

Satvayur Extracts Limited

satvayur

life nurturing pure essences



**Your manufacturing partner for pure botanical
extracts using supercritical CO₂ technology**

Life nurturing pure essences from Satvayur

[Satva (Essence) + Ayur (Life)]

Satvayur Extracts Limited is a manufacturer of pure botanical extracts. The heart of our manufacturing facility is a state-of-the-art supercritical CO₂ extraction plant, which is supported by highly trained personnel and well-defined processes to deliver a superior product. Our products conform to the highest standards of purity, quality and sustainability in every part of the value chain – from sourcing to extraction to processing and finally to delivery.

Satvayur's supercritical CO₂ extracts' functionality is best suited for nutraceuticals and supplements, pharmaceuticals, aromatherapy and fragrances

Why supercritical CO₂ extracts...

- No loss of volatile components during the extraction process
- CO₂ is inert and does not react with any of the substrates to form allied products
- CO₂ prevents oxidation of the extract
- Selective fractionation and extraction of almost all active nodes
- Suitable for thermally unstable or thermo-labile products
- The extract retains the character and complexity of the plant source

Supercritical CO₂ extracts are pure and safe for human consumption with no organic solvents or solvent residues

- CO₂ is non-toxic
- No use of organic solvents and no solvent residues which may be harmful for human consumption
- CO₂ contains no inorganic salts or heavy metals
- CO₂ retards microbial/bacterial growth in the extraction process
- No extraction of the pesticidal substances from primary flora
- CO₂ is certified as GRAS (Generally Regarded as Safe) as per USFDA
- CO₂ meets California Proposition 65 requirements
- CO₂ is certified as a safe solvent as per the Directive of the European Parliament and Council for food ingredients
- CO₂ is well-accepted by the International Federation of Organic Movement (IFOAM)
- CO₂ is acceptable as a food additive by the Japanese Specifications and Standards for Food and Food Additives

Our Vision

- To help improve the health of people worldwide using life nurturing pure botanical extracts
- To partner with producers of pharmaceuticals, nutraceuticals and supplements, foods and beverages, flavours and fragrances

Our Mission

- To be manufacturers of natural botanical extracts with the highest quality, purity, reliability and sustainability, using technologically advanced processes like supercritical CO₂ extraction methods
- To be strategic partners with ethical companies that require natural extracts or specialised extracts and who stand for integrity and high quality of end-use products
- To have a strong team and robust, ecologically-sustainable processes for procurement, product development, and manufacturing
- To have reliable partnering arrangements with growers, the farming community, and trusted suppliers for quality inputs

Our Philosophy

We believe in the healing power of nature

- We want to enable its delivery through foods, fragrances, dietary supplements or pharmaceuticals to the end consumer

We believe in purity

- We ensure purity and sustainability in the entire value chain...from growing to sourcing to processing and finally to supplying to our partners

We believe in Green

- No organic solvents, no solvent wastes
- CO₂ is recyclable, minimal CO₂ released into the atmosphere

We believe in our strengths and in partnering

- Our core competence lies in our partnerships with high quality growers and suppliers, in our technologically superior manufacturing process and in our location

We work closely with our partners for creating and manufacturing custom CO₂ extracts.

Who we are: We are professionally qualified and experienced people with a commitment to contribute to society in a sustainable and meaningful way...through our business and social responsibilities.

How our journey with Satvayur began...

Our journey into the natural world of healing started about 8 years ago, when our then 1-year old daughter was diagnosed with asthma. We delved deep into the world of holistic healing and wellness, exploring connections of all types – food-body-mind-lifestyle.

Ayurveda, the traditional Indian health system, helped us focus on a combination of home remedies, dietary changes, special herbs (Ayurvedic medicines), and lifestyle changes. We observed that certain “wrong” foods would trigger off asthma attacks. Some because they were just incompatible with her, some others because of chemical additives which caused allergic reactions. We learnt what to avoid, what to augment and what foods and spices to use as remedials. In less than six months, we could take her off the preventive inhaler, while the use of an emergency inhaler treatment reduced to almost nil.

We realised the value of the Hippocratic philosophy - “Let food be thy medicine, and medicine be thy food”.

....And we wanted to be a part of the global journey into wellness.

We also realised that people of all ages faced allergic reactions from additives in foods, cosmetics, creams and lotions. We decided to invest in a facility to manufacture pure extracts of spices and herbs for use in nutraceuticals, pharmaceuticals, aromatherapy and cosmetics. And thus, our Satvayur journey started!

