



BioVia® CL 600 Series Antimicrobials

USING MODERN TECHNIQUES TO IMPROVE
YOUR PRODUCTS' FOOD SAFETY HURDLES

Clean Label Conference, March 2016

Dave Horowitz – Director of Sales Strategic Initiatives



CLEAN LABEL CONFERENCE

Agenda

- Definitions
- Antimicrobial Landscape
- BioVia® CL 600 Series
- Challenge Study Data
- How Is It Labeled?
- Applications



What Is Clean Label?

Minimally Processed

Found in the average kitchen



The New Natural

Sustainable

Healthy

Easily Understood

Nutritious

What Happens When We Take Out Chemical Preservatives?

- ✓ Staying away from the “ITES” and “ATES”
- ✓ Being Aware Of The New FSMA Regulations
- ✓ Improving Your Hurdle Technology
- ✓ Utilizing New Technologies To Hit The Bull's-Eye (WGS, Microbiomics)



Are Chemical Preservatives Bad?

Sodium Benzoate > Benzoic Acid > Cranberries, Plums, Prunes

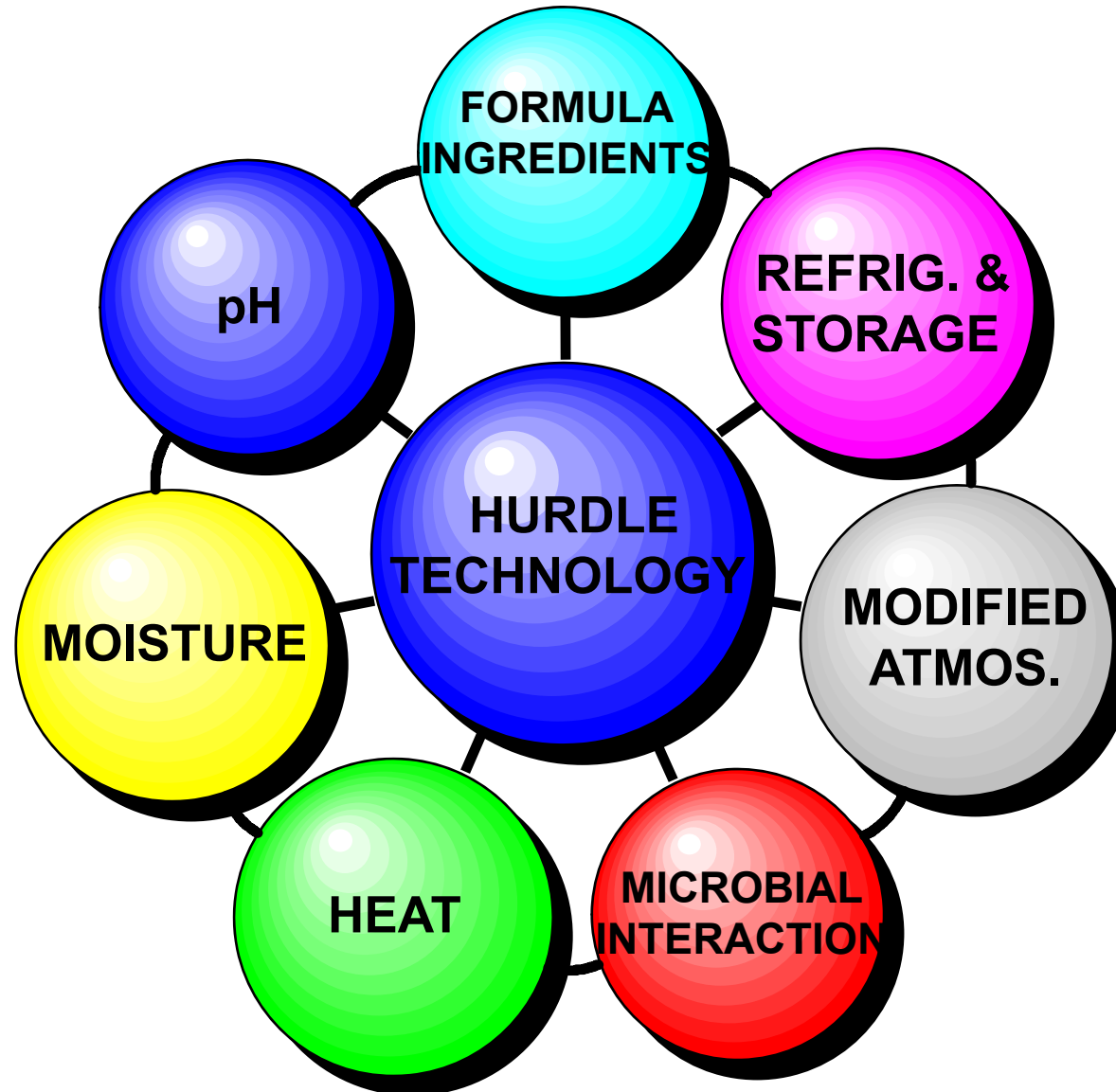
Potassium Sorbate > Sorbic Acid > Berries

