

FRAGRANT INDIA – PAST, PRESENT & FUTURE

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INTRODUCTION

Mother Nature from ancient times has been particularly kind to India gifting her, a fascinating variety of plants. Chinese traveller Fa-Hien chronicles India to be a land of exotic aromatic flowers, fruits, resins and grass. Plants down the ages have fulfilled our basic needs, like food, clothing, and shelter. In addition plants also provide us enough for medicine and pleasure. Plant derivatives like aromatics and intoxicants uniquely affect the human central nervous system, one giving a munificent pleasure and the other an addicting one.

The benevolence of aromatics keeps a person in a congenial frame of mind maintaining the human brain in the right state of equilibrium, and helps in conferring delight and magnificence while the latter gives pleasure by acting on the higher centre of the human brain to imbalance one from normalcy, making plants and plant based products a forerunner for scientific research.

FRAGRANCES

The use and enjoyment of fragrances have endured a tradition as old as humans down the ages and continue to play a beneficial purposeful role to enhance our lifestyles. Fragrances as we know today are complex mixtures of natural and synthetic ingredients. Natural ingredients originate from materials found in nature, like roots, bark, leaves, flowers, etc., and are obtained by use of physical processes such as pressing / cold expression, tapping, by effleurage, distillation, hydro diffusion, extraction, etc., whereas synthetic ingredients are manufactured through chemical processes.

Fragrances are by themselves multi-faceted, eliciting feelings of joy, confidence, and a sense of well being to those who wear them, providing an opportunity to create a virtually unforgettable, personal signature. A subtle spray of fragrance can spark cherished memories and emotions to lift spirits, augment relationships, improve a person's mood, light up romance, to overwhelming enjoyment and happiness. In

personal care, fabric care, and household care consumer products, fragrances enhance its sense of cleanliness / freshness and serve to mask the unpleasant odour of base ingredients. In short we can say "Fragrances help make life complete".

FRAGRANCE ORIGIN & HISTORY

Fragrances originated in India in early times and regular barter trade by the Arabs carried it to the western shores like Egypt, Persia, Greece, and Rome. Aromatics and their uses have been profusely mentioned in "Ayurveda", the world's oldest and India's medicinal tradition of almost 3000 years old. "Ayurveda" explains the various ways that aromatics can be engaged to create useful products for humans to savour. Individual fragrant substances, like flowers, aromatic leaves or roots can be used directly or can be used to produce fragrances or "*Gandha Dravyas*".

The art of blending various fragrant substances in right proportions to concoct a likeable fragrance was considered to be one of the 64 learning arts that a person needed to be proficient in ancient Indian society. Several literary works in Sanskrit, notably the *Atharvaveda*, *Smritis*, *Samhitas*, our epics the Ramayana & Mahabharata, technical treatises like Gangaadhara's, "*Gandhasara – The essence of scent making*", & "*Gandhavaada – Hypothesis on Odours*", Varahamihira's, "*Vrhasamhita*", Somesvara's, "*Manasoallasa*", Chavundaraya's, "*Lokoparakaram*", in Kannada, have detailed information on perfumery and fragrance creation. "*Gandhashastra – The science of odours*", deals with cosmetics and fragrances. It being a branch of Ayurveda, the fragrance ingredients mentioned therein is also said to possess medicinal properties. It also mentions the usefulness of the ingredients in improving skin complexion, lustre and its appearance, to overall enhance beauty.

"*Gandhayukti – The science & strategies to make odoriferous substances*" discusses all technicalities of perfumery and fragrance creation. Sanskrit texts written during the Mauryan rule also describes the method of fragrance preparation and its development.

Varahamihira's "Ghandayukti" – Practical Perfumery

Varahamihira describes two important aspects seen in fragrance preparations. Firstly a practical method for preparation and secondly exploring the possibility of using the information in another field of research with setting botanical identity of the plants as mentioned in "*Brhatsamhita*". "*Ghandayukti*", can be easily understood by reading along with a commentary based on it called "*Bhattopapala's Vivrti*". "*Ghandayukti*" is a practical art of blending fragrance ingredients to prepare valuable fragrances that are stable for long. "*Ghandayukti*" describes a method of manufacturing a large number of fragrances but utilising only a few standardised, basic aromatic ingredients by changing the relative proportion in the final fragrance formulation. "*Ghandharnava*" is the term coined by Varahamihira for this method of manufacturing fragrances.

Ketaki and Champaka Fragrances

Natural essential oils traditionally have been used to make attars or natural fragrances. Ketaki Oil and Champaka Oil were other scented oils that were a connoisseur's delight in ancient India. Ketaki (*Pandanus odoratissimus*) and Champaka (*Michelia champaca*) are popular flowers in India right from olden times. Ancient Sanskrit literatures mention them very extensively. Ketaki and Champaka are used in cosmetics and perfumery as perfumed oils, body powders, incenses, etc. Champaka oil is extolled and even referred to as liquid gold by Varahamihira. Early European botanist Buchanam reports that majority Indians in 1811 AD used Sesame oil infused with Punnaga and Champaka flowers as bathing oil. Champaka Oil in combination with mallika, uptala, surabhi or patala was also very popular during that time.

