A SMALL-SCALE METHOD TO PREPARE AND EVALUATE WHEAT FLOUR TORTILLAS

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B.S., Kansas State University, 1994, AN ABSTRACT OF A MASTER’S THESIS submitted in partial fulfillment of the requirements for the degree MASTER OF SCIENCE, Department of Grain Science and Industry, College of Agriculture, KANSAS STATE UNIVERSITY, Manhattan, Kansas, 2006.

ABSTRACT

Wheat flour tortillas have become increasingly popular in the United States and the tortilla industry is one of the fastest growing within the U.S. baking industry. Tortilla quality is affected by a number of variables, including ingredients and processing conditions. The largest ingredient and most important determinant of tortilla quality is the type of wheat flour used. Due to this fact, there is a need for research aimed at determining which flours are best suited for tortilla production. Especially important is to determine these characteristics in early generation breeding programs. Traditional methods for producing tortillas require rather large amounts of flour (1000g) and large, expensive tortilla making equipment. The goal of this research was to develop a method for evaluating tortilla quality with limited amounts of sample (100g) and utilizing lab-scale tortilla making equipment that could be correlated with established methods of producing tortillas on pilot-scale equipment.

Processing parameters were optimized to produce wheat flour tortillas comparable to those produced by pilot-scale tortilla equipment. Various combinations of press and griddle conditions were tested. Several flours were tested using the optimized methods and data was compared to that from an established tortilla production laboratory at Texas A&M University (TAMU). Tortillas were evaluated for opacity, diameter, thickness, shelf stability and textural properties. A good quality tortilla should have a large diameter, high opacity, and long shelf-stability (resistance to both mold growth and breaking/cracking).

Good correlations were found between the data from the small-scale tortillas produced for this study and those produced on the pilot scale equipment at TAMU.