

Central Washington Animal Agriculture Team



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The Importance of Pork Quality in Youth Swine Projects

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Pork quality should be a major focus for any market swine project member. They need to select lean, muscular animals that are consistent with pork industry goals, however today, some show pigs are actually getting too lean and muscular. The concern on the part of both meat packers and consumers is focused on the quality of the meat. As pigs become ultra lean, with less than 0.5 to 0.6 of an inch of back fat at the last rib, the meat becomes drier and less flavorful and the belly is too thin to make quality bacon. Moreover, the very heavily muscled pigs are also less marketable because they do not meet the needs of the consumer in the size of retail cuts. Ideally, the maximum loin eye area should be 8.5 square inches.

As lean animals are selected, caution must be used to avoid animals that are carriers of the Porcine Stress Syndrome (PSS). PSS, most frequently referred to as the "stress gene", was identified and associated with reduced pork quality as early as the mid-1960's. Since that time, it has been studied extensively for its mode of inheritance, impact on pork quality, and as a factor that influences

the physiological reactions of swine to environmental stress.

DNA testing is available to identify PSS carrier animals as well as those that are homozygous or PSS positive animals. It is now becoming commonplace for companies that sell boars and/or semen to state the status as "stress negative" or "stress carrier."

Pigs that are carriers of the recessive "stress gene" remain a problem, not so much in the commercial swine industry, but in show pigs. Recent observations suggest that an increasing number of show pigs exhibited in fairs and junior livestock shows are carriers of the "stress gene." This tendency has resulted from the selection of ultra muscular, lean pigs as winners in the show ring and thus for project animals in subsequent years.

Avoiding animals that are either homozygous or heterozygous for the "stress gene" is very important for the following reasons. First, PSS positive animals are extremely susceptible to all types of environmental stress, including

unfamiliar surroundings, heat (inability to control their physiological thermostat), as well as interactions with people and other hogs. PSS animals become very excited, exhibiting muscle tremors, tail twitching, and elevated body temperature when exposed to stressful situations.

PSS positive animals often die from environmental stress that normal animals deal with reasonably well. When PSS positive hogs do survive and are processed, their meat is most often classified as Pale, Soft and Exudative (PSE). In other words, the pork produced is very pale in color, soft or mushy in texture, and watery. This condition renders the pork unusable for all fresh pork markets and also undesirable for processed products such as sausage. Carriers of the gene (heterozygous for the recessive gene) often appear quite normal and are not necessarily as excitable as PSS positive animals, but they do have a higher tendency than normal pigs to produce PSE pork.

Research in the mid-1990's showed that approximately 30-50% of all "stress gene" carrier animals produced carcasses that expressed some degree of PSE. At issue here is the tendency of some breeders to intentionally utilize carriers of the "stress gene" to produce hogs for presumed benefits in producing heavily muscled, lean animals to win in the show ring. This practice must come to an end or pork quality concerns in show animals will eliminate a market for youth swine projects.

Paylean[®], a feed additive approved by the Food and Drug Administration (FDA) for use in 2000, helps improve the lean

to fat ratio. However, problems similar to PSS arise when it is misused or used differently than stated on the label. It is also important to remember it is illegal to use any feed additive outside of the uses stated on the label, such as feeding at higher rates or using for a longer feeding period.

Increasingly, pork processors are unwilling to accept show pigs from junior shows due to pork quality problems. The message is clear for all market swine project members - improve pork quality or lose the few remaining market outlets for show animals. While the selection of lean, muscular, and fast gaining animals is recommended as the pork industry ideal, mutant genes, such as PSS, and the misuse of feed additives must not be employed to achieve this goal.

All youth swine projects that are exhibited at livestock shows will inevitably be subjected to stresses not normally encountered in the commercial swine industry. As a result, pork quality problems associated with stress will continue to be a problem for our show animal projects. This lends even more importance to the need for exhibitors and show management personnel to minimize the exposure of animals to stress. By minimizing stress of show animals and eliminating the use of "stress gene" carrier animals, pork quality will improve and processors will have a more favorable image of show pigs.