Calcium Propionate > Propionic Acid > Swiss Cheese

Sodium Diacetate > Acetic Acid > Vinegar



Factors Influencing Growth



Natural Antimicrobials as Hurdles

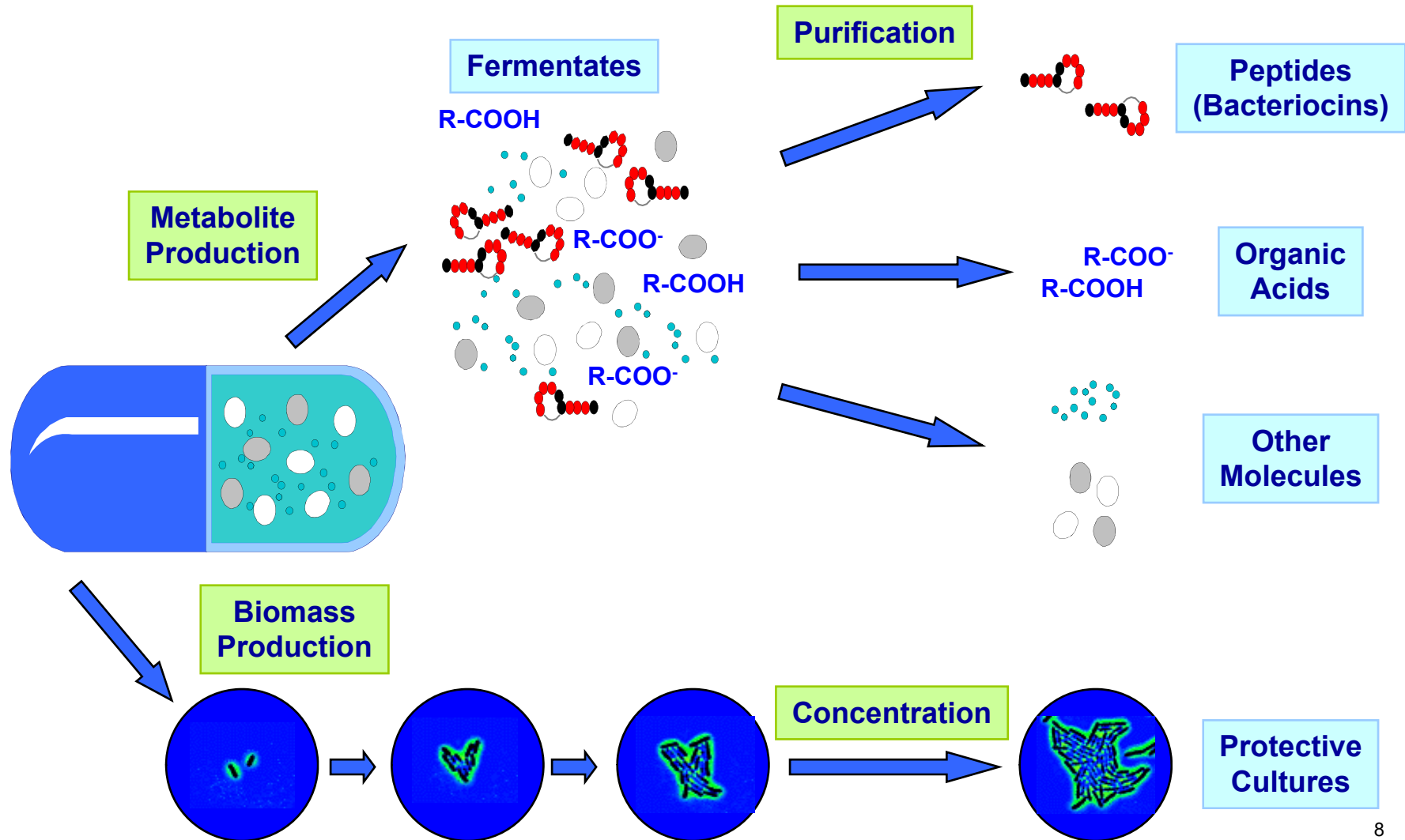
Substances that eliminate microorganisms or inhibit their growth

Examples:

- Organic acids
- Bacteriocins
- Antimycotics
- Others (plant extracts, essential oils, etc.)



