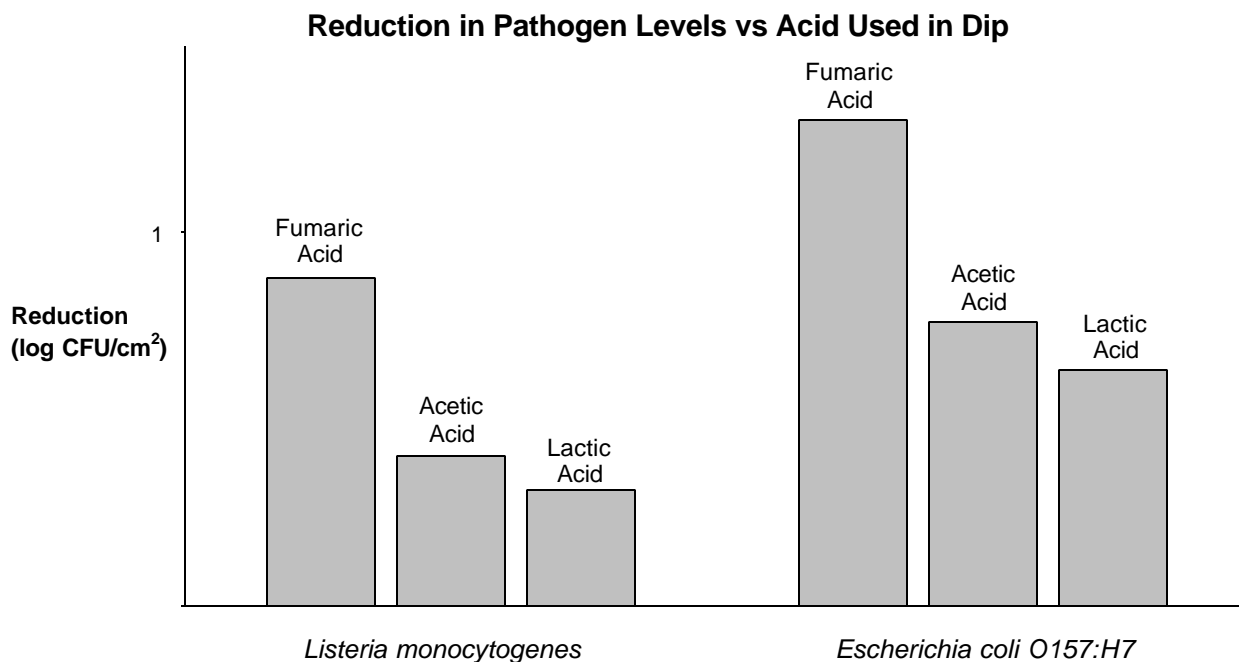


# Fumaric Acid in Antimicrobial Surface Treatments of Meat

The hydrophobic nature of fumaric acid makes it an effective antimicrobial agent. Hydrophobicity is important because the microbial cell wall normally contains lipid material. Hydrophobic organic acids can interact with this lipid material in a way that disrupts microbial activity.

## More Effective than Lactic or Acetic Acids in Pathogen Reduction

As shown in the graph below, Fumaric Acid was much more effective than Lactic or Acetic Acids in the reduction of *Listeria monocytogenes* and *E.Coli O157:H7* in beef muscle that was dipped for 5 seconds in a 1% acid solution at 55°C (131°F). The beef muscle had been previously inoculated with the pathogens and was vacuum packed and held at 4°C (39°F) for 14 days after dipping in the acid solution.



Reference: Podolak R.K. et al. 1996. Inhibition of *Listeria monocytogenes* and *E.Coli O157:H7* on Beef by Applications of Organic Acids. Journal of Food Protection 59(4): 370-373.

**RECOMMENDATIONS FOR USE: Use 1.0% solution at 55°C (131°F); spray or dip the meat pieces with the solution.**

**BARTEK**

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