup> Reference FCR and reference daily gain adjust the averages shown to standard weight interval 7-30 kg, thereby allowing for comparison between years. For more information, see previous publications [3].

### Productivity – finishers

Analysis of productivity in finisher herds revealed a daily gain of 1,007 g determined as median of all herds, which is in an increase of 33 g compared with 2019. Productivity among selected top 5 herds (with the highest daily gain) averaged 1,087 g daily gain and an FCR of 2.49 feed units per kg gain, which is level with top 5 in 2019. Note that KPIs for 2018 and 2019 were somewhat uncertain due to the low number of herds included.

**Table 3.** Production level in all finisher herds and average of 5 herds selected according to a high daily gain.

	All (medians)	Top 5 Average
Herds included	62	5
Herds with feed records	48	5
<b>KPI</b>		
Pigs produced/year, head	6,461	10,847
Daily gain, g	1,007	1,087
Reference daily gain (30-115 kg), g <sup>1</sup>	1,012	1,086
Feed intake/pig/day, feed units	2.75	2.71
Feed conversion ratio/kg gain, feed units	2.67	2.49
Reference FCR (30-115 kg), feed units/kg gain <sup>1</sup>	2.63	2.43
<b>Other information</b>		
Initial weight, kg	32.6	30.5
Carcass weight, kg (average)	90.1	92.8
Gain per pig produced, kg	87.0	91.0
Lean meat % (average)	61.6	62.6
Rejected, %	0.1	0.1
Mortality, %	3.6	3.0

<sup>1</sup> Reference FCR and reference daily gain adjust the averages shown to standard weight interval 30-115 kg, thereby allowing for comparison between years. For more information, see previous publications [3].

## Conclusion

This report presented the estimates of productivity in sow, weaner and finisher herds identified as DanBred. KPIs for weaners and finishers are slightly uncertain due to the low number of herds confirmed as DanBred herds in the analysis. Compared with 2019, results demonstrated progress in pigs weaned/sow and in daily gain for weaners as well as finishers. The average of all top 5 sow herds weaned more than 40 pigs/sow/year.

## References

- [1] Hansen, C. (2021): Landsgennemsnit for produktivitet i svineproduktionen 2019. Notat nr. 2115, SEGES Svineproduktion.
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- [3] Sloth, N. M. & Bertelsen, E. (2007): Rapport over P-rapporternes resultater oktober 2007. Notat nr. 0745, Dansk Svineproduktion.
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## Participants

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## Appendix

Appendix presents KPIs for 2020, 2019 and 2018 (all medians) calculated according to the same method thereby allowing for comparison between different years, which is a novel feature in the analysis of DanBred herds. Tables 4,5 and 6 below thus illustrate the development in the production of sows, weaners and finishers.

**Table 4.** Production level in all sow herds, 2020, 2019 and 2018 [2,4]. All KPIs calculated as medians.

	2020	2019	2018
Herds included	304	221	152
Herds with feed records	277	203	142
<b>KPI</b>			
Sows/year, head	720	762	747
Feed units/sow/year	1,527	1,509	1,524
<b>Litter results</b>			
First parity litters, %	21.9	21.6	22.6
Liveborn/litter, head	18.0	17.7	17.4
Stillborn/litter, head	1.9	2.0	1.8
Weaned/litter, head	15.2	15.0	15.0
Lactation period, days	31	30	31
Weight at weaning, kg	6.2	6.2	6.4
Pre-weaning mortality, %	15.3	14.9	14.1
Total piglet mortality, %	23.2	23.5	22.4
<b>Reproduction</b>			
Non-productive days/litter	13.4	13.0	12.8
Weaning to first service, days	5.7	5.7	5.6
Return rate, %	5.4	5.0	4.8
Farrowing rate, %	87.8	89.1	89.2
Weaned pigs/sow/year, head	34.2	33.9	33.8
Litters/sow/year	2.25	2.27	2.27

**Table 5.** Production level in all weaner herds, 2020, 2019 and 2018 [2,4]. All KPIs calculated as medians.

	2020	2019	2018
Herds included (total in data material)	160	112	88
Herds with feed records	144	97	82
<b>KPI</b>			
Pigs produced/year, head	19,567	19,529	18,807
Daily gain, g	454	449	451
Reference daily gain (7-30 kg), g <sup>1</sup>	460	460	460
Feed conversion ratio/kg gain, feed units	1.80	1.83	1.87
Reference FCR (7-30 kg), Feed units/kg gain <sup>1</sup>	1.79	1.84	1.86
Mortality, %	3.5	3.2	3.1
<b>Other information</b>			
Initial weight, kg	6.2	6.3	6.4
Weight/pig sold, kg	30.8	30.7	30.9

<sup>1</sup> Reference FCR and reference daily gain adjust the averages shown to standard weight interval 7-30 kg, thereby allowing for comparison between years. For more information, see previous publications [3].

**Table 6.** Production level in all finisher herds, 2020, 2019 and 2018 [2,4]. All KPIs calculated as medians.

	2020	2019	2018
Herds included	62	61	35
Herds with feed records	48	53	28
<b>KPI</b>			
Pigs produced/year, head	6,461	9,091	8,292
Daily gain, g	1,007	974	945
Reference daily gain (30-115 kg), g <sup>1</sup>	1,012	966	934
Feed intake/pig/day, feed units	2.75	2.66	2.62
Feed conversion/kg gain, feed units	2.67	2.72	2.73
Reference FCR (30-115 kg), feed units/kg gain <sup>1</sup>	2.63	2.71	2.73
<b>Other information</b>			
Initial weight, kg	32.6	31.8	31.0
Carcass weight, kg (average)	90.1	86.9	85.6
Gain/pig produced, kg	87.0	82.2	79.3
Lean meat % (average)	61.6	61.4	61.1
Rejected, %	0.1	0.1	0.2
Mortality, %	3.6	3.7	3.4

<sup>1</sup> Reference FCR and reference daily gain adjust the averages shown to standard weight interval 30-115 kg, thereby allowing for comparison between years. For more information, see previous publications [3].



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