

ARTIFICIAL SWEETENERS: A MARKET WATCH

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ABSTRACT

Artificial sweeteners are so much sweeter than sugar that very small amounts are needed to create a sweet taste. Some sugar substitutes are natural and some are synthetic. The intensely-sweet sugars substitutes have been widely in use are saccharin, aspartame, sucralose, neotame, and acesulfame potassium. Stevia is a comparatively newer Herbal sweetener and are used extensively. The present paper enumerates the market trend of the artificial sweeteners worldwide.

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INTRODUCTION

Today, the growing health awareness has increased the demand for quality food products that offer better health. Consumers are demanding a greater variety of low calorie products as they strive to make better food variety.

The sweetener is used as a food additive which adds the basic taste of sweetness; artificial sweeteners are sugar substitutes. A sugar substitute is food additives that substitute the effect of sugar in taste, but usually has less food energy. Artificial sweeteners are so much sweeter than sugar that very small amounts are needed to create a sweet taste. Some sugar substitutes are natural and some are synthetic. There is a link that sugar can cause tooth decay. A high intake of sugar does not cause diabetes, people with diabetes the amount of simple sugar they eat often needs to be reduced.

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Saccharin:

Saccharin is an oldest artificial sweetener, developed in 1879. It is 200 to 700 times sweeter than sugar. After being suspected of causing bladder cancer in rats in 1972, many studies were done which ultimately disproved any link to cancer. According to the National Cancer Institute, *"Human epidemiology studies (studies of patterns, causes, and control of diseases in groups of people) have shown no consistent evidence that saccharin is associated with bladder cancer incidence."*

Aspartame:

Aspartame was approved by the FDA in 1981. It is 200 times sweeter than sugar. Its chemical compound breaks down into a substance known as phenylalanine. This can pose a danger for people who have Phenylketonuria, (PKU) but overall, aspartame is considered safe for the people

Acesulfame-K

Acesulfame-K was approved in 1988 as a "tabletop sweetener" and in 2003 as a common use sweetener. It is not metabolized by the body, which means that no calories are absorbed when consumed. It shows 200 times sweetness than sugar.

Sucralose:

Sucralose comes from sugar, but it is 600 times sweeter. Body does not absorb when consumed, so it does not add calories to food articles. In 1999, it was approved as a common use sweetener. It can also be used in home baking to reduce calories in homemade foods.

Neotame:

Neotame is 7,000 to 13,000 times sweeter than sugar. It was approved in 2002 as a common use sweetener. Although it is related to aspartame, it doesn't carry the same unwanted effect in relation to phenylalanine, because a least quantity of phenylalanine is formed during digestion.

Stevia

Stevia is a natural sweetner available in the market. Stevia is a south american native sweetner plant of sunflower family. The raw stevia leaves are around 35 - 40 times sweeter than sugar, stevia extract are sweet upto 300 times of ordinary sugar

Rationale for consumption of artificial sweetener

- Artificial sweeteners helps reduce calorie (energy) intake and assist weight loss. Social and health concerns relating to obesity is driving the consumption of artificial sweetener
- sugar substitutes are considered to be tooth friendly when compared to sugar
- The prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. people with diabetes have difficulty in controlling their blood sugar levels. By limiting their sugar intake with artificial sweeteners, they can enjoy a varied diet while closely controlling their sugar intake. Also, some sugar substitutes do release energy, but are metabolized more slowly, allowing blood sugar levels to remain more stable over time.

People with reactive hypoglycemia will produce an excess of insulin after quickly absorbing glucose into the bloodstream. This causes their blood glucose levels to fall below the optimum level required for proper physiological function. As a result, like diabetics, they must avoid intake of high-glycemic foods and often prefer artificial sweeteners as an alternative.

WORLD MARKET - LOW CALORIE SWEETENER

Total market for sweetening agent is about over \$ 1 bill.

Low calorie sweetener market includes six major categories viz; saccharin, aspartame, sucralose, neotame, acesulfame potassium and Stevia (herbal sweetener).