Natural Food Protectants



Introducing BioVia® CL 600 Series



BioVia® CL 600

Uncured & Cured Meats

BioVia® CL 610

RTE Meals and Deli Salads

BioVia® CL 615

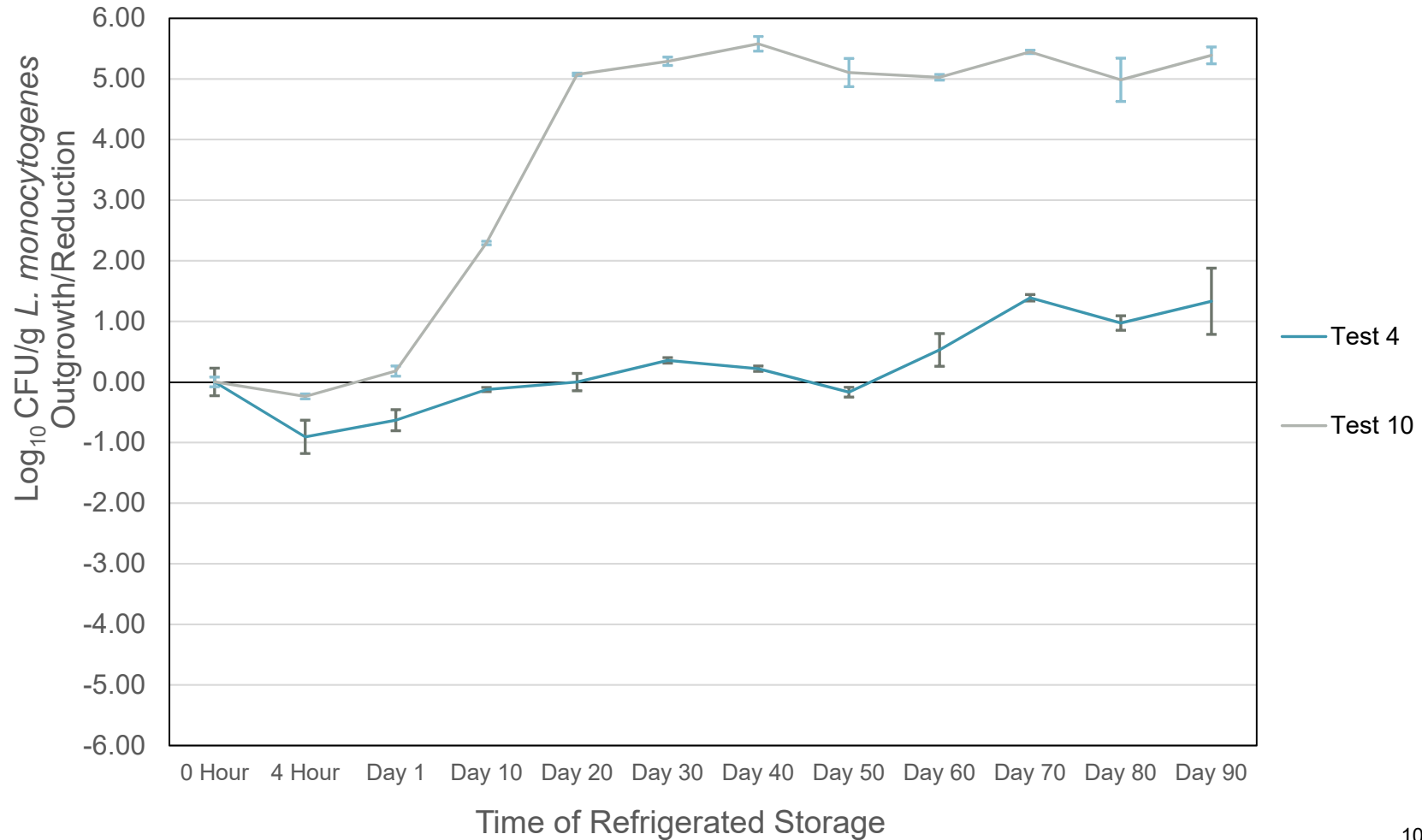
Hummus & Dips > Certified Organic

