



Australian Government

**Rural Industries Research and
Development Corporation**

Prospects for medicinal herbs

Assessment of market potential for selected medicinal herb products

- Valerian
- Arnica
- Skullcap
- Echinacea
- Goldenseal

A report for the Rural Industries Research and Development Corporation

By Gee Yap, Australian Business Limited

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Foreword

Under RIRDC's Essential Oils and Plant Extracts R&D program, significant investment has been made to assist growers to develop the necessary expertise to produce high quality medicinal herbs in Australia. However, the uptake of many medicinal herb species by growers remains slow despite strong global prices and the ability for some these herbs to grow successfully in Australia.

This project aims to identify and confirm market opportunities for five medicinal herbs in Australia and other leading western markets. Discussion with leading industry stakeholders showed that the biggest challenge facing industry lies in the commercialisation of the herbs. Local growers have found it difficult to generate appropriate returns due a small domestic market for raw ingredients and strong competition from established suppliers in North America and Europe.

This report complements other RIRDC publications as it attempts to address some of the challenges associated with introducing new medicinal herb species in Australia. If growers are to cultivate herbs such as echinacea, skullcap and goldenseal, there needs to be a greater focus on commercialisation to ensure a market exists and that growers can attain required returns.

The report portrays the cultivation of medicinal herbs at a cross-road. The Australian market is too small to support an active industry which means that for growers to achieve any volume they will need to concentrate on overseas opportunities. The pursuit of such a strategy will require significant investment in the development of export capabilities among local growers.

A second key challenge for growers is overcoming competition from established suppliers in Europe and North America as they are able to compete on price, quality and supply consistency.

The report highlights the complexities associated with commercialising medicinal crops in Australia. For RIRDC is shows that there might is a need for commercialisation and marketing challenges to be incorporated in the "development" aspect of the RIRDC's R&D Plan for essential oils and plant extracts.

I am confident this report will generate constructive debate on future directions for the industry.

This project was funded from RIRDC Core Funds which are provided by the Australian Government.

This report, an addition to RIRDC's diverse range of over 1500 research publications, forms part of our Essential Oils and Plant Extracts R&D program, which aims to support the growth of a profitable and sustainable essential oils and natural plant extracts industry in Australia.

Most of our publications are available for viewing, downloading or purchasing online through our website:

- downloads at www.rirc.gov.au/fullreports/index.html
- purchases at www.rirc.gov.au/eshop

Peter O'Brien
Managing Director

Acknowledgments

Australian Business Limited would like to take this opportunity to acknowledge the people that took time of their busy schedule to contribute to this project. New crop identification plays an important part of industry development as growers need to be cultivating herb varieties that will yield the highest possible return. In addition, the information collected will also allow RIRDC to better deliver programs aimed at growing the Australian medicinal industry through new market development platforms.

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Executive Summary

What the report is about

This report examines prospects for five medicinal herbs (valerian, arnica, skullcap, echinacea and goldenseal) and finds that the biggest challenge facing the Australian industry lies not in the cultivation but rather the commercialisation of the herbs. Local growers have found it difficult to generate appropriate returns due a small domestic market for raw ingredients and strong competition from established suppliers in North America and Europe.

Who is the report targeted at?

The report is primarily targeted at providing information to growers, but it should also be of interest to raw material processors and policy makers.

Background

The medicinal herbs industry has undergone significant changes in the last five years. The ever increasing push of medicinal herbs into mass market distribution through the dietary supplements category is providing consumers with ever increasing access and the ability to self medicate. Market intelligence collected from leading markets such as the US, Germany, UK, France as well as Australia show a very similar trend – the consumption of medicinal herbs will continue to grow especially in varieties providing relief against age-related ailments such as arthritis, prostate health, digestive health, osteoporosis, menopause, mental clarity, energy level, heart disease and ocular health. The relatively relaxed regulations governing the sale of dietary supplements in Australia and other western countries means manufacturers will continue to use dietary supplements as the channel to promote new industry growth.

Objectives

Against the background of a growing market for medicinal herbs, this project aims to identify and confirm market opportunities for five selected medicinal herbs in Australia and other leading western markets and then examine issues involved in growing these crops in Australia.

Methods used

The report is based on data and information available to Australian Business Ltd through its networks and on interviews with a range of industry representatives in Australia.

Key Findings

The medicinal herb industry globally continues to experience strong growth as consumers increasingly prefer to use natural remedies to treat common ailments. Herbs like echinacea, valerian, skullcap and goldenseal are forecast to enjoy continued strong growth largely due to their ability to provide relief against common ailments such as colds and flu, mild insomnia, stress, PMS, tension, nervousness and upset stomach. The demand for arnica is expected to remain niche in the medium to long term largely due to its limited application to only treat bruises and sprains. However, the price for arnica plant materials is expected to remain strong largely due to supply scarcity. The potential application of the nominated herbs (with the exception of valerian) is largely confined to the herbal medicines and dietary supplements. Valerian has some flavouring properties and is used in food and beverage manufacturing but the herb is more known for its application as a mild sedative.

The supply of raw medicinal herbs globally is highly competitive and organised. There is a diverse range of countries supplying raw plant materials and extracts. In Australia, growers are increasingly finding it difficult to compete against cheaper imports. Processors and manufacturers are increasingly preferring to source imported raw materials due to better supply consistency, quality and price. The unpredictability of supply and demand coupled with significant price fluctuation has led to diminishing local grower interest in the cultivation of medicinal herbs. Interviews with leading industry stakeholders showed the Australian medicinal herbs industry is predominantly confined to 'hobby farmers' with no more than 1-2 acres dedicated to medicinal herbs. Medicinal herbs cultivation in Australia could be hard to measure as there is very little consistency in production volume with growers continuously rotating between other horticultural crops to yield best returns.

The high risk nature associated with medicinal herb cultivation means most local growers prefer to only cultivate herb varieties with the quickest growing cycle to minimise risk exposure. Discussion with growers and leading local research authorities showed that herbs such as *Echinacea pallida*, *Echinacea purpurea*, *Echinacea angustifolia*, skullcap, valerian and goldenseal can be successfully grown in Australia but production levels remain negligible largely due to strong global competition and significant price fluctuation. In addition, some herbs like *E. angustifolia* and goldenseal may require long term commitment prior to growers generating any returns. The cultivation of arnica remains a challenge in Australia as it is native to mountainous regions of Europe.

According to industry stakeholders, herbs that will generate the highest possible return for growers are *E. purpurea*, skullcap and goldenseal. Based on current international pricing for dry plant material *E. purpurea* A\$40-45/kg, skullcap A\$42/kg and goldenseal A\$140-200/kg (as of April 2005) it appears attractive for Australian growers to supply these herbs. Despite current high prices, the unpredictability of international prices will make it difficult to secure grower interest. For example, when Australian growers were supplying skullcap 3-4 years ago at a cost base of A\$22/kg for dry plant material, growers from North America were supplying at A\$16/kg. When domestic production of skullcap ceased, prices have been gradually rising to its current level of A\$42/kg.

Implications of the report's findings

To date, Australian growers have not been able to generate a profitable return from cultivating medicinal herbs. The information collected in this report questions whether Australia has a competitive advantage in supplying medicinal herbs especially when European and North American suppliers can compete on quality, supply consistency and price.

If growers are to achieve required returns from supplying medicinal herbs they need to have a better understanding of the needs of processors. Better communication and involvement of processors at grower level will help them to understand domestic production capabilities and build confidence in sourcing from domestic growers.

The recommended cultivation of *E. Purpurea*, skullcap and goldenseal will require the support of domestic processors and manufacturers to develop much needed critical mass.

The infancy and fragmentation of the industry means that limited available resources should be invested in industry development initiatives. Appropriate support infrastructure is needed to help growers spread risks and investment associated with growing medicinal herbs in Australia. The areas needing attention by industry include:

- Better co-ordination and co-operation across industry stakeholders including growers, government, processors and manufacturers;
- Better access and retention of true botanicals, cultivars, knowledge and technical expertise;
- Improving transparency and flow of information between industry stakeholders;
- Improving quality and consistency of delivery;

- Developing critical mass/volume to provide sufficient scale;
- Better access to market information;
- Developing a quality assurance system to guarantee product authenticity, integrity and safety; and
- Developing a commercial model/template that the industry can adopt.

An unbiased organisation, such as an industry association, is needed to play a co-ordinating/facilitating role in actioning the suggested recommendations. The development of a successful medicinal herb cultivation industry in Australia needs inputs and participation not just from growers but from all the other stakeholders along the supply chain. It is the “inclusion and engagement” process that will create confidence among processors to source locally over foreign suppliers.

If the industry is to have a future, growers need to concentrate on high value herbs such as *E. purpurea*, skullcap and goldenseal. More importantly, there needs to be greater emphasis on commercialisation and the need for a working partnership between growers and processors to ensure a market exists when herbs are harvested.

Whilst there is potential to supply overseas markets, the industry needs to focus on domestic opportunities and, more importantly, work with local processors to formulate herb products that meet the needs of the end-users (ie. customers).

1. Introduction

In formulating the RIRDC R&D Plan for Essential Oils and Plant Extracts 2002-2006, industry stakeholders recognised that Australia is currently a small world player in the market for medicinal extracts. Australian producers face considerable competition from low cost overseas producers, and the supply to domestic market is dominated by imports. However, as the herbal/natural medicines sector continues to grow, it is also becoming increasingly sophisticated with consumers wanting better quality products and forcing manufacturers to place greater control in the production and manufacture of herbal products.

This project aims to support RIRDC's R&D Plan in several ways. The global herbal medicine sector at large is very fragmented and little tangible data exist to allow a true assessment of its herbal supplement component. This is largely due to the fact the term "herbal supplements" encompasses a broad range of applications and thus, a broad range of product categories from professional prescribed herbals to homeopathy and health supplements.

Each product category is a separate market segment and has its own set of regulations governing sales to consumers. This fragmentation and lack of a clear definition makes it extremely difficult to measure the scale of the herbal industry. This project aims to clarify the term "herbal/dietary supplements" and attempts to identify niche opportunities in key western markets such as the US, France, Germany, UK and Australia. The information presented will allow industry to determine if commercial cultivation of the identified herbs is worthwhile. The five herbs nominated by industry for research include:

- Valerian (*Valeriana officinalis* L.);
- Arnica (*Arnica montana* L.);
- Skullcap (*Scutellaria lateriflora* L.),
- Echinacea (*E. angustifolia* DC., *E. pallida* (Nutt.) Nutt., *E. purpurea*(L.) Moench.) and;
- Goldenseal (*Hydrastis canadensis* L.)

Despite Australia's high cost structure, it is perceived that there might be niche opportunities for growers to supply processors wanting superior quality plant materials. This involves capitalising on Australia's "clean and green" reputation and the industry's ability to produce all-natural high quality herbs. This is particularly important as consumers are increasingly looking for high quality all natural remedies to address specific ailments.

The Pan Pharmaceuticals incident in 2003 highlighted the potential for adulteration and contamination in the manufacture of herbal products. It also highlighted the importance for processors to be sourcing high quality raw materials to ensure product safety and integrity. This project aims to gauge potential demand for Australian cultivated herbs and the price premium manufacturers and processors are willing to pay for high quality herbs.

Essentially this project has been formulated to assess the market potential and viability for profitable production in Australia of the five identified medicinal herbs. This project supports the RIRDC's R&D Plan for Essential Oils and Plant Extracts 2002-2006, in particular addressing the objective of improving understanding by potential researchers and producers of markets for essential oils and plant extracts.

Outcomes of the proposed research will enhance knowledge of market opportunities and the viability of profitable Australian production of selected 'best bet' crops prior to investing limited R&D funds in specific crop research.

1.1 The Five Nominated Herbs

All five herbs already have well established presence within the herbal medicine/supplement sector in Australia, Western Europe and the US. For example, echinacea is one of the top selling herbs in the world and is used in a diverse range of herbal products – mainly in products to boost the immune system and prevent coughs and colds.

Herbs, like other horticulture crops have many species and sub-species and growers need to be clear on the varieties demanded by processors. Below is a profile of the nominated herbs and their applications in herbal medicine and dietary supplements.

1.1.1 Valerian (*Valeriana officinalis* L.)

Valerian is a member of the Valerianaceae family, a perennial herb. The dried rhizome and roots of *V. officinalis* comprise the herbal drug valerian, which has been used for at least 1000 years. valerian is widely used in Europe as a mild sedative and sleep aid for insomnia, excitability and exhaustion. It has depressant activities on the central nervous system, is antispasmodic, and has been described as having equalising effects – acting as a sedative in agitated states and a stimulant in fatigue.

The active ingredients in valerian are the valepotriates present and the volatile oil constituents, notably valerenic acid. Studies have concluded that valerian extracts helped to improve significantly sleep quality of people suffering from mild insomnia, with minimal side effects. *V. officinalis* preparations are considered safe despite the known *in vitro* cytotoxic activity of valepotriates and no acute side effects have been reported.

The essential oil of valerian is extracted from the root and rhizomes are used in the production of Valium. Extracts are used in flavouring components in many food products and beverages and also as a non-addictive sedative to treat nervous tension, muscle spasms, cramps, and related conditions.

1.1.2 Arnica (*Arnica montana* L.)

Arnica is a perennial herb that is a native of Europe, often restricted to the more mountainous regions. The hairy flowering stems can carry between one and three yellow daisy-like flower heads.

In Europe, it has been a popular remedy – the tincture is generally used for external application to sprains, bruises, and wounds, and as a paint for chilblains when the skin is unbroken. It is seldom used internally, because of its irritant effect on the stomach.

Arnica is also used in homeopathy following an accident or a shock, as well as for illness of the venous or arterial systems.

The plant parts used are the flower heads and rhizome. The active constituents include a yellow bitter principle (arnicin), volatile essential oil, several sesquiterpenoid lactones, tannin etc. The flower is said to contain more arnicin than the rhizome, but no tannin. Its most active component, the sesquiterpene lactone is known reduce pain and swelling.

1.1.3 Skullcap (*Scutellaria lateriflora* L.)

Skullcap (*Scutellaria spp.*) is a member of the mint family (Labiatae or Lamiaceae). There are two commonly grown and marketed species; *Scutellaria lateriflora* (American skullcap) and *Scutellaria baicalensis* (Chinese skullcap).

The Chinese skullcap is a perennial herb with a large and long taproot and is native to eastern Asia. Only the roots and rhizomes are used – usually to treat enteritis, dysentery, diarrhoea, jaundice, chronic hepatitis, urinary tract infections, hypertension, threatened miscarriage, nosebleed and haemorrhage from the lungs or bowel.

American skullcap (*S. lateriflora*) on the other hand has been used to treat a wide range of nervous conditions. Its tonic and restorative properties help to support and nourish the nervous system, calming and relieving stress and anxiety. It is used in the treatment of various problems of the nervous system including epilepsy, insomnia, anxiety and withdrawal from barbiturates and tranquilisers. American skullcap has also been used to suppress menstruation and relief breast pain. American skullcap is native to North America.

The research will focus on American skullcap as this is the species more commonly featured in western herbal medicines/supplements.

1.1.4 Echinacea (*Echinacea angustifolia* DC., *E. pallida* (Nutt) Nutt. *E. purpurea* (L) Moench.)

Echinacea, which belongs to the daisy family Asteraceae (Compositae), is commonly known as the 'purple coneflower'. The whole plant, but specifically the roots of echinacea, is highly regarded as a non-specific stimulant of the immune system, as an anti-inflammatory to aid in wound healing.

The dried root and rhizome are the major plant materials used but leaves are also known to be harvested and extracted. The herb is very popular in North America and Europe where it is primarily used as an immune booster to prevent against cold and flu. Three species of echinacea are commonly used in herbal medicines and supplements namely *E. angustifolia*, *E. pallida* and *E. purpurea*.

Echinacea's active compounds include flavonoids, phytosterols, echinacoside, a caffeic acid derivative and echinacin. Whilst echinacea's chemistry is well known, there is plenty of debate about what are active constituents. The quality markers used in Australia are primarily the alkylamides while in the US market prefers the caffeoyl phenols (echinacoside, cichoric acid and chlorogenic acid).

1.1.5 Goldenseal (*Hydrastis canadensis* L.)

Goldenseal is a highly valued North American medicinal herb belonging to the family Ranunculaceae. The plant is native to north western United States and Canada.

The main active ingredients in goldenseal are the alkaloids hydrastine and berberine. It is used as a muscle stimulant, stomach strengtheners, antihemorrhagic and as a laxative. Goldenseal also has some antibacterial activity.

The potential applications of goldenseal include treating digestive disorders, peptic ulcers, gum diseases, sinusitis, catarrhal deafness, tinnitus, pelvic inflammatory disorders and painful periods. It has proved particularly useful for inflammation of mucous membranes in conditions such as thrush, pelvic inflammatory disorders, mouth ulcers and nasal catarrh. Goldenseal is also applied externally for vaginal infection, eczema and conjunctivitis.

All parts of the plant are used for medicinal purposes. However, it is the rhizome that is the most valued component because it contains the highest concentration of active ingredients including 2-4% hydrastine and 2-3% berberine. The pharmacological action of goldenseal is thought to result mainly from hydrastine and to a lesser extent berberine.

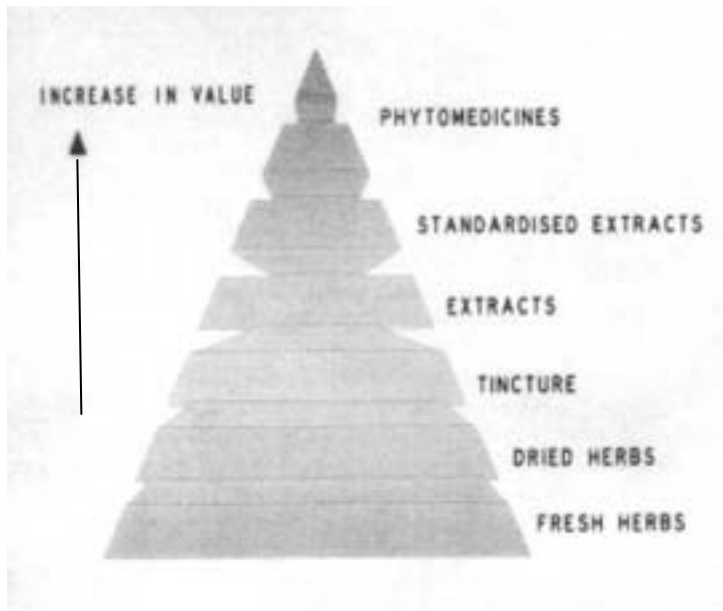
2. Industry Overview

2.1 Essential Oils and Extracts

The application of medicinal herbs and their extracts is diverse, from simple tea infusions to naturopath prescribed preparations. In addition, some medicinal herbs are also used for their flavour and fragrance properties in the manufacturing of food and beverage, cosmeceuticals and personal care products. With the exception of valerian which has some flavouring properties, all the nominated herbs are primarily used for medicinal purposes.

