RESEARCH ABSTRACT
PORK QUALITY

Title: Proteomic Analysis of PSE Susceptible Animals - **NPB#02-031**

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Abstract: Meat quality in pigs suffers when there are abnormalities in the regulation of calcium within the muscle cell. This condition is commonly referred to as PSE and results in meat of poor quality. The objective of this study was to identify simultaneous changes in the amount of the sarcoplasmic reticular (SR) proteins association with calcium regulation. The procedure used called proteomics was able to sort out the changes that occur in the following proteins: calsequestrin, two forms of ryanodine receptor and two forms of SR APTase, triadin, dihydropyridine receptor and SR junctional protein. Improvement in both time (< 3 hr) and amount of the sample (< 5g) were developed in isolating SR protein making it possible to analyze an increased number of samples. Early results indicate it was possible to isolate the SR proteins and perform a separation so they could be quantified. Analysis of the SR protein in the pigs that either were normal or contained the napole and halothane gene.showed that the halothane positive pigs had higher ($p < .05$) SR ATPase1 protein and lower ryanodine receptor levels than the normal animal. This work demonstrates a method can be developed that can rapidly identify, using the same samples, the potential of the hog to have PSE problems. Continued work is going on to verify all the possible changes occurring, but the procedures used can be applied to the pork industry.