All are Kosher Pareve



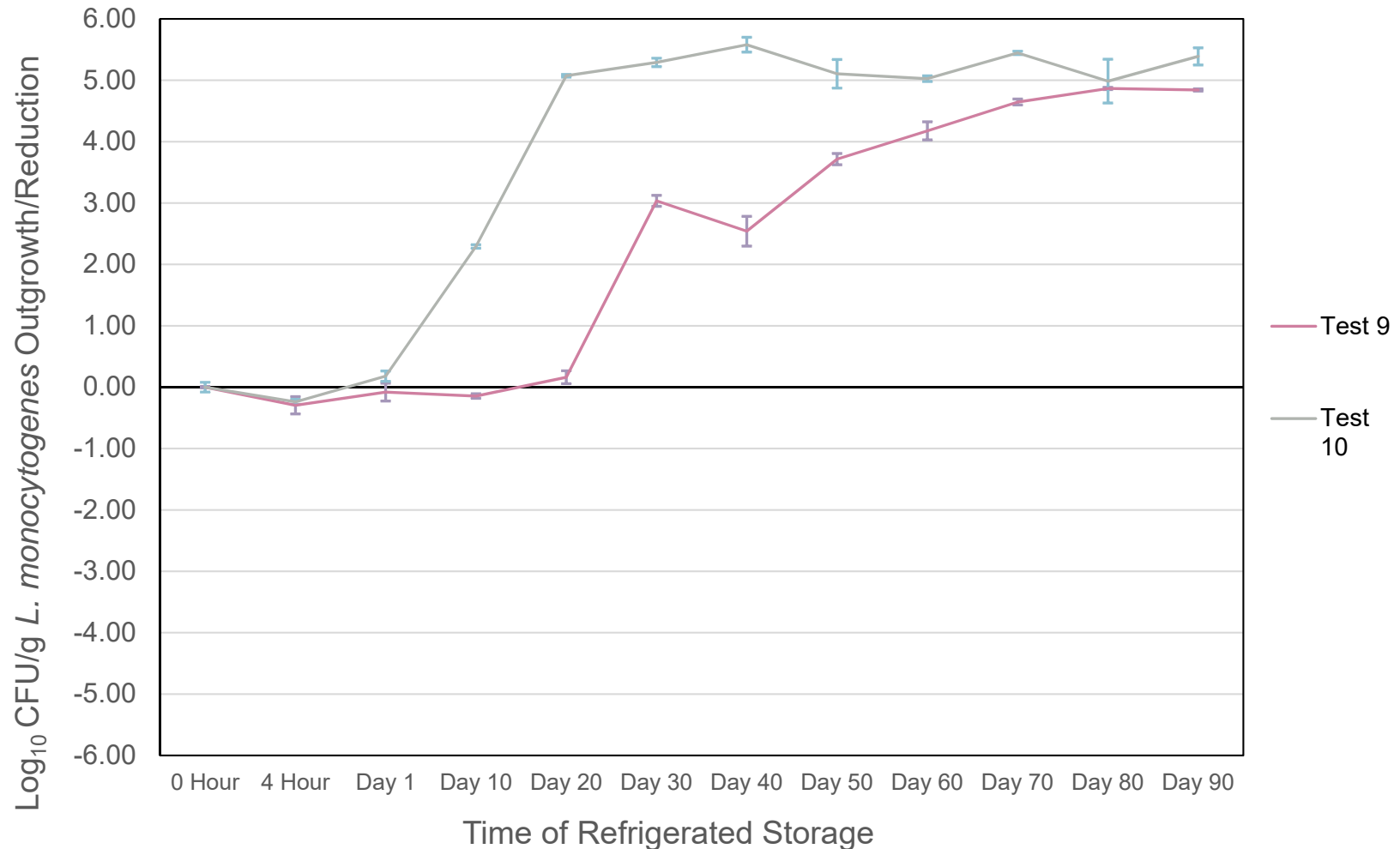
BioVia® CL 600 Validation

Log₁₀ CFU/g *L. monocytogenes* Outgrowth/Reduction in Test 4 Antimicrobial Formulation of Uncured Turkey Loaf Over 90 Days of Refrigerated Storage