The Core Team

Koushik Sekhar, President and CEO

- Alumnus of the Indian Institute of Technology (IIT) Madras and the Indian Institute of Management (IIM) Ahmedabad
- Over 20 years experience in Corporate Management and Finance
- Serves on the boards of several other companies
- Trustee on the board of Development Support Team, Pune

Geeta Prakash, Vice President

- Alumna of College of Engineering, Pune and IIM Ahmedabad
- Over 20 years experience in Strategy, Finance, Marketing and Human Capital Management
- Fulbright-CII Fellowship, Carnegie Mellon University (2002)
- Advisory Board of several social sector ventures
- Principal, Corporate Advisory Group of IIM Udaipur

Satvayur Extracts Limited

Your manufacturing partner for pure botanical extracts using supercritical CO₂ technology.

Our core strengths:

- Our manufacturing facility
- Fully automated PLC plant, based on technology from USA
- Extraction upto 500 bar critical pressure
- Main plant capacity: 3x300 litres (~3x 80 US gallons) extractors and 2 separators
- Pilot plant for initial trials and testing: 10 litres (~2 US gallons)

Our world class team and processes

- Technical team experienced in fine-tuning the manufacturing process to obtain extracts as per customer specifications
- Adherence to the highest levels of accuracy, reliability and quality standards in manufacturing
- Highly trained manpower in engineering and technology
- ISO 22000 and HACCP compliances are underway
- Our supply chain logistics - sourcing to delivery
- Location at Chikkaballapur, in South India, close to spice and ginger growing areas (Kerala, Karnataka, Tamil Nadu and Andhra Pradesh) and other herbal plantations
- Relationships with growers/grower co-operatives and societies in India, including organic farmers
- Ability to grow crops / cultivars / plants based on specific customer requirements
- Capability to acquire raw materials within and outside India from trusted commercial as well as organic food products suppliers
- Located 20 minutes away from Bangalore International Airport, well connected world-wide

We are happy to work with like-minded customers as ingredient suppliers or strategic partners, who add further value and reach the end consumer.



NATURAL INGREDIENTS

"Aushadham Uchyate Sarvam" - Food is the supreme medicine and healer of all.

– Ancient Indian text.

"Herbs are like strong food supplements, and should be taken on a regular basis. Right nutrition is not only taking our daily bread but also our daily herbs." - Dr David Frawley

Natural ingredients are pure extracts of herbs, spices and other plants, primarily used in the nutraceutical, dietary supplements and pharmaceutical industries.

Man has been using plants as healing sources for common or complex ailments from centuries, for either curing them or alleviating their symptoms. This is primarily due to the healing properties of phytochemicals like alkaloids, tannins, phenols, steroids, flavonoids, oils, etc. which are present in different plant parts like leaves, flowers, stems, roots, bark, seeds, fruits, etc. In modern medicine and health applications, many active compounds from plants are extracted from the specific plant part for their unique properties like antioxidant, antifungal, antibacterial, anti-inflammatory, anti-viral, etc..



Advantages of CO₂ extracts in Nutraceutical / Dietary Supplements

- Whole or selective extractions of herbs and spices. For example, the anti-oxidant fraction could be selectively added to the nutraceutical formulation without the unwanted aroma of strong smelling antioxidant herbs like garlic or rosemary, or allergens from specific botanicals
- Higher extraction concentrations, higher yields and higher levels of purity.
- Standardised concentration of active ingredients
- Higher purity, desirable for long-term consumptions of nutraceuticals and dietary supplements

Advantages of CO₂ extracts in Pharmaceuticals

- Better bio-efficacy of natural extracts in contrast to synthesised or chemically manufactured ones
- Minimal or no side-effects like short-term allergic reactions, long-term organ malfunctions, or drug-resistance
- Selective extraction enables the combining of modern pharmaceutical manufacturing processes with healing properties of herbs and plants
- No thermal degradation of the extract
- CO₂-SCFE has a natural edge on specificity

Pure Ingredients from Satvayur for Nutraceutical and Pharmaceutical applications

Ginger CO₂ Extract Standardized for Gingerols (Zingiber officinale)

Ginger has been considered as a prophylactic and cure for many problems. It is very wide-ranging and versatile in its application and uses. Ginger is listed in the pharmacopeia's of most countries like India, China, Germany, USA. Use of ginger has been documented in ancient texts of Ayurveda by Sushruta and Charaka, the ancient Indian science for healing (the science of life) in the Sanskrit language. It is also mentioned in traditional Chinese medicine texts and ancient texts of Greek, Arabic and Roman medical literature like Dioscorides' De Materia Medica. It's mention in the ancient texts were primarily for its carminative, digestive, gastric stimulant, anti-emetic, anti-phlegm and anti-inflammatory properties.

