



NutraSweet® in Juice Beverages

ADVANTAGES OF NUTRASWEET® IN JUICE BEVERAGES

NutraSweet® brand sweetener has proven to be the sweetener of choice for diet carbonated soft drinks and many other low calorie, sugar-free beverages[§] since its introduction in the early 1980s.

NutraSweet, generically known as aspartame, is a high-potency sweetener manufactured and marketed by The NutraSweet Company. Aspartame is the methyl ester of the dipeptide L-aspartyl-L-phenylalanine. Its components are identical to those that occur naturally in many common foods.

The NutraSweet logo, used only on products sweetened with 100% NutraSweet® brand sweetener, is well-recognized and trusted by consumers. When displayed, the logo unit adds value to products because it is a recognized sign of great, sweet taste. In 1996, the United States Food and Drug Administration granted general use approval for NutraSweet.

NutraSweet offers many advantages, including cost savings, to manufacturers of juice drinks. Lower costs in existing sugar-sweetened fruit drinks can be realized when aspartame from The NutraSweet Company is blended with high fructose corn syrup (HFCS) 42. Both options provide opportunities for success in marketing light juice beverages.

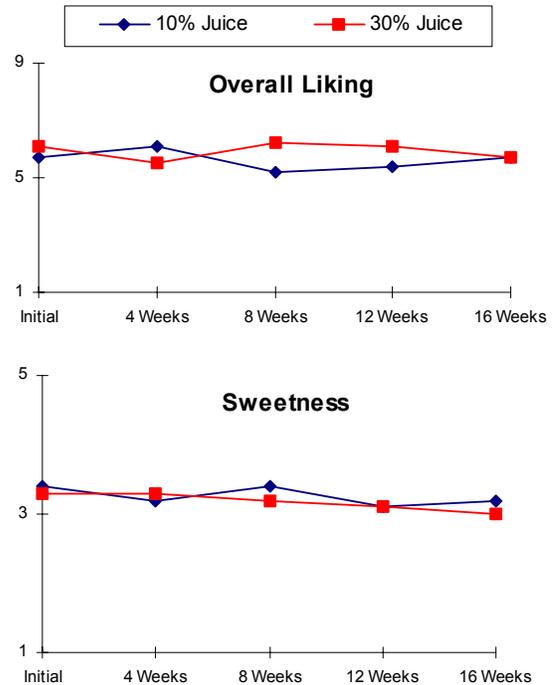
Traditionally, sucrose and high fructose corn syrup are the primary sweeteners used in juice beverages. When formulating beverages without carbohydrate-containing sweeteners, it is important to use a sweetener that provides a clean, sweet taste and works well with other ingredients to produce a great-tasting drink.

NutraSweet® brand sweetener has been shown to have a flavor and taste profile that is comparable to sugar. In addition, NutraSweet can extend and complement flavors, especially citrus. Sensory data on 10% and 30% orange juice beverage sweetened solely with NutraSweet showed acceptable overall liking and sweetness ratings over the expected shelf-life of the product. (See Figure 1.)

[§] It is best to consult with a regulatory or legal consultant to determine the appropriate claims and final labeling requirements for your products.

FIGURE 1. SENSORY COMPARISON OF STILL/RTD BEVERAGES

NutraSweet consistently meets or exceeds Food Chemical Codex (current edition) and USP/NF



SS#0428 & 0430

Standards for aspartame. The foundation for the high quality of NutraSweet lies in the many years of experience that The NutraSweet Company has in aspartame production. With this experience come technical expertise and ample production capacity to ensure customers a steady supply of high-quality product at competitive prices. Ongoing efforts of the R&D staff focus on providing product formulation guidance to food and beverage manufacturers.

WORKING WITH NUTRASWEET® IN JUICE BEVERAGES

NutraSweet® brand sweetener can be used in standard manufacturing processes. It is available in several forms: powder, granular, liquid, and blended with other commonly used food ingredients. NutraSweet® Granular™ has worked consistently well in juice beverages. Either Custom Granular 60™ or Custom Liquid 50™ will provide faster dissolution for those products that require it.

When processing beverages with NutraSweet, pH and temperature are the two most critical factors. Generally, NutraSweet dissolves more quickly in acidic conditions and in temperatures of 50° to 70°F (10° to 21°C). Maximum stability is observed at approximately pH 4.3, regardless of temperature. Currently, most marketed juice beverages with NutraSweet range in pH from 2.9 to 5.0.