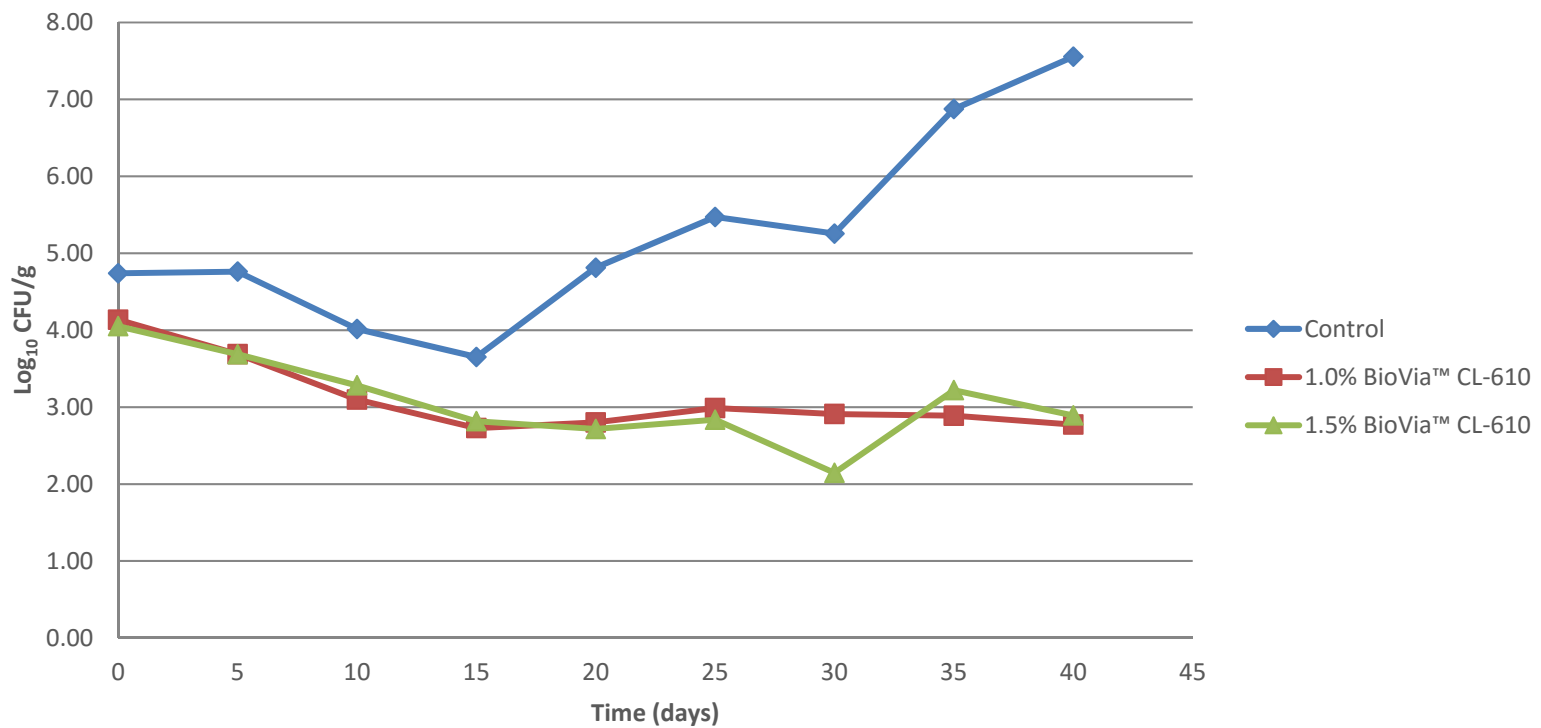
3% Lactate/Diacetate Validation

Log₁₀ CFU/g *L. monocytogenes* Outgrowth/Reduction in Test 9 Antimicrobial Formulation of Uncured Turkey Loaf Over 90 Days of Refrigerated Storage



