



DULZANA™

# DULZANA™

Organic Certified  
Clean Label  
1:1 Sugar flavor  
profile ingredient







# DULZANA™

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# WHAT IS THE PROBLEM WITH SUGAR?

One of the oldest and most mature markets worldwide is the global sweetener market, in which sugar still holds a major share. During the last decade, the sweeteners industry experienced significant growth globally due to innovation in R&D and manufacturing technologies. The intention was to better manage the prevention, cure, and recovery of an increasingly overweight, obese, and diabetic population. Today, people are settling more and more into sedentary lifestyles.

It is no secret that sweeteners are essential in the food and beverage industries. Companies continue to explore and enhance the use of sweeteners in several applications; including new product inventions, launches, and more. Consumers' energetic, fast-paced lifestyles will influence market growth even more in the near future.

With the introduction of new sweeteners beyond sugar, (caloric and non-caloric), the demand for sugar has dramatically decreased. Unfortunately, sugar is directly related to a number of health issues; causing dental problems and supplying "empty calories" that give a rapid "sugar high." If not burned off, this can turn sugar into fat.

Furthermore, diabetes is an increasing global health problem. Sugar has a high glycemic index value, which is why many people have turned (and continue to turn) to lower-calorie products and alternatives that obtain their sweetness from sources other than sucrose.

Another specific consumer need is the desire for low-calorie foods to better manage weight, promote an attractive physical appearance, and promote better overall health. Low-calorie sweeteners are used to help reduce the caloric content of foods.

Current non-sugar sweeteners provide consumers with a sweet taste without



# Dangers of Sugar

the calories or carbohydrates, but with the caveat of a terribly unnatural aftertaste. This has been noticed in many products, including aspartame, acesulfame-K, sucralose, saccharin, cyclamate, neotame and, more recently, natural stevia.

On average, one person consumes approximately 43 pounds of sweeteners per year. Research proves that almost everyone is born with the desire for a sweet taste. Historically, there are plenty of references about the use of various types of sweeteners within almost every culture across the planet.

Sweeteners are used in all types of foods, including beverages, soft drinks, desserts, pastries, sauces, soups, cereals, granola bars, protein shakes, fruit juices, candy, and more. The use of sweeteners depends on various factors; such as region, culture, nationality, and personal taste.

Sweeteners are essential to the development of several new food and drink products marketed based on their ingredients being altered to become “diet,” “light,” “sugar reduced” or “sugar-free.”



# DILEMMA BETWEEN SUGARS AND CURRENT SWEETENERS



## Negative Effects of Sugar and Caloric Sweeteners:

- Obesity
- Diabetes
- Tooth Decay
- Heart Disease

## Negative Effects of Highly Processed Non-Caloric Sweeteners:

- The flavor can be far too intense
- Low comparability to sugar
- Bitter aftertaste
- Mostly over-processed
- From synthetic sources
- Proven long-term negative side effects

## Need for low caloric Sweeteners

There are several major drivers for the increasing popularity of low-caloric sweeteners:

- An increasing diabetic population and surging risks of heart diseases. This results in attempts to develop lower calorie foods.
- New health-conscious consumer groups who demand a lower sugar intake. They want to focus on weight reduction efforts.
- Clients express concern over the development of dental caries.
- A fresh change to over-processed, synthetic non-caloric sweeteners.



2 Ounces of Cream + 2 Teaspoons of Sugar x 2 Cups of Coffe a Day = 300 CALORIES

U.S. AVERAGE ADULT DAILY COFFEE COMSUMPTION.

IMAGINE THE BENEFITS OF LOWER CALORIES WITHOUT SACRIFICING TASTE

# LABELS

## **“NO SUGAR ADDED”**

Claims make a difference

GIVEN THE GLOBAL SATURATED DEMAND OF SUGAR, IT'S A FACT THAT FOOD MANUFACTURERS ARE INTERESTED IN PROVIDING CONSUMERS WITH LOW-SUGAR OPTIONS. HOWEVER, CURRENT REGULATION RELATED TO SUGAR

Non-caloric sweeteners are effective in replacing the sweetness sugar provides, but not the desired sensory characteristics of sugar. These include bulk, flavor, color, and texture; making the product undesirable. Sugar provides good-keeping quality, moisture, tenderness, and flavor. Various types of compensating ingredients/bulking agents (such as colors, hydrocolloids, emulsifiers, and leavening ingredients) must be added to achieve the characteristics sugar provides for several applications. However, nothing works quite like the real thing.