Fragrances during the Mogul Rule

Yashodhara in his treatise "*Yashah prakasha sudhokara*" has described the use of "*Adhahpathana yantra*" to produce fragrances. The method is comparable to the method mentioned in "*Ain-e-Akbari*", a chronicle by Abul Fazal 1590 AD to make "*Chuwah*" a very popular fragrance used by Emperor Akbar and his courtiers. Small pieces of lignum aloes are taken in a narrow vessel, luted with clay cotton

and rice barn. A small space is left at the neck of the vessel, which is placed in a dish of water so that the mouth of the first vessel touches the surface. A gentle fire using cow dung cakes is made around the vessel. The heat generated melts the aloes until it distils into the water. It is then collected and washed with water or rose water to remove the smoky odour.

In olden times, Attars were very popular with the well to do sections of society. Some attar is pure oil while some are mixtures of different essential oils, resins, and concentrates in a natural base or carrier oils. The unique aroma of attar is due to the condensed vapours of individual flowers directly into the base oil generally sandalwood oil. The aroma of sandal wood oil has the unique property to complement with the aroma of other plant oils, combined with it, and acts as a preservative to other essential oils without getting rancid.

WHY INDIA LOST OUT AS WORLD LEADER IN THE FRAGRANCE MARKET?

The science of perfumery and fragrance creation were so developed that India was placed in a pivotal place in the ancient cosmetic and perfumery world economy. Botanist Buchanan, in his detailed informative paper "*Account of the manufacture of rose water and other perfumes at Patna in 1811 AD and its bearing on the history of the Indian perfumery industry*", gives very interesting insights on the state of the perfumery industry, in Kanauj of Mythili (Kanyakubja as mentioned in Sanskrit literature) and the importance given to it by the Europeans. He further states that the industrial revolution that took place in Europe was largely due to the awakened interest of the European nations to the excellence of the Indian perfumery industry and their zest to compete with India.

Buchanan's paper infers that their keenness to compete with India and dislodge its premier position resulted in the successful penetration of the world fragrance market that was once a domain of the Indian perfumery industry and where India enjoyed complete monopoly. Interestingly India which was once a world leader of the fragrance industry is today one of the worlds largest consumers of foreign fragrances and fragranced products. The rapid advancements made by the European industry in the 20th century due to modern scientific thought and

knowledge made sure that India missed all that it had treasured over centuries. Social and political happenings and the oppressive British rule in India also helped in sealing any further progress possible in the Indian perfumery industry.

MODERN PERFUMERY

We all know how social and economic happening, shape character and personality of human beings. Although one can consider from the turn of the 20th century to the end of World War I as the Golden Age of Modern Perfumery, the period starting from the 1930s to the outbreak of World War II was also no less memorable. The world socio-economic environment in the last millennium, gave rise to modern women, influencing fashions, cosmetics and fragrance preferences. However the 19th century and early 20th century to the end of World War II, fashion industry lay dormant in India due to her pre-occupation with the non-violent struggle for freedom from the oppressive foreign rule. India finally became Independent in 1947 and a republic in 1950, and with it fashion consciousnesses re-entered albeit slowly in the Indian milieu.

A NEW BEGINNING – FIFTIES & SIXTIES

The war ending, India became free. Mahatma Gandhi's non-violent movement without any malice toward the erstwhile British rulers made Indian & Western fashion both popular among the well to do populace in the cities and bigger towns. Fabric restrictions ended. Economic reconstruction that suffered earlier got renewed with new vigour in new independent India. New look long full shirts, snug bodices, jackets, teenage fashions became glamorous. Nail enamel, matte finish, lightly powdered make ups, deep red lips, usage started. Fragrance consumption that was very meagre during the freedom struggle began increasing very slowly. Consumer goods, becoming available women opted for softer prettier scents. Floral family types were popular. Political and social change and people's wish to move away from the unhappy past led to a very optimistic fifty, a sort of renaissance for arts, fashion and fragrances took place.

Primary colours became modern. Years of struggle and suffering made people yearn for relationship and togetherness with family and

friends. People focussed on living comforts. Suburban housing development, shopping centres, and comfortable lifestyles, became important. Taxis and airplanes services started. "Sputnik – I", took off and space age began. Automated household appliances started entering the life of women making it a little easier. Movies started influencing people creating new heroes. People in the cities began appreciating Rock & Roll, Tight pants, Elvis Presley haircuts & sideburns, tee shirts and lather jackets.

Women in films dictated fashions with full skirts, matching tops, sweater sets, mother-daughter dresses, baby doll pyjamas, suits and stiletto heels, Capri pants, Bermuda shorts, and flat shoes. Colourfast turquoise dye for cotton made pink shirts hot and fashionable. Heavy makeup strongly marked brows became fashionable, doe eyed eyes with curved corners, emphasised a growing range of eye shadows. The affluent influenced fashion trends with designs becoming more artistic and creative. Fragrance bottles became sought after.

