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Studies on safe acidification of salsa for home boiling water canning

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Salsa is America's No. 1 condiment. This popularity has extended to home food preservers who want to make use of a seasonal harvest of garden-grown tomatoes and vegetables. Most salsa recipes mix low-acid foods, such as onions, green peppers, and jalapeño peppers, with acid foods, such as tomatoes. Currently the USDA and the National Center for Home Food Preservation recommend that a boiling water canning process be used only for research-tested salsa recipes that provide evidence of safe acidification to inhibit *Clostridium botulinum* growth. Only a few such research-tested salsa recipes are available and these must be followed with little deviation.

This project sought to create and test a guideline recipe for salsa that allowed for variations in low-acid ingredients, while maintaining a safe level of acidification from tomatoes and lemon juice.

Based on this research a safe recipe guideline ratio of 200g Roma tomatoes, 200g (onions, peppers, and dry spices), and ¼ cup (60ml or 61g) of bottled lemon juice per pint volume was proposed. The lemon juice (60ml) safely acidified a lab recipe (200g Roma tomatoes, 120g onions, 65g green peppers, 10g jalapeño peppers, and 5g table salt per pint) to below pH 3.82. Salsa made from 200g tomatoes, ¼ cup lemon juice and either all onions (200g) or all green peppers (200g) as the low-acid ingredient maintained a pH below 3.82. In acidification curves single low-acid salsa ingredients needed only 10ml lemon juice per 200g vegetable to acidify below pH 4.6. Furthermore, 60ml lemon juice per pint safely acidified full pint volumes (263-304g) of onions, green peppers, or jalapeños alone to below pH 3.82. Informal taste panels indicated an acceptable salsa flavor after canning using recipes within the guideline.