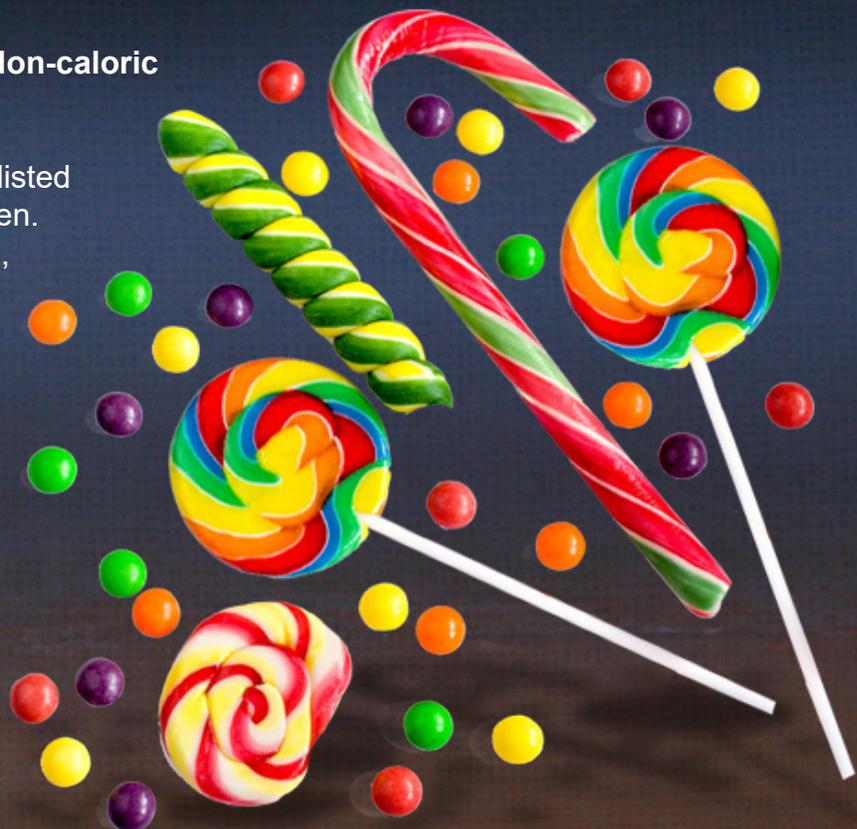
Consumers and formulators are dissatisfied with the sensorial outcome of sweeteners, which are 200 to 300 times sweeter than sucrose. Some non-sugar sweeteners, like aspartame, undergo a reaction that causes a loss in sweetness intensity when exposed to high temperatures. Some high-intensity sweeteners, like stevia, have a strong bitter aftertaste. This reduces its acceptability.

**Health issues related to Non-caloric sweeteners:**

The U.S. government listed saccharin a possible carcinogen. According to [aspartame.org](http://aspartame.org), Diet Soda accounts for 70% of aspartame consumed. A 12-ounce can of Diet Soda contains 180mg of aspartame. Aspartame users ingest an average of 200mg per day. It has been suggested over several studies a link between aspartame consumption and cancer risk.

Many non-nutritive sweeteners are non-caloric because they are not metabolized, and pass through the body unchanged.

**“At The Green Labs, we are conscious that every once in a while, a new technology, an old problem, and a big idea turn into an innovation. The biggest beneficiaries of this differentiation? .....our clients.”**





**...YET, THE  
SOLUTION  
WAS RIGHT  
IN FRONT  
OF US!**



New product development in the sweeteners market has been extremely active over the past few decades. Chemists have invented various sugar substitutes that failed to deliver desirable properties, such as an improved aftertaste. The market demands non-sugar sweeteners across a broader set of applications.

- **The search to push for the development of new products has stopped.**

- **Thanks to Dulzana™** many of these key issues, such as low calories, clean label, and a good aftertaste, has been solved.

The ability to inhibit activation of the bitter taste receptors can have far-reaching effects if the aftertastes of artificial sweeteners, among other foods, beverages, and even pharmaceuticals, could be minimized.

# DULZANA™ BENEFITS

With these complications in mind, we developed **Dulzana™** with a Brix of 95 and a palatable ratio to sugar of 1:1. This product provides outstanding flavor, with a third of the calories of regular sugar. **Dulzana™** offers the following benefits:

- **Dulzana™** is considered an ingredient
- “No added sugars” in your label
- Sweet, clean taste
- Closest flavor profile to sugar
- Organic Certified - (conventional available)
- 100% Natural
- Not derived from synthetic sources (Saccharin, Cyclamate, Aspartame, Acesulfame-K-, Sucralose, Neotame, or Aspartame)
- Not derived from starch (Maltodextrin, Corn & Glucose Syrup, or Dextrose)
- Not derived from non-nutritive Sweeteners (Thaumatococcus, Glycyrrhizin, Tagatose, Monatin, Luo Han Guo, or Brazzein)
- Water-soluble
- Heat, shelf, and pH stable
- Transparent
- Flavor enhancer
- Great feel in the mouth
- Non-bitter aftertaste
- Low caloric Impact
- Brix 95
- Regulatory approval in several countries as a “natural masking agent”
- Not considered an E-Number
- Glycemic index < 36
- Natural Antioxidant
- Can be labeled as “Apple Powder” or “Apple Extract Powder” on ingredients list
- Contains the healthy phytochemicals of an apple, including pectin fiber
- Apple extracts are considered GRAS



DULZANA™

## Better than Sugar

Now you can remove sugars from your label and instead place a nice big “No added Sugars”. Dulzana™ has a 1:1 ratio comparable to sugar, but with all the natural benefits of an apple !

