Title: Digestible indispensable amino acid score (DIAAS) for pork products at various stages of processing. NPB # 17-083

Investigator: Eric P. Berg

Institution: North Dakota State University, Fargo

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Scientific Abstract:
Calculation of the digestible indispensable amino acid score (DIAAS) is recommended by the Food and Agriculture Organization of the United Nations (FAO) for evaluating protein quality in human foods. The objectives of the present studies were to determine DIAAS values for pork and beef products, and to test the hypothesis that processing increases DIAAS. In Experiment 1, 10 ileal cannulated gilts were allotted to a $10 \times 10$ Latin square. In Experiment 2, 9 ileal cannulated gilts were allotted to a $9 \times 8$ Youden square. The DIAAS was calculated using the FAO established reference patterns for children 6 mo to 3 yr and children > 3 yr, adolescents, and adults. In Experiment 1, DIAAS was greater than 100 for all pork products regardless of reference pattern. For both reference patterns, the DIAAS for smoked-cooked bacon was greater than for raw belly and smoked bacon, the two cured hams had numerically greater DIAAS than the non-cured ham, and loin heated to 63°C had a greater DIAAS compared with loin heated to 68°C or 72°C. In Experiment 2, all products had a DIAAS value greater than 100, except cooked ground beef and ribeye roast heated to 72°C. For both reference patterns, bologna and ribeye roast heated to 64°C had the greatest DIAAS and cooked ground beef had the least DIAAS. In conclusion, meat products generally have DIAAS values greater than 100, and curing and cooking may increase DIAAS.