The chaotic sixties dominated with teenage youth culture that was all-powerful and influential. Fashion, music, clothes and attitude, were all rebellious and anti establishment. Mini skirts, lacy panty hose, white leather boots, Pop art, Sassoon hair cuts, hippy ethnic looks, Afghan dresses, African kaftans, Indonesian batik shirts, dangling pierced earrings were introduced in films and predominated fashions. Film artists became fashion trendsetters as contrasting flower prints epitomised the modern generation. Minis became micro mini; micro-mini soon became midis causing a great deal of confusion. Midis drove women to wear pants and suits generally worn by men. Soon unisex clothes took over and finally culminating in the ubiquitous Jeans. Pale lip colours and frosted lip-gloss, heavy dye makeup, false lashes, painted twiggy lashes, bright eye shadow, became popular. The young teenage rebellious generation mistrusted all over the age of thirty. Obviously, fragrance preferences evident among the younger lot were the trendsetters. Musky, incense type classics and flowery fragrances became popular. As fashion trends and lifestyles of the west took time to get introduced in India, western trends of the fifties and sixties both continued to be popular in the sixties.

QUIET SEVENTIES

The "free love" generation of the hippies, popular in the west in the sixties came to India in the seventies and likewise the fashion trends. Beatles, drugs, hippies, communes changed the environment. Can you forget Zeenat Aman's westernised outfits and Dev Anand's "Dum Maro Dum", of the seventies? However compared to the sixties, the new decade was quiet with economic recession hovering all over the globe. The seventies can best be described as a period of transformation. India too witnessed changes politically and socially. The first truly non-congress government began to rule India after almost two years of emergency imposed by the Congress party. The seventies really did not produce any new family of fragrances. The fragrance character however did change in line with the changing attitude of women, now liberated from the bonds of a homemaker. They expressed their liberation with their liking for floral green fragrance types that personified the "Me" generation, strong, determined and ready to be heard women of the seventies. Indian people became aware of stylish signature fragrances from famous fashion labels that were sold in upmarket stores selling imported stuffs, opening the door for trendy fragrances of varying genres. Famous fashion names and flashy advertising entered these stores to sell ending the innocence of the fragrance industry.

People became conscious about their health and body. Jogging, playing, exercising, roller-skating, consuming health foods, started. Disco dancing was born. Pants, suits, tight jeans, jogging suits, jump suits, were the biggest fashions. Unisex clothing became common. More and more women joined the industrial work force. During the seventies, feminism, neo-romanticism with clothes with several lifestyles and reflecting the owner's attitude in life and views emerged. Conservatism became common in regular life styles and in cosmetic and fragrance usage. Makeups were subdued and the natural look was in. Brown eye shadow, beige foundation, colourless lip-gloss, brown and terracotta lipsticks, and nail enamels, became popular.

CONSERVATIVE EIGHTIES

The conservative economies of the eighties, made consumer purchases tend towards the classic timeless products reflecting quality rather than

quantity. The teens of the sixties matured and eventually tried to achieve what their parents also did at the same age. Good education, settling down well in career, marrying late and hence later children became new values. Different lifestyle options, speciality boutiques, special interest magazines, body fitness clubs, nutrition, and health food cult that had emerged in the west during the seventies became more pronounced in India in the eighties.

Individual success of young professional caught on with the industry creating exclusive fragrances for males and females. Femininity and masculinity thus became well defined. Distributors and advertisement campaigns grew larger and became more elaborate. Consumer base grew exponentially. As the decade progressed, photography publicity campaigns became essential and big budgets were allocated for launchings and promotions. Eloquent brand names offering exclusive styles developed. Product lifestyle became shorter. Fashionable clothing, soft dresses, softer fabrics and tailoring that provide easy movement and fluidity became essential elements to live life. Cosmetics for every occasion were produced and marketed. Although the eighties stimulated the fifties in terms of attitude, values, patriotism, and conservatism, it was also very different from it in other ways, making this decade a very complex one. Popular scents included florizontals, spicy florizontals, and pure oriental having a fantasy appeal.

GLOBALISED NINETIES

MATERIALISTIC

Economic crisis, conflicts and confrontation, among nations in the eighties led independent nations to become interdependent. Communications, energy conservation and environmental concerns, became crucial. The will to survive in these tiring times made commercial coexistence on one another necessary. Commercial economic power was valued more than brute military strength. Economic construction began, in all developing nations particularly witnessed in India, China, and countries of the erstwhile Soviet Union. The large population in these nations also emerged into major marketing opportunities for all marketers. Until the nineties fashion trends and lifestyles of the west took at least a decade long to be introduced in India. However, the nineties

set the trend of Globalisation written with a capital "G." German reunification and the fall of the Berlin-Wall epitomised globalisation. Globalisation became important to all organisations and establishments that had the desire to survive. The textile, cosmetic, fragrance industries were no exceptions.

Globalisation opened the pathway for free access across the world market and proved to be a blessing to those who realised the available opportunities. Some overwhelmed, with the greater challenge of a bigger and tougher market competition suffered. Prior to globalisation, testing and launching a new fragrance in one market and then after having succeeded there introducing it in another market was common. All this changed. Instead, launching it simultaneously in all the target countries was a smarter thing to do.

Greater challenges and tougher competition of the nineties created stress in people. Perfumes that induced a soothing, calm and quiet fragrance was the need of the hour. In this decade, many fragrance launches took place. In a span of one year, 1991 alone, more than 60 new fragrances were unveiled and most were fresh scents. An important trend one noticed was that consumers depending on their mood used more than one fragrance at a time. This in turn reduced a fragrance's life span to less than three years.