Most of the growth in the use of herbal products is in mass market distribution and the best way to communicate to the consumer is by quantifying (standardising) to the most broadly reported pharmacologically active compounds. This allows consumers to measure the active constituents per dosage/taking. Therefore, the industry is increasingly shifting from dried herbs and powders to measured standardised extracts. By measuring the level of active constituents, consumers are able to determine the potency or concentration levels of the herb.

Chart 1 – Value Increase in Botanical Medicines



As outlined by Chung 2000, herbs could be processed at five different levels to meet the requirements of product manufactures. Chart 1 shows the progression in both value and concentration resulting from various processing techniques.

The most basic form of processing is dried herbs. Basic dried herbs have long been a staple for natural products retailers and remain popular because they offer customers a myriad of options for preparing their own teas, liquid extracts, capsules and oils. The principal usage is in the form of hot tea for digestive ailments or detoxification, especially in cleaning the liver.

Tinctures and extracts are essentially the same thing. Tinctures are merely a particular type of extract (usually an alcoholic solution obtained by steeping the plant material in alcohol or aqueous alcohol etc.). Extracts in a general sense can be liquid solutions obtained by extraction with any solvent, whether they have been concentrated or not; semi-solids obtained by removal of the solvent from tinctures, essential oils obtained by steam distillation of plant material or plant concretes and absolutes.

Standardised extracts are prepared by blending, dilution or concentration of crude extracts to conform to a particular standard. For example, standardised goldenseal extract is usually guaranteed to contain a total of 5% of alkaloids (both hydrastine and berbine).

Phytomedicines are the finished products, often mixtures of several different extracts. Unwanted compounds are rarely removed, mainly because their identity is often unknown, and partly because there can be literally dozens of active compounds present in any plant extract.

Processed medicinal herbs have to be assayed for active principle content if they are to be used medicinally.

2.2 Potential Applications

The various levels of processing allow the five nominated herbs to be used in a diverse range of applications. All five nominated herbs are not new and have strong established markets in Western Europe and North America. Essentially the five herbs are ultimately used in complementary medicine, dietary supplements, non-prescription (OTC) and prescription medicines.

By definition, complementary medicines in Australia include traditional medicines and vitamins, minerals, nutritional supplements and herbal, aromatherapeutic and homoeopathic products.

Dietary supplements are products which contain one or more of the following classes of ingredients: vitamins, minerals, amino acids, herbs and other botanicals which are intended for ingestion in the form of a capsule, powder, softgel or gel cap. They are not represented as a conventional food or as sole items of a meal or diet. In Australia, this market is often divided into “vitamins” and “supplements” with supplements covering herbs/botanicals, minerals, and specialty supplements.

Non-Prescription (OTC) medicines are products that are readily available in pharmacies, and selected products are also available in supermarkets, health food stores and other retailers. These products usually contain well-known, established ingredients and usually have a long history of use (eg. cough and cold remedies, anti-fungal treatments, sunscreens and non-prescription analgesics such as aspirin and paracetamol) and are usually bought by consumers for self-treatment.

Lastly, prescription herbal medication is largely confined to the use of phytomedicines by physicians such as naturopaths and homoeopaths in the formulation of natural remedies or concoctions for their patients.

2.3 Medicinal Herb Cultivation in Australia

The commercial cultivation of medicinal herbs in Australia is underdeveloped and still in its infancy. While Australia’s diverse climatic and soil conditions provide the ability to cultivate a range of medicinal crops, growers have been slow to take up production on a significant commercial scale. The unpredictability of market conditions and the failure of several large scale ventures highlighted the associated risks in medicinal herb cultivation, thus discouraging and reducing grower interest.

There are very few growers in Australia that dedicate their entire operation to medicinal herbs. According to industry sources, the industry essentially comprises of some 50-60 “hobby farmers” that would grow medicinal herbs in part (usually 1-2 acres) with other horticultural crops. Typical volumes supplied by each grower would be between 20-50kg of dried plant material.

Most growers tend to cultivate medicinal herbs as cash crop to provide quick turnover and generate cash flow to cover farm operations. As a result, there is very little consistency in production as growers are continuously switching between crops to reflect potential market demand – growers could be growing medicinal herbs this season and vegetables the next, all depending on where demand and return are highest. Most of the medicinal herbs grown in Australia are destined for basic processing for use in herbal tea formulation.

The constant rotation of crops makes it extremely difficult to ascertain production levels in Australia. Herbs like skullcap, valerian, echinacea (*Echinacea pallida*, *E. purpurea*, *E. angustifolia*) and goldenseal can be successfully grown in Australia but it is estimated that very few growers currently supply these herbs, if at all.

The growth of the medicinal herb cultivation industry in Australia is hampered by several factors.

1) International Competition

The trade of medicinal herbs is a mature and global business with a range of countries supplying plant material. Countries like India, China and Eastern Europe have been particularly competitive in the supply of medicinal herbs due largely to their lower operating cost base. The cultivation of medicinal herbs is relatively labour intensive and access to cheap labour in these countries allows producers to supply herbs often at prices below production cost in Australia. Countries like China generate tremendous pricing pressure as their large scale production capabilities allow them to achieve significant cost savings through economies of scale. The lack of scale in herb farming in Australia makes it extremely difficult for growers to compete internationally.

With regard to the five nominated herbs, the majority of supply comes from North America and Europe. In particular, herbs originating from Eastern Europe are particularly cheap. For instance, the current price of skullcap from Eastern Europe is \$13/kg compared with \$42/kg from the US. Low cost countries are often criticised for producing poor quality herbs. However, globalisation has allowed improved access to technology and skills transfer which in turn has significantly reduced the development cycle needed to improve crop quality. The requirement for growers to provide batch samples means herbs are continually tested to ensure they meet the needs of buyers.

Competition from North America and western Europe should not be under-estimated either. Countries such as the USA, Canada and Germany have been cultivating medicinal herbs much longer than Australia and their industry is much more mature and better structured to absorb market downturns. For example, North American growers were able to supply dried skullcap plant materials at \$16/kg when Australia needed a farm gate price of \$22/kg to breakeven.

Whilst Australia has a reputation of being “Clean and Green” and for its ability to produce high quality herbs, international price pressure makes it extremely difficult for local growers to be competitive.

In addition, there is also significant supply from wild harvested herbs especially from Eastern Europe competing for the same market share. However, the harvest of wild herbs is fast losing popularity as there is increasing pressure from consumer groups and governments to stop such activities as it is seen as environmentally damaging. In addition, processors have preference for cultivated herbs as it allows for better control in reducing misidentification, adulteration and contamination.

2) Demand Fluctuations

Demand for medicinal herbs can be divided into two main categories; core users and fashion/casual users. Core users strongly believe in traditional remedies and will often rely on herbs to treat specific ailments. On the other hand, casual users will use medicinal herbs depending on publicity and positive medical findings.

The growth in the consumption of medicinal herbs has been primarily driven by casual users especially for use as health supplements. In other words, growth in the industry has been fuelled by consumers taking medicinal herbs to improve general well being and prevent possible ailments. Most dietary supplements are shelf stable products that are easily accessible by consumers. Consumers in general are becoming increasingly health conscious and self-educating to improve their overall health. Consumers would read-up on the latest trends in natural health and make their purchasing decision based on the information received. For example, natural remedies such as ginkgo biloba,

royal jelly and shark cartilage experienced phenomenal growth in recent years due to positive reviews and the promise of relief or prevention against certain ailments.

However, consumers are very cautious and will drop a product instantly if it is subject to a bad review. More importantly, consumers expect to see tangible benefits from taking health supplements. As the efficacy of most herbal supplements is often unsubstantiated or questionable, the direct impact to consumers could be minimal and hard to notice. As a result, consumers will subsequently drop the product if they are unable to realise the expected benefits.

Therefore, demand for medicinal herbs in the use of dietary supplements could fluctuate tremendously depending on publicity and medical findings. For example, ginseng sales in the US have declined considerably in recent years as consumers questioned its efficacy in preventing heart disease. On the other hand, sales of fish oils and Omega-3 fatty acids have skyrocketed due to recent studies showing it prevent heart disease. The consumption of dietary supplements is highly “fashionable” with consumers constantly on the look out for the next big fad.

From a grower’s point of view, the cultivation of medicinal herbs involves high risks owing to large fluctuations in demand. Some herbs can take several years to mature and this lead time exposes growers to potential market downturn. Growers in general tend to cultivate herbs that are high in demand and short in supply. However, when many growers are cultivating the same herbs to take advantage of the supply shortfall it eventually leads to an over-supply and price collapse. The problem is further exacerbated by a lack of global supply information thus creating great potential for local growers to be caught out with excessive supplies which might be difficult to sell.

To minimise risks, growers prefer to cultivate herb varieties with the shortest lead time to maturity. In addition, growers tend to concentrate on the domestic market only as there are too many requirements, uncertainties and risks associated in supplying markets overseas. The long cultivation cycle for *E. angustifolia*, arnica and goldenseal makes it extremely hard to attract grower interest and commitment.

3) Quality Consistency

One of the biggest challenges in cultivating medicinal herbs is achieving quality consistency across the industry. The level of active constituents in medicinal herbs is very susceptible to a range of factors including the species/genotypes used, cultivation technique, on farm practices, soil type, temperature, harvest time, latitude, humidity, rainfall, sunlight etc. As growing conditions differ from farm to farm, the potency and purity will vary, thus affecting the quality and return to growers. It is extremely difficult for growers to produce the same quality levels especially when cultivation is spread across many different geographical areas. Most of the extracts used by manufacturers are usually blended to quality specifications demanded by them.

Most western medicinal herbs are native to Europe and North America and there is no guarantee that the herbs will grow as successfully here in Australia despite the ability to replicate similar climatic conditions. In most instances, growers need to trial different species, genotypes and growing techniques to suit Australian conditions. There is no mechanism to capture and retain the knowledge of successful growers (especially in hard to grow herbs such as goldenseal, *E. angustifolia* and *E. purpurea*) so that it could be disseminated for the rest of industry. High grower turnover is further exacerbating the problem.

Despite Australia’s clean and green reputation, the infancy of the industry means it lacks scale, expertise and support infrastructure to allow growers (as a group) to consistently supply herbs to quality specifications demanded by processors and manufacturers.

4) Grower Commitment

As mentioned previously, there are very few growers in Australia who are fully dedicated to growing medicinal herbs, especially in relation to the five nominated herbs. The industry predominantly

comprises of hobby farmers who would enter and exit the market depending on potential demand. The high turnover of growers makes supply highly irregular and production levels impossible to measure.

The investment needed and high risk exposure make it difficult to secure grower commitment. To successfully cultivate medicinal herbs, growers need to have trialled a specific herb several times to fine tune cultivation techniques and growing conditions to maximise the yield and return. In addition, they will also need to identify species and genotypes that will best suit local growing condition. The high grower turnover and production irregularity limits the development of technical expertise needed to develop high quality medicinal herbs. As the result, processors and manufactures find there is little supply consistency as well as herb quality not meeting their requirements.

Take for example the development of *E. angustifolia* in the US. According to Appropriate Technology Transfer for Rural Areas (US), few large processors in US would buy on the world spot market, instead preferring to deal only with contracted growers. Processors will almost never enter into a contract with an inexperienced grower. A grower must raise at least a trial plot in order to be able to supply the required sample to the buyer. Growers have reported that it takes up to 10 crop season to secure a contract. A decision to raise echinacea is a long term commitment, requiring a minimum of three years until the first roots are large enough to market, and much longer until a reasonable return on investment can be achieved. Investments must be made in buildings, seed, and machinery, and most of all, in acquiring knowledge. It is not a decision that can be made on the spot (“Well, I think I’ll plant echinacea this year instead of corn”). Most growers in Australia grow medicinal herbs as cash crops and are not willing to commit to species taking 3-4 years to mature.

5) Access to Plant Stock

Herb species and genotypes producing high amounts of active constituents are highly prized and protected by established growers. As most western medicinal herbs originate from North America and Europe, local growers can sometimes have difficulty accessing high quality true botanical, genotypes and cultivars. Herbs such as *E. angustifolia*, goldenseal and arnica can be difficult to cultivate and there is continuous research to develop new seeds and genotypes that grow faster and are suitable for a diverse range of growing conditions. Access to research results and different genotypes is important as it will improve the viability of cultivating hard to grow herbs in Australia.

In addition, seed integrity is equally as important. Growers can source seeds that are contaminated such as *E. purpurea* cross pollinated with *E. pallida*. Such hybrids are worthless and can cause significant losses to growers as they will not know about the contamination until the seeds germinate. Therefore, growers need access to reliable suppliers to ensure genetic purity of the seed supplied

6) Communication

The medicinal herbs industry in Australia is highly fragmented with growers, processors and manufacturers operating at their own individual level. There is very little collaboration between growers, manufacturers and processors with the relationship purely seen as one of seller and buyer. No framework or mechanism exists to encourage processors and growers to work together to better meet customer needs through better development of quality products. For example, in the food sector there are intermediaries like Meat and Livestock Australia (MLA) and Wine and Brandy Corporation responsible for enhancing the communication between processors and farmers to ensure the industry is demand and customer driven.

2.4 Cost Structure and Supply Chain Analysis

The medicinal herb industry primarily comprises 8 core stakeholders.

- 1) **Development agents** – Universities and government agencies supporting industry development through better crop and market development.
- 2) **Small growers** – primarily consist of hobby farmers cultivating no more than 1-2 acres of herbs. These growers tend to supply small processors for use in basic product manufacturing such as herbal teas.
- 3) **Commercial growers** – who operate herb plantations and their production output is based on achieving critical mass. These growers tend to concentrate on supplying large sophisticated processors.
- 4) **Wholesalers** – usually act as dealers, collecting from various growers, holding stock and selling to processors and end-users. Some wholesalers are also involved in basic processing such as cutting and sifting herbs for use in basic product manufacturing such as herbal teas.
- 5) **Processors** – who would process plant materials into concentrates and extracts. It is not uncommon for processors to be a manufacturer of end products as well.
- 6) **Manufacturers** – are involved in manufacturing the herbal products demanded by retailers and users ranging from health supplements to phytomedicines
- 7) **Retailers** – they provide the necessary distribution channels to reach end-users
- 8) **End-user** – consumers who purchase herbal products with the view of promoting good health and to treat or prevent possible ailments.

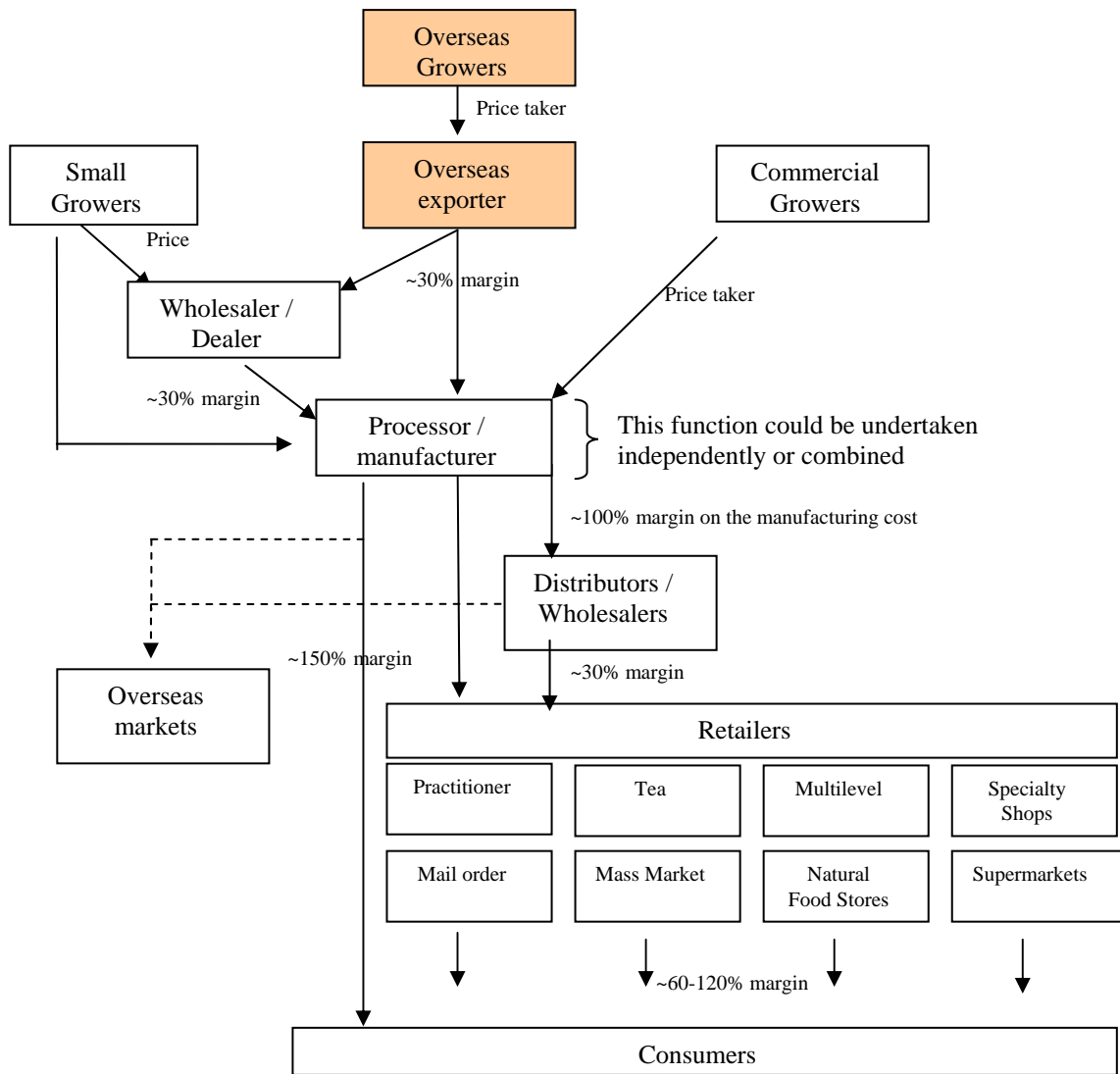
The supply chain model illustrated in Chart 2.4.1 is based on the supply of herbal tea products to consumers. It should be noted that the profit margins can differ significantly depending on the product category, herb, purity, potency, extraction method and distribution channels. It is not uncommon for some herbal products to have mark-ups in excess of 1000% between the manufacturer and the final retail price. It should be noted that the margins listed in Chart 2.4.1 are indicative mark-ups for herbal teas products and in no way reflect a standard measure for other product categories such as phytomedicines or health supplements.

The potential to create high mark-ups especially within the health supplements category means that many brokers could be involved in the distribution and supply of medicinal herb products. It also creates the possibility for heavy discounting especially if the manufacturer minimises the use of brokers to reach targeted consumers. High margins are needed to support heavy marketing and branding activities to build product value and consumer awareness.

Growers are often price takers, not knowing what they will receive until the herb has been tested by processors. It is this inability to estimate potential returns that makes growers hesitant in cultivating medicinal herbs. Growers have tried supplying high-priced herbs such as *E. angustifolia*, skullcap and *E. purpurea* but have not been able to generate required returns due weak global prices, which at times could drop to below production cost in Australia.

