Method for Improving the Water-holding Capacity, Color and Organoleptic Properties of Meat

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method of improving the quality of fresh meat.

OVERVIEW

The market-driven trend of producing leaner pork, poultry and beef has resulted in an overall loss of meat product quality. In pork, the occurrence of lower quality PSE (pale, soft, exudative) meat, which results in part from a rapid fall in pH immediately postmortem, has increased as pigs have been bred for leaner carcasses. Economic losses associated with PSE and RSE (normal color, but soft, floppy and exudative) meat are extensive, due to lower yields, decreased customer appeal, decreased juiciness and tenderness after cooking and greater product variability.

THE INVENTION

UW-Madison researchers have developed a method of improving the quality of fresh meat by injecting a solution of sodium bicarbonate into the muscles of a carcass. Small quantities of sodium bicarbonate have an elevating and stabilizing effect on the ultimate pH of muscle. Injecting a sodium bicarbonate solution into swine, beef or poultry muscles improves the appearance, water-holding capacity (WHC) and organoleptic properties (those properties that appeal to the senses) of pork, and the organoleptic properties of beef and poultry.

APPLICATIONS

• Improves the organoleptic qualities (juiciness and tenderness) of salable pork, beef, veal, lamb and poultry
• Improves the appearance (color) of fresh pork muscles
• Reduces the rate and extent of pH decline of meat on the carcass
• Greatly inhibits the formation of PSE and RSE meat in pork
KEY BENEFITS

• May result in economic gains to producers by reducing the proportion of products considered inferior by consumers
• Can be optimized to accommodate the methods currently used in pork processing
• Can be selectively used to treat only those pork carcasses or individual cuts at risk of becoming PSE
• Carcasses can be injected with the sodium bicarbonate solution before or after the onset of rigor mortis.
• Sodium bicarbonate is generally regarded as safe for human consumption.

ADDITIONAL INFORMATION

Tech Fields
Food & Supplements - Ingredients

CONTACT INFORMATION

For current licensing status, please contact Emily Bauer at emily@warf.org or (608) 262-8638.