## No Chemicals

Dulzana™ has none of that synthetic sources such as Saccharin, Cyclamate, Aspartame, Acesulfame-K-, Sucralose, Neotame, and Aspartame. As well as any starch derived sources as Maltodextrin, Corn & Glucose Syrup, and Dextrose. And best of all Dulzana™ is non-derived from non-nutritive sweeteners such as Thaumatin, Glycrrhizin, Tagatose, Monatin, Luo Han Guo, and Brazzein

## Yum !

Dulzana™ has a very sweet clean taste and has a great mouth feel. It is a flavor enhancer with a non-bitter aftertaste. Dulzana™ is water soluble and once diluted it is transparent. It is also heat, shelf and pH stable with a low caloric impact .

## Star Product

Our product has regulatory approval in several countries as a “Natural masking agent”. It’s Non-considered an E-Number, had a glycemic index of < 36 and a Brix 95.

## Natural and Certified

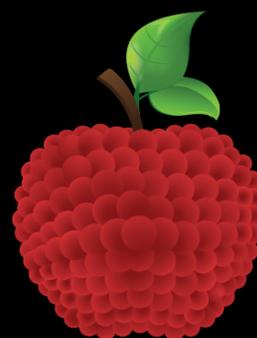
Dulzana™ is USDA Organic Certified , but it can also come as conventional material. The product is 100% Natural. There is also the possibility to get the material Kosher Certified. Apple Extracts are considered GRAS and Dulzana™ is has a clean label status.

## Healthy Benefits

Dulzana™ is a natural antioxidant that can be labeled as “Apple Powder” on an ingredients list. It contains naturally occurring apple’s healthy phytochemicals such as pectin fiber.



# SO, WHAT EXACTLY IS DULZANA™ ?



DULZANA™

Dulzana™ is a 100% natural, low-calorie, organic-certified sweetener. It features healthy, naturally-occurring antioxidants and a very pleasant flavor. The ingredient is obtained from the pure extraction of cultivated apples from the best soils of Brazil, and is carefully manufactured to preserve apples' healthy phytochemical properties. The goal is to offer a functional ingredient and/or product that can be used for multiple applications across several industries.

Apples, a rich source of nutraceuticals and pectin fiber, are one of the most widely consumed fruits in the United States. It is believed that the daily consumption of apples provides great health benefits.

Apples, compared to other fruits, contain high levels of flavonoids and polyphenols, recognized for their antioxidant and anti-inflammatory activities. Several studies have associated apple intake with maintaining health and reducing one's risk of developing various degenerative diseases.

Dulzana™'s sweet flavor comes from our specific proprietary processing method, . This involves us extracting fibers from Brazilian red apples to microencapsulate them at ambient temperatures, producing a fine powder while preserving all the nutrients initially intended by mother nature.

Dulzana™'s plant matrix contains fructose from apples among other phytochemical beneficial ingredients. These include quercetin, chlorogenic acid, catechins, phlorizin, and pectin. Recent studies in animal models have suggested a synergistic interaction between apple polyphenols and pectin, a soluble fiber. Apples can boost the beneficial microbiota of the gastrointestinal tract, owing to the fact that a proportion of apple polyphenols can escape absorption in the





small intestine. Together with non-digestible polysaccharides reaching the colon, they can serve as substrates for bacterial fermentation.<sup>2</sup>

Apples, like other fruits, contain fructose: A simple natural carbohydrate that’s twice as sweet as ordinary table sugar. Fructose is one of the most abundant monosaccharides in fruits. Fructose does not cause a rapid rise (and subsequent large fall) in blood glucose levels. The glycemic load per gram of fructose is only 19, while that of table sugar is 65.

Studies have suggested that a low-GI diet, for an extended period of time, may induce favorable metabolic effects and contribute to the prevention of type 2 diabetes.<sup>3,4</sup> Fructose is mainly metabolized in the liver, meaning it is not absorbed into the bloodstream as quickly. Its lower GI, when compared to sugar, may be safer for those who need to control their blood sugar levels, including those trying to control their weight.<sup>5</sup>

Dulzana™ is ideal for sports enthusiasts, bodybuilders, and those who need a lot of carbohydrates to have a sustainable energy supply. However, excessive intake of fructose may pose the same risks as other caloric sweeteners.