Celebrity endorsement became more fashionable and profitable. People started buying fragrances from the Internet or via home shopping. Selling a fragrance in combination with the image of a film or sports star became one of the smartest media campaigns. Unisex fragrance that made its appearance revolutionised the sector where most products earlier had strictly been classified as 'feminine' or 'masculine'. By mid nineties, light scents, sheer oriental and florizontals dominated. Year 1997, was International women's year. Women looked for freedom to express their individuality as wives, mothers, and businesspersons and tried to define femininity their own way, with either gentle scents or returning to oriental fragrances. Classic re-launches of '80s scents, with a newer creative fragrant interpretation for young women who live life in their own time, with their own standard looks took shape. Companies extended their product lines to essential body collections. Sexy but mystic, romantic but sophisticated, was what

women wanted to be by the late '90s. Women wanted their fragrances to evoke these feelings when worn. Even though the classic scents continued to rule the senses, one had to sell it in a lighter version, or possibly introduce it through new personal care product.

THE NEW MILLENNIUM POISED FOR SAFETY – A DILEMMA

The Gulf War, clandestine terrorist attacks by misguided religious groups, the Afghan conflict and AIDS are the major happenings in this new millennium. It has brought into focus the fears and concerns of society. Materialism has faded with men and women yearning for a purer world. All this indirectly translated in safety concerns of the various products used. Research Institute of Fragrance Materials (RIFM) through the International Fragrance Research Association (IFRA), European Union cosmetics directive, and other Government bodies, have become very active in regulating the use of fragrance materials keeping in mind the welfare of the consumers.

'The Fragrance Foundation', a non-profit educational arm of the global fragrance industry, says that there are more than thousand body fragrances alone in the world market today. While many people enjoy wearing fragrances and using fragranced products, the gamut of related advertisements carries some away. There is a growing outcry by some people who claim that exposure to some synthetic fragrances and fragranced products adversely affect health. Fragrances influence the human body positively as well as sometimes negatively. The human body is amazing as it tolerates exposures to many substances all in a day's time.

The factors that determine what will be tolerated without adverse effects and what will be not are very many. Variations can exist even in the same individual depending on factors involved. In general, a healthier person is more tolerant towards conditions that are less than optimal. Females are usually more prone to problems from synthetic fragrances than males. Individual genetic factors, body chemistry, age also have a bearing on human tolerance to wards chemicals. It is often difficult to pin down the cause of several symptoms when the triggering substance is one that is common in the environment. We are aware that fragrances are a complex mix of art and chemistry. The chemicals used in the

fragrance formulation must not only be compatible, but also be aesthetically pleasing to the nose. More than 5000 chemicals are used in the manufacture of fragrances. Synthetic organic chemicals constitute 80-90% (by weight and value) of the raw materials used in fragrance formulations today and very little is known about the impact synthetic fragrances have on human health.

SYNTHETIC FRAGRANCE INGREDIENTS AND ITS SENSITIVITY TO HUMANS

The International Fragrance Research Association (IFRA), a consortium of associations from most countries of the developed world, leads the industry initiative in regulating the use of fragrance materials. Formed in 1973, this is an association of national associations. Individual fragrance companies belong to IFRA through their membership in national associations, as there is no direct company membership in the association. At present IFRA includes national associations from the Asia-Pacific (Australia, Singapore, and Japan), North America (United States, Canada), Latin America (Brazil, Mexico) and Europe (France, Germany, Italy, Netherlands, Spain, Switzerland, and United Kingdom). India is not a member of IFRA.

Another body that plays a role in regulating the industry is the Research Institute of Fragrance Materials (RIFM) set up in 1968 by the fragrance industry. The Institute has an independent research and testing program handled by an expert panel of academicians. It is recognised internationally for its expertise in toxicology, pharmacology, dermatology, environmental sciences, and biochemistry. RIFM maintains a database of safety information of ingredients and liaises with regulatory scientific authorities. IFRA relies on RIFM's scientific judgement in establishing guidelines and restrictions on use of fragrance ingredients by fragrance suppliers. The two organizations play a supporting role to each other.

IFRA is responsible for risk management while RIFM is concerned with the assessment of risks in fragranced products. To date, RIFM has tested more than 1,300 fragrance materials, and published results in scientific journals such as *Food and Chemical Toxicology*. The results of the aroma chemical screening are then submitted by RIFM to the International Fragrance

Association (IFRA). If a fragrance material is found to have adverse health effects, IFRA categorises the material as, Prohibited (P), Restricted (R), Specifications (S), etc., and recommends amounts of the material to be used in fragrances and fragranced products. The environmental health effects of synthetic fragrances are complex with a sure lack of sufficient research to conclude.

However a study by the United States Environment Pollution Authority (EPA) in 1991 lists some synthetic fragrance chemicals as hazardous to humans. Similarly, European Union cosmetics directive identifies 26 fragrance ingredients as allergens. Individual sensitivity to fragrance chemicals varies widely right from zero or no effect to severe symptoms. It may be noted that many people who report sensitivities to synthetic fragrances also report sensitivities to other chemicals. This makes the claims of adverse reactions to synthetic fragrances difficult or impossible to link to a particular fragrance chemical.

To move out from an increasingly materialistic world, people are cocooning themselves or embracing the new age lifestyles, looking for fragrances that reflect a new freshness. The internet is expanding, touching every aspect of our lives and giving rise to a webbed interplanetary settlement. The so-called macho men have started to open up to their emotions and are exhibiting it so openly. Do you recollect our only cricket world cup winning captain Kapil Dev and his antics on television?

