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Vinegar Adds SAS to Any Product

French fries are better with malt vinegar or ketchup as a condiment. Raw oysters are traditionally served with a vinegar and shallot mignonette. Southern stewed greens are exceptional when accompanied by cider vinegar. Vinegar has been used as a condiment by civilizations dating as far back as the Sumerians. Today, it is found in gourmet foods from mustard to complex sauces.

Vinegar was originally produced as a by-product of wine. The slow or “Orleans” method of production is still used today for finer, more flavorful vinegars. It also provides functional properties to food.

The most important contribution vinegar makes is added flavor. Fatty and bitter foods are complemented by either a lower-pH sauce with vinegar or a splash of vinegar. Second, it increases the flow of saliva, which makes it easier to consume or wash these foods down naturally. Third, it prevents microbial growth, making it critical in many processes.

Vinegar serves as a functional ingredient for manufactured products as well. It is used in mustard, ketchup, frozen dinners, center-of-the-plate sauces, dipping sauces, glazes, condiments, side dishes, and marinades. It is critical in many applications for full flavor development.

A multitude of vinegars are on the market and used in manufacturing. A proper balance among salt, acid, and sweetness (SAS) is critical for a flavorful product. When the SAS is in balance, the human is inclined to eat more. Take a dipping sauce that will be served with fried shrimp, for example. The salt will enhance the intended flavor of the sauce, whether smoked chipotle peppers, roasted vegetables, caramelized onion and garlic, herbaceous, or savory. The vinegar (acetic acid) in the sauce will be enough to enhance the flavor and create a bit of saliva. The saliva will eat through the fat and breading and keep the palate clean to encourage a person to eat more. Without this cleaning of the palate, the person would become saturated and find it a less-desirable eating experience. And the sweetness will round out each of the flavors. Each of these SAS components will enhance the intended flavor of the dish when they are in proper balance. This is the goal of a product developer and chef, so it is critical to know what the sauce will be used for to properly design the flavor system.

It is important to use vinegar that fits the intended flavor of a product. Apple cider, malt, red wine, rice, balsamic, distilled,

sherry, and tarragon are some of the many varieties of vinegar available on the market today. Each has a unique flavor profile. In cooking and manufacturing applications, vinegar is used to change or enhance the flavor of a product; at other times, it is used to change the pH. Each of these applications is functional. Some processing methods are enhanced and some products are microbiologically more stable when the pH is lower. Products that benefit from lower pH include hot-filled products, aseptic, hot-filled juices or sauces, and shelf-stable products.

Chefs often make a reduction of vinegar to create a more-intense flavor and change the consistency. Reduced balsamic vinegar is very flavorful—the flavor of the grapes is increased—the viscosity is increased, and the color is darker. The quality of the balsamic vinegar used will affect the overall flavor. Using a lower-quality product might result in a poor flavor profile. Typically, the reduction will enhance the original flavors. Reduction is a natural part of many processes.

My favorite vinaigrette combines several vinegars and juices. I use balsamic, brown rice, malt, and cider vinegars, along

with pomegranate and orange juices balanced with a high-quality, flavorful extra virgin olive oil. A touch of cracked black pepper and kosher salt complement this product. I balance the SAS with either honey or sugar. The result is a flavorful and complex dressing that is lower in fat and bursting with flavor.

The proper balance is critical and important for the end product to be perfect. How I serve the vinegar or what I serve it with will affect the SAS. If I am serving it with a salad topped with grilled salmon, I will use a touch more acid or lower the pH. If I am using it on a light salad of fresh field greens and roasted and salted pumpkin seeds, I may use a touch more sweetness. It's necessary to know the intended flavor and application to dial in the SAS of vinaigrette.

Food technologists should consider the traditional use of vinegar when designing a formulation. Refer to cookbooks, consult with a chef, and use the traditional ingredients that have been used for years when writing formulations. When creating a new product, use the vinegar that enhances the flavor and provides the functional properties needed in processing. Remain focused on the goal. After all, “It is all about flavor,” so keep your SAS in balance. ●

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