Dulzana™’s neutral taste combines the benefits of apple sweet profile without getting any apple flavor.

	<i>Dulzana™</i>	Brown Sugar	Refined Table Sugar (Saccharose, sucrose)	Glucose (Dextrose)	Maltodextrin	Honey	High-Fructose Corn Syrup (45 Percent Glucose And 55 Percent Fructose)
GI	≤36		65	100		50-75	75 - 115x
°Bx g sugars / 100 g solution	95 (95g sugars/100 solution)						
Calories/10g							
2 teaspoon (tsp)= 10g 1tablespoon = 15g	17/10g	48 cal/10g	48 cal/12g 40 cal/10g	364cal/100g 36.4 cal/10g	190 cal/50g 38cal/10g	64cal/tablespoon 64 cal/15g 42.6 cal/10g	53 cal/tablespoon 53 cal/15g 35.3 cal/10g

**2022**

DULZANA™ IS ESTABLISHED AS A STANDARD RECOGNIZED INDUSTRY BRAND



**2019**

\$18.2 BILLION FORECASTED AT A CAGR OF 4.3%

**2018**

DULZANA™ ENTERS THE NUTRACEUTICALS, FOOD & BEVERAGE MARKETS



**2015**

DULZANA™ DEVELOPMENT STARTS THROUGH MARKET ANALYSIS



**2014**

\$14.7 BILLION



**2013**

\$14.1 BILLION

Non-sugar sweetener sales from 2013 to 2019. Dulzana™ is catching a growing trend due to increased health consciousness, awareness, and use of non-sugar based dietary foods.



# CONSUMPTION BENEFITS OF DULZANA™

## Absorption Benefits:

- Since the human body has a lower calorie intake, **Dulzana™** helps control weight.
- **Dulzana™** is not an anorectic agent. In other words, it does not reduce appetite. It simply helps to enhance the flavor of food or beverages while producing a palatable diet for those watching and/or attempting to lose weight.
- **Dulzana™** can satisfy a “sweet tooth” with a third of the calorie-count found in regular sugar.
- Unlike traditional sugar, **Dulzana™** low amount of calories come from fructose,

meaning it has a negligible effect on blood sugars.

- **Dulzana™** is 100% manufactured from apples, it does not contain man-made chemicals not found in nature. The reason behind our development comes from the fact that the human body is incapable to process and absorb these synthetic chemicals. Instead, we offer a natural ingredient without harmful side effects.

**Dulzana™** gets closer to the standard definition of “Ideal Non-Sugar Sweeteners,” as described by the Calorie Control Council, Atlanta (1985):

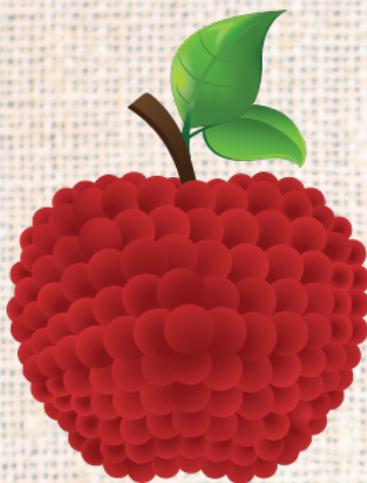
- Should have the same (or greater) sweetness as sucrose
- Should be colorless, readily-soluble, stable, functional, and economically feasible
- Should contribute reduced or fewer calories to the diet
- Should be non-toxic and a non-promoter of dental caries



**MADE FROM  
APPLES WITH  
TONS OF LOVE!!**



# WHAT IS THE PROCESS BEHIND



TGL-CDSO™  
TECHNOLOGY

DULZANA™

The Green Labs Cool Drying System Zero Carrier™ is a proprietary processing technology that converts a raw ingredient's biomass, in its liquid form, into powder. This is done by removing moisture components from liquid extracts by drying at cool temperatures without affecting naturally-occurring active compounds from the plant matrix. Instead of using carriers after drying, we have researched and developed the most effective and natural way to maintain the product's power from its natural form.

As a result, highly functional 100% PURE raw apple powder sweetener, in bulk quantities, is manufactured for nutraceutical, food, and beverage applications.

## Regulatory Compliance Importance

Unlike high-intensity sweeteners (HIS,) Dulzana™ is considered a naturally "safe" product. It does not need to undergo the FDA's stringent food additive approval process to be used in foods and beverages. Because there are no analytical methods to quantify the amount of added sugars separately from intrinsic sugars, the FDA proposes the following. When a certain food contains both added and naturally-occurring sugars, the manufacturer must make and keep records to verify the declared amount of added

sugars.

