

Project on Pork Marbling in collaboration with Ontario Pork (Investigating a Pork Grading System)

Executive Summary

In 2007, Ontario Pork, in conjunction with its provincial partners, embarked on a pork marbling project to determine if consumers were interested in a more highly marbled pork product. Research from 2007 indicated that consumers did in fact prefer more highly marbled pork over less marbled. On a scale of 1 to 10, one being the lowest level of marbling and 10 being the highest level, consumers preferred a marbling level of 4 to 6, when cooked. It was then determined that research was required to determine the breed, feed and management practices required to attain the level of marbling that consumers indicated a preference for in 2007. This research was the catalyst for the project in 2008 and 2009. The objectives of the 'Pork Grading System' project were to:

- 1) Develop a pork grading system that provides consumers with information to base purchase decisions on
- 2) Develop a pork grading system that offers producers an alternative to growing commodity pork
- 3) Develop a pork grading system that offers processors, retailers and foodservice operators a point of difference for branding/marketing purposes

In order to attain these objectives, research had to be successful in developing a hog that was more highly marbled and more palatable to consumers. CDPQ (Centre de développement du porc du Québec Inc.) in partnership with CCSI (Canadian Centre for Swine Improvement) carried out this research project and in May, 2009 the test hogs were slaughtered.

The piglets were chosen from purebred Durocs and crossbreeds for their marbling qualities and the hogs were fed a high energy diet at the end of the test period. Test results showed that the live ultrasound measurements and the NPPC score ranged from 2 to 6 at 149 days. Of the 120 pigs that entered the test station, 79 pigs were selected for meat quality based on the live ultrasound measurements. As a result, these hogs were slaughtered at an age of 179 days, which is typical, however the slaughter weight was substantially higher than typical commercial hogs (142 kg versus the average 114 kg), resulting in larger and heavier primals. (See Appendix A for full 'Field Trial Report'). These selected primals were shipped to Quality Meat Packers in Ontario, where yield tests were conducted and product was prepared for the consumer taste tests. Visual inspection of the loins showed a marked increase in marbling in the eye of the loin. From the researchers' perspective, their objective to increase marbling in the hogs was attained, as most of the loins shipped to Quality Meat Packers were in the 3 to 5 range on the NPPC marbling score. Typical commercial hogs in Canada are in the 1 to 2 range on the marbling scale. The size of the primals however is considered to be problematic from a processing perspective. Most equipment is not designed to handle primals of this size and many retailers and foodservice operators are not interested in larger primals, as they increase the unit price point.

Two taste tests were conducted. The first was at the Sobeys 'Test Centre', where six consumer taste panels were conducted comparing Sobeys 'Sterling Silver Pork' (moisture enhanced), the more highly marbled pork (test product), and regular pork. Test results show that the more highly marbled pork was preferred in only one of the six taste tests. (See Appendix B for full report). Researchers have advised us that the size of this study should not be considered however, given the natural variability that occurs in animals and the small sample size within this study. The second test was conducted at Ontario Pork, using a different cooking method (fried rather than baked) and compared regular pork against the more highly marbled product. The marbled pork (Sample 2 in Appendix C) was ranked much more positively in texture and taste.

It was hoped that this research would provide us with a product that could be launched as a premium product at Sobeys, however more research is required at this stage. The researchers believe that the hogs should be fed the higher energy diet sooner and that they should go to market at a younger age. This would ensure that the marbled hogs would be slaughtered at a lower weight with smaller primals.