

## Technology Comparison

Preservative	Mechanism	Health Risks	Resistance Risk	Environmental Impact	L 44 F Advantage
<b>Sodium Benzoate</b>	Acidification, membrane disruption	Moderate: Hyperactivity, asthma	High	Water & soil pollution	L 44 F + bioflavonoids provide safer alternative
<b>Potassium Sorbate</b>	Enzyme inhibition	Mild allergenicity	Moderate	Aquatic toxicity	Synergistic blend without allergenicity
<b>Nitrites/Nitrates</b>	Clostridia inhibition	Nitrosamines (carcinogenic)	Medium	Toxic residues	Meat-safe surface application
<b>Sulfites</b>	Oxidative protein damage	Severe reactions in asthmatics	Low-Moderate	Acid rain risk	Non-allergenic alternative
<b>BHA/BHT</b>	Free radical control	Possible carcinogen, endocrine disruptor	High	Persistent, aquatic harm	Osmotic/pH balancing
<b>Natamycin</b>	Fungal membrane pore formation	Narrow action	Fungal resistance	Minimal impact	Bacteria + fungi coverage
<b>Nisin</b>	Gram+ cell wall disruption	Ineffective on Gram-, protease-sensitive	Narrow spectrum	Less stable in complex food	Broad Gram+ & Gram-action
<b>L44 F</b>	Multi-target (membrane, enzyme, chelation, pH/osmotic)	GRAS certified, No health risks	No resistance observed	Biodegradable & eco-safe	Next-gen, clean-label solution