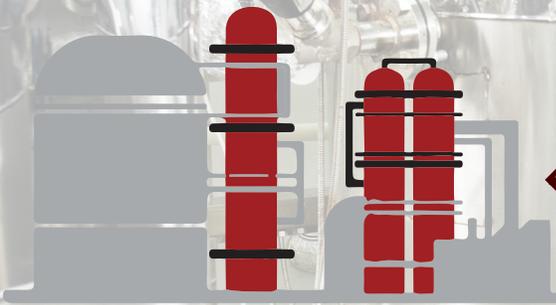
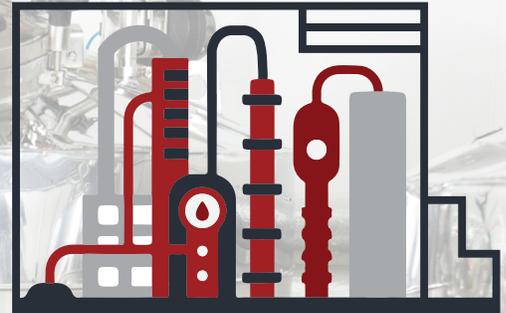
The agency proposes the declaration of added sugars to enable consumers to implement the 2010 Dietary Guidelines for Americans' recommendation to reduce their intake of added sugars (and solid fats).

The FDA also expressed the view that foods with added sugars are typically less nutritionally dense than those with intrinsic sugars, such as Dulzana™, which is 100% natural and extracted from low Heavy Metal Brazilian apples.

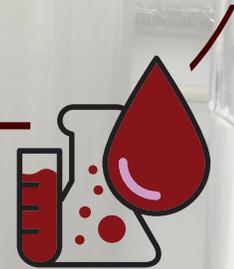


Harvesting of Apples

Molecules are selected and separated from the rest of raw materials.

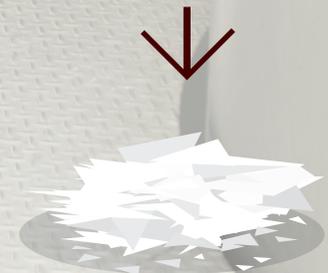


Cold Molecular Concentration where active compounds are agglomerated and spherical evaporation of solvent protects solids (phytonutrients) from thermal shock.



High pressure drying allows natural fibers and fat to microencapsulate the liquid extraction of biomass drying at ambient temperatures with the purpose of protecting nutrients original purity.

**TGL-CDSO™**  
TECHNOLOGY



Final Product

**AS A RESULT, HIGHLY FUNCTIONAL 100% PURE RAW POWDERED INGREDIENTS IN BULK QUANTITIES ARE NOW MANUFACTURED FOR NUTRACEUTICAL, FOOD AND BEVERAGE APPLICATIONS.**



## ***Does The Green Labs understand the Sweetener Market?***

Non-nutritive sweeteners, also known as high-intensity sweeteners, do not provide calories and are many times sweeter than sugar. Some commonly consumed foods with non-nutritive sweeteners are Diet Sodas, cereals, and sugar-free desserts such as ice cream. Non-nutritive sweeteners are found in many products today, due to their low or non-caloric characteristics.

This can be used as a method of advertisement for dieters or those conscious of their sugar intake. The food and beverage industries are increasingly replacing sugar or corn syrup with non-nutritive sweeteners in a range of products traditionally containing sugar.

New products are being launched as consumers are increasingly becoming aware

of the vitamins, minerals, and nutrients needed to maintain a healthy diet. Consumers are searching for newer, cleaner ways to meet their recommended daily intake. **Dulzana™**, with a high level of soluble fiber, offers manufacturers a low-calorie and great tasting ingredient to develop functional final products while adding a creative boost to unlimited mixes of nutraceuticals, essential vitamins, or fiber in each packet or teaspoon. This is a great way to add a little more than just “sweetness” to food and beverages.

**Dulzana™** is carefully extracted using a vegan-friendly process that harnesses the sweetness of natural apples without the residual bitterness.



# WHERE IS THE MONEY ?

Non-sugar sweetener sales grew from \$14.1 billion in 2013 to \$14.7 billion in 2014. The market is estimated to rise at a CAGR of 4.3% and be worth nearly \$18.2 billion by 2019. This growth is due to increased health consciousness, awareness, and use of non-sugar based dietary foods.

## SUMMARY TABLE

Global Market for Sugars and Non-Sugar Sweeteners, Through 2019 (\$ Millions)

Type	2012	2013	2014	2019	CAGR% 2014-2019
Sugar	107,991.99	90,003.4	92,126.7	104,658.3	2.6
Non-Sugar Sweeteners	14636.3	14,097.3	14,732.2	18,163.7	4.3
Total	122,628.2	104,130.7	106,858.9	122,822.0	2.8

Source: BCC Research

### STRONGER DEMAND FROM CONSUMERS

Sweeteners are essential to the development of several new food and drink products marketed on the basis of their ingredients being altered to become “diet,” “light,” “sugar-reduced,” or “sugar-free.” It is all triggered by the following:

- Consumer attraction to food and drinks with reduced-calorie contents while still delivering the full sensory experience of sugared products
- Concern about the global rise in obesity
- Consumer demand for healthier products
- Other health issues such as diabetes and dental cavities (major factors leading to the shift to low calorie, non-sugar sweeteners).

