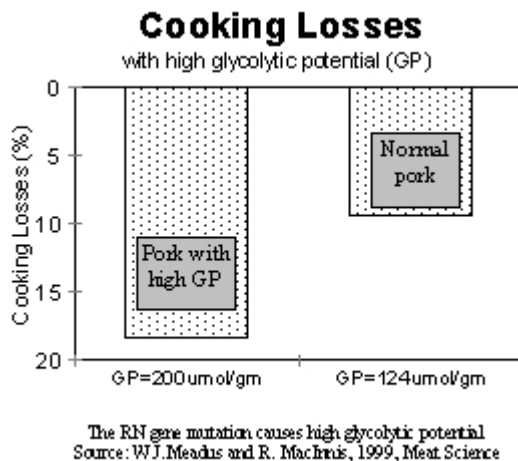


The Prevalence of the RN gene in Canadian Pig Breeds and its impact on Meat Quality **Dr. Dan Hurnik**

We discussed the value of different boar lines on the performance of commercial pigs. I would like to report on a second study we participated in. It was a project to look at in the RN gene, which can reduce pork quality. The RN gene, which can reduce pork quality. The RN gene is also called the Napole gene, or acid meat gene, and experts what some call the "Hampshire effect". The project was a joint study between Agriculture and Agri-food Canada, the National Institute for Agricultural Research in France, and the Canadian Centre for Swine Improvement. We participated by supplying samples from the PEI Quality Swine boar stud for this evaluation.

The RN gene, found on chromosome 15, is reported to be a major gene influencing meat quality. One form of the gene causes the meat quality. One form of the gene causes the meat to retain 70% more glycogen (carbohydrate) than normal pork. The effect of the glycogen is to drop the muscle pH after processing creating to more acidic meat. A lower pH can lead to more drip loss in fresh product and increase shrink during processing and cooking. The researchers estimate it costs the industry up to a \$14 per pig - a loss seen primarily by the processors and consumers.



The RN gene has a dominant expression, so any presence of the problem gene will impact meat quality. Recently molecular tests have been developed to accurately detect the presence of the problem. The highest frequency of the gene has been reported internationally in the Hampshire breed, but some have suggested it may exist in the other breeds. This study sought to document the prevalence of the gene in Canadian breeding stock.

The results of the study are listed below:

Breed	#Pigs Tested	RN Carriers
Hampshire	89	70(78.6%)
Duroc	116	0
Landrace	79	0
Yorkshire	110	0
Other	10	0

When looking at the registered breeds, it looks as though the gene is present only in the Hampshire breed in Canada. When the Hamp herds were looked at more closely, the following was found:

Source	#Pigs Tested	RN Carriers
Herd 1	16	16 (100%)
Herd 2	17	17 (100%)
Herd 3	52	33 (63.5%)
Boar stud	4	4 (100%)

The study indicated the problem gene is present in high frequency in Hampshire pigs and likely in Hamp crossbred lines as well.

The authors of the study go on to indicate the research is excellent news for the commercial producers using Canadian Duroc, York, and Landrace animals in their production system. It is suggested that one reason for the excellent reputation of Canadian pork in domestic and international markets is the extensive use of these breeds in commercial pigs production.