

Great strides in improving soybean processing and formulations make soy products that are embraced by even the most soy-phobic mainstream consumers in the West. By **Rajendra Gupta**, president, Prosoya

A Burst Of Flavours

IMPROVEMENTS in soybean processing and formulations, as well as increasing awareness of health benefits of soy, have provided double-digit growth to soy beverages over the past 15 years. However, over 90 percent of the consumers in the West still do not like the taste and price of such products.

Recent innovations have enabled production of soy beverages that are liked even by the most soy-phobic mainstream consumers in the West and are taste and price competitive with 'junk foods'.

The fact that soybean has the highest quality of protein at lowest economic and environmental costs, is acknowledged universally by experts and the public alike. However, the taste of most products

made with soybeans has been less than acceptable except within the Asia Pacific region. Elsewhere, soy foods and beverages have been accepted by a very limited number of people, mostly due to health or dietary reasons.

TASTE FACTOR

Advances in soybean processing and formulations have greatly improved the palatability of soy products. This results in increased acceptance of the products, reduced pricing, and improved margins for product promotion. Unfortunately, innovations are sought and implemented by enterprising small companies, while well-established large corporations continue to use older technologies with the hope of convincing the consumer to pur-

chase a product on the strength of large advertising budgets.

This has resulted in the mainstream consumer becoming increasingly skeptical about any good tasting claim for soy foods and beverages.

Nutrition and eco-geniality of a product may be used in product promotion and positioning, but cannot offset the weakness in taste and pricing. Making the



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product from soy protein isolates, rather than from freshly extracted high quality soymilk, increases the product cost and grossly limits the amount of soy nutrition in a beverage.

THE P3 EFFECT

Let us consider the factors governing product acceptance. These are mainly palatability, pricing and promotion.

These factors work multiplicatively. In one scenario, five percent of consumers like product taste, appearance and nutrition (key palatability attributes), 10 percent feel the price is right, and the 50 percent have knowledge and availability of the product through its promotion and positioning. So, multiplying the percentages together ($5 \times 10 \times 50 = 0.25$), it can be concluded that 0.25 percent of consumers would likely purchase the product.

This is called the P3 effect. The number is too small to justify the promotional expense needed to reach out to 50 percent of consumers.

In another scenario, palatability factor is 50 percent, pricing 50 percent and promotion five percent. Now $P3 = 1.25$ percent, five times larger than in the first scenario, and at 10 percent of the promotional cost, yielding an advantage 50 times over (5,000 percent). It is the later scenario that rapidly propels a startup company with the right product to become the market leader with minimum investment. This is likely the scenario that resulted in the phenomenal success of Innocent smoothies in UK.

In the case of soy beverages, all these factors have been unfavourable, especially in most of the countries outside the Orient

(East and South-east Asia). Even in the Orient, new age soy beverages have difficulty attracting the masses due to the P3 effect.



• Palatability

The palatability factor has improved significantly in the past 15 years, especially in the past five years. Non-beany, cereal like, deodorised soy extracts are suitable for formulating beverages with vanilla, chocolate, strawberry, mocha, and many other flavours. These beverages now have limited acceptance, possibly with an average palatability factor of five percent. In fact, this factor varies substantially across the globe.

SOY BASE FORMULATION

Getting the right base for a soy beverage is important, and can mask the undesirable taste of the beverage. Prosoy's recipe for a typical formulation of the base is:

- Deodorised soybean extract (made by oxygen free cold grinding of whole soybeans) diluted to 7.71 percent
- Dissolved solids = 98.190 percent
- Sugar (or other sweetener) = 1.496 percent
- Salt = 0.100 percent
- Carrageenan = 0.030 percent
- Milk or other suitable base flavour = 0.004 percent
- Vitamin mix = 0.01 percent
- Mineral mix = 0.17 percent

This soy base is then mixed with pre-formulated mixes of different flavours, sweetener, and juice blends, to obtain great tasting high palatability beverages. This includes creamy orange, peach mango, strawberry banana, cherry, apple, guava, and many other flavoured and real juice based soy beverages.

Getting the right base is key to making great tasting, low cost, highly nutritional beverages. If the base is not right then it becomes very difficult and expensive to mask the bad taste. High calorie ingredients are required, and soy base percentage has to be reduced. Even then the soy taste is not completely eliminated, and the product gets very limited acceptance.

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• Pricing

However, in spite of lower cost of the ingredients in comparison to dairy beverages, the prices of soy beverages remain higher. This is attributed to lower production volume, higher packaging cost, higher distribution cost, lower takeoff velocity from the shelf, higher retailers' margins, and higher taxes.

As such, the pricing factor (price acceptance) is rather low. It is possibly five to 10 percent in Canada, USA and Western Europe, whereas in India and other countries in South-east Asia possibly 0.1 percent.

The palatability and pricing factors have to be greatly improved for soy beverages, to a level similar to juice, milk and other mainstream beverages, before expecting their acceptance by the masses.

ZERO SOY TASTE BEVERAGES

Fortunately, such soy beverages are available just around the corner. Even the most soy-phobic consumers of all ages and ethnicities in pilot scale trials favour these beverages that have zero soy taste.

These are based on fruit, nut and cereal flavours mixed in specially extracted and formulated soymilk base starting from whole soybeans.

Because of negative experiences of the past, mainstream adult consumers are no longer interested in trying new soy products. Reach out to children to taste it. If they like it, you have a winner, and they would ask their parents to buy it. For repeat business, price has to be affordable too. **APFI**

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RECIPES & FORMULATIONS

Soy beverages can also get that extra edge in the market by including contents that can benefit consumers' health. Whether it is for added immunity, anti-aging or to improve cognitive function, consumers can drink their way to good health with these formulations. By **Dr Ram Chaudhari**, chief scientific officer, Fortitech.

IMMUNITY

Nutrient	250 ml Serving
Vitamin A	10
Vitamin E	10
Vitamin C	10
Folic Acid	10
Niacinamide	10
Pantothenic Acid	10
Vitamin B1	10
Vitamin B2	10
Vitamin B6	10
Vitamin B12	10
Zinc	10
CoQ10	2.5 mg
Green Tea Extract	2.5 mg
Pomegranate	2.5 mg

ANTI-AGING

Nutrient	Per Serving
Collagen	100 mg
Vitamin E	3 IU
Biotin	50 mcg
Vitamin C	10 mg
Aloe Vera	50 mg
CoQ10	10 mg
Fibre (Inulin)	500 mg
Lycopene	1 mg

COGNITIVE FUNCTION

Nutrient	Per Serving
Ginkgo Biloba	15 mg
Ginseng	15 mg
Vitamin A	200 IU
Vitamin C	25 mg
Vitamin E	10 IU
Acetylcholine	10 mg

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