Consumer research shows that low-calorie foods and beverages have become part of the lifestyle of millions of people who want to stay in better overall health, control their weight, or simply enjoy the many low-calorie products available.

### GLOBAL NON-SUGAR SWEETENERS MARKET

Globally, the non-sugar sweetener market was worth \$14.6 billion in 2012 and is expected to reach \$18.2 billion by 2019, growing at a CAGR of 4.3% from 2014 to 2019. This steady growth is attributed to the growing popularity of low-calorie products and health concerns related to the use of sugar.

### MARKET ANALYSIS FOR NON-SUGAR SWEETENERS

Non-sugar sweeteners can be loosely defined as: “Any sweetener that can be used instead of regular table sugar.” Today, sugar substitutes are found in a variety of food and beverages marketed as “sugar-free” or “diet,” including soft drinks, chewing gum, jellies, baked goods, candy, fruit juice, ice cream, and yogurt.

Another factor that drives the global non-sugar sweetener market is consumer magnetism to food and drinks with reduced-calorie contents.

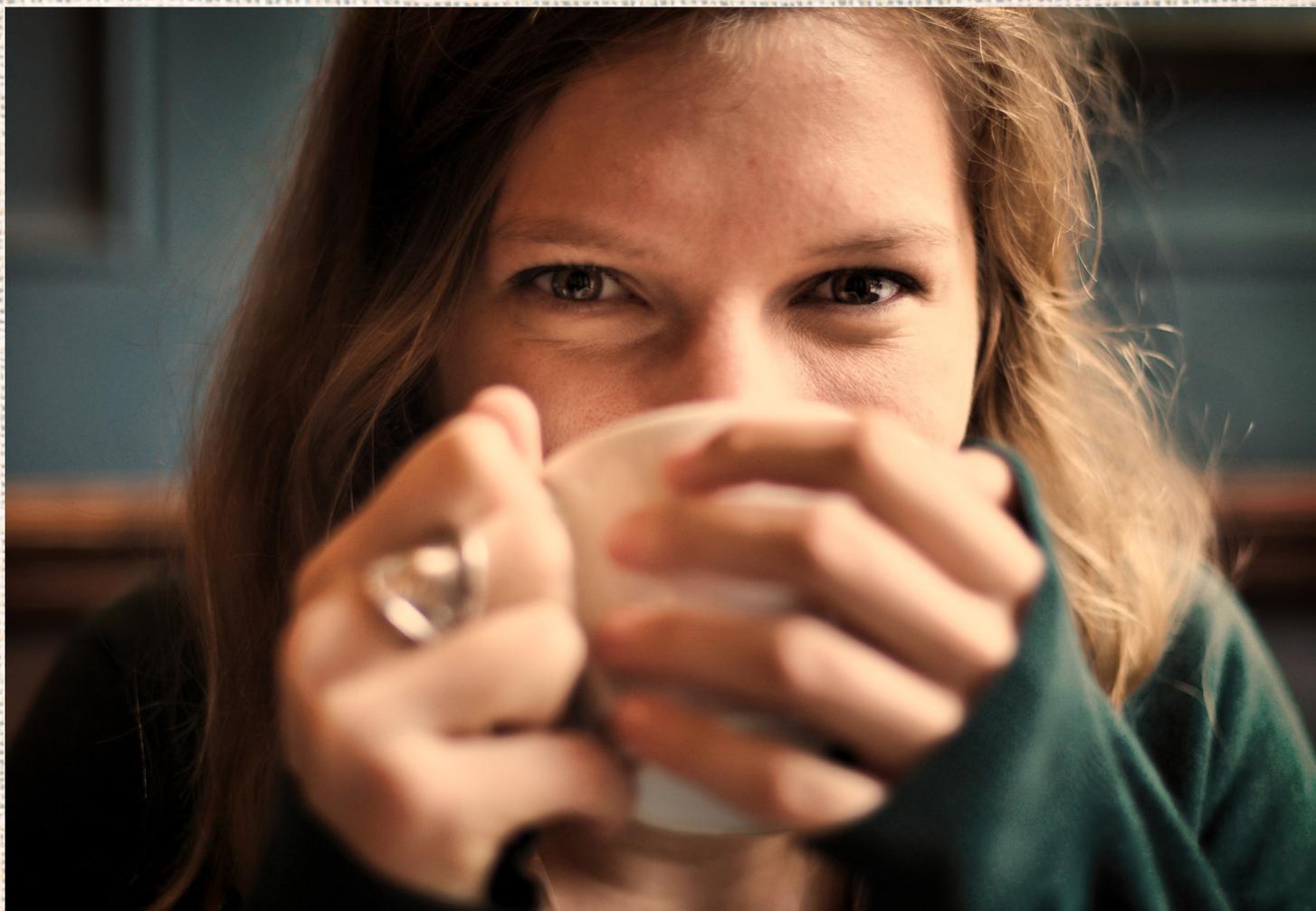
### Global Market for Non-Sugar Sweeteners by Type – Through 2019 (\$ Millions)