Sl.No.	Artificial Sweeteners	MS%	Value (in Mill \$)	Key market Areas
1	Aspartame	44	440	NA, Europe, Asia
2	Saccharin	11	110	Asia, Europe, USA
3	Sucralose	26	260	USA, Europe
4	Cyclamate	10	100	Asia, Europe
5	Aceulfame K	8	80	NA, Europe, Asia
6	Stevia	1	10	-----
7	Total	100	\$ 1 bill	

Regional consumption - Low calorie sweetener

Sl. No.	Region	MS%	Value (in Mill \$)
1	America	53	530
2	Europe	21	210
3	Asia	19	190
4	Rest of world	7	70

Market driving factors

1. Increase in Diabetic population: According to recent estimates, the prevalence of diabetes in the worldwide is predicted to be 366,000,000 population by 2030.

year	2000	2030
Population	171,000,000	366,000,000

2. Change in Life style
 - a. Increase of over weight and obese population
 - b. Rising no. of people keen to cut sugar intake
3. Increase in calorie consciousness
4. Increase in production of Beverage industry

INDIAN ROADMAP FOR ARTIFICIAL SWEETENER

Total Artificial Sweetener in India is divided in two market segment; FMCG portfolio and healthcare product portfolio

FMCG portfolio:

The Artificial Sweetener market value categorized under FMCG brand is about Rs70 cr. Per annum as per the industry sources

Mode of promotion is electronic media and print media and largely available at super market FMCG store etc.

Healthcare product portfolio:

The Artificial Sweetener market value categorized under healthcare products is about Rs. 14 cr. Per annum

Artificial Sweetener market includes three major categories

Sl. No.	Artificial Sweeteners	Market share%	Growth
1	Aspartame	64	Negative
2	Saccharin	28	not significant
3	Sucralose	8	High

1. About 16 brands are available in the market as per the market research
2. Sugar Free is currently the market leader in the sweetener category with over 50 % market share. It has presence in both Aspartame and Sucralose category
3. Aspartame is showing negative growth
4. Saccharin market showing no significant change in its market size
5. Sucralose has been showing very good acceptance in market and enjoying highest growth among artificial sweeteners
6. Over 10 brands available in the sucralose category in Indian market

Market share of leading brands of Sucralose *

Sl. No.	Sucralose Brands	Company	Market share%
1	Sugar free natura	Zydus cadila	34
2	Elata	Alembic	27
3	Zero	Alembic	14
4	Ax Cal	British Biologicals	13
5	Blow Cal	Alkem	12

* Market share value is estimated and based on the primary and secondary data source from market. It only point to market share in healthcare product and not includes FMCG market value of artificial sweeteners

CONCLUSION

In response to rising demand for superior taste, low-calorie, sugar-free food products, the number of food stuffs containing artificial low calorie sweeteners has grown markedly in recent years. In terms of artificial sweetener usage, beverages dairy products diet soft drinks and foodstuffs are representing the expanding market for the sugar substitute industry. According to the primary and secondary market data sucralose is the choice of artificial sweetener, and growing with fantastic speed.

Changing life style, people increasing calorie consciousness and increasing Indian diabetic population are the reason to increasingly consumers are either losing their sweetening behaviors or are turning to artificial sweeteners. Artificial sweeteners are becoming a big business in India with high-profile promotional campaigns indulging the health-consciousness to choose alternatives for sugar. Brands such as Equal, a global product from Chicago-based Merisant, Sweetex from Boots Piramal, Sugar Free TM from Zydus Cadila and Zero and elata from Alembic are popular in India.

Indian market of artificial sweeteners looks very attractive and likely to take up good growth in terms of volume and value. The current market size is not very significant but future is likely to be attractive. Indian Pharma major, Alkem Laboratories Ltd started manufacturing sugar substitute's sucralose for in all the foods applications like Bakery, Confectionery, Dairy products, Ready to Eat Packed foods, Fruits & Vegetable products - Juices, Jams, Sauces, Ketchups, Syrups, Jellies etc. An another Indian pharmaceutical company has completed a new sucralose facility and is ready to begin production of the popular sweetener sucralose

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