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## **Efficacy of the Precure™ Antimicrobial<sup>1</sup> (pH = 1.5) as a Dip Treatment (3 vs. 30 seconds) for Controlling Microorganisms on Broiler Parts**

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**Abstract:** The objective of the following study was to evaluate the microbial efficacy of a Precure™ (Safe Foods Corporation, N. Little Rock, AR) dip (3 vs. 30 seconds) treatment (pH = 1.5) for further processed broiler parts including wings, leg quarters and breast halves. Precure™ is listed as a solution of GRAS acids for use by FDA and is listed as a safe and suitable ingredient by USDA for use on poultry. This study was conducted in response to the request by several poultry companies for a means to increase the shelf-life of further processed broiler parts. Therefore, 60 post-chill broiler carcasses were obtained from a local USDA-inspected poultry processing facility and were transported on ice to MCA Services (Rogers, AR). Upon arrival at the laboratory, the carcasses were held under refrigerated conditions (40 to 42°F) for 24 hours to simulate transport to a further processing (cut-up) facility. After the 24-hour refrigerated hold period, the 60 carcasses were each manually cut into six pieces including two wings, two leg quarters and two breast halves. The cut-up parts were then randomly divided into three groups including a control and two treatment groups. Within each treatment group a pair of wings, a pair of leg quarters or a pair of breast halves served as an individual sample. Thus, there were 20 samples for each of the three carcass parts within each of the three treatment groups. The treatment groups included the control which received no further treatment, a group which was subjected to a 3-second room temperature dip in Precure™ (pH = 1.5) and a group which was subjected to a 30-second room temperature dip in Precure™ (pH = 1.5). Parts in both of the dip treatments were allowed to drain for 30 seconds after dipping. All samples (two wings, two leg quarters or two breast halves) were placed into sterile poultry rinse bags and were then held refrigerated at 40°F until microbiological evaluation was initiated (< 4 hours). The rinse fluid (100 mL Butterfield's Phosphate Diluent) from the samples was evaluated for Aerobic Plate Count using Petrifilm™<sup>3</sup> in accordance with USDA/FSIS standard laboratory procedures. The lower detection level was 1 colony forming unit per mL. All dipped parts were also observed for organoleptic properties and no negative qualities were observed. The Aerobic Plate Counts for the control parts were 2.0 logs (wings), 2.4 logs (leg quarters) and 1.9 logs (breast halves). The group that was subjected to the 3-second Precure™ dip had Aerobic Plate Count values of 0.5 logs (wings), 0.3 logs (leg quarters) and 0.9 logs (breast halves). There was no recovery of Aerobic Plate Count from parts that were subjected to the 30-second dip in Precure™. Thus, the 3-second dip in Precure™ resulted in Aerobic Plate Count reductions of > 97% for wings, > 99% for leg quarters and > 89% for breast halves while the 30-second dip in Precure™ allowed for no recovery of organisms. Results from this study clearly demonstrate that the use of Precure™ (pH = 1.5) as a dip treatment (3 to 30 seconds) for poultry parts will significantly improve the microbiological properties of poultry parts without adversely affecting the sensory attributes. Thus, the commercially available Precure™ treatment provides the processor with a very economical means of controlling the microbiological properties, and possibly extending the shelf-life, of further processed poultry parts.

**Key words:** Precure™, broiler parts, dip treatments, no microbial recovery, cost effective

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