In modern day medicine, clinical trials of ginger extracts have proven their efficacy as:

- an anti-emetic - for tackling motion sickness, anti-nausea especially for pregnancy-induced nausea, and in post-operative and post-chemotherapy nausea and vomiting, a prophylactic against sea-sickness and treatment for vertigo
- a carminative – for patients with anorexia nervosa. Also as an ameliorative for ulcerative colitis
- an immunity booster especially for prevention of colds and flus because of its "warming" effect
- an anti-inflammatory - especially in cases of osteoarthritis and rheumatoid arthritis, and for muscle, ligament and cartilage injuries
- an anti-carcinogenic – especially in inhibiting growth of colorectal cancer cells and for killing ovarian cancer cells
- as a stroke preventer – due to its blood thinning effect and impact on human platelet count
- as an antibiotic and anti-fungal – especially in staphylococcus-caused respiratory tract infections, periodontal and some skin infections
- as an anti-diabetic medication for prevention and controlling diabetes, cholesterol and blood fats



Other natural ingredients from Satvayur

Rosemary CO₂ extract

NATURAL FRAGRANCES

"A fragrant smell is as much a factor in health as in beauty" - Dr Jean Valnet

Natural fragrances or aromatic essences are volatile, pure essential oils from plants, spices, flowers, etc. The essential oils from different herbs, spices and flowers provide subtle aromas from fragrant to pungent.

Advantages of CO₂ extracts in aromatherapy and medicated oils

- Natural fragrances are primarily used for their aromatic properties by the perfume and cosmetic industry, for aromatherapy and also for the food and beverage industry
- No loss of volatile components from the extracted oil
- Volatile oil compounds can be isolated from the other extracts easily
- Suitable for thermally unstable or thermo-labile products, preventing damage to the essential oil



Advantages of CO₂ extracts in fine fragrances

- It is almost as though the supercritical CO₂ technology was designed for perfumery
- The extract retains the character, complexity, delicacy, freshness and smell close to natural which is most essential for the fine fragrances or perfumes and aromatherapy
- Due to selective extraction, the highly volatile top / head notes can be separated from the medium level or heart notes and from the heaviest base notes
- Easier for the perfumers typically trying to get the right balance of different extracts for desired top notes, middle notes and base notes



Pure Fragrances from Satvayur for Perfumery and Aromatherapy

Ginger Oil CO₂

Ginger oil is typically described as warm, earthy, spicy, uplifting and energising.

For fine fragrances or perfumery applications

Satvayur's ginger essential oil is a light yellow clear liquid with a pleasant aroma despite the pungent raw material. The top notes are spicy, yet quite mellow and well-rounded. The middle and base notes are sweet, woody with some sharper piney aspects.

For aromatherapy applications

Overall, ginger oil has a warming and soothing quality. It is very energising, uplifting and revitalizing. Being a cephalic oil, it is able to simultaneously clear the head as well as stimulate the brain and the senses. It is a therapeutic, antidepressant stimulant tonic. Being a carminative, stomachic and antispasmodic oil, one of the most common uses of ginger oil in aroma therapy is to relieve digestive problems like nausea, dizziness, indigestion, vomiting, diarrhea, abdominal distention and gas, and morning sickness. It also works very well as an expectorant and decongestant. It also has analgesic, anti-inflammatory uses. Being a sudorific and anti-pyretic oil, it also helps alleviate febrile conditions.

For topical applications and oral consumption

CO₂ extracted ginger oil is generally regarded as safe (GRAS) for human consumption.

Ginger oil may be applied externally for treating abdominal bloating due to gas and colic for all including children and pregnant women. It is also rubefacient and anti-inflammatory and may be applied externally to any injured area (where the skin is not cut) to reduce pain and inflammation.



Other fragrances from Satvayur

Rosemary Oil CO₂ extracted

Vetiver Oil CO₂ extracted

NATURAL FLAVOURS

"If variety is the spice of life, herbs and spices are the foundation – they transform everyday foods into exciting culinary adventures... Flavor enhancement is key to healthy eating – it inspires people to enjoy nourishing foods" - Dr Andrew Weil

Natural flavours are important for attributing the desired combination of taste and aroma of food and food products. As per the Indian traditional system, there are 6 tastes. The unpleasantness of a taste can well be masked by the added flavour, which may be more aroma-based.

