

# Imitating Synthetics: Naturally

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In the last two decades, it has become fashionable to market products with a natural or herbal brand halo and make big money. The word natural has a very strong influence in sales and marketing and this is quite evident in consumer products available in the market. To improve sales, use of the word 'natural' and its analogues has been high on the agenda for all marketing professionals. This trend is not expected to weaken, but will only strengthen with time.

India, traditionally, used more of natural flavours as Indians preferred freshly prepared foods. In similar fashion, natural fragrances were the norm, being easily obtainable from fresh flowers and natural woods growing wild. Europe and America consumed artificial or synthetic flavours due to use of canned frozen food and beverage. Scientific advancement and industrial revolution in the west made synthetic fragrances popular.

This picture has changed now, due to fundamental changes in lifestyle. Health has now become an important aspect of life. Marketing jargons like fresh, natural, etc., have become very common worldwide. Low calorie, light, natural, organic, and other similar claims are common in virtually all food, beverages, confectionaries, bakery and snacks that generally used artificial additives. The use of artificial ingredients is reducing, and is being replaced with natural ingredient additives.

To cater to this demand, development of natural flavours and fragrance ingredients for use in creation is the need of the hour. To achieve this objective, tech-

niques like physical extraction and distillation, fermentation or enzymolysis, plant tissue culture, biotechnology and other methods have been undertaken and adopted.

The use of processes like physical extraction and distillation is not new to the industry, but the high degree of sophistication nowadays available is phenomenal. The real growth however has taken place in the field of biotechnology.

The flavour and fragrance industry have traditionally imitated nature, directing all their creative strengths and efforts to achieve success. However of late, the world has turned a full circle. The trend now being toward nature and all-natural, industry now strives to imitate chemistry and all its scientific achievements through nature and her products. Modern day lifestyles have made natural products popular, as it conjures all the goodness of life, like cleanliness, purity, and freedom from contaminants.

The growth of natural flavours and fragrances is restrained due to the exorbitant cost of many natural ingredients. A typical example is naturally occurring benzaldehyde that is about 80-times the cost of the synthetic one. One of the prime reasons for the high cost of natural ingredients is the high capital costs and R&D investments needed to become a manufacturer and supplier of natural ingredients.

Although few major manufacturers can afford to invest in such large measure, all others have only to source the

ingredient through an alternative source if they have to remain competitive. Locating sources and developing processes is also expensive. Some ingredients can be obtained from natural sources easily.

However, many occur in minute quantities in plant sources and have limited availability. Obtaining them is not only time consuming, but also require expensive extraction equipment and processes.

The flavour and fragrance industry operations are minuscule when compared to the bulk chemical industry. The flavour and fragrance industry still uses the batch process, unlike the continuous processing methods prevalent in the chemical industry. The flavour and fragrance industry requires a lot more number of ingredients, albeit in smaller quantities, in order to create a single flavour or fragrance.

This explains why every flavour and fragrance company manufacture their products only on receipt of confirmed purchase orders, so that their needs to keep low inventories of raw materials are met. Environmental conditions, political upheavals are other reasons responsible in affecting availability and cost of natural ingredients and impacting supply and demand.

Consumers in general expect the product to smell and taste better. It does not really matter whether it is natural or synthetic. However, nowadays use of natural ingredients has become fashionable and a necessary marketing feature.

Foods like confectioneries and beverages, which predominantly used artificial or synthetic flavours, are also becoming pro-natural.

The consumers will no doubt pay higher price, but definitely not an exorbitant one. Moreover, they will agree for a price premium, only if other expenditure has not to be sacrificed.

Product manufacturers have now to aim for a finished product that not only claims a natural feature, but also be priced, close to their artificial or synthetic counterparts. Nevertheless, the cost incurred in the use of natural ingredients is relatively less when compared to that spent in marketing and distribution.

The future challenge for the flavour

and fragrance industry lies in playing a larger role in the development and use of natural ingredients.

This is possible only if efforts are directed to locate high content and consistently available source or develop low cost production methods to produce a wide range of natural ingredients for creating a large variety of products.

Does this mean that only natural ingredients are to be preferred? The answer is a resounding "no", as anything natural is good, is a statement to be taken with a pinch of salt. Hardly any one is bothered in using synthetic vitamin in place of the natural one.

We believe and know that the effect obtained by using synthetic vitamin is similar to that when natural vitamin is

used. The same will be the attitude of consumers towards flavours and fragrances.

Natural and synthetics are both required. From the time of the industrial revolution industry emulated nature through creative chemistry. Now we should attempt to emulate synthetic achievements through natural means. Our goal should be to produce natural flavour and fragrance ingredients that have the same strength and character of the synthetics.

We are sure that scientific research will lead to discover newer technologies and develop complex natural ingredients that will not only increase the perfumers and the flavourist palette and scope, but also change the face of the industry.