It is also extremely difficult to obtain price uniformity among growers as prices paid could vary significantly depending on the quality. A processor's willingness to pay a premium is largely dependent on herb purity and potency. In most instances, purity and potency could vary significantly between growers due to a host of factors including different horticulture practices, post harvest treatment, soil composition, climatic conditions and time of harvest. It is such factors that make growing medicinal herbs an extremely challenging and risky business.

Chart 2.4.1 – Domestic Supply Channel for Medicinal Herbs



Despite current high prices and ability for herbs such as *E. angustifolia*, *E. purpurea* and skullcap to successfully grow in Australia, most growers in Australia have not been able to realise the price premium. In fact, return to growers has been so poor that most will only grow medicinal herbs under contract.

Listed below are indicative margins for the nominated herbs imported from North America and Europe, and the minimum prices required by domestic growers.

***E. angustifolia* (dried roots)**

	Wholesale Price Range
Foreign growers	A\$38-60/kg ↑
Dealer/Wholesaler /Exporter –	\$50-77/kg
Importer/Processor* (in Aust)	\$65-100/kg
Processor (in Aust)	\$85-130/kg ↓
Min \$ required by local growers	N/A

* Large processors tend to import herbs directly from foreign suppliers

***E. purpurea* (dried roots)**

	Wholesale Price Range
Overseas growers	A\$23-27/kg ↑
Dealer/Wholesaler /Exporter –	\$30-35/kg
Importer/Processors (in Aust)	\$38-45/kg
Processor (in Aust)	\$50-\$58/kg ↓
Min \$ required by local growers	\$35/kg

***E. pallida* (dried roots) – Not available, not widely used in Australia**

	Wholesale Price Range
Overseas growers	N/A
Dealer/Wholesaler /Exporter –	N/A
Importer/Processor (in Aust)	N/A
Processor (in Aust)	N/A
Min \$ required by local growers	N/A

Valerian (dried roots - non-organic)

	Wholesale Price Range
Overseas growers	A\$4.50-7/kg ↑
Dealer/Wholesaler /Exporter –	\$6-9/kg
Importer/Processor (in Aust)	\$8-12/kg
Processor (in Aust)	\$10.50-16/kg ↓
Min \$ required by local growers	\$18-22/kg

Skullcap (dried roots)

	Wholesale Price Range
Overseas growers	A\$9-25/kg ↑
Dealer/Wholesaler /Exporter	\$12-32/kg
Importer/Processor (in Aust)	\$16-42/kg
Processor (in Aust)	\$21-55/kg ↓
Min \$ required by local growers	\$22/kg

Arnica (dried roots)

	Wholesale Price Range
Overseas growers	A\$30-42/kg ↑
Dealer/Wholesaler /Exporter	\$38-54/kg
Importer/Processor (in Aust)	\$50-70/kg
Processor (in Aust)	\$65-91/kg ↓
Min \$ required by local growers	Not grown in Aust.

Goldenseal (dried roots)

	Wholesale Price Range
Overseas growers	A\$85-42/kg ↑
Dealer/Wholesaler /Exporter –	\$110-150/kg
Importer/Processor (in Aust)	\$140-200/kg
Processor (in Aust)	\$180-260/kg ↓
Min \$ required by Aust growers	Limited production in Aust

Chart 2.4.2 – Overseas Supply Channel for Australian Herbs

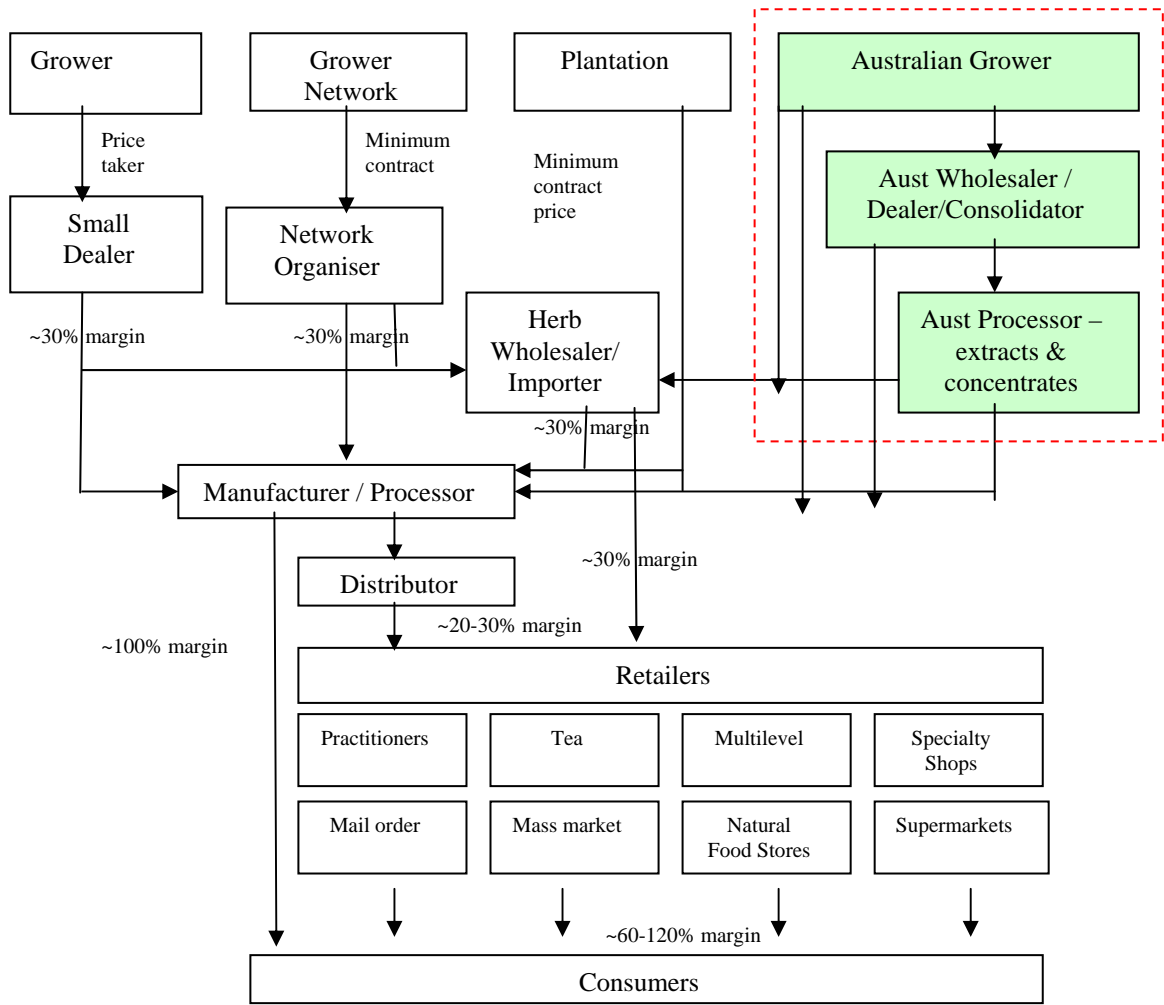


Chart 2.4.2 shows the supply chain involved in servicing possible overseas markets. There are two possible ways in which exporting could take place. Firstly, growers could choose to export dried plant materials directly or through local dealers and wholesalers.

The prices paid by overseas buyers will depend on the purity and potency of the herb. Given that the majority of growers in Australia are hobby farmers it is likely that some level of consolidation (either through a co-operative or wholesaler) will be needed to effectively meet the needs of large processors and manufacturers in Europe and the US. One of the difficulties in consolidating dried plant materials will be achieving quality consistency and uniformity as different growers will have different purity and potency levels. To better achieve quality consistency, there could be a need for growers to process dried plant materials into oils and extracts to allow for blending to quality specifications demanded by buyers. The export of extracts and concentrates also makes exporting more cost

effective as bulky plant materials have been removed leaving only the active constituents in the form of oils and extracts.

Different processors would have different needs with some preferring dried plant materials and others preferring oils and extracts. More importantly, growers would need to identify and develop a working relationship with possible buyers in overseas markets. The medicinal herb market in Europe and the US is much more mature and sophisticated with processors having well established sourcing channels. Processors will demand that Australian growers have a proven record in consistently supplying high quality herbs both in Australia and overseas markets. Once the reputation of the grower/supplier could be established, processors would then benchmark them against other suppliers in Europe and North America with the purchasing decision largely to be influenced by price.

It will be extremely difficult for growers to service overseas markets without first having successfully supplied the domestic market. Unfortunately, the Australian market for dried plant materials and extracts is very small and dominated by several large processors/manufacturers. Any growers growing the five nominated herbs on a sizable scale e.g. on an area greater than 50 acres has the potential to saturate the Australian market. At the same time, growers need economies of scale to better compete with suppliers from North America and Europe. It is this “Catch 22” situation that makes it difficult for growers to justify growing the five nominated herbs.

Whilst the Australian market for medicinal herbs is small, it provides the foundation for growers to develop the necessary capabilities to service larger overseas markets. Growers are encouraged to only consider exporting once they have been able to supply the domestic market, at the same time, the domestic market is extremely small and can be saturated with the supply of several tonnes of dried plant materials.

3. International Market Trends

3.1 USA

There has been significant attitudinal change in the US population in recent years with healthy living becoming the primary focus for many people of all ages.

Impetus for the healthy living is attributable to two key factors. First, the ageing of the baby boomer generation and the prospect of longer life spans have prompted many middle-aged people to seek out ways to maintain good health for as long as possible. This has led to an emphasis on preventative medicines, preventative healthcare, and healthy lifestyles. With the baby boomers entering their earning years, they have the means and the motivation to spend heavily on “wellness” products, in an effort to avoid the traditional pitfalls of old age, such as dental problems, joint pain and heart disease.

The second key factor has been the widespread introduction and availability of ‘alternative’ medicines and therapies, such as acupuncture, herbalism, botanical therapies and non-invasive treatments. The wellness concept is closely allied with alternative medicine’s holistic view of health as a balance of body systems. Key wellness products include vitamins and natural remedies, naturally based OTC remedies, self care devices, prescription products, homoeopathic remedies, aromatherapy, in-home diagnostics and health foods.

Americans generally prefer to rely on their personal knowledge and judgement when treating minor ailments. In a recent survey in 2001 by Roper Starch Worldwide Inc and sponsored by the Consumer Healthcare Products Association, 73% of people asked said they chose to treat common ailments, such as colds and headaches, themselves without referring to a doctor.

This attitude reflects the fact that most Americans feel comfortable treating themselves with OTC medications, in part because they believe that the Food and Drug Administration approval of a product for OTC use ensures it is ‘safe’.

Attitudes towards self-medication are also tied to a trend towards greater involvement in healthcare decisions. Consumers are less passive participants in the healthcare system than they were 50 years ago. They want more control, are making more of their own decisions, and have a better understanding of their options. OTC drugs and self-medication are essential parts of this trend towards greater individual responsibility and control. Furthermore, the switching of some products from prescription to OTC status has given consumers access to products that used to require a doctor’s visit.

In general, the trend towards self-medication tends to be increasing in the US. According to Consumer Healthcare Products Association Data, nearly 60% of adults surveyed in 2001 said that they were more likely to treat their own health conditions than they were in the previous year. Moreover, 96% of survey respondents said they felt quite confident in their healthcare decisions.

Table 3.1 (a) - Adults First Choice of Action for Common Ailments 2001

	% Adults Surveyed				
	Use OTC	Consult Doctor	No Action	No Response	Total
Headache pain	54	4	34	8	100
Heartburn, indigestion	43	8	35	14	100
Skin problems	51	8	26	15	100
Allergy, sinus	40	13	21	16	100
Muscle, joint, backpain	30	16	37	17	100
Minor eye ailment	29	19	37	15	100
Pre-menstrual problems	35	9	36	20	100
Teeth, gum problems	17	36	31	16	100

Source: Roper Starch Worldwide Inc, Consumer Healthcare Products Association

3.1.1 Natural medicines in the US

The wellness trend is aligned with alternative medicine and holistic healthcare. Natural medicines and herbal remedies have been a good fit with this trend, as there is a large number of herbalists, naturopaths, and homoeopathic and other alternative care practitioners who endorse phytopharmaceutical products and other natural medicines. Growth in alternative medicine is supported in part by growing disenchantment with standard medicine.

The wellness trend also has an ethos of gentleness or safety that supports the use of natural products, which tend to be mild drugs, over the use of conventional pharmaceuticals, which can cause side effects in some users. Growing awareness of this issue has made natural medicines popular among parents, and has made natural ingredients a useful positioning tool for manufacturers of OTC products, particularly smaller companies.

Consumer support for natural medicines is further strengthened with the increasing availability of scientific research showing the efficacy of various supplements in combating diseases/illnesses. For example, numerous studies have documented the use of valerian as a mild sedative to aid sleep disorders like mild insomnia. As consumer awareness of this body of research has grown, so has interest in purchasing natural medicines. Scientific research has also played a role in product development, by allowing manufacturers to isolate active phytopharmaceutical compounds and other natural medicines ingredients, and identify bodily conditions that these products can treat. This research led to the launch of a large number of new products during the review period, particularly within the vitamins and dietary supplements sector.

Table 3.1 (b) - Sales of Natural Medicines 1997-2002

	1997	1998	1999	2000	2001	2002
Sales US\$M	3900.0	4463.0	4587.0	4738.4	4909.0	5090.1
Growth (%)		14.4	2.8	3.3	3.6	4.0

Source: American Herbal Products Association, American Institute of Homeopathy, National Center for Homeopathy, trade press (incl. Chain Drug Review, Drug Store News, Nutrition Business Journal), trade interviews, Euromonitor estimates. Excludes sales through practitioners, includes homoeopathic products.

3.1.2 Industry Regulation

Governmental regulation of dietary supplements in the US remains limited as the result of the Dietary Supplement & Education Act of 1994 (DSHEA). Pursuant to the Act, the US Food and Drug Administration (FDA) cannot regulate dietary supplements unless they have been proven to be unsafe. Moreover, the DSHEA prevents the FDA from reviewing dietary supplements for safety and effectiveness before they are marketed. In the event that evidence exists to prove a supplement unsafe, the law allows the FDA to 'prohibit sales of a dietary supplement if it presents a significant or unreasonable risk of injury'. This legal standard of 'significant or unreasonable risk' requires a somewhat nebulous risk-benefit calculation based on the best available scientific evidence. It strongly suggests that the FDA must determine whether a supplement's known or supposed health risks outweigh any known or suspected benefits.

In late 2003, the FDA proposed a new set of regulations for the dietary supplement sector. The new regulations are designed to ensure accuracy in labelling and in the quality of ingredients and manufacturing procedures involved in the sales of supplements products. The FDA also proposed a regulation in March 2003 requiring current good manufacturing practices for all dietary supplements sold in the US. These regulations would, for the first time, hold companies accountable for ensuring that dosages were reflected correctly on product labels and that contaminants or impurities would not seep into supplement products.

3.1.3 Distribution

OTC products are subject to few distribution restrictions in the US, and can therefore be found in wide variety of outlets. These include supermarkets, drugstores, mass merchandisers, convenience stores, independent grocery stores, warehouse clubs, and even Internet retailers.

When choosing an OTC product, many consumers prefer to seek a pharmacist's advice. Drugstores therefore remain popular outlets for OTC products. However, a large number of supermarkets and mass merchandisers have pharmacy sections and pharmacists on duty. These sections are often used as traffic-builders for the store, with emphasis placed on the servicing of regular prescriptions. In addition, a growing number of discount chains have added pharmacies to their stores.

Table 3.1 (c) - Retail Sales of OTC Healthcare by Distribution Format 1998 - 2003

	1998	2003
Chemists/pharmacies	4.2	2.8
Drugstores/parapharmacies	24.5	24.1
Grocery outlets	19.6	18.0
Healthfood shops	19.0	16.8
Discounters	16.4	22.0
Direct sales	10.1	10.1
Others	6.1	6.1
Total	100.0	100.0

Source: Official statistics, trade associations, trade press, company research, store checks, trade interviews, Euromonitor estimates.

3.1.4 Market Size

The US OTC market generated sales in excess of US\$29 billion in 2003. These strong sales could be attributed to the manifestation of consumers increasingly turning to self-medication and the ageing population wanting a healthier lifestyle. In addition, the market performance was greatly helped by the outbreak of an unusually resistant strain of influenza virus in 2003, as well as a shortage of influenza vaccine. Moreover, sales continued to be aided by the switch of Claritin from registered

product to OTC. These events propelled current value of sales of cough, cold and allergy remedies forward by 14.5% in 2003.

The industry has been slow to introduce new products to drive growth. Instead product development has tended to be along the lines of improvements to existing products. This included antibiotic wound treatments, herbal calming aids, and combination analgesics for migraine pain. These introductions have spurred growth in their respective categories by adding value to existing products, and are illustrative of effective strategies employed by makers to create value where true innovation has been lacking.

Table 3.1 (d) – Retail Sales of OTC Healthcare by Sector: Value 1998 - 2003

	US\$ million					
	1998	1999	2000	2001	2002	2003
Analgesics	3,681.2	3,759.9	3,745.3	3,748.8	3,891.9	3,685.3
Cough, cold and allergy (hay fever) remedies	6,694.5	3,956.9	3,942.2	4,065.6	4,174.0	4,778.1
Digestive remedies	3,008.0	3,089.5	3,113.4	3,082.9	3,120.3	3,246.3
Medicated skin care	2,719.9	2,782.2	2,862.9	2,917.9	2,986.2	3,058.2
Vitamins and dietary supplements	11,906.7	12,323.0	12,142.3	11,944.1	12,190.7	12,494.2
Smoking cessation aids	626.2	638.1	644.7	660.1	674.0	698.0
Eye care	432.9	448.0	461.9	480.8	493.3	511.0
Ear care	62.1	62.0	61.6	60.9	60.6	62.1
Adult mouthcare	129.5	130.7	132.8	140.6	145.0	149.9
Calming and sleeping products	112.1	121.5	134.5	136.3	142.6	151.3
Wound treatments	498.3	519.7	539.3	557.6	578.1	594.4
OTC Healthcare	26,871.4	27,831.3	27,781.1	27,795.7	28,456.9	29,428.8

Source: US Census Bureau, US Food and Drug Administration, Consumer Healthcare Products Association, National Association for Chain Drug Stores, American Herbal Products Association, trade press (incl. Advertising Age, American Demographics, American Druggist, American Health Line, Brandweek, Chain Drug Review, Chemical Market Reporter, Drug Store News, Drug Topics, Grocery Headquarters, Household and Personal Products Industry, Mass Market Retailer, Nutrition Business Journal, Supermarket News), company research, investor brokerage reports, trade interviews, Euromonitor estimates

3.1.4.1 Vitamins and Dietary Supplements

Dietary supplements was the largest US vitamins and dietary subsector in 2003, holding 49.9% of the total sector value, on sales of US\$6,233 million. Dietary supplements are also the most rapidly growing subsector, with a current value increase of 2.6% from 2002. The US dietary supplements subsector remained highly fragmented by type in 2003, and showed a continued trend towards increasing fragmentation as less developed supplement types drove growth, and a number of major supplement types, mostly single-herb supplements, suffered value declines.