Food technologists decide on the type of extract to be used for flavouring depending on the end-application, ie food or beverage, whether the product is in a ready to eat or a ready to cook state, whether a flavour should be experienced at the start or the end of the bite.

Advantages of CO₂ extracted natural flavours in foods and beverages

Spices and herbs are important ingredients in food – not only for adding flavours to food and food products, but also for specific functionalities like preservation, softening, nutritional property or catalysis.

- Supercritical CO₂ extraction process is devoid of harsh temperature and solvent exposure yielding flavor closest to nature than any else
- Supercritical CO₂ essential oils / oleoresins / soft extracts do not contain any solvent residues or contamination
- They are free from micro organisms like bacteria, mold, etc
- They are homogeneous in consistency and character.
- As food additives, they are much less bulky compared to the raw spices, and lend themselves to uniform cooking and taste dispersion
- Since supercritical CO₂ extraction leaves no traces of any solvent in the product, it is GRAS (generally regarded as safe) as per the US FDA, and is also accepted as suitable for organic foods, as per the Codex Alimentarius International Food Standards
- Standardisation - Different flavours and pungency levels based on the cultivar being extracted and the age in the life-cycle at the time of extraction
- Supercritical CO₂ extraction has a distinct advantage wherever flavours in beverages are delicate and distinct



Pure Flavours from Satvayur for Foods and Beverages

Ginger CO₂ soft extract as a food additive

Ginger is a very versatile spice and hence it has become ubiquitous and indispensable in almost all cuisines. Apart from the spicy, tangy flavour that characterises ginger, it was used as a seasoning primarily in foods that were difficult to digest because of its carminative properties. For example, with meats, fish, pulses, etc. Ginger also has a proteolytic enzyme which helps break down protein easier, and is used to marinate meats in order to tenderize them and aid their digestion. In the far east and south asian cuisines, ginger is used largely in savouries, curries and soups. It is also often used in teas. In Europe and the Americas, ginger is used in cookies, sweets and beverages. For example, it is used in ginger ale, ginger beer and ginger brandy. Ginger is also used as an aperitif, or appetite stimulant.



Since its health benefits were known for millenia in traditions of India (Charaka and Sushruta Samhita), China (Inner Canon and other doctrines) and the Roman empire (Dioscorides' De Materia Medica), it was incorporated in culinary recipes of each of these nations. It spread through trade routes and colonisations. In fact, it was considered so precious that during the middle ages, one pound of ginger was supposed to equal the price of one sheep. There are references in medieval texts of Sweden that nuns introduced ginger in their cookies to ease indigestion. Today, gingerbread or ginger nut cookies or the ginger bread man are commonly consumed across the world.



Other flavours from Satvayur

Rosemary, Clove, Star Anise, Cardamom, Black pepper, Cumin, Turmeric

natural ingredients | natural fragrances | natural flavours



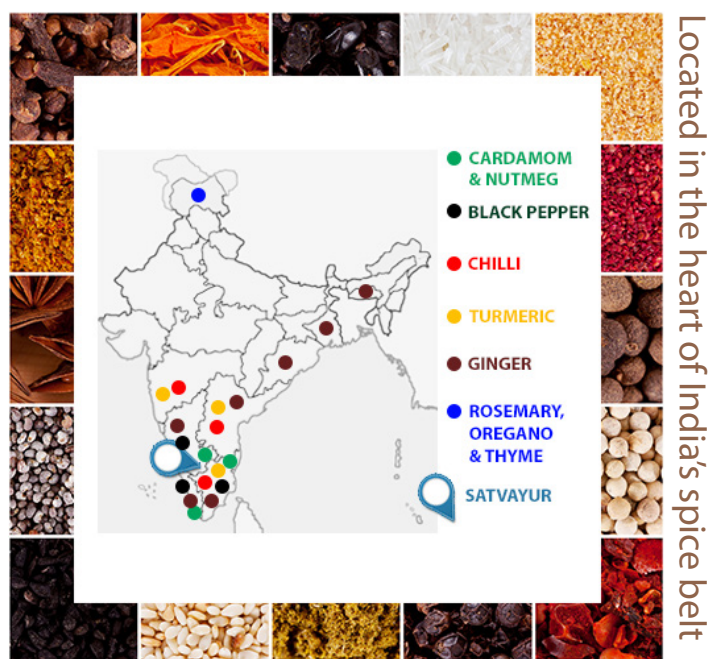
Product Portfolio

Ginger Extract standardised for Gingerols

Ginger Extract standardised for Shogaols

Ginger Oil | Rosemary Extract

Rosemary Essential Oil | Vetiver Essential Oil



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