Type	2012	2013	2014	2019	CAGR% 2014-2019
Caloric Sweeteners	10,225.5	9,508.8	9,896.2	11,846.9	3.7
Non-Caloric Sweeteners	2,214.8	2,306.7	2,432.6	3,231.1	5.8
Sugar Alcohols	2,196.0	2,281.8	2,403.4	3,085.7	5.1
<b>Total</b>	<b>14,636.3</b>	<b>14,097.3</b>	<b>14,732.2</b>	<b>18,163.7</b>	<b>4.3</b>

Source: BCC Research

#### North America

North America has been a hub for companies that experiment with and develop novel products to meet consumers’ demands. For sweet applications, companies are focusing on the development of differential products to cater to new market requirements. North America is the largest market in this regard, and is growing at a robust rate.



**“Coffee and Tea Industries benefit the most out of Dulzana’s clean flavor profile”**

# IN WHAT APPLICATIONS CAN I USE DULZANA™ ?

Low-calorie sweeteners are widely used in thousands of diet drinks and other food products; such as yogurts, desserts, and gum. Food manufacturers often use a blend of non-nutritive sweeteners, or a blend of sugar/nutritive sweeteners and non-nutritive sweeteners, to improve the flavor acceptability of non-nutritive sweeteners.

**Dulzana™** enhances both fruity and subtle flavors, further demonstrating good stability. It ensures that there is no difference in a product's taste over time. **Dulzana™** promotes a refined taste profile over the lifetime of the product, while also achieving a range of other nutritional and technical clean label attributes. These include:



- Organic Certified
- Kosher Certified
- GMP Compliant
- Gluten Free
- Vegan Compliant
- Zero Sodium
- Low Glycemic Index
- “Non added Sugars” as per 21CFR101.60
- Allergen Free
- Baby/Toddler friendly
- Fat Free
- Non-Chemical additives
- Non-GMO
- Food Ingredient
- Functional and Superfood friendly
- No artificial colorants or flavors
- Manufactured under ecological & environmental practices
- 100% Natural
- Non-artificial sweeteners
- BSE-TSE Free
- Prop 65 Compliant
- Low Heavy Metals and Microbes

This versatile, clean-tasting sweetener is as easy to formulate as sugar, and studies have shown that it is preferred by consumers. It offers a superior taste profile, making its caloric contribution to beverages negligible.



In relation to soft drinks and offers a clean, effervescent flavor, often associated with stevia-gum manufacturers' new trend sugar-free, aspartame-free, and intensity sweetener, often disliked aftertaste.

beverages, Dulzana™ without the aftertaste sweetened beverages. Chewing is going after formulations which include stevia. Stevia is a natural high-by consumers due to its characteristic

Designed specifically for beverages, sauces, marinades, condiments, baked goods, jellies and confections, Dulzana™ is highly soluble. It is appropriate across a wide range of formulations seeing as it works so well with other sweeteners. It is also heat, shelf, and pH stable.

Dulzana™ is as sweet as sugar. It can easily be plugged into formulations at a 1:1 ratio to replace sucrose or high fructose corn syrup to reduce calories and enhance flavor.

### Global Market for Non-Caloric Sweeteners/Non-Nutritive Sweeteners/High-Intensity Sweeteners by Application – Through 2019 (\$ Millions)

Type	2012	2013	2014	2019	CAGR% 2014-2019
Beverage	836.5	871.1	918.1	1,209.5	5.7
Tabletop	532.8	555.0	585.2	775.3	5.8
Confectionery/Candy	471.6	491.3	518.4	609.1	5.9
Frozen Desserts	242.3	252.3	266.2	357.9	6.1
Others	131.6	137.0	144.7	198.3	6.5
<b>Total</b>	<b>2,214.8</b>	<b>2,306.7</b>	<b>2,432.6</b>	<b>3,231.1</b>	<b>5.8</b>

Source: BCC Research

### Market Share

Beverages had the largest share of the non-caloric sweetener market in 2013 at 37.8%. Tabletop sweeteners had a 24.1% share and confectionery held a 21.3% share. Frozen desserts captured a 10.9% share while others had a 5.9% share in 2013.