Herbal supplement types such as ginkgo biloba, echinacea, and St John's wort, which were category leaders in 1999, continued to suffer significant current value declines of 27.5%, 8.5% and 31.1%, respectively in 2003. In general, strong initial trials of such products by consumers did not lead to repeat purchases in many instances, with many consumers becoming increasingly disillusioned regarding product efficacy. Other products to suffer significant decline in recent years include ginseng and garlic.

Table 3.1 (e) – Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 1998 - 2003

	US\$ million					
	1998	1999	2000	2001	2002	2003
Vitamins	5422.2	5558.0	5555.3	5613.0	5772.9	5908.5
Dietary supplements	6159.7	6430.4	6241.7	5993.5	6071.5	6232.3
Tonics & bottled nutritive drinks	12.0	12.5	12.9	13.3	13.5	13.7
Child-specific vitamins & dietary supplements	312.7	322.0	332.3	324.3	332.8	339.7
Vitamins & dietary supplements	11906.7	12323.0	12142.3	11944.1	12190.7	12494.2

Source: American Herbal products Association, trade press (incl. Chain Drug Review, Drug Store News, Drug Topics, Grocery Headquarters, MMR, Nutrition Business Journal, Private Label Buyer, Supermarket News), company research, investor brokerage reports, store checks, trade interviews, Euromonitor estimates

Table 3.1 (f) – Retail Sales of Dietary Supplements by Type: Value 1998-2003

	US\$ million					
	1998	1999	2000	2001	2002	2003
Dietary Supplements	6,159.7	6,430.4	6,241.7	5,993.5	6,071.5	6,232.3
- Calcium supplements	668.5	746.8	810.4	840.4	943.8	1,007.9
- Mineral supplements	530.0	561.7	558.8	568.3	595.0	612.3
- Fish oils	60.0	69.7	77.8	95.2	124.7	156.7
- Garlic	193.5	172.7	170.4	176.2	172.3	165.6
- Ginseng	247.5	218.1	197.8	145.0	102.7	83.5
- Ginkgo biloba	367.2	355.6	297.1	209.8	146.6	106.3
- Evening primrose	22.5	23.2	30.9	35.8	37.3	39.3
- Echinacea	245.3	247.3	242.3	228.2	194.2	177.7
- St John's wort	370.7	300.3	226.5	128.2	77.4	53.3
- Protein powder	-	-	-	-	-	-
- Probiotic supplements	110.2	118.7	126.5	142.6	152.1	158.9
- Eye health supplements	10.7	11.8	19.4	37.3	45.3	56.0
- Royal jelly	51.1	54.5	56.8	60.3	62.1	64.5
- Co-enzyme Q10	96.0	120.0	144.0	172.4	192.4	207.6
- Glucosamine	352.5	495.4	623.2	676.9	678.3	708.1
- Sam-E	7.4	51.4	66.5	69.8	71.6	72.6
- Other dietary supplements	2,826.5	2,883.2	2,593.3	2,407.1	2,475.7	2,562.0

Source: American Herbal products Association, trade press (incl. Chain Drug Review, Drug Store News, Drug Topics, Grocery Headquarters, MMR, Nutrition Business Journal, Private Label Buyer, Supermarket News), company research, investor brokerage reports, store checks, trade interviews, Euromonitor estimates

The fragmentation of the industry can be supported by the large diversity of products available within the US. More than 41% of total US dietary supplements value in 2003 was classified as “Others” which include smaller selling products including soy, black cohosh root, milk thistle, ephedra, goldenseal, valerian, green tea, mushrooms, elderberry, and bilberry. This area is increasingly fragmented with the continuous introduction of new product types. Nevertheless, this group grew by 3.5% in current value between 2002 and 2003, to more than US\$2.5 billion.

Demand for dietary supplements remains strong thanks to an ageing US population, more limited access to physicians (due to the private healthcare system), and a generally greater awareness of personal health and nutritional issues. Demand for dietary supplement was particularly strong in categories that address age-related complaints including:

- Joint pain/arthritis
- Prostate health
- Digestive health
- Osteoporosis
- Menopause
- Mental clarity
- Energy level/vitality
- Heart disease/cholesterol
- Ocular health

Supplements that enjoyed strong growth in 2003 included glucosamine, co-enzymes, evening primrose oil and fish oils, and several recently emerged supplements types, such as lutein, chondroitin, MSM, Sam-E, probiotics, royal jelly, black cohosh root, and soy. Although some of these have achieved considerable value sales, many are still penetrating the market, and enjoying strong initial trials by consumers.

US consumers tend to be fickle with regards to their vitamins and dietary supplement consumption. Though consumers may take a product such as echinacea to support immune function and both prevent and treat the common cold and flu, their interest wanes over time. This is partly a result of consumers’ difficulty, even aversion, to maintaining a specific dosage over time. However, consumers have also become disenchanted with such products as they do not provide the quick-fix, miracle cure they have been hoping for. It is much easier to notice when health problems occur than when products have been contributing to an overall level of good health. Echinacea sales fell by 27.6% between 1998 and 2003, to US\$178 million.

Another explanation for rapidly shifting consumer interest is that most US consumers do not know precisely what they are purchasing when they buy a dietary supplement. Because of this, consumers frequently listen to manufacturer product hype as they look for the ‘next big thing’. However, interest quickly wanes – as has been the case for herbal supplements such as echinacea – as the supplement does not prove to be the miracle cure that the user has hoped for.

Demand is often influenced by media coverage often cited by the trade press and the industry. In the late 1990s, media coverage was predominantly favourable, and amounted in many ways to free advertising. National news programmes covered the growing use of certain supplements types as news, prompting further experimentation by consumers, and leading to triple-digit growth rates for some supplement types in mass-market distribution channels. However, over the last 3-4 years, media coverage developed a negative bias, depressing demand for many supplements as coverage of substandard quality products eroded consumer trust and thus expenditure. A frequently employed media strategy was to decry the lack of actual clinical research done to support manufactures’ claims. Dietary supplements such as St John’s wort, ginseng and ginkgo biloba were targeted for media criticism, and consequently suffered among the strongest current value declines in 2003.

3.1.5 Forecasted Growth

Despite ongoing sector maturation, dietary supplements are expected to continue growing as a result of continued consumer interest, an ageing population, limited access to physicians as result of managed healthcare programmes, and a greater emphasis on personal self-care in the matter of nutritional and health issues.

The ageing population is expected to remain the most significant contributor to overall growth. As the baby boomer generation continues to age, their interest in age-related products such as those supporting immune system, mental health, energy enhancement, digestive health and cardiovascular health is expected to continue. Moreover, proprietary blends are also expected to perform strongly over the forecast period, as consumers increasingly look to them to treat specific health conditions.

Based on the Euromonitor estimates, sales of dietary supplements are expected to increase by 15% in constant value terms between 2003 to 2008. Specific supplements such as calcium, fish oils, evening primrose oil, co-enzyme Q10, and glucosamine – all of which claim to support bodily function as consumers age – are expected to drive growth. Conversely, supplements that saw sharp declines in recent years – including ginseng, ginkgo biloba, echinacea, and St John’s wort – are all expected to continue to decline due to continuing consumer scepticism, albeit at a diminishing rate, due to maturity. Age specific products possess enormous growth potential in the face of an ageing baby boomer generation.

Table 3.1 (f) – Forecast Retail Sales of OTC Healthcare by Sector: Value 2003-2008

	US\$ million					
	2003	2004	2005	2006	2007	2008
Analgesics	3,685.3	3,644.9	3,599.0	3,556.1	3,521.5	3,482.2
Cough, cold and allergy (hay fever) remedies	4,778.1	4,838.9	4,926.9	4,999.6	5,053.0	5,118.9
Digestive remedies	3,246.3	3,377.1	3,395.9	3,436.5	3,488.1	3,539.5
Medicated skin care	3,058.2	3,106.8	3,153.1	3,190.3	3,245.1	3,318.2
Vitamins and dietary supplements	12,494.2	12,558.4	12,787.7	13,080.6	13,380.6	13,694.3
Smoking cessation aids	698.0	710.6	725.3	735.7	752.6	771.5
Eye care	511.0	518.4	526.9	530.8	538.3	548.0
Ear care	62.1	62.6	62.5	61.8	61.6	62.0
Adult mouthcare	149.9	152.9	156.6	159.4	161.3	164.7
Calming and sleeping products	151.3	158.0	165.7	171.3	176.6	182.8
Wound treatments	594.4	607.3	622.3	632.8	642.8	649.0
OTC Healthcare	29,428.8	29,735.9	30,121.9	30,555.0	31,021.0	31,531.1

Source: Euromonitor

Table 3.1 (g) – Forecast Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 2003-2008

	US\$ million					
	2003	2004	2005	2006	2007	2008
Vitamins	5,908.5	5,894.7	5,932.4	5,969.6	6,026.8	6,113.2
Dietary supplements	6,232.3	6,299.5	6,481.1	6,729.3	6,965.5	7,188.1
Tonics & bottled nutritive drinks	13.7	13.7	13.8	13.8	13.9	14.0
Child-specific vitamins & dietary supplements	339.7	350.6	360.4	368.0	373.8	379.1
Vitamins & dietary supplements	12,494.2	12,558.4	12,787.7	13,080.6	13,380.0	13,694.3

Source: Euromonitor estimates

Manufacturers will continue to introduce products to treat condition specific health issues. Product areas that are likely to show sustained growth include:

Joint health

Usually based on four key ingredients: glucosamine, MSM (methylsulphonyl methane), chondroitin, and Sam-E (S-adenosylmethionine). Many manufacturers are combining these compounds with each other or with supplement types to produce proprietary mixtures, which are often sold as value-added, branded goods. In addition to these four supplements, other manufacturers have also begun to offer joint care products that feature other herbal and mineral supplements.

Cardiovascular health

Several new products were recently introduced into the US market claiming to promote circulation and the cardiovascular system, as well as lowering cholesterol. Ingredients used in the formulation of these products include garlic, lycopene, hawthorn extract, B vitamins, Vitamin E, magnesium and chromium.

Digestive health

The majority of such products are centred on probiotic formulations which support intestinal bacteria to maximise digestion. Typical ingredients used in product formulation include glucosamine, proteolytic enzymes, vitamin K, peppermint oil, fermented soy beans and pharmaceutical-grade bacteria.

Mental health and stress relief

Supplements assisting brain function ranged from those designed to improve memory, to mood enhancers, to stress relievers. Common ingredients used in the formulation of mental health and stress relief products include magnolia, phellodendron, green tea, omega-3 fatty acids and other herbs.

Energy enhancement

This product segment particularly appeals to the ageing population. Until recently, this category was dominated by ephedra products. However, sales have declined significantly due to the FDA enforced ban of ephedra products due to increasing side-effects including heart attack, stroke, seizures, fever, vomiting, coma and in some instances even death.

The ban of ephedra products has led to manufacturers reverting to the use of safer ingredients such as green tea, ginseng, caffeine, ginkgo biloba, gatu kola, bee pollen, cayenne pepper, and white willow bark.

Immune system support

This category remains relatively active with the continuous introduction of new products that boost immune system support. Echinacea and Vitamin C remains popular key ingredients in the formulations of such products.

3.2 Germany

There are two medicine classes in Germany: prescription-only and non-prescription. In the case of prescription products the classification is determined by the active ingredients, dosages, strengths and presentation forms. The non-prescription-bound market has two distinct parts: the term 'self-medication' usually refers to products which customers can freely select from shelves, such as vitamins, while OTC medication products can only be sold over the counter in pharmacies, requiring a doctor's prescription.

Many dietary supplements by-pass the regulatory process by having their products classified as foodstuff. The German Food Law determines the status of a product according to 'the objective determination of the product's predominant purpose, according to the common opinion/interpretation of the trade'. Among the criteria for judgement are composition, posology and claims made of its efficacy, as well as dosage and labelling.

3.2.1 Natural medicines in Germany

Traditional remedies are relatively widespread and commonly used in Germany. Quite often, German consumers will turn to traditional remedies (usually involving the use of natural and herbal ingredients) to soothe symptoms and if the sickness persists they will then visit the doctor.

The preference for traditional remedies means there is also strong support for homeopathy in Germany. Homeopathy is taken very seriously in Germany as homoeopaths have to be registered medical doctors. There are approximately 4,000 homoeopaths in Germany and they perform about 10 million consultations per annum. Between 1997–2001, sales of homoeopathy remedies increased by approximately 9% and are expected to continue rising in coming years. It is estimated that 80% of Germans employ some form of alternative medicine.

Table 3.2 (a) - Retail Sales of Homoeopathy 1997-2002

	1997	1998	1999	2000	2001	2002
Sales EUR million	2,360	2,450	2,600	2,700	2,810	3,100
Growth (%)		3.8	6.1	3.8	4.0	10.3

Source: Company research, Euromonitor estimates

3.2.2 Industry Regulation

Recent healthcare reforms have led to the introduction of a new system where most drugs and medicaments purchased from January 2004 onwards with a prescription will not be reimbursed by the GKV (compulsory health insurance). It can be expected that sales of prescription-free drugs will be affected by trends towards cost avoidance, ie, people will buy traditional remedies, bargain hunt, renounce treatment or substitute products requiring a prescription. OTC products that used to be available via prescription (and were thus reimbursable) are bound to lose some of their consumer base. This also raises the question whether self-medication will increase as a response to the change in legislation.

Patients will have to pay for all of their homeopathic remedies, because, along with other OTC products, these will no longer be reimbursed by the GKV. It can be expected that sales of homeopathic remedies will dip and that many smaller manufacturers will suffer as a result.

Industry sources claim that the GKV will severely hurt the non-prescription-bound market, especially prescription sales of semi-ethical herbal, homoeopathic and anthroposophic products, as well as combination products, while sales of single-ingredients would also be cut, thus negatively impacting herbal prescription products.

It is estimated that demand for herbal products is likely to weaken in years to come. In recent years, German consumers have become increasingly aware of the fact that natural ingredients can in some cases cause allergic reactions, and are hence not perceived as being as safe as was previously assumed. Secondly, the end of reimbursement for almost all herbal products will likely lead to doctor prescribing more standard medicines as they remain reimbursable. With doctors' prescriptions accounting for roughly 50% of generated sales for herbal products, hard times can be confidently predicted for smaller companies.

3.2.3 Distribution

The German medicinal product market is highly regulated in respect to distribution. All products fall into one of the following categories: 1) Prescription only, 2) Pharmacy-only and 3) Products sold outside pharmacies.

“Prescription-only” medication has to be prescribed by a physician and can only be purchased in pharmacies. “Pharmacy-only” products do not need the supervision of a doctor, but have to be purchased in a pharmacy to ensure the availability of qualified advice from a pharmacist if required. Lastly, “product sold outside pharmacies” can be sold through a variety of retail channels including pharmacies, chemists, health food shops and other outlets.

Pharmacies are the most important retail outlets for dietary supplements in Germany, accounting for almost 35% of sales value in 2003. Although they are more expensive than other retailers, customers still see them as most competent for health issues, and thus prepared to spend more on the products they offer.

However, pharmacies' share of the retail distribution dietary supplements fell by more than 1%, while drugstores increased by more than 1% to 24%. Unlike grocery stores and supermarkets, drugstores are increasingly seen as a qualified place to purchase dietary supplements and manufacturers are keen to work with them.

Table 3.2 (b) - Retail Sales of OTC Healthcare by Distribution Format 1998 - 2003

	1998	2003
Chemists/pharmacies	70.2%	68.2%
Drugstores/parapharmacies	10.3	11.7
Grocery outlets	12.0	11.6
Healthfood shops	5.5	5.0
Discounters	1.3	2.6
Direct sales	0.5	0.8
Others	0.2	0.2
Total	100.0	100.0

Source: Official statistics, trade associations, trade press, company research, store checks, trade interviews, Euromonitor estimates.

3.2.4 Market Size

Retail sales of OTC healthcare products in Germany for 2003 were worth EUR4.5 billion. While most sectors displayed growth in 2003, analgesics, digestive remedies and child specific OTC healthcare declined.

The two most important product categories cough, cold and allergy remedies and vitamin and dietary supplements enjoyed strong sales in 2003 largely due to a relatively cold winter and serious outbreaks of influenza. Eye care, ear care and smoking cessation aids were the most dynamic sectors in 2003, with growth at 11%, 8% and 9% respectively over 2002.

Table 3.2 (c) – Retail Sales of OTC Healthcare by Sector: Value 1998 - 2003

	EUR million					
	1998	1999	2000	2001	2002	2003
Analgesics	694.7	726.8	759.7	771.7	763.1	756.2
Cough, cold and allergy (hay fever) remedies	958.6	1,003.7	1,047.3	1,048.3	1,020.1	1,047.7
Digestive remedies	461.5	481.7	508.3	513.8	504.0	500.7
Medicated skin care	653.0	682.7	724.7	728.6	749.0	756.7
Vitamins and dietary supplements	959.8	985.4	1,019.5	1,020.4	1,017.5	1,020.4
Smoking cessation aids	25.4	25.2	28.2	33.7	35.4	38.5
Eye care	42.9	47.1	53.1	59.7	65.2	72.1
Ear care	4.9	4.9	5.3	5.6	6.0	6.4
Adult mouthcare	22.0	22.6	23.6	24.5	25.0	26.0
Calming and sleeping products	180.9	201.7	219.2	209.4	210.5	218.9
Wound treatments	46.5	47.2	48.9	48.7	49.1	51.0
OTC Healthcare	4,050.2	4,228.9	4,437.8	4,464.3	4,444.9	4,494.5

Source: Trade association (BAH), trade press (Lebensmittelreport, Lebensmittepraxis, OTC bulletin, websites), company research, store checks, trade interviews, Euromonitor estimates

3.2.4.1 Vitamins and Dietary Supplements

The German vitamins and dietary supplement sector is worth an estimated EUR1,020 million in 2003. The sales of dietary supplements increased by 1% to reach EUR566 million in 2003, while vitamins declined by 0.3% to around EUR352 million. The two leading companies in vitamins and dietary supplements are Abtei Pharma Vertriebs-GmbH, with its well-known brands Eunova, Cetebe and Abtei, and MCM Klosterfrau with its Melissengeist tonic.

The improvement in the performance demonstrated in 2003 can be attributed to several factors. Firstly, a wave of colds and influenza during the spring led to an increase in sales of vitamins, calcium and magnesium. In addition, 2003 saw new product trends such as “beauty from inside” such as Bad Heibrunner’s Beauty Vitamin-B-Komplex Kapseln (capsules) or GlaxoSmithKline’s Age Control Tag & Nacht Haut Kapseln (Day & Night capsules), which promise improved appearance, were popular and sold well. So-called target group products, aimed at particular population segments, also helped increase sales. Various new product launches also added value to vitamins and dietary supplements.

Fish oils and calcium enjoyed particularly strong demand in 2003 with sales of EUR29 million and EUR53 million respectively. Industry sources say that Omega-3 Salmon Oils are popular with German consumers, especially with the ageing population. Calcium sales are strong predominantly due to older people taking calcium supplements to prevent osteoporosis.