Aldehydic floral notes that were popular in earlier decade made a comeback with a twist of exotic fruits and spices to appeal to a younger audience. Fragrances that reminded the gentle, tender memories of our childhood, linking taste and smell in the creamy, sweet notes of vanilla, caramel, milk have returned. Fragrances that smell of fresh water, as if to quench our desire for purity evoking the sea, water, plants and flowers, creating a natural feel, and eventually refocusing on the basics: earth, fire, water and wind are now appealing to this modern generation.

FRAGRANCES TODAY

Consumers' fascination of fragrances has only increased with time as the manufacture of fragranced personal care, laundry care and

household care products is ever growing. Nowadays products are being sold with fragrances as its main selling point with the entire advertising campaigns centred on the fragrance odour of a product. The consumer trend too has been towards more powerful and long lasting fragrances.

India traditionally used more of natural flavours as Indians preferred freshly prepared foodstuff. 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 flavour due to the 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 lifestyles. Modern day lifestyles have made natural products popular as it conjures, all the goodness of life, like cleanliness, purity, and freedom from contaminants. Health has now become an important aspect of life. 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. Marketing jargons like fresh, natural, etc., have become very common world over. 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 getting, reduced, and is being, replaced with natural ingredient additives. This trend is not expected to weaken and will only strengthen with time.

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 techniques 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.

The growth of natural flavours and fragrances is restrained due to the exorbitant cost of many natural ingredients. A typical example is the naturally occurring benzaldehyde that is about eighty 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 research and development investments needed to become a manufacturer and supplier of natural ingredients. Although a 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 process 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 equipments and processes.

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 flavour, 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 ingredient is 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 both are 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 now 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.

MARKET SCENARIO

The world F&F market today is estimated to be about 19 billion US \$ of which the top ten players amount for 69% of the market. The remaining 31% is spread over all other F&F houses, both multinational and regional players. The F&F market is almost equally distributed. Globalisation of the Indian economy has made geographic barriers defunct bringing disparate areas of the globe closer than ever before. To survive and grow in the global market environment is no longer an ideal situation but a dire necessity. Lifestyles, preferences and rejections belong now to a more uniform and standard spectrum across the world despite the subtle nuances so evident in specific regions. Adapting quickly to the latest trend is necessary for success.

The top companies in the list below have had a substantial presence and business in India for many years now

THE TOP TEN GLOBAL COMPANIES			
(All estimates are as on 20 th May 2008)			
RANK	COMPANY	US \$	MARKET SHARE %
1	Givaudan	3,647.0	18.30
2	Firmenich	2,627.5	13.20
3	IFF	2,276.6	11.40
4	Symrise	1,860.8	9.30
5	Takasago	1,112.0	5.60
6	Sensient Flavors	572.0	2.90
7	Mane SA	448.7	2.30
8	T. Hasegawa	448.1	2.30
9	Frutarom	368.3	1.80
10	Robertet SA	352.1	1.80
Top Ten Totals		13713.2	68.90
All Others		6196.8	31.10
Total Market		19,910	100.0

Other international F&F houses in the last ten years or so have also setup shop and are active in the Indian market. The Indian F&F market is estimated to be about 270 million US \$. The organised fragrance market is about 137 million US \$. It is estimated that International houses account for about 70% of the organised Indian market while the rest is catered to by home grown Indian companies like M/s., S. H. Kelkar & Company Pvt. Ltd., Oriental Aromatics Ltd., Ultra International Ltd., Khattri Fragrances & Flavours Limited, Gupta & Company (P) Ltd., Sachee Aromatics Limited, etc. Almost all Indian companies are privately owned where typically sales volume figures are not openly disclosed. S.H. Kelkar & Company Pvt. Ltd., leads in the Indian F&F Industry followed by other houses as mentioned above. Some Indian FMCG companies who use fragrances and flavours in their products also make their own fragrance blends, by purchasing individual aroma chemicals and mixing them. Mixing various fragrances purchased from different fragrance houses along with their in-house compounds is also a different way to make finished fragrance blends. Hence the Indian F&F industry sales figures estimates given above may not be completely correct and may be 10 to 15 higher.

FRAGRANCES WITHOUT SYNTHETIC AROMA CHEMICALS

Interestingly most synthetic fragrances generally contain similar basic ingredients with the exception of certain speciality chemicals. The speciality materials some of them captive for organisational perfumers imparts certain uniqueness to the fragrance odour profile. It is quite likely that odour effects and chemical stability possible by use of synthetic aroma chemicals are near impossible to get with only natural stuff. Natural plants have always played significant role as medicines. At one time, it was felt that the chemical synthesis would completely replace the drugs of natural origin. However inspite of various synthetic drug discoveries the use of plant drugs continues unabated.

Even today, medicinal needs of about 80% people in developing nations are met by herbal drug preparations. Furthermore, inspite of the emergence of many wonderful synthetic drugs, the problems of senescence and 'civilisation' diseases, e.g. Immunodeficiency syndromes, arthritis, mental disorders, cancer, etc., are still not tackled completely. Naturally there is a greater demand for natural medicines and 'health-foods' today than ever before. In analogy to the above, the fear of synthetics having unwanted side effects or being potential carcinogens without any therapeutic benefits, regular scientific updates on the understanding of adverse effects of synthetics, is having its toll on consumers preferring naturals. In view of these developments aromatic plants producing essential oils become significantly important from the functional point of view. At this juncture natural fragrances made by use of only organic ingredients and essential oils, an amazing phenomenon of plant metabolism may rank as the next best alternative.

