

Advantages of Effervescence in the Beverage Market

by Joe Montgomery

Companies are looking for novel and beneficial ways to deliver increasingly sophisticated ingredients that have tangible benefits for their customer's health and lifestyle. One innovative delivery systems with application in the beverage market is effervescent technology. The effervescent dosage form offers some distinct benefits.

First, there is the issue of sustainability and environmentalism. There is growing consumer awareness of the impact their choices make on the environment. Bottled water and beverages using functional ingredients, such as vitamin waters, energy drinks and sports beverages, are increasingly popular and packaged largely in plastic bottles or aluminum cans. Developing effervescent tablets using similar functional ingredients ultimately use less packaging on a per-serving basis than similar products sold in bottles or cans. Tablets have been formulated to flavor up to 24 oz. of water, depending on the application.

In addition, the ability to package a large dose of active ingredients (up to 2 g in tablets and higher for powders) in a delivery system that can be taken anywhere means a consumer can turn any liquid into a functional beverage. Given the increased focus on minimizing the use of plastics and other petroleum-based products, the effervescent dose allows a consumer to get the benefits of a functional beverage without having to purchase a new bottle every time.

Another benefit this delivery system offers is that effervescent products allow for extremely efficient bioavailability for active ingredients. It is thought that the carbon dioxide produced by an effervescent reaction alters the paracellular pathway to increase absorption of vitamins, minerals and pharmaceutically active ingredients in the gastrointestinal (GI) tract. Additionally, buffering in the stomach causes the stomach to empty more quickly and allows for quicker absorption of active ingredients into the bloodstream.

Some active ingredients are sensitive to moisture or may be pH sensitive. With an effervescent dose, the manufacturing is done under extremely low-moisture conditions and packaged in a way that is either self-desiccating or completely moisture-proof until the product is used. With regard to pH sensitivity, effervescent products are particularly well-suited to amino acids or other active ingredients, which can be denatured in the low pH environment of the stomach.

Positioning an effervescent product as a "functional beverage" option also takes it out of the competitive realm of daily dietary supplements. Delivering nutritional ingredients in an effervescent that can be taken anywhere and with virtually any liquid can be much easier for people who have difficulty swallowing large pills, while still helping them meet their supplement needs. In addition, it is possible to create flavors that mask poor tasting vitamins, minerals and herbal extracts. This allows for the creation of a pleasing tasting beverage.

As people become more comfortable with the effervescent delivery system, and as companies increasingly understand the benefits of an extremely convenient, portable and easy-to-use package that delivers a positive, refreshing and beneficial experience, that upward trend will only continue. □

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