Table 3.2 (d) – Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 1998 - 2003

	EUR\$ million					
	1998	1999	2000	2001	2002	2003
Vitamins	326.5	336.9	356.9	352.7	352.7	351.6
Dietary supplements	515.2	533.9	550.1	560.3	560.3	566.1
Tonics & bottled nutritive drinks	97	93.3	91.9	84.5	84.5	82.6
Child-specific vitamins & dietary supplements	21.1	21.2	20.6	20.0	20.0	20.1
Vitamins & dietary supplements	959.8	985.4	1019.5	1020.4	1017.5	1020.4

Source: Trade association (BAH), trade press (Lebensmittelreport, Lebensmittelpraxis, OTC bulletin, websites), company research, store checks, trade interviews, Euromonitor estimates

Age related products continued to enjoy strong growth in Germany, in particular calcium and magnesium supplements to combat age related conditions including muscle cramps, heart disease and high blood pressure. In 2003 Novartis Consumer Health, the second largest company in Germany in terms of minerals supplements (excluding calcium), launched Magnesium-Sandoz Forte, a high-strength addition to the company's magnesium medicine in Germany.

Apart from calcium and magnesium, hawthorn also experienced healthy growth in 2003 with an increase of 5% in current value terms to approximately EUR31 million. Hawthorn contains proanthocyanidins and flavonoids, which increase the blood circulation to the heart muscle, and is therefore very good at combating decreasing cardiac output, which might result in feelings of anxiety and tiredness.

The most popular brand containing hawthorn in Germany is Kneipp's Kneipp Weissdorn, with a value share in sales of hawthorn of almost 43% in 2003. More and more Germans are concerned about a healthy diet, and demand for products containing hawthorn, ginkgo biloba or evening primrose is growing as a result.

Products formulated to enhance general appearance also enjoyed strong popularity in 2003. For example, a mixture of siliceous earth, vitamins and calcium are used to formulate products that promote good skin, hair and nails. Whilst such products have been a fixture on the German OTC shelf for many years both, established brands and private labels, have revitalised demand with the introduction of new lines.

Table 3.2 (e) – Retail Sales of Dietary Supplements by Type: Value 1998-2003

	EUR\$ million					
	1998	1999	2000	2001	2002	2003
Dietary Supplements	515.2	533.9	550.1	559.1	560.3	566.1
- Calcium supplements	45	50.4	54.2	52.9	51.5	53.1
- Mineral supplements	93.4	98.8	101.7	113.2	115.5	117.9
- Fish oils	12.3	18.4	24.0	30.1	33.1	36.2
- Garlic	109.7	94.6	85.4	72.6	68.5	64.4
- Ginseng	14.1	16.0	17.1	16.3	15.9	15.6
- Ginkgo biloba	50.3	51.1	51.6	52.7	52.8	53.0
- Evening primrose	16.3	16.9	17.4	17.4	17.5	17.8
- Echinacea	86.3	88.2	88.7	87.4	87.1	86.6
- St John's wort	25.9	28.1	29.7	27.6	26.6	25.6
- Others	61.9	71.5	80.3	89.0	91.8	96.0

Source: Trade association (BAH), trade press (Lebensmittelreport, Lebensmittelpraxis, OTC bulletin, websites), company research, store checks, trade interviews, Euromonitor estimates

The maturity of the German market means new product launches are increasingly aimed at addressing specific conditions and consumer segments. For example, Bad Heilbrunner's MenoStabil Rotklee Kapseln (red clover capsules) target menopausal women, while Biolabor's "Sports" range is for people who work regularly. New products targeting specific consumer-groups, especially anti-ageing products, were well-received by consumers.

The boundaries between dietary supplements (as medicinal products), cosmetics and functional food are becoming increasingly blurred. While looking for new possibilities with respect to increasing value sales, manufactures of dietary supplements are getting into areas like functional foods to seek new growth opportunities. For example, Queisser Pharma and Bauer dairy products now offer functional yoghurt, which is the type of product that is likely to be become more common in the future.

3.2.5 Forecasted Growth

Forecasted growth in the industry is expected to come from products that target a specific health condition or consumer group such as Germany's baby boomers. Products like fish oils, calcium, magnesium etc are likely to continue enjoying strong sales.

The German health reform, which came into force 1 January 2004, is likely to have little impact on the sale of dietary supplements. The fact that non-prescription medicines will no longer be reimbursed by German health insurance is not likely to affect sales of dietary supplements – at least not in drugstores or supermarkets. Consumers will continue to purchase their supplements in drugstores and supermarkets after the health reform.

However, some supplements (especially professionally prescribed lines) might actually suffer under the reform. Consumers who used to purchase their prescribed dietary supplements from pharmacies might not want to do so now that they have to pay for them. However, only a moderate percentage of dietary supplements and a small percentage of vitamins are actually prescribed by doctors.

The health reform is expected to lead to an increase in self-medication in Germany. The admission to a doctor's surgery of EUR10.00 per quarter is expected to boost self-medication, leading to a new

dimension of prevention in Germany. This could be a chance for drugstores to gain share in the retail distribution of dietary supplements, and for pharmacies to strengthen their ties with manufacturers.

Manufacturers will in turn have to work more closely with drugstores, supermarkets and pharmacies to sell their products to customers. The self-medication trend is also going to increase competition between retailers and pharmacies for customers.

Table 3.2 (f) – Forecast Retail Sales of OTC Healthcare by Sector: Value 2003-2008

	EUR million					
	2003	2004	2005	2006	2007	2008
Analgesics	756.2	733.0	717.7	709.6	703.0	700.2
Cough, cold and allergy (hay fever) remedies	1,047.7	1,051.6	1,056.7	1,056.8	1,057.2	1,063.3
Digestive remedies	500.7	492.0	485.0	479.1	474.0	469.9
Medicated skin care	756.7	751.6	758.8	765.9	771.6	777.4
Vitamins and dietary supplements	1,020.4	1,007.2	993.5	994.3	994.6	988.4
Smoking cessation aids	38.5	40.3	41.7	45.2	49.4	51.3
Eye care	72.1	75.0	77.8	82.1	89.0	51.3
Ear care	6.4	6.6	6.9	7.1	7.5	7.7
Adult mouthcare	26.0	26.3	26.5	27.1	27.8	28.5
Calming and sleeping products	218.9	216.7	215.6	219.5	227.0	232.7
Wound treatments	51.0	51.9	52.4	53.7	54.8	55.9
OTC Healthcare	4,494.5	4,452.3	4,432.5	4,440.5	4,456.0	4,472.3

Source: Euromonitor

Table 3.2 (g) – Forecast Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 2003-2008

	EUR\$ million					
	2003	2004	2005	2006	2007	2008
Vitamins	351.6	346.2	341.2	339.9	339.0	337.2
Dietary supplements	566.1	563.8	560.6	564.6	567.3	564.9
Tonic and bottled nutritive drinks	82.6	77.3	71.8	69.8	68.2	66.2
Child-specific vitamins and dietary supplements	20.1	20.0	19.9	20.1	20.1	20.1
Vitamins and dietary supplements	1020.4	1007.2	993.5	994.3	994.6	988.4

Source: Trade interviews, Euromonitor estimates

3.3 United Kingdom

Medicines in the UK are classified into three main types:

POM (Prescribed Only Medicines): obtained from a GP, through the National Health Service

P (Pharmacy-only): obtained from any registered pharmacy under the supervision of a resident pharmacist

GSL (General Sales List) medicines available on the shelves in any legitimate retail outlet.

GSL includes homoeopathic and herbal medicines licensed as medicines by the Medicines Control Agency, vitamins, minerals and dietary supplements.

An OTC medicine can be classed as either a GSL or a P product, and thus legislation governing OTC does not cover medicines obtained by prescription.

3.3.1 Natural Medicines in the UK

Homoeopathy is becoming increasingly established in the UK. Products are typically used to treat minor ailments, predominantly coughs and colds. However, a comprehensive range of products is also available offering relief from travel sickness, insomnia, cuts and bruises, parasite infestation and rheumatic pains. Homoeopathy also deals with conditions not typically catered for by OTC medicines, such as anxiety and depression.

Table 3.3 (a) – Retail Sales of Homoeopathy 1998-2003

	1998	1999	2000	2001	2002	2003
Retail sales £ Million	14.6	15.8	19.3	29.0	30.7	31.4
Growth (%)		8.2	22.2	50	5.8	2.3

Source: Company research, Euromonitor estimates

Growth has arisen from a number of contributory factors. Not least of these has been the rising preference for natural and herbal remedies in general, which are frequently viewed as healthier than standard medicines. Homoeopathic products also benefit from an exotic consumer perception, arguably rivalling that of herbal OTC products, which has added to their novelty and stimulated growth. Manufacturers have capitalised on this, positioning homoeopathic brands as alternative lifestyle products and targeting fashion-conscious consumers with a more romantic self-perception.

Homoeopathy is likely to be excluded from European directives on food supplements and herbal remedies, due to the almost negligible concentration of active ingredients present in these products. While still a niche in the UK, homoeopathy enjoys a long history, having been included within the National Health System (NHS) since 1948. There are currently five homoeopathic hospitals in the UK, providing treatments covered by the NHS.

Leading manufacturers of homoeopathic products include A Nelson & Co, with the Nelsons Homeopathy range, in addition to its parallel ranges such as Nelson & Russell Aromatherapy, Flower Remedies and the Nelson Aura Range of Herbal Tinctures. Weleda UK Ltd and Bioforce (UK) Ltd have also established a burgeoning niche presence through the sale of homoeopathic products, positioned as gentle and non-harmful alternatives to standard medicines.

3.3.2 Industry Regulation

The Food Supplements Directive, passed by the European Parliament, came into force on 12 July 2002 and was implemented fully in July 2003. The Food Supplements Directive contains a list of vitamins and minerals which can be used in the manufacture of food supplements. It includes specifications on packaging and labelling of vitamins and dietary supplements, and sets out minimum

and maximum ingredient levels. Those vitamins and dietary supplements that are not included within the directive cannot be sold in the UK without being supported by a dossier of evidence supporting their health benefits. Manufacturers do not have to provide this evidence immediately, however, and may have up to seven years to provide evidence, at the discretion of the member states.

This new legislation has forced many manufacturers to reformulate existing products, and in some cases products have been discontinued, as reformulation has proved uneconomic.

Under the Traditional Herbal Medicinal Products directive, and the Food Supplement Directive from the European Union, food supplements and herbal remedies, including St John's wort, vitamin C and echinacea, now come under pharmaceutical licensing requirements.

The Food Supplement Directive was introduced into law in 2003, despite strong opposition from those in the industry and from consumers across the EU. Its aim is to harmonise nutritional supplements across Europe. The directive includes a list of supplements that can be sold in the UK. Those that are not included on the list must provide evidence of their health benefits and impact before they will be added to the list. Dosage limits will be set for nutritional supplements, which may be substantially lower than those currently found in the UK.

A separate Traditional Herbal Medicinal Product directive impacts on herbal remedies. Under this legislation, traditional herbal remedies can be sold only if they have been in use as a herbal remedy for 30 years, and have been sold for at least 15 years in the EU. Suppliers of herbal remedies must be licensed, and a licensed pharmaceutical product manufacturer must manufacture the products. Products cannot be sold in the EU if they do not have 15 years of EU sales history, even if they have a long history in non-EU countries, accompanied by a strong safety record. Combining legally available herbal ingredients will also be severely restricted.

Specialist shops and health food stores are particularly concerned about these directives, and claim that the directives will cost the UK economy up to £70 million due to lost sales and specialist shop closures. Many also claim that multinational corporations will benefit from the directives, as they are more likely to specialise in the kind of low dose products favoured by these directives.

3.3.3 Distribution

Classification of OTC medicines as POM, P or GSL presents distinct boundaries for distribution in the UK. POM products are prescribed by a GP and subsequently purchased through a registered pharmacy under the supervision of a resident pharmacist.

Until recently, P products, available only through pharmacies, were largely restricted to Boots and to independent chemists that held National Health Service (NHS) dispensing contracts. Grocery distribution channels largely did not sell P products as their sale required a resident pharmacist. The multiples therefore largely limited themselves to GSL products. GSL products can be sold through any retail format. They are typically sold via chemists/pharmacists, drugstores/parapharmacies, and grocery outlets, including multiple grocers, convenience and health food shops.

The retailing environment for OTC products in the UK is changing. The share of grocery outlets as a distribution channel for OTC products increased from 22% in 1997 to 31% in 2003. The general relaxing of strict regulatory laws as well as the development of in-store pharmacies has substantially changed the landscape of the OTC market.

Table 3.3 (b) - Retail Sales of OTC Healthcare by Distribution Format 1998 - 2003

	1998	2003
Chemists/pharmacies	55.3	49.8
Drugstores/parapharmacies	8.5	8.1
Grocery outlets	24.4	30.3
Healthfood shops	3.6	3.1
Discounters	0.2	0.3
Direct sales	3.8	3.5
Others	4.3	4.9
Total	100	100

Source: Official statistics, trade associations, trade press, company research, store checks, trade interviews, Euromonitor estimates.

3.3.4 Market Size

Vitamins and dietary supplements had been a rising star of the OTC healthcare market through the late 1990s and right up until the millennium. In 2003, vitamins and dietary supplements products claimed sales of close to £400 million, making it the third largest sector in the OTC marketplace. However, negative newspaper reports continued through 2003, in many cases portraying vitamins and dietary supplements products as nothing more than overpriced placebos with little or no efficacy in preventing disease or improving general health and wellbeing. Although the purchasing patterns of core users have been reported as unaffected by these revelations, sales of multivitamins, in particular, to a wider range of consumers through multiple groceries have been deeply affected with a 10% decline in multivitamin sales in 2003.

Increased competition at the retail level has added pressure to prices especially with higher private label penetration at the expense of branded products. The emergence of private labels has led to price becoming the major driving factor influencing consumer purchases. It seems that manufacturers and private label brands prefer to compete on the sole basis of price in lieu of brand investment.

Table 3.3 (c) – Retail Sales of OTC Healthcare by Sector: Value 1998 - 2003

	£million					
	1998	1999	2000	2001	2002	2003
Analgesics	398.5	434.8	467.0	482.4	491.8	506.3
Cough, cold and allergy (hay fever) remedies	477.9	530.8	556.8	567.2	565.3	575.0
Digestive remedies	222.5	231.5	243.4	251.4	261.0	275.4
Medicated skin care	276.7	231.5	243.4	251.4	261.0	275.4
Vitamins and dietary supplements	378.0	393.6	411.9	412.6	406.6	396.7
Smoking cessation aids	42.6	49.4	57.3	59.7	68.2	77.2
Eye care	29.6	32.1	34.5	36.1	38.7	39.9
Ear care	7.6	8.4	9.1	9.6	10.1	10.5
Adult mouthcare	17.2	18.9	20.8	22.2	25.6	28.2
Calming and sleeping products	16.1	18.9	21.4	23.2	24.3	24.6
Wound treatments	31.8	32.4	32.9	33.4	33.8	34.1
OTC Healthcare	1,898.6	2,046.9	2,172.5	2,238.0	2,285.5	2,348.8

Source: Trade interviews, Euromonitor estimates

3.3.4.1 Dietary Supplements Sector

Sales of dietary supplements in the UK grew by 1.5% in 2003, to £215 million. This growth was largely underpinned by the strong performance of fish oils in 2003, on the back of a BBC documentary which espoused the virtues of fish oil consumption for brain development, and the maintenance of a healthy brain for children and adults. “Other” fish oils, benefited most from this publicity, and saw sales increase by almost 7% in 2003, to £6.5 million. Although press reports led to growth in the ‘other’ fish oil segment, sales still only represented 7% of total fish oil sales, and overall growth was crucially underpinned by the long established cod liver oil segment, which enjoyed growth of 4.4%, on the back of new product development, wider availability and positive press coverage. Cod liver oil was one of a number of dietary supplements to address age-related complaints, and has found rising demand amongst the growing band of ageing baby boomers. Most are seeking to maintain their health rather than let it deteriorate with age, older UK citizens continue to seek out dietary supplements whose reputations have been built through word of mouth and media coverage. Sales of cod liver oil products were worth £14 million in 2003.

The most dynamic growth was seen by echinacea, which recorded growth of almost 60% from 1998-2003. This herbal remedy demonstrated its rise to mainstream acceptance with its addition to Pfizer’s Benylin Active Response cold remedy, launched in 2001. Sales growth of echinacea slowed in 2003, however, to around 4% reaching sales of £4.2 million. This was due in part to a relatively mild cold and flu season compared to earlier years.

Growth in the dietary supplements sector is very driven by fads. A combination of word of mouth and favourable coverage in the media leads to sales picking up and seeing dynamic growth. A large amount of favourable publicity is needed to sustain and increase sales volume. Once the fad fades, consumers move on to other “in-fashion” items, leaving only the loyal users left and hence much lower sales levels. For example, evening primrose suffered from a less fashionable image and sales

fell by around 10% in 2002. As the product becomes less fashionable, it also becomes increasingly low priced and dominated by private label brands.

Table 3.3 (d) - Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 1998-2003

	£Million					
	1998	1999	2000	2001	2002	2003
Vitamins	149.1	164.8	174.8	171.3	163.1	149.1
Dietary supplements	207.7	205.1	210.7	212.2	212.2	214.9
Tonics & bottled nutritive drinks	6.7	7.0	7.8	8.4	8.8	9.1
Child-specific vitamins & dietary supplements	14.5	16.7	18.6	20.7	22.5	23.6
Vitamins & dietary supplements	378.0	393.6	411.9	412.6	406.6	396.7

Source: Official statistics, trade associations, trade press, company research, stores checks, trade interviews, Euromonitor estimates

Table 3.3 (e) - Retail Sales of Dietary Supplements by Type: value 1998-2003

	£Million					
	1998	1999	2000	2001	2002	2003
Dietary supplements	207.7	205.1	210.7	212.2	212.2	214.9
- Calcium supplements	8.3	9.5	10.3	9.4	8.6	7.8
- Mineral supplements	14.7	16.8	18.2	17.7	16.9	15.8
- Fish oils	94.1	91.8	93.8	92.9	92.3	96.5
- Garlic	19.3	15.7	12.7	13.5	14.1	14.3
- Ginseng	4.4	5.3	6.5	8.6	10.3	11.7
- Gingko biloba	3.5	4.7	7.1	7.3	7.4	7.2
- Evening primrose oil	32.0	27.4	22.6	20.7	19.0	17.2
- Echinacea	0.4	0.9	3.0	3.6	4.0	4.2
- St John's wort	10.3	11.2	12.0	11.5	10.8	9.7
- Protein powder	-	0.1	0.3	0.4	0.5	0.7
- Probiotic supplements	-	-	0.4	0.7	1.1	1.6
- Eye health supplements	-	0.2	0.6	0.8	1.0	1.2
- Royal jelly	1.7	1.6	1.5	1.3	1.0	0.9
- Co-enzyme Q10	0.2	0.2	0.3	0.4	0.5	0.6
- Glucosamine	0.1	0.2	0.2	0.5	0.9	1.6
- Sam-E	0	0.1	0.1	0.1	0.2	0.2
- Other dietary supplements	18.7	19.5	21.3	22.9	23.7	23.8

Source: Trade associations (PAGB), trade press (Checkout, Chemist & Druggist, Marketing Weekly, The Grocer), company research, store checks, trade interviews, Euromonitor estimates

The entry of bulk retailers in this sector has created mass-market appeal and an insatiable appetite for price reductions and discounting. The higher penetration rate has created an opportunity for branded manufacturers to develop new sales by targeting new potential users that have not been exposed to herbal products.

