

# Effect of genotype on marbling content

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Pig producers are now being asked to react to a situation in which pork has been perceived to have too little marbling. A certain level of marbling is now highly desired, if not required. Increasing the overall fatness of a pig will indeed increase the amount of marbling. However, the resulting increase in backfat may not be desirable. The goal is to increase the marbling while maintaining an acceptable level of carcass fatness. The data described herein demonstrates the value of the Duroc and Hampshire breeds in this regard.

Backfat was measured by grading probe. Marbling level was assessed using the NPPC (National Pork Producers Council) marbling standards at the 10th/11th rib on the longissimus (loin-eye) muscles of 30 gilts of each of 10 different genotypes based on the Yorkshire, Landrace, Duroc, Hampshire, Berkshire and Pietrain breeds.

Yorkshire- and Landrace-based genotypes had relatively low backfat (average 14 mm) and were very low in marbling (average marbling score = 1.5). One third of pigs within these genotypes were essentially devoid of marbling (marbling score  $\leq$  1.25). Berkshire and Berkshire-crossed pigs, none of which were devoid of marbling, had much higher levels of marbling (marbling score = 2.8), but also had much higher backfat thickness (26 mm). On the other hand, the Duroc-based line had an average marbling score (2.7), similar to Berkshire-based pigs. Yet their backfat (15 mm) was only slightly higher than that of the Yorkshire- and Landrace-based lines, and none of the pigs from the Duroc-based line were devoid of marbling. The Hampshire-based pigs had lower marbling (marbling score = 2) than Duroc-based pigs, but higher marbling than, and similar backfat to, pigs of Yorkshire and Landrace-based lines. Only 13% of pigs from the Hampshire-based genotypes were devoid of marbling.

## **Implications:**

Marbling levels can be increased by increasing the overall pig fatness. However, this can also be accomplished by making use of pigs of the Duroc breed and, to a lesser extent, pigs of the Hampshire breed, which can produce more desirable levels of marbling while maintaining a relatively low backfat thickness.