CONSTRAINTS & OPPORTUNITIES

Global changes occurring due to eroding forest cover has led to increased environmental awareness, among people. This in turn has led to a change in consumer perception and redefining of priorities to save the eco system and reemphasise the need to encourage use of forestland plant based products. God almighty has blessed India with different types of soils and climates that supports growth of a variety of Plants. 18000 native species are found in India of

which 1300 species on the last count contain aromas. In spite of its rich natural forest vegetation and a home of many exotic natural plants, India cultivates only limited items of commercial value. There is a great scope for commercial cultivation of several aromatic crops in India as there is always a market demand for new and specific aroma ingredients for development of new exotic fragrances.

Although fragrance usage is on an increase, the availability of quality plant oils for fragrance creation is not sufficient to keep pace with the demand generated. Plant cultivation largely depends on climatic conditions. Yields vary, year after year. Availability differs season to season. Unpredictable quality and odour profile is common. Price fluctuation is rampant. Supply and demand is rarely even. Advent of biotechnology and modern farming techniques has to an extent insulated plant cultivation from the vagaries of nature but this is far too less to make a significant difference on the industry dependence on nature.

Aromatic crop cultivation freshens up the polluted atmosphere and is a renewable resource in the ecosystem. The crops are useful even after the extraction of available essential oil as they can be converted into artificial board for carpentry, used as fodder for animals, or decomposed to get bio-fertilisers. Essential oil bearing crop cultivation and processing is labour intensive generating good employment opportunities.

STEPS NEEDED FOR SUCCESS & TO REGAIN OUR GLORY

Even today essential oils are extracted in India, in an unorganised manner. This industry can grow only by following scientific means and methods of propagation and extraction. Systematic exploitation of aromatic plants by Indian Industry can bring a great economic advantage to our country as, more and more aromatic plants are brought under use. Setting up of small-scale essential oil extraction and processing units can provide ample employment opportunities for the rural youths. Once these units come into operation, local farmers can be motivated easily for large-scale cultivation of selected aromatic crops according to the prevalent agro-climatic conditions. During the initial stages raw material requirement of these industries can be met either

through collection from wild habitats or through intercropping cultivation in agricultural farms. Either way, it will provide employment to millions of youths from farming communities. Value addition through post harvest technology can also generate further agricultural income and employment opportunities to many.

Conservation of aromatic plants by promoting sustainable genetic management schemes at the community level is necessary for equitable distribution of acquired benefits and to improve livelihoods of the rural poor. This can be achieved only if proper training for cultivation, primary processing, grading, packaging, storage and marketing are provided to rural cultivators. In addition bio-partnership, networking and providing access to information between the prime stakeholders namely local communities, R&D scientists and industry is necessary. Generating a strong database on genetic resources of aromatic plants and creation of protectorates/biosphere reserves to conserve the genetic stock of endangered species (*in situ* conservation) is essential.

Sufficient quantity of quality seed and planting material of aromatic plants for cultivators should be made available. Newer agro-techniques and technology should be developed, assessed and refined for large-scale cultivation to maintain sustainability and competitive advantage. Tissue culture transplantation techniques need to be adopted for species whose propagation through seeding is not easy. Analytical laboratories for testing and maintaining quality controls should be established. Utmost priority is to be given to develop skilled manpower to handle all aspects of aromatic plants through intensive training programmes. Evolving a long-term human resource development strategy for continuous improvement in competence and skills should ensure upgradation of the technical knowledge for field personnel's.

India's agro climatic conditions provide an ideal habitat for the natural growth of a variety of aromatic plants and herbs. The climatic diversity also offers large opportunities for domestication of many herbs that are in short supply and have to be imported. This will not only supplement internal demands but also save substantial foreign exchange. The fact that derivatives of aromatic plants are non-narcotic without noticeable side effects, even if used for a prolonged time, in

permissible doses fuels its demand around the world. Interestingly 30 of the ingredients prohibited by IFRA on grounds of safety or otherwise are naturals. Cultivation, processing and use of aromatic plants are a great potential for employment generation in rural areas. Our tilt and liking towards synthetic aroma chemicals is slowly destroying nature's gift of aromatic plant species used for fragrance creation in ancient India and which grew abundantly in our forests.

Another reason for the disappearance of many plant species is our ignorance with regard to its identity and use. In our ignorance, many useful species are treated as useless weeds and destroyed with no scope for regeneration. In spite of our country's innumerable benefits there exists constraints like inequitable trade practices that allow only a very small amount of profit to percolate down to the collectors, cultivators and harvesters of aromatic plants, inadequate government funding and prioritisation, insufficient information sharing and co-ordination among stake-holders, poor mechanism to improve resource conservation, livelihood security in rural and marginal communities, lack of co-ordination of any holistic research programme, weak linkages between stakeholders right from production to consumption value chain are all responsible in impeding the growth of this industry.