The emergence of supermarkets in retailing a wide range of vitamins and dietary supplements at very competitive prices has led to a price war with chemists, specialists and internet based retailers hitting back with their own lower prices and two-for-one offers. Ultimately the whole retailing sector has committed itself to a downward spiral of price promotion, designed to entice the massive and still relatively untapped market of 'uncommitted' consumers, who by their sheer numbers far outweigh the importance of the traditional supplements takers.

3.3.5 Forecasted Growth

Sales of vitamins and dietary supplements are forecast to grow by 1.2% to reach around the £420 million by 2008 (Euromonitor 2004). Sales are likely to increase as a result of the lessening impact of the Food Supplement Directive and the Traditional Herbal Medicinal Directive, which became law in 2003. Although this severely impacted sales of vitamins and dietary supplements, it would appear that once the new system is established the bulk of the sector should behave as before.

Manufacturers are increasingly formulating specific products to target specific consumer groups in order to create a competitive position in the market. For instance, the consumer groups likely to drive growth over the next several years include:

- *Men's health*– products promoting the overall health of men
- *Women's health* – products that address specific female problems such as menopause and PMS
- *Children* – products formulated specifically for kids.
- *Baby boomers* - products designed to address age related problems such as osteoporosis.

Baby boomers play an important role in the UK vitamin and dietary supplements sector as this consumer segment represents about 25% of the UK population but accounts for 45% of the total value of dietary supplements sales. Baby boomers are expected to continue being the largest consumer grouping in the purchasing of vitamins and dietary supplements in years to come.

Women play a critical role in the purchase of vitamins and dietary supplements in the UK, accounting for some 75% of in-store purchases and 65% of total consumption. Great potential exists to tap the male grouping. However, retailers and manufacturers must make more effort in terms of formulation, packaging and marketing to entice male spending. For example, Healthspan Glucosamine's advertisement campaign featured Lawrence Dallaglio (England Rugby Captain 2004).

Table 3.3 (f) - Forecast Retail Sales of OTC Healthcare by Sector: Value 2003 -2008

	£Million					
	2003	2004	2005	2006	2007	2008
Analgesics	506.3	508.3	510.1	512.4	513.9	514.9
Cough, cold and allergy remedies	575.0	575.1	572.6	570.0	567.3	562.8
Digestive remedies	275.4	280.5	284.4	287.3	290.4	291.6
Medicated skincare	381.0	392.7	403.5	414.6	425.1	435.4
Vitamins and dietary supplements	396.7	387.7	390.2	401.3	412.2	422.0
Smoking cessation aids	77.2	82.6	86.6	90.0	92.5	94.6
Eye care	39.9	40.2	40.6	41.0	41.3	41.4
Ear care	10.5	10.6	10.7	10.7	10.7	10.7
Adult mouthcare	28.2	30.7	33.4	35.4	37.1	38.8
Calming and sleeping products	24.6	23.9	23.3	22.6	22.0	21.5
Wounds treatments	34.1	33.5	32.8	32.2	31.8	31.5
OTC healthcare	2348.8	2365.9	2388.1	2417.5	2444.5	2465.3

Table 3.3 (g) - Forecast Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 2003-2008

	£Million					
	2003	2004	2005	2006	2007	2008
Vitamins	5,908.5	5,894.7	5,932.4	5,969.6	6,026.8	6,113.2
Dietary supplements	6,232.3	6,299.5	6,481.1	6,729.3	6,965.5	7,188.1
Tonics & bottled nutritive drinks	13.7	13.7	13.8	13.8	13.9	14.0
Child-specific vitamins & dietary supplements	339.7	350.6	360.4	368.0	373.8	379.1
Vitamins & dietary supplements	12,494.2	12,558.4	12,787.7	13,080.6	13,380.0	13,694.3

Source: Euromonitor estimates

3.4 France

There is a growing trend in France where consumers are increasingly using herbal remedies, also called “phytotherapy” to promote “wellness” or well-being. These products are particularly used to treat chronic conditions (ie. Rheumatism, cystitis, bronchitis, sinusitis and allergies), psychological ailments (anxiety, insomnia and depression, and in gynaecology (fibroid, breast cyst, pre-menstrual syndrome and menopause).

Phytotherapy is most important in dietary supplements. The consumers who are most likely to buy natural dietary supplements are 35-60 year-old women, among whom slimming and beauty supplements are particular popular. Herbal remedies are increasingly popular in product types such as digestive remedies and cough, cold and allergy remedies.

The government's new policy to reduce healthcare spending by reducing reimbursements for conventional medicines is likely to encourage self-medication, in tandem with increasing health awareness, is expected to have a positive impact on sales of preventive products, thereby boosting sales of herbal remedies in the short to medium term.

3.4.1 Natural medicines in France

France is one of the world's leading markets for homeopathic products, together with Germany and the Netherlands. However, the share of homeopathic products as a proportion of total OTC sales remains relatively low as homeopathy is mostly confined to a few sectors, mainly calming and sleeping products, motion sickness remedies and cough, cold and allergy remedies.

The sale of homeopathic products is governed by the AFSSAPS and marketing authorisation needs to be obtained in advance for products claiming a therapeutic effect. Some homeopathic remedies can be partly reimbursed by the national health system. There are currently about 3,500 botanical, biological, chemical and mineral items used to prepare homeopathic medicines.

Sales of traditional and herbal remedies are relatively low in France, even though they became increasingly popular in recent years, due to their perception as natural products with fewer side effects. Herbal remedies are available only in a few sectors, including cough, cold and allergy remedies, digestive remedies, vitamins and dietary supplements and calming and sleeping products, in which they accounted for over 10% of value sales. They are also present to a lesser extent in medicated skin care.

Herbal medicines need to be registered by the AFSSAPS health product safety agency, which publishes a list of about 200 plants 'whose use is well established'. The registration of products which contain one of these plants follows an abridged procedure. Herbal substance can have up to two therapeutic indications. Herbal products are generally sold by herbalists, though they are also increasingly available in pharmacies and parapharmacies.

According to the trade magazine *Le Quotidien du Pharmacien*, homeopathic products accounted for only 2% of total sales of remedies sold in pharmacies, but have significant potential for growth. It is estimated that almost 40% of the French population use homeopathic products at least on an occasional basis, and more than 30% of French GPs prescribe homeopathic products. The homeopathy industry achieved a sales turnover of EUR235 million in 2003.

The leading producer of homeopathy products in France is Boiron. The company sells the well-known *Cocculine* motion sickness remedy brand, as well as the popular cold and flu remedy *Oscillococcinum*. The second leading player after Boiron is *Laboratoires Dolisos*, a division of *Laboratoires Pierre Fabre*, whose turnover accounted for 6.5% of the group's total in 2002.

3.4.2 Industry Regulation

Registration of non-prescription medicines in France is carried out in accordance with EU rules regarding quality, safety and efficacy. The registration procedures of herbal medicines may be shortened where the plant or plant extracts is officially listed by the French Health Products Safety Agency.

As far as European legislation is concerned, the EU Directive on Food Supplements, adopted in 2002 and dealing with vitamins and minerals, aims to harmonise the statements displayed across all countries. This directive was incorporated into French legislation at the end of 2003. The EU

Directive of 2 December 1994 sets out classification of medicines throughout the EU and applies the following for herbal products:

- Herbal medicines – those products that contain only plant and/or plant materials as active ingredients
- Homeopathic medicines: homeopathic medicines in France are required to be registered through the Medicines Agency before they can be marketed or distributed. Registration by reference is not allowed and resulted in some complaints from parallel importers to the EU, that it did not follow EU Law. In early 2000, the French government announced that it would make parallel importation of medicines possible via the abridged procedure in the near future.

The EU Food Supplement Directive, due to become law in 2005, aims at harmonising nutritional supplements across Europe, and comprises a list of 300 ingredients to be banned, as well as supplements which can be sold, and dosage limits.

3.4.3 Distribution

Medicine distribution remains under the control of the Directorate General for Health at the Ministry of Social Affairs and Health.

The distribution of OTC products in France is largely dependant on pharmacies, accounting for over 84% of value sales in 2003. This dominance also partly reflects the fact that semi-ethical medicines, representing the majority of OTC sales, are distributed exclusively through pharmacies. According to French legislation, most non-reimbursable products, including those bought without prescription, have to be requested from the pharmacist and are not freely available on a self-service basis. There were about 22,700 pharmacies in France in 2003.

However, OTC products are increasingly becoming available in channels such as parapharmacies and grocery outlets. Parapharmacies, which are often part of a chain, cannot sell prescribed medicines, even though they are often managed by qualified pharmacists. Sales through parapharmacies consist of non-medicinal products or those not requiring an AMM (Autorisation de Mise sur Marche) – an authority regulating the marketing of pharmaceuticals. Similarly, grocery outlets can only sell a limited range of OTC products.

Grocery outlets, supermarkets and hypermarkets have also been strengthening their position in the OTC market in recent years. These outlets are particularly strong in self-medicated products such as cough, cold and allergy remedies, vitamins and dietary supplements and wound treatments. These outlets benefited from the fact that they offered similar products to pharmacies at lower prices, especially in vitamins and dietary supplements and wound treatments.

Health food shops as a distribution point remains small in France accounting for only 0.6% of OTC sales in 2003. A typical product range stocked by health food stores includes vitamins, dietary supplements, health and dietetic foods.

Table 3.4.1 (a) - Retail Sales of OTC Healthcare by Distribution Format: % Analysis 1998-2003

	1998	2003
Chemists/pharmacies	85.8	84.1
Drugstores/parapharmacies	3.6	4.1
Grocery outlets	9.7	10.6
Healthfood shops	0.5	0.6
Discounters	0.1	0.1
Direct sales	0.2	0.3
Others	0.2	0.2
Total	100	100

Source: Trade press (Le Quotidien du Pharmacien), company research, store checks, trade interviews, Euromonitor estimates

3.4.4 Market Size

Value sales of OTC healthcare products in France enjoyed only modest growth over the last few years. Product categories such as analgesics, cough, cold and allergy remedies and digestive remedies, experienced stable or declining sales. However, manufacturers continued to generate additional value sales, partly thanks to product innovation, including more convenient packaging and formulas.

Self-medication remains less significant in France than in other European countries such as Germany and the UK, partly as a result of consumers often visiting their doctors and have medicines prescribed rather than self-medicate, and because the national health system covers the cost of a wide range of medicines. This is further exacerbated with the health authorities lowering the level of reimbursement of a significant number of semi-ethical products from 65% to 35%, thus further impacting negatively on the development of OTC products in France.

Sales of OTC products increased 10.6% between 1998 – 2003 to reach almost EUR2.5 billion. Product categories that showed good growth over this period included vitamins and dietary supplements, smoking cessation aids, calming and sleeping products and wound treatments.

Sales of vitamins and dietary supplements in 2003 were EUR549.2 million, an increase of 15.2%. Despite good growth, the interest in vitamins and dietary supplements by the French is less than their European counterparts as they sway towards a food-orientated culture rather than use supplements in capsule or tablet form. However, increasingly busy lifestyles are having an impact on eating habits, and French consumers are becoming increasingly aware of the benefits of taking vitamins and dietary supplements, their role being to maintain a healthy diet. However, the growth has been more confined to food supplements and vitamins rather than traditional health remedies.

Table 3.4 (b) - Retail Sales of OTC Healthcare by Sector: Value 1998-2003

	EUR million					
	1998	199	2000	2001	2002	2003
Analgesics	438.2	446.4	451.4	445.3	433.2	432.2
Cough, cold and allergy (hay fever) remedies	495.5	499.5	500.6	513.9	510.4	510.8
Digestive remedies	295.5	296.9	295.5	298.3	297.8	294.7
Medicated skincare	287.2	301.5	303.4	308.5	306.5	307.6
Vitamins and dietary supplements	476.0	486.2	498.6	509.4	528.5	548.2
Smoking cessation aids	10.9	12.1	52.2	68.5	77.1	112.0
Eye care	60.2	61.3	62.4	63.9	65.8	66.6
Ear care	9.3	9.3	9.3	9.4	9.5	9.6
Adult mouthcare	35.3	35.8	36.0	36.8	37.3	37.9
Calming and sleeping products	64.7	67.9	69.9	72.7	74.1	76.0
Wounds treatments	87.6	92.6	95.8	100.5	101.9	104.3
OTC Healthcare	2,260.4	2,309.6	2,375.2	2,427.2	2,441.9	2,499.9

Source: Trade associations (AESGP), trade press (Le Quotidien du Pharmacien), company research, store checks, trade interviews, Euromonitor estimates

3.4.4.1 Dietary Supplements

Dietary supplement sales were worth EUR278.7 million in 2003. The trend towards natural products, increasing public knowledge of dietary supplements and growing awareness of the benefits of a healthy diet have boosted sales of dietary supplements in recent years.

To a significant degree, the strong performance of dietary supplements was due to the implementation of the new European regulation 2002/CE, which finally gave a legal definition of dietary supplements. Some major manufacturers actually held back the launch of products whilst waiting for this legislation to arrive, so as to be in line with the new definitions, leading to a greater number of product launches in the second half of 2003. The strong sales of dietary supplements in 2003 can be attributed to a large extent to the new European regulation 2002/46/Ce which dictates the packaging and marketing message standards for this sub sector. The regulation led to manufacturers placing increased emphasis on benefits rather than ingredients, in order to attract consumers who are not familiar with dietary supplements. For example, products promoting good health in hair, skin, aging or weight loss performed particularly well in 2003.

In particular, ginkgo biloba is enjoying very strong sales in France, accounting for a quarter of dietary supplement value sales in 2003. Its popularity is related to its efficacy as a varicose vein remedy (which accounts for the majority of sales) and to its anti-ageing properties, both of which are of growing concern in France.

Other dietary supplement ingredients enjoying strong sales include calcium and magnesium supplements as well as fish oils. The popularity of these supplements can be attributed to France's aging population and their requirement for products to treat age related ailments.

Sales of other products such as garlic and echinacea continue to decline as consumers try other newer products in the market. The recent bad press on echinacea and withdrawal of Echinacee Elusanes in 2001 further exacerbated the decline in sales.

Table 3.4 (c) - Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 1998-2003

	EUR million					
	1998	1999	2000	2001	2002	2003
Vitamins	133.2	136.0	137.9	139.4	145.3	152.0
Dietary supplements	224.9	232.1	243.9	254.4	264.8	278.7
Tonics & bottled nutritive drinks	103.6	103.6	102.0	100.6	103.2	102.2
Child-specific vitamins & dietary supplements	14.2	14.5	14.8	15.0	15.2	15.3
Vitamins & dietary supplements	476.0	486.2	498.6	509.4	528.5	548.2

Source: Trade associations (AESGP), trade press (Cosmetique Magazine, Les Echos, LSA, Pharmaceutiques, Points de Vente, Quotipharm), company research, store checks, trade interviews, Euromonitor estimates.

Table 3.4 (d) - Retail Sales of Dietary Supplements by Type: value 1998-2003

	£million					
	1998	1999	2000	2001	2002	2003
Dietary supplements	224.9	232.1	243.9	254.4	264.8	278.7
- Calcium supplements	17.0	17.7	18.1	18.7	18.6	18.4
- Mineral supplements	33.9	34.5	34.5	34.3	34.5	34.8
- Fish oils	8.8	8.4	9.3	9.5	9.8	10.2
- Garlic	11.9	11.9	11.7	11.6	11.5	11.4
- Ginseng	9.2	9.5	9.8	10.2	10.4	10.7
- Gingko biloba	68.1	69.2	70.2	71.0	71.1	71.5
- Evening primrose oil	10.8	11.3	11.7	12.0	12.5	12.9
- Echinacea	6.1	6.2	6.3	6.0	5.5	5.3
- St John's wort	7.1	-	-	-	-	-
- Protein powder	-	-	-	-	-	-
- Probiotic supplements	-	-	-	-	-	-
- Eye health supplements	7.3	7.3	7.6	7.9	8.1	8.3
- Royal jelly	3.3	3.5	3.5	3.7	3.9	4.1
- Co-enzyme Q10	-	-	-	-	-	-
- Glucosamine	-	-	-	-	-	-
- Sam-E	-	-	-	-	-	-
- Other dietary supplements	41.3	52.7	61.2	69.5	78.9	91.3

Source: Trade associations (AESGP), trade press (Cosmetique Magazine, Les Echos, LSA, Pharmaceutiques, Points de Vente, Quotipharm), company research, store checks, trade interviews, Euromonitor estimates.

3.4.5 Forecasted Sector Growth

The range of products introduced by manufacturers in recent years shows that the dietary supplements sector is trending towards formulating specific products for specific consumer groups such as women and baby boomers. For example, the pharmacy brand Arkopharma enlarged its range by adding plants such as harpagophytum, ash tree and dead nettle, particularly recommended for arthritis, rheumatism and gout. It is estimated that women and baby boomers will form the core market for vitamins and dietary supplements.

The vitamins and dietary supplements sub-sector is expected to enjoy good growth over the next few years. It is expected that manufacturers will concentrate on developing products combining vitamins and dietary supplements, thus blurring the boundaries between them. The choice of OTC dietary supplements will thus become increasingly diversified.

According to Synadiet (Association of Dietary Supplements Manufacturers) sales of dietary supplements have the potential to be three times their current level in France. Sales of dietary supplements are predicted to increase by 19.2% in constant value terms over the forecast period. The development of nutritional complexes aimed at specific demographic groups and genders, combined with increased consumer awareness and a general interest in organic practices, will stimulate sales of herbal remedies and natural supplements. This will particularly be the case in hypermarkets and supermarkets, where sales are still somewhat under developed and can benefit from greater shelf space.

In addition, manufacturers are also extending their product range to encompass “nutri-cosmetics” (including skin care, hair care, nail care and anti-ageing products) which involves developing dietary supplements with cosmetic properties. Slimming products are expected to continue to represent one of the main areas of focus for “nutri-cosmetics”.

