



CITRIC ACID VS. FERMENTO VS. STARTER CULTURES

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If the result you are looking for is that acidic "tang" that is found in fermented meat, then read below.

That "fermented tang" as found in fermented dry cured meat is due to a lactic acid build up (decrease in pH). Fermento duplicates this somewhat, as does Citric Acid, however, Citric Acid is not lactic acid. With the Citric Acid you will get an acidic tang, but not the same as the real thing. Fermentation is the key to making high quality products with the traditional tangy flavors. These tangy flavors are produced by specific bacteria that are added to the meat by chance during the handling of the meat, or by deliberately adding a known Starter Culture as part of the formula. The latter method is more desirable, as we can have controlled fermentation and can produce a consistent product.

FERMENTO: A dairy based product (Cultured Whey Protein and Skim Milk) used to produce a tangy taste in semi dry products such as Venison Summer Sausage, Cervelat, Goetburg, and any other Summer Sausage. The recommended level to start with is 3% (about 1 oz. per lb. of meat). You may add up to 6% to produce a more tangy taste, but do not exceed 6% or the sausage will become mushy. Fermento does not require refrigeration and eliminates the time necessary for the fermentation process to take place when using meat starter cultures. Instead of several days required for starter cultures to start fermenting; you can now stuff your sausage immediately and proceed to smoking.

MEAT STARTER CULTURES: Live bacteria that are added to the meat mix to lower the pH and are used in a very specific environment where the humidity and the temperature can be controlled. Different meat Starter Cultures are available to make products with different levels of "tang". Using meat Starter Cultures require a fermentation period, which is not necessary when using Citric Acid or Fermento.

ENCAPSULATED CITRIC ACID: Use encapsulated citric acid when making semi-dried (processed using heat) summer sausages or snack sticks when that distinctive "tang", associated with reduce pH, is desired but the lengthy fermentation cycle is not. When used correctly, it is almost impossible to tell if the sausage was manufactured by fermentation or by the use of this product. There is no need to worry about processing under special conditions. You just add the citric acid to the meat at end of the mixing process (making sure that you do not grind meat again), and then blend into the meat by hand or by mixer. If using a meat mixer, mix only until the encapsulated citric acid is blended into the meat mix, usually about one minute is sufficient. Longer mixing can cause the capsules to rupture resulting in the premature release of the citric acid. This can also happen when citric acid is run through the grinder.

Encapsulated Citric Acid is Citric Acid, a naturally occurring acid, that has been encapsulated (coated) with maltodextrine, a hydrogenated vegetable oil, which will melt at 135 degrees F. releasing the Citric Acid into the meat product. This prevents the Citric Acid from releasing and prematurely lowering the pH of your sausage meat mix. If the meat's pH drops before the protein sets at 105-115 degrees you will get a negative effect on the texture of your finished sausage. It won't bind as well and the texture will be crumbly. Since heat is needed this product is not used for making dry products (processed with no heat). Those products require a starter culture. Once the capsule has melted, releasing the Citric Acid into the product, a decrease in pH is achieved resulting in the distinctive "tang" or sour taste associated with reduced pH products.

Suggested usage for this purpose is 3 oz. for 25 lb. of meat

Also use to preserve color of fresh sausage during storage. Use 1/2 oz. to 1 oz. per 100 lb. of meat for this purpose.

NOTE: Too much Citric Acid will cause the meat to turn white.



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The Meaning of pH: The term "pH" is commonly used in processing foods. What does it mean? It is simply the symbol of a scale, numbered from 0 to 14 that rates water solutions according to their acidity or alkalinity.

Pure water is given the number 7 - right in the middle of the scale - because it contains an equal number of acidic and basic ions and is therefore neutral. As the alkalinity of a solution increases, the pH value goes up; as the acidity increases, the pH goes down. Each step represents an increase or decrease by a factor of ten. On this scale, the most acid substance is hydrochloric acid, which, in proper concentration, is rated at 0, or ten million times as acid as water. At the other end of the scale is a solution of sodium hydroxide, rated at 14, or 10 million times as alkaline as water. Solutions of other substances take their places in between.

PH value	Relative Acidity Or Alkalinity
0 acidity	10,000,000
1	1,000,000
2	100,000
3	10,000
4	1,000
5	100
6	10
7 Neutral (pure water)	1
8	10
9	100
10	1,000
11	10,000
12	100,000
13	1,000,000
14	10,000,000

PH of common things	pH
Hydrochloric acid, normal	0.1
Sulfuric acid, normal	0.3
Oxalic acid, 0.1 normal	1.6
Limes	1.8 - 2.0
Ginger ale	2.0 - 4.0
Lemons	2.2 - 2.4
Apples	2.9 - 3.3
Grapefruit	3.0 - 3.3
Bananas	4.5 - 4.7
Boric acid, 0.1 normal	5.2
Best pH for raw meats	5.6 - 5.8
Best pH for cooked meats	5.8 - 6.2
Cows milk	6.3 - 6.6
Drinking water	6.5 - 6.8
Pure water	7.0
Sodium Bicarbonate, 1.0 normal	8.4
Ammonia	10.6 - 11.6
Sodium hydroxide, normal	14.0