Technical and economic study on heavier market pigs (140 kg)

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Introduction

For many years, the slaughter weight of market hogs has been increasing gradually and this trend will likely continue. For slaughter plants, this increase in weight allows to market more meat without increasing the number of hogs slaughtered. Several questions are raised by these changes for producers, however. What are the feed conversion and feed costs for these additional kilograms? What happens to meat quality? Is this trend of slaughtering pigs at heavier weights viable in the situation where feed costs tend to rise?

Main objective

To compare the effect of slaughtering pigs at a heavier weight (140 kg *vs.* 120 kg) on animal performance and farm profitability.

Materials and Methods

Two trials were carried out at the Deschambault swine testing station, each time using two groups of pigs with a 21-day age difference at the start of the tests. Younger animals (a total of 332 animals) were raised to a standard 120 kg live weight, while older animals (a total of 340 animals) reached 140 kg of live weight.

Performance results from the trials were used to generate growth, feed intake, backfat and lean deposition curves. These allowed to update the parameters of a decision support tool of the CDPQ, "$imule-lot." This free decision support tool is available at www.cdpq.ca. Using "$imule-lot," an economic analysis was carried out on increasing the slaughter weight from 120 kg to 140 kg (live weight) in a commercial setting, taking into consideration different feed costs and pig prices. Subsequently, changes in the sales over feed cost margins were estimated, which allowed for the identification of cut-off points.

Implications

In summary, when comparing 120 kg pigs and 140 kg pigs, the higher the feed price the more profitable it is to produce 120 kg pigs. Furthermore, when pig prices are higher, lighter pigs (120 kg) are still more profitable, unless the target weight of 140 kg can be reached quickly enough so that the number of kilograms per pig-place annually is not reduced significantly.

For smaller weight gain increments (like 5 kg), it is often more profitable for producers to finish their hogs at a heavier weight, unless pork prices are very low and/or feed prices very high.

Results and discussion

Performances

Results showed very little differences with regards to meat quality between both groups. Carcass quality (lean yield, carcass yield, etc.) and live performance traits (average daily gain, feed conversion ratio (FCR), etc.) differed considerably between groups.

Sales over feed cost margins for 120 kg pigs vs 140 kg pigs

Based on parameters and production environment defined as part of this project, producing pigs to a 140 kg live weight in 22 weeks is profitable as long as the price of finishing feed remains below $330/ton (cut-off point). From this point on, the economic advantage is transferred to the 120 kg scenario, where the target weight can be reached in only 18 weeks (see Figure 1). When feed price is set at $355/ton and pig prices fluctuate between $130 and $172/100 kg, the 120 kg scenario has an absolute economic advantage over the 140 kg scenario. However, as pig prices increase, a gradually smaller margin difference is observed between both scenarios.

The 140 kg scenario is penalized by having less kilograms produced per year per pig-place (-12.2 kg) since pigs are kept longer. In order for the 140 kg slaughter weight scenario to be more profitable than the 120 kg scenario, it is necessary for the rearing period to be shorter than 22 weeks. This way, the number of kilograms produced annually per pig-place would not drop as much.

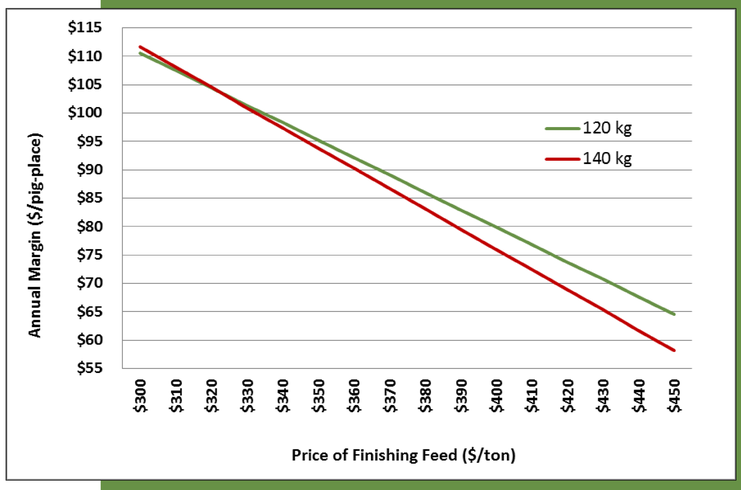

Figure 1 Change in annual margin (income – feed – piglet cost) per pig-place as a function of the price of feed used in the finishing phase and a fixed hog price at $170 /100 kg, index 100.

Price of finishing feed ($/ton)	Pork price ($/100 kg)										
	130	135	140	145	150	155	160	165	170	175	180
330	0.33	0.56	0.80	1.03	1.27	1.51	1.74	1.98	2.21	2.45	2.69
340	0.15	0.39	0.62	0.86	1.09	1.33	1.57	1.80	2.04	2.27	2.51
350	-0.02	0.21	0.45	0.68	0.92	1.15	1.39	1.63	1.86	2.10	2.33
360	-0.20	0.04	0.27	0.51	0.74	0.98	1.21	1.45	1.69	1.92	2.16
370	-0.38	-0.14	0.09	0.33	0.57	0.80	1.04	1.27	1.51	1.75	1.98
380	-0.55	-0.32	-0.08	0.15	0.39	0.63	0.86	1.10	1.33	1.57	1.81
390	-0.73	-0.49	-0.26	-0.02	0.21	0.45	0.69	0.92	1.16	1.39	1.63
400	-0.90	-0.67	-0.43	-0.20	0.04	0.27	0.51	0.75	0.98	1.22	1.45

Figure 2 Gain or loss on margin after feed costs ($/pig) incurred from raising pigs from 120 kg to 125 kg live weight

Margins with smaller weight increments

A sensitivity analysis was also made on the marginal profitability of adding five kilograms for different scenarios between 120 and 140 kg live weight, while only considering feed costs and additional income (Figure 2 showing results for the scenario 120 kg to 125 kg). Such change in slaughter weight would have a lesser impact on production length than going from 120 kg to 140 kg. This analysis showed that heavier pigs (+5 kg) are usually more profitable, especially when pig prices are high or when finishing feed prices are relatively low.

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