Lactic acid monopropionates, an opportunity for pathogens and common threat for many refrigerated foods, is associated with an estimated 1,600 illnesses and 260 deaths each year. It is ubiquitous in the environment and therefore improper cooking, recontamination of the food, or lack of proper hurdles can all result in growth of the pathogen and cause severe foodborne illness. Lactic acid bacteria are a group of food spoilage bacteria not commonly associated with human illness; however, growth of these spoilage organisms at refrigerated temperatures results in major economic loss. Organic acids and salts, sodium, and lactates are well known for their inhibitory properties against L. monocytogenes and LAB. Lactic and acetic acids often are used food form due to lipophilic properties and existing powdered forms require sodium as a counter ion to be able to create the necessary ion pair properties. Growing demand for sodium free formulations has increased the development of sodium-free antimicrobials for the food industry. One sodium free preservative is a sodium free propionates blend containing 0.5% Provian K, 0.5% Provian K, and 1.5% Provian K which is considered safe for food use by the United States Food and Drug Administration under the Federal Food, Drug, and Cosmetic Act. The goal of this study was to evaluate the efficacy against L. monocytogenes and LAB in cured and uncured deli-style turkey. Five uncured and cured (28% moisture, 4% fat, 1.2% KNO3) turkey formulations were produced and cooled according to USDA guidelines. Cured formulations containing 0.5% Provian K, 0.5% Provian K and 1.5% Provian K were serially diluted and enumerated on Modified Oxford agar (MOX, 35°C, 48h) for populations of L. monocytogenes. Inhibition of both LAB and L. monocytogenes has been demonstrated using this sodium free propionates blend. L. monocytogenes was inhibited by a sodium free propionates blend containing 0.5% Provian K, 0.5% Provian K, and 1.5% Provian K. Specific tests were performed to remove sodium from the formulation and various control treatments were performed to determine the efficacy of the sodium free preservative. Intrinsic factor targets for pH, % moisture, % salt, water activity (a_w) depending against both L. monocytogenes and LAB. This research provides the meat industry with an acetate based antimicrobial to inhibit L. monocytogenes and LAB in cured and uncured deli-style turkey. Five uncured and cured (28% moisture, 4% fat, 1.2% KNO3) turkey formulations were produced and cooled according to USDA guidelines. Cured formulations containing 0.5% Provian K, 0.5% Provian K and 1.5% Provian K were serially diluted and enumerated on Modified Oxford agar (MOX, 35°C, 48h) for populations of L. monocytogenes. 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