Table 3.4 (e) - Forecast Retail Sales of OTC Healthcare by Sector: Value 2003 -2008

	£Million					
	2003	2004	2005	2006	2007	2008
Analgesics	432.2	425.3	419.7	415.1	411.2	407.6
Cough, cold and allergy remedies	510.8	505.4	501.3	497.7	494.8	492.4
Digestive remedies	294.7	505.4	287.7	287.9	2895	290.3
Medicated skincare	307.6	289.6	305.2	305.4	306.8	308.9
Vitamins and dietary supplements	548.2	305.8	574.2	587.9	598.3	614.4
Smoking cessation aids	112.0	562.4	146.6	157.5	166.5	174.7
Eye care	66.6	131.6	65.5	65.3	65.5	65.8
Ear care	9.6	65.9	9.5	9.5	9.5	9.5
Adult mouthcare	37.9	9.5	38.3	38.6	38.8	39.0
Calming and sleeping products	76.0	38.0	78.0	79.2	80.0	80.5
Wounds treatments	104.3	76.9	107.4	109.4	111.2	112.5
OTC healthcare	2,499.9	105.9	2,533.3	2,553.3	2,571.9	2,595.6

Source: Euromonitor

Table 3.4 (f) - Forecast Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 2003-2008

	£million					
	2003	2004	2005	2006	2007	2008
Vitamins	152.0	155.6	158.4	161.8	165.8	170.7
Dietary supplements	278.7	291.4	303.2	314.4	321.5	332.3
Tonics and bottled nutritive drinks	102.2	100.1	97.6	96.5	96.0	96.4
Child-specific vitamins and dietary supplements	15.3	15.3	15.0	14.9	15.0	15.1
Vitamins and dietary supplements	548.2	562.4	574.2	587.6	598.3	614.4

Source: Euromonitor estimates

3.5 Australia

The OTC healthcare sector in Australia continues to enjoy good growth as consumers continue to place greater emphasis on self-medication with over-the-counter medications for common illnesses. In 2003, sales reached A\$1.8 billion, a new record level (Euromonitor 2004).

Over the last decade, the growing ageing population in Australia represented another important factor that drove the growth of OTC sales. The rising number of consumers between the ages of 40 and 50 years of age is aiding growth in the OTC healthcare. Their high levels of disposable income continued to drive demand for healthcare products in 2003. The consumers are in their prime earning years and are fuelling good growth in the Australian OTC sector, especially in vitamins and dietary supplements sales.

The elderly tend to suffer from osteoporosis and menopause driving demand for alternative medicines to maintain a healthy circulatory system, bone density, skin, hair, eyes, mouth and liver. Increase in arthritis and rheumatism created a greater demand for products geared towards these age-related ailments. Constipation is a common condition among the aged and resulted in growing demand for laxatives with fibre supplements and haemorrhoid treatments. The growing older population welcomed the development of product extensions for arthritis pain relief specifically targeted at osteoarthritis sufferers.

3.5.1 Natural Medicines in Australia

The use of traditional remedies received increased interest among manufacturers in recent years. Traditional herbal remedies in Australia are gaining acceptance by the general public because of widespread belief that they are mild with few side effects and ideal for treating some chronic diseases.

One product that has enjoyed strong popularity in the last three years is tea tree oil. Consumers use tea tree oil for a range of applications including acne, skin disorders, congestion and other cold and influenza symptoms.

The use of traditional remedies is supported by a growing homeopathy sector in Australia. Homeopathic products are classified as complementary medicines. The Therapeutic Goods Advertising Code does not apply to advertisements directed at homeopathic practitioners. However, direct advertising of the benefits of homeopathic products to consumers is prohibited. Homeopathic products are categorised as unscheduled and do not need to be listed if each ingredient meets the criteria outlined by the TGA.

Unscheduled homeopathic products may be sold in all retail outlets, while scheduled homeopathic products can be sold only via pharmacists or via authorised dealers. According to industry sources, they are unable to provide an estimate of the size or value of retail sales of homeopathic products. This is due to the complexity and narrow focus which is often included in assessments of retail sales in these products.

Local manufacturers dominate homeopathic products in Australia, with major players such as Mayne Pharma, Blackmores and Herron. These companies targeted natural remedies as a potential niche market due to the comparative low costs involved with research and development.

3.5.2 Industry Regulation

The OTC sector in Australia is governed by the Therapeutic Goods Act (1989) and the Therapeutic Goods Regulations which are administered by the Therapeutic Goods Administration. OTC medicines are usually registered, while complementary medicines may be or may not be listed as complementary medicines. The process by which the manufacturer of a non-prescription medicine can obtain registration involves the submission of an application to the Chemicals and Non-Prescription Medicines Branch of the Therapeutic Goods Administration (TGA). The Complementary Medicines Evaluation Committee (CMEC) evaluates complementary healthcare products such as traditional medicines and herbal remedies.

Applications for listing of vitamins, minerals, herbal and homeopathic complementary medicines can be submitted electronically to the TGA as part of a self-assessment programme. The sponsor makes a statutory declaration that they hold evidence to support the claims they make regarding the therapeutic properties of the product in question.

The majority of unregistered medications, though by no means all, are complementary medicines. Complementary medicines encompass vitamins, minerals, traditional, herbal and homeopathic medicines.

Herbal products are considered to be therapeutic under the Therapeutic Goods Act in cases where they are:

- Presented in a way that they are likely to be seen as therapeutic
- Included in a class of goods where the principal or sole use of which is therapeutic use.

Herbal products that are considered therapeutic are classified as complementary medicines under Schedule 14 of the Therapeutic Goods Regulations. Additionally, all herbs permitted for therapeutic use are included on the Australian Herbal Names List (AHN). Herbal substances acceptable for use in listed, unscheduled herbal medicines are those that:

- Are not considered new herbal substances;
- Are not derived from herbs that are classed as non-permissible under Part 4, Schedule 4 of the regulations;
- Are not scheduled in the “Uniform Standard for the Scheduling of Drugs and Poisons (SUSDP).

Vitamin and mineral products may be classified as food, cosmetics or complementary medicines under Schedule 14 of the Therapeutic Goods Act, depending on the claims made by the product’s sponsor. If they are to be taken as dietary supplements and make therapeutic claims then they are classified as therapeutic goods and are listable.

3.5.3 Distribution

Retail pharmacies are the most important outlet for selling OTC healthcare products. They dominated the distribution of analgesics, cold, cough and allergy remedies, digestive remedies, medicated skin care products, smoking cessation aids, eye care, ear care, adult mouth care and calming and sleeping products. Most of these products were classed as S2 or S3 and thus only available at pharmacies. Manufacturers also favour pharmacies due to the sales recommendations from pharmacies.

In the distribution of vitamins and dietary supplements, health food stores are the largest distribution point due to the nature of their business and their focus in stocking natural healthcare products.

Grocery outlets (mainly supermarkets) as a distribution channel are enjoying strong growth as consumers are increasingly using this channel as a one stop shop for essential home products. Supermarkets are continually increasing their shelf space for OTC healthcare products as these products tend to yield higher returns compared with food and beverage. Supermarkets are particularly strong in the distribution of vitamins and dietary supplements as consumers feel confident in self prescribing these products without the assistance of a health care professional.

The use of the internet as a distribution channel is not encouraging. The majority of consumers have little faith in the integrity of online sellers. The gamut of consumer distrust runs from online payment systems to the honesty of online sellers regarding the quality of the products they sell. Consumers prefer face-to-face transaction where they can physically handle the goods before they make their decision.

Sales of vitamins and dietary supplements via the internet have not made a large impression so far in Australia. There are increasing numbers of websites available for online ordering vitamins and dietary supplements by e-retailers but their impact is still minimal. Nevertheless, this channel is often used by direct sellers to reach potential customers. For example, successful companies such Herbalife, Amway and Avon distribute products through their own websites with many of their products not widely available through retail outlets. As shown in Table , direct sales accounted for 2.8% of the OTC healthcare sector.

Table 3.5 (a) - Retail Sales of OTC Healthcare by Distribution Format: % Analysis 1998/2003

	1998	2003
Chemists/pharmacies	59.0%	59.9%
Drugstores/parapharmacies	-	-
Grocery outlets	26.6	25.4
Healthfood shops	9.9	10.2
Discounters	-	0.4
Direct sales	2.3	2.8
Others	2.2	1.2
Total	100	100

Source: Trade interviews, Euromonitor estimates

3.5.4 Market Size

The OTC healthcare market in Australia is highly fragmented. With the exception of the top player, Pfizer Ltd, no company had more than 10% of market value in 2003. Both domestic and multinational companies are present in the market. Smaller manufacturers also play a prominent role

in their local areas, or particular products ranges. The top five leading companies are Pfizer Pty Ltd, GlaxoSmithKline Australia, Mayne Pharma Pty Ltd, Blackmores Ltd and Boots Healthcare Australia Pty Ltd.

Mayne Pharma Pty Ltd retained its top ranking in vitamins and dietary supplements – in 2003 it had annual sales of A\$143 million and 8% value share of the total OTC market. Its leading position is derived from the company’s active participation in vitamins and dietary supplements. Its diverse range of products are marketed under brands such as Cenovis, Nature’s Own and Bio-Organics. It originally sold the latter two brands through Bullivant’s. The company’s competitive price image and effective distribution strategy are also responsible for its leading position.

Nevertheless, the Pan Pharmaceuticals incident had a significant impact on Mayne Pharma’s operation – resulting in their market share dropping from 8.9% in 2002 to 7.9% in 2003. This benefited the second largest domestic health care company, Blackmores, which became the fourth largest player in OTC and its market share increased by 0.5% in 2003 – Blackmores was the number one brand 2002/03 thanks to its strong position in vitamins and dietary supplements.

Table 3.5 (b) - Vitamins and Dietary Supplements Company Shares 2001 – 2003

	2001	2003
Mayne Pharma	27.4	24.0
Blackmores Ltd	17.0	18.9
Herron Pharmaceuticals Pty Ltd	10.4	10.8
Roche Products Pty Ltd	4.9	4.7
Bionax	4.1	3.9
Pfizer ESP Pty Ltd	3.8	3.7
Pharmacare Laboratories Pty Ltd	3.2	3.3
Wyeth Australia Pty Ltd	-	2.8
Vitaplex Products Pty Ltd	2.5	2.7
Key Pharmaceuticals Ltd	1.6	1.8
Bayer Australia Pty Ltd	1.6	1.6
Novagen Laboratories Pty Ltd	1.1	1.3
Swisse Natural Health Products Pty Ltd	0.8	0.8
Multi Corp Industries Ltd	0.8	0.7
Nestle Australia Ltd	0.6	0.7
Vitaglow Products Pty Ltd	0.7	0.5
Aventis Pharma Pty Ltd	0.4	0.4
Felton Grimwade & Bickford Pty Ltd	0.3	0.3
Bioglan Ltd	0.3	0.3
Bioplus Healthcare Ltd	0.2	0.2
Brauer Biotherapies Pty Ltd	0.2	0.2
Golden Harvest Health Foods Co	0.2	0.2
Wagner Pro Biotics	0.1	0.1
Aloe Vera of Australia	0.1	0.1
Whithall Consumer Healthcare Pty Ltd	2.6	-
Private labels	4.6	5.2
Others	10.6	10.8
Total	100	100

Source: company research, trade interviews, Euromonitor estimates

As mentioned previously, the Australian OTC market was extremely robust in 2003 with sales reaching a new record A\$1.8 billion, an increase of 4% over 2002. The growth was driven by a strong consumer trend towards self-medication and medicines offering efficacy, healthy functionality and convenience. Branding also played an important part as companies such as Blackmores and Herron created strong confidence among consumers for OTC products.

Australia’s ageing population is another factor fuelling the growth of the Australian OTC market. Research to-date shows that Australia’s elderly spend far more on healthcare than younger people

and are consuming a range of products that promote “wellness”. Older consumers suffering from osteoporosis and menopause drove demand for alternative medicines to maintain a healthy circulatory system, bone density, skin, hair, eyes, mouth and liver – all greatly benefited sales of vitamins and dietary supplements. Increases in arthritis and rheumatism created a greater demand for products geared towards these age-related ailments. There is also a growing demand for laxatives with fibre supplements and haemorrhoid treatments. The elderly welcomed the development of product extensions for arthritis pain relief specifically targeted at osteoarthritis sufferers.

Table 3.5 (c) - Retail Sales of OTC Healthcare by Sector: Value 1998-2003

	A\$million					
	1998	1999	2000	2001	2002	2003
Analgesics	213.2	219.4	221.6	231.3	250.5	262.8
Cough, cold and allergy (hay fever) remedies	282.1	299.9	316.7	333.3	352.9	363.1
Digestive remedies	102.9	106.8	109.4	113.3	117.2	121.4
Medicated skin care	173.1	182.4	188.9	196.1	201.0	205.3
Vitamins and dietary supplements	384.6	410.7	436.5	464.1	488.9	511.5
Smoking cessation aids	33.4	54.3	76.1	93.2	111.5	126.6
Eye care	32.0	33.6	35.5	38.5	40.5	42.2
Ear care	6.8	7.0	7.1	7.3	7.6	8.0
Adult mouthcare	27.7	27.8	28.0	28.4	28.2	28.5
Calming and sleeping products	9.4	9.6	9.7	9.8	9.9	10.1
Wound treatments	92.6	100.3	105.4	110.1	116.0	120.5
OTC healthcare	1,357.8	1,451.8	1,535.0	1,625.4	1,724.1	1,800.0

Source: Trade association (Australian Self Medication Industry, Pharmacy Guild, Pharmaceutical Society of Australia, Therapeutic Goods Administration, The Complementary Health Council), trade press (Australian Pharmaceutical Journal, B&T marketing and media, Business Review Weekly, Foodweek, Herald Sun, Retail Pharmacy, Retail World, The Age), company research, trade interviews, Euromonitor estimates.

3.5.4.1 Vitamin and Dietary Supplements

Vitamins and dietary supplements represent the largest sector in the OTC healthcare market. In 2003, sales amounted to A\$511 million or 28% of the total Australian OTC market. The strong performance in this sub-sector can be attributed to the introduction of premium products offering multiple benefits, thus alleviating the commodity status of many single ingredient products. For example, Arthri-Eze (Bio-Organics), offers systemic relief from arthritis pain with key ingredients of primrose oil, natural fish oil and vitamin E.

Within the vitamins and dietary supplements sub-sector, dietary supplements constituted more than 60% of sector sales. Dietary supplements also enjoyed the most dynamic growth, recording 49% increase in sales turnover to reach A\$312 million from 1998-2003.

Growth was driven largely by increased consumer awareness of these products as a result of heavy media exposure. One form of such media exposure was in the shape of advertising campaigns for various food products, which helped raise awareness of the need to include various substances in the diet. For instance, calcium supplements inadvertently benefited from advertising campaigns for major milk brands that stressed the need for sufficient calcium in the diet to prevent osteoporosis. In addition, the desire for a healthy life and a balanced diet resulted in increased consumption, especially among ageing baby boomers.

Table 3.5 (d) - Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 1998-2003

	A\$million					
	1998	1999	2000	2001	2002	2003
Vitamins	166.8	169.2	171.6	176.1	183.1	189.5
Dietary supplements	209.0	169.2	171.6	176.1	183.1	189.5
Tonics and bottled nutritive drinks	5.1	5.3	5.5	5.8	5.9	6.0
Child-specific vitamins and dietary supplements	3.7	3.9	4.1	4.3	4.4	4.5
Vitamins and dietary supplements	384.6	410.7	436.5	464.1	488.9	511.5

Source: Trade association (Australian Self Medication Industry, Pharmacy Guild, Pharmaceutical Society of Australia, Therapeutic Goods Administration, The Complementary Health Council), trade press (Australian Pharmaceutical Journal, B&T marketing and media, Business Review Weekly, Foodweek, Herald Sun, Retail Pharmacy, Retail World, The Age), company research, trade interviews, Euromonitor estimates.

Table 3.5 (e) - Retail Sales of Dietary Supplements by Type: Value 1998-2003

	A\$million					
	1998	1999	2000	2001	2002	2003
Dietary supplements	209.0	232.3	255.3	277.9	295.5	311.5
- Calcium supplements	22.5	23.3	24.8	26.0	28.0	29.7
- Mineral supplements	17.3	18.4	19.4	20.9	22.0	23.2
- Fish oils	43.7	46.8	49.2	52.1	53.0	54.3
- Garlic	22.2	25.1	27.5	29.6	31.4	33.1
- Ginseng	17.3	19.3	21.1	23.4	25.0	26.1
- Gingko biloba	10.3	12.3	14.4	16.8	19.0	20.5
- Evening primrose oil	13.0	14.4	15.6	16.8	18.2	19.3
- Echinacea	13.4	13.7	16.4	17.6	18.9	19.7
- St John's wort	8.5	10.5	11.4	12.8	13.5	14.2
- Protein powder	-	-	-	-	-	-
- Probiotic supplements	-	-	-	-	-	-
- Eye health supplements	-	-	-	-	-	-
- Royal jelly	-	-	-	-	-	-
- Co-enzyme Q10	-	-	-	-	-	-
- Glucosamine	8.7	10.4	12.2	14.3	15.3	16.8
- Sam-E	-	-	-	-	-	-
- Other dietary supplements	32.1	38.0	43.4	47.6	51.2	54.5

Source: Trade association (Australian Self Medication Industry, Pharmacy Guild, Pharmaceutical Society of Australia, Therapeutic Goods Administration, The Complementary Health Council), trade press (Australian Pharmaceutical Journal, B&T marketing and media, Business Review Weekly, Foodweek, Herald Sun, Retail Pharmacy, Retail World, The Age), company research, trade interviews, Euromonitor estimates.

3.4.5 Forecasted Growth

Vitamins and dietary supplements will continue to be the largest sector in the OTC market throughout the next five years. It is expected that the sales of vitamins and dietary supplements will reach A\$541 million in 2008. Market growth will be underpinned by a greater emphasis on healthy lifestyles and a more positive attitude towards self-medication. Product promotion and price competition will be the future focus, and manufacturers will compete on product quality and constant advertising.

It is expected that the growing elderly population will be the key consumer group sustaining growth in years to come as they continue to spend more on dietary supplements in order to take care of themselves.

Female consumers will maintain strong consumption of anti-ageing vitamins and dietary supplement products, such as vitamin E and royal jelly, and increasing awareness of brand image will become another main driving force. However, the growth expected from new launches will be at the expense of more prominent single vitamins and dietary supplements, with sales of the individual products being cannibalised by the new launches.

The vitamins and dietary supplements sector is also likely to witness more introductions of premium products with specific formulations to address a particular area of wellness or ailment. Instead of purchasing different types of vitamins and supplements, products with specific benefits will offer relief from particular ailments. For example, Arthri-Eze (Bio-Organics), offers systemic relief from arthritis pain with key ingredients including primrose oil, natural fish oil and vitamin E.