CHALLENGE TO INDIA

India is no exception to the global phenomenon of environmental problems and depletion of natural plant resources. However, the rich diversity in aromatic plants that nature has provided India needs to be exploited judiciously without disturbing the ecological balance. Resources need to be harnessed for economic development, and at the same time their regeneration, preservation and propagation has to be maintained for sustenance. The restoration and preservation of our biological heritage is a challenge not only to our planners, administrators, scientists, industrialist, entrepreneurs, and farmer's but also to common individuals and citizens at large. Efforts to coordinate development of quality planting material, encouraging commercial cultivation, value addition through processing, liaison with industries, and trade including export, is necessary to boost India's economy and our standard of living.

India, the land of opportunities is truly projected to be one of the world's largest economies, in terms of GDP, and purchasing power parity. The Indian population of over one billion, in this millennium will be extremely young, with 70% under 34 years of age unlike in the developed countries. It is up to all of us, to grab this opportunity and choose whether we need to strive back to our pre-eminent position of being the world leader of the natural fragrance industry as in ancient times or rest satisfied by becoming the world's largest consumer of imported fragrances and fragranced products.

The consumer who now leads a hectic way of life is no longer satisfied with purely aesthetic gains but seeks to get additional properties and benefits. The growing disillusionment over synthetic drugs due to their side effects in the last 15 to 20 years has seen a plethora of personal care products available in the market. The products range from pure essential oils, body oils, hair oils, body lotions and creams, soaps, shower gel, shaving products, Eau de cologne, etc., that claim to provide effective therapy for all kind of illness and states of our mind.

FACTORS AFFECTING THE F&F INDUSTRY

Traditionally flavours and fragrances commanded a high price due to the flavourist or perfumer's artistic ability and difficulty in creation. Flavours and fragrances now have very similar requirements as consumer goods. It too requires investments in marketing and presentation, for commercial success. This does not mean that flavours and fragrances are far from artistic creation but merely states that commercial rules have to be followed during creation while retaining the same quality followed in earlier times. Clients today believe flavours and fragrances to be simple mixtures of aromatic materials and not a harmonious accord achieved with difficulty.

Flavours and Fragrances are graded according to the price of the raw material used to create them, as it is easy to decipher the composition with modern analytical methods. The cost of creation, technical application and research, evaluation and panel testing largely ignored in the calculations. Ironically, without hesitation one purchases an marble carving or a canvas painting at exorbitant price, much more than the cost of the marble

stone or the cost of canvas and paint, but reluctant to spend similarly on a flavour and fragrance purchase.

In the last decade, prices offered to fragrance and flavour houses by FMCG manufacturers to supply flavour and fragrances have consistently gone down. Raw materials costs for manufacturing FMCG are on the rise. FMCG manufacturers are unable to pass on the same to consumers by increasing product costs. In view of this, price increases requested by flavour and fragrances houses are strongly resisted by FMCG manufacturers ignoring the genuine concern of the F&F industry affected by the overall increase in the prices of aroma and flavour chemicals that are the building blocks of their products. Price increases and fluctuations in petrochemical industry that are precursors in the manufacturing of aroma chemicals have also squeezed profit margins substantially for the F&F industry.

Flavour and fragrance market in the developed nations have fully matured with sales almost stagnant. Global F&F industries in order to grow are increasingly looking at developing nations, especially India, China and erstwhile USSR. The Indian market is still in its nascent stage and there is a long way to traverse before it fully matures. The lowering of margins have forced many global F&F manufacturers to look at India and China as sourcing centres for essential oils, and for manufacturing quality aroma and flavour chemicals required by their creative setups around the world.

Fragrance and flavour manufacturing is not complex oil and involves simple mixing and making a blend of about 10 to 100 different chemical ingredients. On these, some may be natural and some synthetic. Improving fragrance delivery systems using techniques like encapsulation, sustained release, or using newer methods in counteracting specific malodours, etc., are some areas where F&F houses are concentrating to maintain their existing business and to increase profit margins. The development of captive aroma chemicals is another way larger F&F houses use to maintain leadership position and prevent cheaper imitation of their fragrance creations.

One major method global FMCG manufacturers and F&F houses use is to make a long term purchase arrangement among themselves which

permit large discounts for FMCG manufacturer and in lieu an assured amount of global business for the F&F houses. This core listing process procedures adopted by most international FMCG manufacturers and F&F houses, effectively thwarts attempts by Indian F&F manufacturer's corner their existing business making these exclusive only to the selected few.

F&F OPERATIONS

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 F&F companies manufacture their products only on receipt of confirmed purchase orders, so that their needs to keep low inventories of raw materials are met. Inventory management thus is a very important function and streamlining systems and their operations necessary. Maintaining sufficient quantities of aroma materials at all times is difficult without accurate forecasting of the fragrance or flavour need by the purchasing companies. This leads to long lead times, sometimes almost six to eight weeks for fragrance or flavour supply, which can be critical to end-user FMCG manufacturers.

