



# Worthwhile Operational Guidelines & Suggestions

BROILER PROCESSING TIMELY INFORMATION – MARCH 2010

## Marination of Meat and Poultry products

Meat and poultry products are marinated to increase tenderness, to add flavor and also to increase the shelf life of these products. Market forms of marinated poultry include cut-up parts, boneless breast, wings and various formed products. Almost 15 - 44% of the broiler products sold in the US markets is marinated with different marinades, such as combinations of various spices, vinegars, wine, fruit juices or oils. Marination is also a common practice to reduce water loss during cooking and thus increasing yield and quality. Spices and seasonings are added to develop flavors according to consumer taste preferences which are based on either traditional or emerging ethnic tastes. Spices and marinades have become important functional ingredients in the meat and poultry industry as they not only improve flavors but enhance salty perception, have anti-oxidant and antimicrobial activities. Marinades add value to the meat and poultry products which is convenient for the consumer and also beneficial for the processor.

The pH of marinades is usually acidic so sugar or honey is often added to reduce the acidic taste in marinades. The antimicrobial activity may be attributed to the acidic pH (5 or less) of the marinades which is inhibitory to most of the microorganisms. Low pH and high salt content in marinades may act as individual ecological factors in reducing the foodborne pathogens. Several studies have reported the antimicrobial activity of spices against *Salmonella*, *Listeria* and *Campylobacter* which are the major foodborne pathogens of concern. Vacuum tumbling and injection marination are done commercially while immersion marination is commonly practiced at consumer level. Ingredients such as honey also inhibit formation of heterocyclic amines during cooking and grilling. Polyphosphates are common ingredients in marinades preparations; they increase the water holding capacity of meat and act as chelating agents to bind the metal ions required for microbial growth and thereby enhancing the antimicrobial activity of the marinade. Marinades also contain certain spices or extracts with antioxidant properties and prevent lipid oxidation in the meats which is a quality concern in the industry and reduces the shelf life of poultry and meat products.

Marinades provide excellent alternatives as natural antimicrobial systems for the chicken and meat products. Processors have been adventurous with various different flavors such as Teriyaki, Italian, Chinese, Honey barbeque based on the consumer acceptance and demands.

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