

pHase™
Sodium
Acid
Sulfate

Application Update

Baking and
Leavening

Beverage

Candy and
Confectionary

Dairy

Fruit Fillings

Fruit / Vegetable
Processing

Jams and Jellies

pH Reduction

Sauces and
Dressings

Savory and
Seasonings

pHase™: Lower pH with Minimal Impact on Beverage Flavor

Sensory Spectrum¹ evaluated the sour intensity of pHase™, Citric Acid, Malic Acid, and Phosphoric Acid in water at three different pH values.

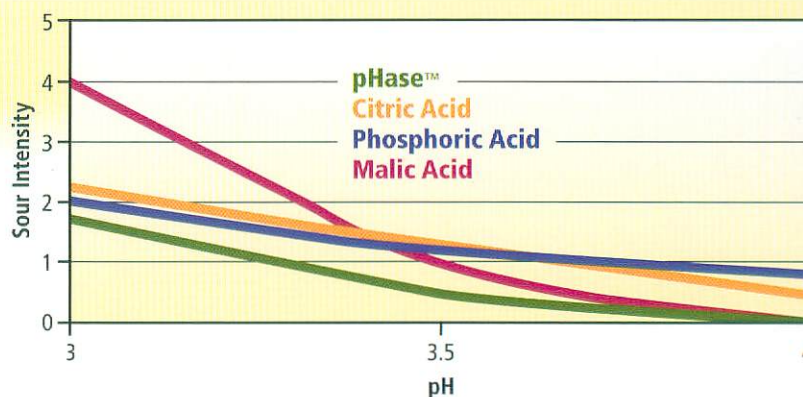
The taste panelists evaluated the samples to rate the perceived sour intensity of each acid at pH 3.0, 3.5, and 4.0.

At each pH level, pHase™ had the lowest sour impact.

Concentration of
Acid, wt%

pH	3.0	3.5	4.0
pHase™	0.0135	0.0035	0.001
Citric	0.0275	0.005	0.0015
Phosphoric, 75%	0.0125	0.003	0.001
Malic	0.0275	0.005	0.001

Sour Intensity
versus pH



Panelists' Observations

pHase™: This series had the lowest sour impact of the four sources across all pH levels. No sour taste was perceived in the pH 4.0 sample. Sour intensity was slight in pH 3.5 and 3.0 samples. Sample pH 3.0 had the highest impact of sour, though the overall intensity was slight. Low bitter taste was also noted in all samples, and a bitter aftertaste was perceived in the pH 3.0 sample. An astringent feeling factor was noted in sample pH 3.5 only.

Citric: Sour taste was perceived at slight to low intensities across all pH levels of the sample. Though intensity increased only slightly, an increase in sour impact was noted as the pH dropped. Bitter taste was noted at a low intensity in the pH 3.0 sample only, and astringency was perceived in the pH 3.5 and 3.0 samples.

Phosphoric: Sour taste was perceived at slight to low intensities across all pH levels of the sample. Though intensity increased only slightly, an increase in sour impact was noted as the pH dropped. Bitter taste was also noted in all three samples at low to low-moderate intensities, the highest being perceived at pH 3.5.

Malic: No sour taste was perceived in the pH 4.0 sample. Sour intensity grew sharply from slight (pH 3.5) to low-moderate (pH 3.0). Slight bitter taste was also noted in the pH 3.0 sample, and a low astringency feeling factor was perceived in the two lower pH samples.

Reference: 1. *Spectrum Descriptive Analysis of Acid Samples*, Sensory Spectrum; Chatham, NJ, October 2002.

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