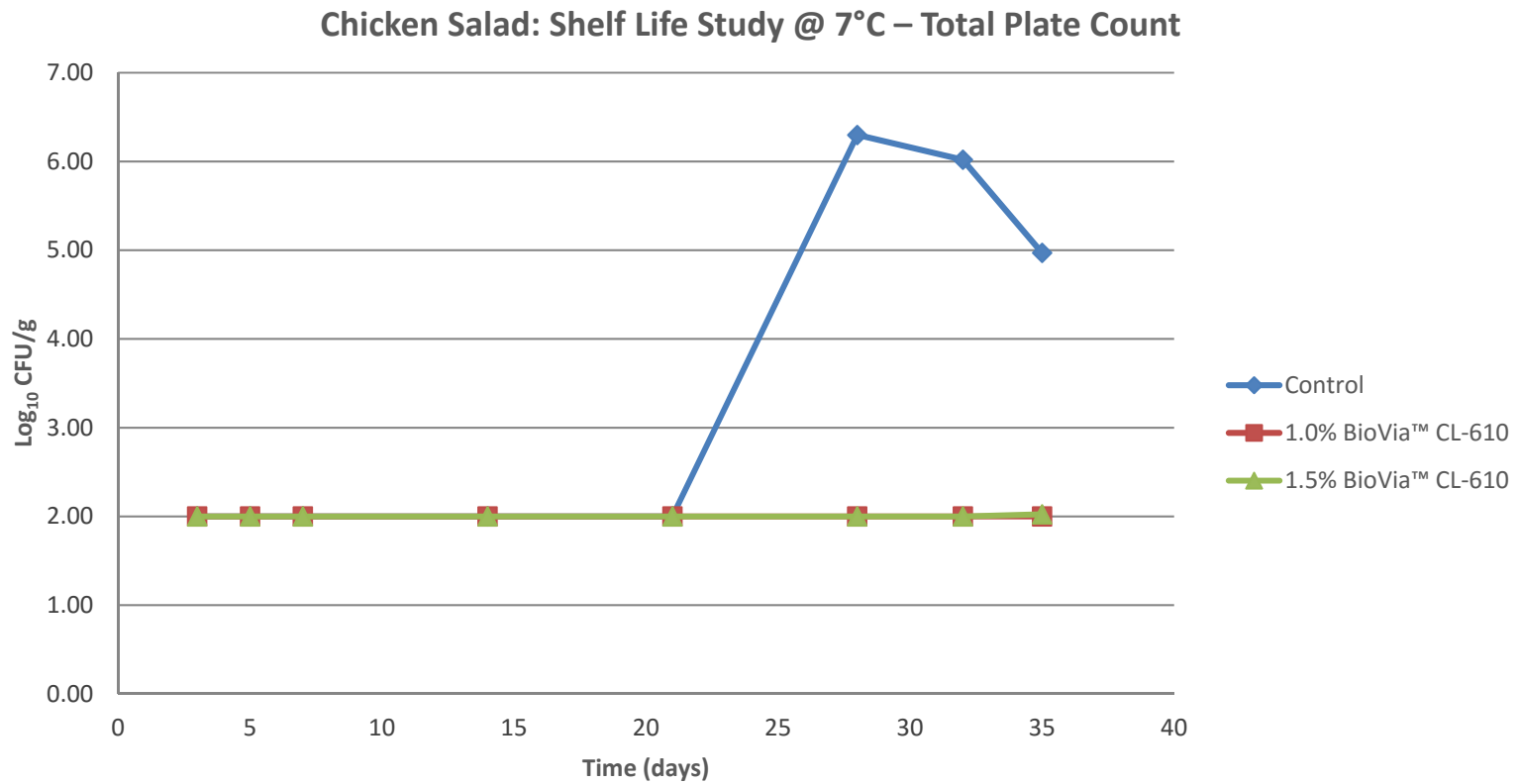
BioVia[®] CL 610 Validation

Chicken Salad: *Listeria monocytogenes* Challenge Study @ 7°C



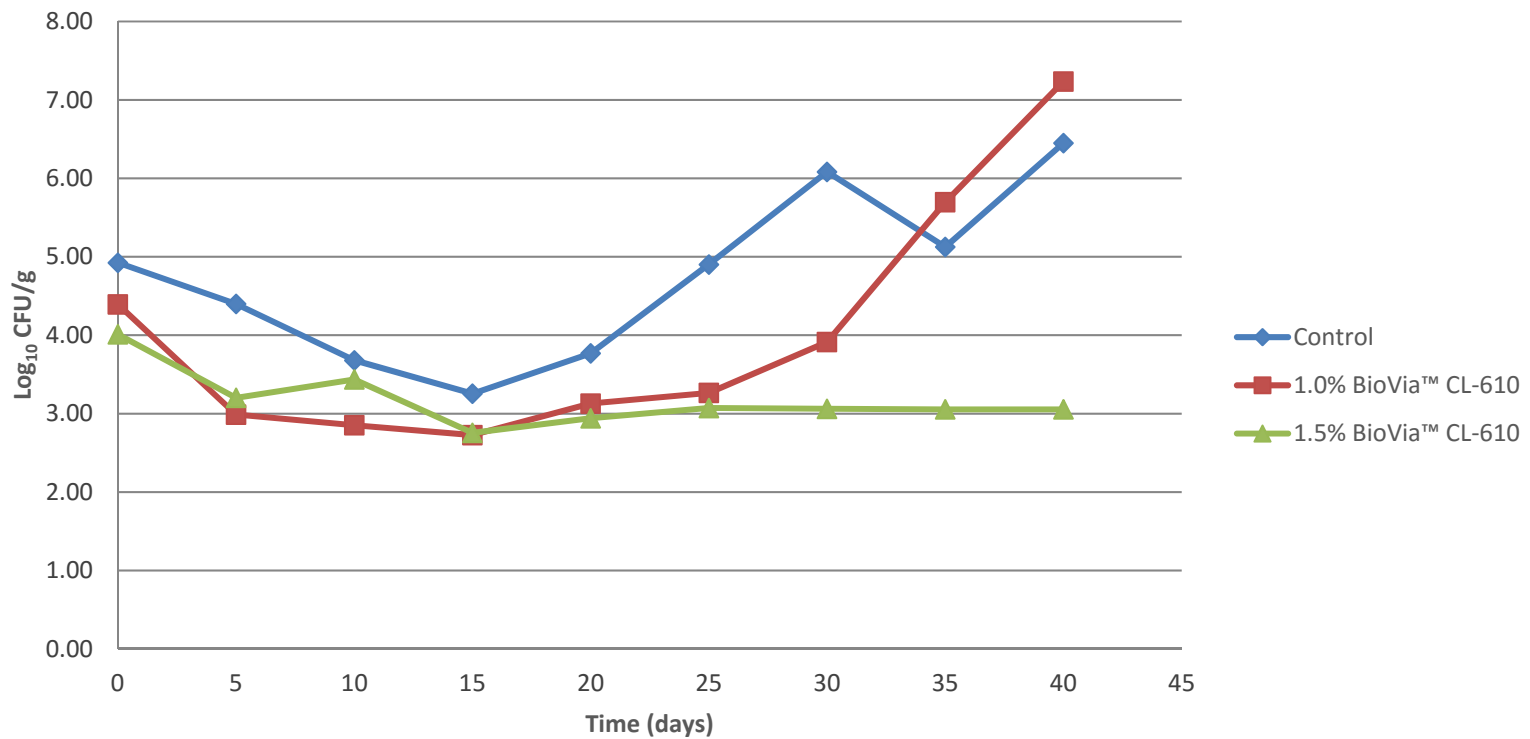
*The *Listeria monocytogenes* challenge study was conducted by an independent laboratory.

BioVia[®] CL 610 Validation



BioVia[®] CL 610 Validation

Tuna Salad: *Listeria monocytogenes* Challenge Study @ 7°C



*The *Listeria monocytogenes* challenge study was conducted by an independent laboratory.

How Can It Be Labeled?

All BioVia® CL 600 series antimicrobials contain:

Cultured Dextrose,
Dried Vinegar

-OR-

Cultured Corn Syrup
Solids, Dried Vinegar



FAQ

QUESTION: Will the BioVia® CL 600 have an affect on my product's flavor?

ANSWER: It should have minimal effect. In some cases it can add a positive savory taste. Stop by the DuPont tabletop for further discussion.

QUESTION: Does the BioVia® impart a cidal or stasis effect?

ANSWER: It may tend to show some bacteriocidal effects on lactics, but should also provide good stasis.

QUESTION: What are the attributes which provide the BioVia® with its antimicrobial efficacy?

ANSWER: The naturally produced organic acids from fermentation along with bacteriocins provide a unique and effective clean label system.

Thank You

Nutrition Facts
Serving Size
Amount Per Serving
Calories 0
 How Can We Help You Clean Up Your Label?
 David.Horowitz@dupont.com

ABOUT DUPONT NUTRITION & HEALTH

DuPont Nutrition & Health combines in-depth knowledge of food and nutrition with current research and expert science to deliver unmatched value to the food, beverage and dietary supplement industries. We are innovative solvers, drawing on deep consumer insights and a broad product portfolio to help our customers turn challenges into high-value business opportunities.