#### Global Market Share of Non-Caloric Sweeteners/Non-Nutritive Sweeteners/High-Intensity Sweeteners by Application – 2013 (%)

Type	Share
Beverage	37.8
Tabletop	24.1
Confectionery/Candy	21.3
Frozen Desserts	10.9
Others	5.9
<b>Total</b>	<b>100</b>

Source: BCC Research



### **Beverages**

Low-calorie carbonated beverages form the fastest-growing segment in the diet food and beverages market. They are typically sugar-free, artificially sweetened, nonalcoholic carbonated beverages. These are generally marketed toward health-conscious people, diabetics, athletes and other people who want to lose weight, improve physical fitness or reduce their sugar intake. Opinion is mixed as to the taste of these beverages; some think they lack the taste of their sugar-sweetened counterparts while others think the taste is similar. Some also note an unusual non-sugary aftertaste. Others feel that cola has no aftertaste and that cola sweetened by high fructose corn syrup has a gritty, oversweet aftertaste.

### **Beverage Market Revenue**

The global market for beverages (low-calorie carbonated) was \$871.1 million in 2013 and reached \$918.1 million in 2014. Sales are estimated to reach \$1.2 billion by 2019, rising at a CAGR of 5.7%. North America was the market leader with \$382.3 million in sales in 2013, which are estimated to reach \$525.7 million by 2019. This growth is attributed to the growing popularity of sugar-free beverages, which primarily use non-caloric sweeteners.

### **Candy/Confectionary**

Sugar-free chewing gum dominates the chewing gum market in many countries. Most Sugarless gum now outsells sugared gum.

Chewing sugar-free gum stimulates the production of saliva by up to 10 times the resting (or unstimulated) rate. Saliva neutralizes plaque acid from the mouth and helps reduce the risk of dental caries by up to 40%. The stimulated saliva also helps repair early dental lesions through remineralization of the tooth's surface.

Chewing gum continues to be a favorite among U.S. consumers. Consumers, including adults, seniors and children alike, continue chewing various types of gum for a variety of reasons, thereby adding to the market demand in this industry. Innovations such as smoking-cessation gums and dental gums, which promise to clean or whiten teeth, entered the industry in the late 1990s.

### **Candy Market Revenue**

The global market for confectionary products in 2013 was at \$491.3 million and \$518.4 million in 2014. This market is expected to grow at a CAGR of 5.9% and be worth \$690.1 million by 2019.





### **Tabletop Sweeteners**

The tabletop sweetener is any non-sugar sweetener used just like sugar for everyday use. Tabletop sweeteners are available for individual use and are supplied in three different forms:

- Tablet.
- Granulated.
- Liquid.

#### **Market Revenue**

North America is the leader in this category with a 43% market share in 2013. The global market for tabletop sweeteners in 2012 was \$532.8 million, which reached \$555 million in 2013. This market is expected to grow at a CAGR of 5.8% and reach \$775.3 million by 2019.

### **Frozen Desserts**

Like caloric sweeteners, non-caloric sweeteners like sucralose, aspartame and stevia are used in frozen desserts. They contribute to a lower glycemic index. This market is growing due to the health consciousness of consumers who abstain from other conventional forms of desserts to prevent weight gain or due to diabetes-related issues. Products with low calories are a premium product category for emerging markets and thus command higher prices, which boosts the overall revenue of this product category in these markets.

#### **Market Revenue**

The global market for frozen desserts is estimated to reach \$357.9 million by 2019.



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### **Other Foods**

Other applications of non-nutritive sweeteners include use in fillings, yogurt, sweet sauces and toppings, alcoholic and other low-calorie beverages. These are smaller niche markets that satisfy the specific needs of their consumers. All the products included in this category have not yet developed completely and do not have a mature market yet. Products such as diet yogurt or diet bakery products are still nascent but are increasing rapidly. This trend has caught up well in relatively matured markets such as the U.S. and is growing rapidly in emerging markets as well.

#### **Market Revenue**

The global market for other low-calorie products in 2012 was \$131.6 million and \$137 million in 2013. The market is estimated to reach \$198.3 million by 2019, rising at a CAGR of 6.5%. The North American market and emerging markets are projected to grow by a CAGR of 6.3% and 7.4%, respectively. Revenues in North America and emerging countries are expected to reach \$68.2 million and \$87.7 million, respectively, by 2019.



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# The Green Labs™

211 Warren Street Suite 206  
Newark, NJ 07103 USA  
Toll Free 1-800-219-3086  
Toll Free Fax 1-800-219-3087  
General Email: [info@thegreenlabs.com](mailto:info@thegreenlabs.com)  
Visit us online at: [www.thegreenlabs.com](http://www.thegreenlabs.com)

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