As a dry ingredient, the stability of NutraSweet is excellent. When used in beverages, pH, temperature, and storage time all affect its stability. Aseptic processes and tunnel, UHT, HTST, and batch pasteurization are all acceptable methods for manufacturing juice beverages with NutraSweet. After processing, 92% to 100% of the NutraSweet remains. Distribution and storage typically exert a greater influence on product stability and acceptability over time.

With proper handling and storage, NutraSweet provides sweetness over the normal shelf-life for beverages. Sensory data shows that 10% and 30% juice beverages, sweetened solely with NutraSweet, maintained acceptable ratings when stored at 70°F (21°C) for at least 16 weeks. (See Figure 1.) Beverages made with blends of HFCS and aspartame could also be expected to have acceptable sweetness levels within the normal shelf-life.

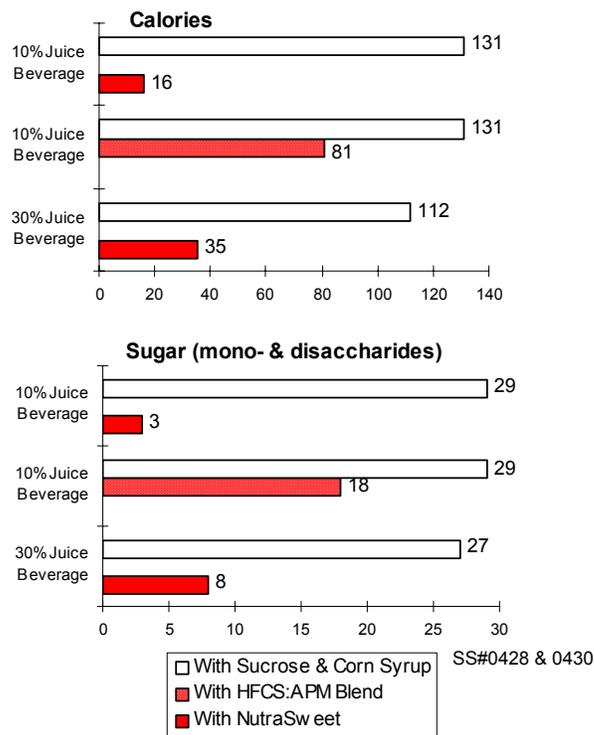
NUTRITION/HEALTH ASPECTS

Depending on product formulation, beverages with NutraSweet may qualify for no sugar added and light labeling claims. A caloric reduction of close to 90% is likely in juice beverages when sweetened with 100% NutraSweet instead of carbohydrate-containing sweeteners. In juice beverages formulated with ingredients that contain sucrose and corn syrup, a reduction of at least 1/3 of the calories can easily be achieved. (See Figure 2.)

Individuals with diabetes or with weight control problems generally find the use of products made with NutraSweet a useful adjunct to their basic diet. Research has shown that aspartame does not interfere with blood glucose control in diabetics, making it an acceptable sweetener.

However, the total caloric contribution of products containing NutraSweet must be considered a part of the total daily diet. Manufacturers concerned with conveying comprehensive information for those on special diets can include diet exchange guidance on the package label.

FIGURE 2. NUTRITIONAL COMPARISON OF JUICE BEVERAGES PER 8 FL. OZ. SERVING



MORE INFORMATION IS AVAILABLE TO YOU

This bulletin is intended to be general in nature. We are eager to work with you in the development of new products and processes. For additional information about our products, please call **1-800-323-5321 (USA/Canada)**

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Visit our website at
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The information contained herein is, to our best knowledge, true and accurate, but all recommendations or suggestions are made without guarantee, since we can neither anticipate nor control the different

conditions under which this information and our products are used. Each manufacturer should evaluate the nutrient content of their final products to determine compliance with FDA food labeling regulations when making nutrient claims. Further, The NutraSweet Company disclaims all liability with regard to its customers' infringement of third party patents. We recommend that our customers apply for licenses under any relevant patents. No statement herein or by our employees shall be construed to imply the nonexistence of relevant patents nor as a recommendation or inducement to infringe said patents. It is our policy, however, to assist our customers and to help in the solution of particular problems that may arise in connection with applications of our products.

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