Environmental conditions, political upheavals, dependence on imports, are other reasons responsible in affecting availability and cost of aroma ingredients and impacting supply and demand. This has led the global F&F houses to source the raw materials from Indian suppliers, which help in bringing down the cost for procurement and reducing lead times. The F&F industry today is at the crossroads finding it tough with rising input costs and dropping prices of the compounded products. However, still there is growth in absolute terms. Rising incomes, better education and more awareness will mean a higher inclination to spend on 'Quality Lifestyle' products for home and health, personal grooming and social symbols. The demand for flavours will also continue to rise as the processed food market continues to grow. Regular use of flavours and fragrances in a product is no longer a luxury but a necessity for consumer acceptance. Flavours and fragrances that are novel will

continue to be popular and gain better and faster acceptance. India traditionally used more of natural flavours as Indians preferred freshly prepared foodstuff unlike in Europe and America where artificial or synthetic flavour were in demand due to the use of canned frozen food and beverage. This is likely to continue. However, due to fundamental changes in lifestyles certain food items, beverages, confectionaries, bakery, and snacks that generally use artificial additives will increase giving a fillip to the flavour industry in times to come.

FUTURE OUTLOOK

Competition is intense in the F& F industry in terms of quality, price and services rendered to the end user. The competitive edge can only be achieved by use of captive and exclusive ingredient technology that will make ones flavour and fragrance unique and difficult to copy. Cost control will continue to play a very important role if one has to maintain a leading position. In recent times we have seen economic crisis, conflicts and confrontation, among nations. As the outcome of all these upheavals, independent nations have become interdependent. Energy conservation, environmental concerns, communications and the will to survive have made commercial coexistence on one another crucial.

The ability to function on a truly integrated world scale and service globally will be a key in gaining core listing and long term contracts mutually beneficial to the F&F houses and the FMCG players. Despite the presence of many international and Indian F&F houses it is expected that more F&F houses will attempt to penetrate the Indian market and get their share of the pie. Locally grown private Indian F&F houses too are consolidating and regrouping themselves professionally to measure up to the international houses. With the Indian FMCG market hotting up it is highly unlikely that local Indian F&F companies will lag behind in giving a fair competition to the global giants. It will be very interesting to watch the trajectory of this fragrant industry and savour its flavour in times to come. The future holds great diversity. Alternative lifestyles, varied segmentation and specialisation will continue to expand presenting a golden, opportunity for robust growth. The rural demand particularly in developing nations will impel marketers to broaden their reach by

increased penetration, innovative strategies, proper positioning, a strong brand promotion, effective communication, a good distribution network, providing superior quality products at an affordable purchase price. Unprecedented demand in a growing environment will help marketers create new positioning, for their creations that will appeal and explore newer avenues for sales growth.

Innovation in a business function is critical for development, for beating competition and for increasing market share and profits. Newer ideas, means and methods that can excite consumers will have to be adopted that not only induce them to use the product but also make them use in copious amounts. Today the cost of entry is high and this will only increase in times to come. As consumer needs keep evolving, marketed products will also have to change and keep up with the times. Consumers will move from a product with a single benefit to products that will provide multiple benefits. The industry will have to rise up to this challenge to produce products accordingly and market it at an affordable price. If one is ready to launch an interesting innovative product with good advertisement and promotional support then several modest success, a few major hits, and a multitude of failures is guaranteed. Some will survive the test of time and become classics, some more will have a modest lifetime of 2-3 years and many will disappear without leaving a trace.

Physical fitness will continue to be a part of our living style. Outdoor activities, walking, jogging, swimming, running, bodybuilding and exercising to keep one fit and fine will increase among consumers. Developing nations in Asia and Africa are becoming westernised and this will become faster day-by-day. Marketers will explode the market with, cosmetics, fragrances and other lifestyle consumer products and aggressively market it to the young who are less inclined to deep-rooted cultural habits and product usage. Electronic items, machinery and computers have already entered our life in office and our homes. In the coming decade it will totally permeate every aspect of human existence. Time is not far off when personalised hand crafted products made specific to individual requirements are available. Every person will have his or her own one of the kind signature products, fashion clothing, cosmetics or fragrances created exclusively for them.

Aromatherapy based products using all naturals will blossom and grow stronger. Fragranced cosmetics that repel mosquitoes from biting you but attract the opposite sex keeping the stray dogs away may become a reality. The new ideas list can be endless. In the era of growth, it is important that innovative creations, move outside the limits of the now existing fragrance types, thereby extending the existing product lineage. This is most likely to happen in the near future.

CONCLUSION

The sense of smell depends on other human senses. As such, it is not surprising that our psychological and emotional needs directly determine our fragrance choices. Fragrances like the colours and clothes we wear, not only gives us a chance to identify and emphasize our moods and feelings but also help us project the moods and feelings we so desire.

Fragrance manufacturers and marketers all these years have done much research on the psychological impact of fragrance and they will continue to do so. The future of the cosmetic fragrance fashion industry will depend on the level of creativity we foster and support. Industry encouragement necessary to all practitioners to achieve a high level of originality without too much, shackles of practicality and compromise will have to be provided to achieve success. Every statistic, trend and social happening in society has an impact on consumer behaviour as it could turn out to be the root to develop an important marketing concept directed towards a small segment or special interest group.

Great ideas are not very easy to get. One will have to discard more than twenty ideas to identify one that is practically achievable and has a potential for success. It is important to initiate an idea and develop it and if it is meritorious then opportunities to market it successfully will be many. We are aware how our sense of smell affect us either subliminally or overtly, fascinating us with its magical mystery. With every passing day, we gain additional knowledge and as we unravel the secrets of the unknown the fascination and excitement, it brings forth only increases. Creativity in every facet of life is the driving force for effecting change, and future will only bring continuous change. The only item that is constant is change – change for the better. Growth & Glory to India!