Table 3.5 (f) - Forecast Retail Sales of OTC Healthcare by Sector: Value 2003 -2008

	\$A million					
	2003	2004	2005	2006	2007	2008
Analgesics	262.8	265.2	267.7	270.5	273.3	275.9
Cough, cold and allergy remedies	363.1	363.2	364.8	366.3	367.6	368.4
Digestive remedies	121.4	122.0	122.5	123.0	123.6	124.1
Medicated skincare	205.3	203.7	202.6	201.9	201.7	202.0
Vitamins and dietary supplements	511.5	519.9	527.1	533.0	573.6	541.0
Smoking cessation aids	126.6	137.9	147.8	157.0	164.3	169.2
Eye care	42.2	42.7	43.2	43.5	43.9	44.2
Ear care	8.0	8.1	8.3	8.4	8.5	8.5
Adult mouthcare	28.5	28.1	27.7	27.4	27.1	26.8
Calming and sleeping products	10.1	9.9	9.9	9.8	9.7	9.7
Wounds treatments	120.5	121.7	122.5	123.0	123.4	123.8
OTC healthcare	1,800.0	1,822.4	1,844.0	1,863.8	1,880.6	1,893.7

Source: Euromonitor

Table 3.5 (g) - Forecast Retail Sales of Vitamins and Dietary Supplements by Subsector: Value 2003-2008

	A\$million					
	2003	2004	2005	2006	2007	2008
Vitamins	189.5	190.7	191.8	192.9	194.1	195.4
Dietary supplements	311.5	318.8	324.9	329.7	333.1	335.2
Tonics and bottled nutritive drinks	6.0	5.9	5.8	5.8	5.8	5.7
Child –specific vitamins and dietary supplements	4.5	4.5	4.6	4.6	4.6	4.7
Vitamins and dietary supplements	511.5	519.9	527.1	533.0	537.6	541.0

Source: Euromonitor estimates

4. Identified Opportunities

An assessment of several leading markets for western medicinal herbs showed that the industry is enjoying overall good growth as consumers are increasingly relying on natural remedies to promote healthy living and prevent possible ailments. As we know, the application of medicinal herbs can be very diverse ranging from professionally prescribed phytomedicines to simple tea infusions. The industry overall is considered a mature market with most product categories enjoying only modest growth, with the exception of health supplements. This product category has registered phenomenal growth in recent years largely due to increasing consumer interest in self-medication and better accessibility through mass distribution channels.

As consumers in the western world become increasingly sophisticated, they are also placing greater emphasis on healthy living, which is very much aligned with alternative medicine and holistic healthcare. The wellness trend is creating demand for mild drugs over the use of conventional pharmaceuticals and has made natural ingredients a useful positioning tool for manufacturers of OTC products, particularly smaller companies.

The research also showed that age related health products will be the key growth engine as the baby boomer generation reaches retirement age and requires a range of products to sustain a healthy lifestyle. In part, products formulated to promote wellness and provide relief against age related ailments such as joint pain, prostate health, digestive health, osteoporosis, menopause, mental clarity, vitality, heart disease and ocular health will do extremely well. For example, the industry is already witnessing strong growth in products such as Sam-E, glucosamine, co-enzyme Q10, fish oils and calcium.

The five nominated herbs should enjoy strong demand due their ability to treat the following ailments/conditions.

Herb	General Purpose	Conditions
Goldenseal	Used as a muscle stimulant, stomach strengthener, antihemorrhagic and as a laxative.	Digestive disorders, peptic ulcers, gum diseases, sinusitis, catarrhal deafness, tinnitus, pelvic inflammatory disorders and painful periods.
Valerian	Used for its calming and relaxant properties.	Sleep aid for insomnia, excitability and exhaustion.
Arnica	Usually applied externally to treat against sprains and bruises.	Sprains, bruises and wounds.
Skullcap	Used to treat a wide range of nervous conditions.	Epilepsy, insomnia, anxiety, delirium tremens, withdrawal from barbiturates and tranquilisers, and neuralgia
Echinacea	Known for its immuno stimulant properties to boost the immune system	Mainly to prevent/relief against cold and flu.

According to a leading alternative medicine magazine in the US - Prevention Magazine, demand for new herb varieties and species is very much dependant on the herb's ability to treat certain symptoms or conditions. A recent survey in the US showed the 10 leading uses for herbal remedies are:

Table 4.1: Leading Uses for Herbal Remedies in the US

	Condition / Symptom	Percentage of Consumer Use (%)	Nominated Herb
1	Cold	59	Echinacea
2	Burns	45	Arnica
3	Headaches	22	-
4	Allergies	21	-
5	Rashes	18	-
6	Insomnia	18	Valerian, Skullcap
7	PMS	17	Goldenseal
8	Depression	7	-
9	Diarrhoea	7	-
10	Menopause	4	-

Source: Prevention Magazine USA

Table 4.2: Leading Uses for Herbal Remedies in the Europe

	Condition / Symptom	Percentage of Consumer Use (%)	Nominated Herb
1	Cold	69	Echinacea
2	Flu	34	Echinacea
3	Insomnia	27	Valerian, Skullcap
4	Upset stomach	26	Goldenseal
5	Indigestion, intestinal troubles	24	Goldenseal
6	Headaches	24	-
7	Nervousness	21	Valerian, Skullcap
8	Circulatory problems	19	-
9	Bronchitis	18	-
10	Exhaustion or fatigue	15	Valerian, Skullcap
11	Skin problems	14	-

Source: Natural Medicine 2002: Most Important Findings of the Allenbach Trend Study

Arnica

Arnica is predominantly used for external application such as the treatment of muscle sprains and bruises. While it enjoys good consumer awareness and penetration in Europe and the US, overall demand for this product category remains small and not considered a key growth area for manufacturers. According to the World Wide Fund (WWF) for Nature, it is estimated that some 50 tonnes of dried flowers are used annually – equivalent to 250 – 300 tonnes of fresh flower. According to leading processors in Australia, local demand is estimated to be no more than 1-2 tonnes per annum.

The sale of medicated skin care products is predominantly driven by ailments that change the skin appearance such as acne, hair loss, nappy rash and topical parasites. Manufacturers consider the treatment of sprains and bruises to be a niche category as the most effective treatment is through cooling (ice pack), compression and elevation. In addition, there is also strong competition from other pharmaceutical products such as anti-inflammatory painkillers and Heat Rub which provide effective relief against pain and discomfort. Heat Rub is particularly popular as consumers can notice the immediate effect upon applying it to the injured area.

The use of arnica in the treatment of sprains and bruises is expected to remain constant as there is no intention by manufacturers to broaden its application into the treatment of other ailments.

While demand for arnica remains small, there is some potential for arnica to be cultivated in Australia as supply remains predominantly from wild growing plants from eastern Europe, mainly from Balkan countries, Spain and Switzerland. According to a local herb importer in Australia, current pricing for dried arnica roots is approximately AUD\$50/kg.

Initial trials to cultivate arnica in Australia have been met with limited success. arnica is a difficult herb to cultivate as high altitude is needed for it to grow successfully. According to the WWF, research is continuing in Germany to develop new genotypes better suited for lower altitudes with initial trials showing positive results.

If Australian growers are to grow this herb, they will need to monitor the research development and experiment with any new genotypes in order to determine whether they could be successfully grown at lower altitudes.

	Current pricing - dried plant material	Suitable for Australian climate	Currently Grown in Australia	Reason
Arnica	\$50-70/kg	No – high altitude is needed	No	High altitude is needed to grow arnica successfully.

Echinacea

Of the five nominated herbs, echinacea is by far the most established and consistently ranks as one of the top ten selling herbs in the US and Europe. Echinacea’s immuno-stimulant properties as a preventive agent against colds and influenza fit perfectly well with the overall “wellness” trend. Consumers see cold and influenza as a regular occurrence and prefer to use natural remedies for prevention and relief.

Echinacea has been used in dietary supplements and phytomedicines for a long time. Sales of echinacea products in recent years have slowed and in some countries declined as manufacturers are increasingly introducing other herbs to treat other more “fashionable” ailments such as age-related conditions.

Current sales of echinacea products in Europe and the US are estimated at US\$300 million per annum. Changing consumer trends and market pressures in the short to medium term are likely to result in further sales decline as consumers shift their interest to treating other ailments heavily promoted by manufacturers. This uncertainty is further exacerbated by the fact that demand for echinacea products is highly seasonal and largely dependant on the outbreak of new flu strains.

According to industry stakeholders, the potential cultivation of echinacea is largely confined to *E. angustifolia* and *E. purpurea*. Whilst Australia has good capabilities to produce *E. pallida*, there is little demand for this species. There is tendency for growers to grow *E. purpurea* over *E. angustifolia* as they are able to turn over the crop 2-3 times more often, thus creating the potential to generate higher returns. Using the current imported wholesale prices of A\$65-\$100/kg for *E. angustifolia* roots and A\$40-45/kg for *E. purpurea* roots, local growers stand to make at least 20% more in cultivating *E. purpurea* over *E. angustifolia*. Whilst *E. angustifolia* could be difficult to cultivate due to lower yield and additional cost of weed control, it is the longer growing cycle that ultimately affects commercial viability and grower interest.

According to leading processors, a guesstimate of annual consumption for organically grown echinacea in Australia would be no more than 15 tonnes with dry plant material originating from within Australia, the US, Canada and Germany. Local growers used to supply *E. purpurea* but the majority stopped when global prices dropped to A\$25/kg which was significantly below the production cost of A\$35/kg (farm gate).

While current pricing for organic *E. purpurea* A\$35-40/kg appears attractive, growers need to be cautious as demand downturn for echinacea could mean an oversupply of raw material in the global marketplace.

	Current pricing – dried plant material	Suitable for Australian climate	Currently grown in Australia	Reason
<i>E. angustifolia</i>	\$65-\$100/kg (roots)	Yes	Yes, but in very small volume.	Very few growers grow it. Takes too long to mature with possible low plant yield and weed control issues. Growers can turn over <i>E. purpurea</i> 2-3 times more often and thus generate higher rate of return.
<i>E. pallida</i>	N/A	Yes	No	There is very little demand for <i>E. pallida</i> in Australia
<i>E. purpurea</i>	Up to A\$40/kg (organic roots) Up to A\$26/kg (conventional roots) Up to A\$10/kg (tops)	Yes	Yes	Grown on a small scale to supply domestic processors.

Valerian

Valerian is widely used in Europe as a mild sedative and sleep aid for insomnia, excitability, and exhaustion. In addition, its oil is also used for other non-medical applications such as flavouring and fragrances. The market for valerian is well established as the herb has been in use in Europe for at least 1,000 years.

Demand for valerian products is expected to remain strong in the short to medium term as incidents of mild insomnia and depression are expected to grow due to increased pressures of living in a modern society. The treatment of stress related ailments is a leading driver for herbal remedies/medicines sales in Europe and the US. In 2002, the European market for valerian extract was valued at A\$27 million. The demand for valerian is forecasted to have a compound annual growth rate of 8.5% until 2009. It is estimated that current global demand for dried valerian root is about 800 tonnes per annum.

Dry valerian plant material originating from North America and Europe is currently priced between A\$8-10/kg. At this price range, local growers are not able to compete as domestic production cost (based previous supply prices) of between A\$18-22/kg. While valerian is a relatively cheap herb to grow in Australia, the post harvest cost is expensive as cleaning the fine fibrous roots is very labour intensive.

A very small of volume of valerian is grown in Australia mainly under contract for use in herbal teas, health supplements and homeopathy.

	Current pricing – dried plant material	Suitable for Australian climate	Currently grown in Australia	Reason
Valerian	Organic – up to A\$20/kg Conventional - \$8-10/kg	Yes	No	Local growers can't compete at \$8-10/kg for conventional crop and have never been able to obtain A\$20/kg for organic crops.

Goldenseal

Goldenseal has established a long track record for medicinal use in North America. Within the last ten years, interest in Europe has been steadily increasing as this botanical is increasingly used in combination with other herbs such as echinacea and black cohosh. In 2001, approximately 120 tonnes of dry goldenseal herbal material were sold on the world market. Demand exceeded supply for high quality cultivated material. Cultivated material represented about 25% of the overall supply in 2001.

Restrictions on wild harvesting and the desire for higher concentrations of bioactives continue to drive demand for high-quality cultivated materials. Prices for high quality, cultivated dried root could be as high as \$200/kg, making it one of the most expensive herbs in the world. It takes 500 to 650 plants to produce 1kg of dried roots. The extremely long growing cycle means that growers can only realise their investment over the long term. For example, seed germination takes approximately 12 months and a further 4-5 years for growers to develop significant stock for commercial cultivation. Plants transplanted from rhizomes take three to four years to reach maturity while plants from seedlings take 5-7 years to mature. It is this level of commitment that has resulted in only a small number of growers supplying goldenseal.

Goldenseal can be successfully grown in Australia but the length of time needed to recoup initial outlay means very few growers are cultivating this herb. Without possible price safeguards, many growers would prefer to grow faster growing crops to realise quicker returns. The economics and cash flow commitment associated with goldenseal cultivation mean that the only viable option for new growers is to grow it as a side income. Growers in North America tend to produce goldenseal on a small scale and are usually members of co-ops or vertically integrated into large processors.

	Current pricing – dried plant material	Suitable for Australian climate	Currently grown in Australia	Reason
Goldenseal	Up to \$200/kg – typically between \$140-160/kg	Yes	No	Very slow growing herb. Hard to secure grower interest as it can take up to 10 years to generate enough plantings for commercial production.

Skullcap (American)

Skullcap should continue to enjoy strong demand because of its ability to protect against digestive problems, anxiety, depression and insomnia. More importantly, the relaxing and calming properties of skullcap mean that it could be used as a substitute for other popular herbs such as valerian, kava kava, St John's wort, black cohosh, ginger, peppermint, dandelion and barberry. As the market for established herbs such as valerian, St John's wort and black cohosh began to mature, processors could resort to promoting lesser known herbs such as skullcap to reinvigorate consumer interest in natural relaxant remedies.

There is strong potential for skullcap to achieve growth of 20-30% per annum in the short to medium term due to increasing pressure to stop using Kava Kava in Europe and North America. While the market may experience some short term supply shortage, this is not likely to translate into sustained upward price pressures as growers are able to fill shortages quickly due to the relative short growing cycle involved with skullcap.

Australian growers used to supply skullcap but production came to a stop when global prices dropped to as low as A\$16/kg. Local growers were not able to compete as the production cost in Australia for skullcap is between A\$18-22/kg. Since domestic production ceased several years ago, prices for imported skullcap from North America have been gradually rising to reach as high as A\$42/kg for organic crops and A\$25-30/kg for conventional crops.

	Current pricing – dried plant materials	Suitable for Australian climate	Currently grown in Australia	Reason
Skullcap	Organic - up to \$42/kg Conventional - \$A25-30/kg	Yes	No	Domestic production stopped when global prices dropped to A\$16/kg about 2-3 years ago.

5. Recommendations

The consumption of medicinal herbs is undergoing significant transformation as ever increasing distribution channels are creating improved access and ability for consumers to better self-medicate. The increasing availability of medicinal herbs as health and dietary supplements through mass market retail channels like pharmacies, health food shops and supermarkets is fuelling ever increasing consumer demand. Demand for the four nominated herbs echinacea, skullcap, valerian and goldenseal is expected to remain strong in the medium to long term largely due to their ability to provide relief against common ailments such as cold and flu, mild insomnia, PMS, nervousness and upset stomach. Consumers are increasingly opting to use herbal remedies to treat these common ailments due to the lack of side effects as well as being perceived as healthier alternatives to conventional medicine. The demand for arnica products is expected to remain small due to its limited application but price for raw plant material is expected to remain strong largely owing to scarcity of supply.

The global supply of medicinal herbs is an established market and supply of raw plant materials is highly competitive. Herbs like echinacea (*E. pallida* and *E. purpurea*), valerian and skullcap are relatively easy to cultivate thus assuring abundance of supply. Growers are continuously under significant price pressure subjecting the industry to a commodity trading structure. These herbs are already successfully grown in Australia but production levels remain negligible and sporadic due to high market uncertainty and price fluctuation. Growers are hesitant to grow these herbs as they have not been able to generate appropriate returns to date.

The challenge is further exacerbated with growers often uncertain of the financial return until the herb has been tested by the processor. Most processors require a Certificate of Analysis and/or independent testing to determine botanical identity, levels of active constituents, purity, and cleanliness. Prices are usually determined relative to global supply and conformance to quality specifications. The lack of a guaranteed minimum farm gate price means it is extremely difficult for growers to gauge possible returns. Based on current global prices, it would seem that the best herb prospects include *E. angustifolia*, *E. purpurea*, skullcap and goldenseal. The challenge for growers lies not in the cultivation but rather in the ability to generate required return.

There needs to be appropriate infrastructure to support the marketability and acceptability of locally grown medicinal herbs by processors both here in Australia and overseas. A whole of industry approach is needed to strengthen production capabilities and develop appropriate channels to market. To help improve market confidence and acceptability of Australian grown medicinal herbs, growers need to place greater emphasis on:

- Industry wide co-operation and communication;
- Access to well-defined botanical strains;
- Quality assurance; and
- Understanding the needs of processors.

1) Industry Wide Co-Operation and Communication

The relationship between grower and processor is often seen as one of seller and buyer. If the industry is to grow, there needs to be stronger collaboration between both parties in developing the necessary mechanisms to better support farm gate price through value creation. For processors, they need to be confident that the plant materials meet their specification. Better communication allows processors to be kept informed of current industry developments and practices used to safeguard herb quality and integrity. There is potential for growers to create value through better supply of information such as:

- Authentication – providing information on the botanical identity of the species being grown;

- Seed or cultivar origin – helps build credibility;
- On farm practices used to maximise plant growth and content of medicinally active constituents;
- Practices and processes used to minimise contamination;
- Post-harvest processes to minimise loss of active constituents;
- Research and development activities to improve herb quality and integrity; and
- Knowledge and information sharing with other leading herb producing countries such as the US and Germany to ensure growers are continuously adopting best practices.

It is the flow of such information that will provide processors with a sense of involvement and create confidence in the quality and integrity of locally grown herbs, and the potential for growers to achieve higher prices.

Equally as important, processors also need to communicate with growers on emerging consumer trends and market conditions. Access to such vital market information allows growers to better plan their crops and allocate appropriate resources to cultivating herbs that are market driven. Growers need to extend their knowledge beyond cultivation to include the marketing aspects of medicinal herbs, especially in understanding the needs of processors and end users. It is meeting these needs that will allow local growers to demand a premium over cheaper imports. Specifically, growers could benefit from information such as:

- A better understanding of cost structure and value created by each party along the supply chain. This will give growers a better appreciation of the resources required for new product and channel development to attract new consumers;
- A better understanding of core marketing principles (product, place, price and promotion) and how they are used to meet the needs of consumers ;
- The quality assurance process used by processors to ensure product safety and integrity, and how it relates back to growers;
- Feedback from the marketplace on emerging consumer trends and product categories enjoying strong growth; and
- Information on international suppliers and market trends.

It is through accessing such information and working with processors that growers will be able to better plan and invest with confidence especially in herbs requiring long term commitment, such as the highly prized *E. angustifolia* and goldenseal. There is tremendous potential for processors to play a more active role at grower level by providing much needed market intelligence especially in creation of value to consumers.

Higher farm gate prices can only be achieved with growers and processors working together to deliver high quality herb products to customers. The collaboration between growers, processors and government needs to be demonstrated through practical projects with clearly defined roles for each stakeholder.

2) Access to Well-Defined Botanical Strains

Access to well-defined botanical strains especially for highly prized species such as *E. angustifolia* and goldenseal could be difficult to obtain. Successful growers who have committed significant investment to developing genotypes that are faster growing and containing higher proportions of the desired active constituents will closely guard their propagation materials to prevent access by other growers. In addition, any new growers wishing to cultivate these herbs would also need access to vital knowledge and expertise to successfully grow these under Australian conditions.

Growers in Europe and North America are continuously developing new genotypes that are more robust, quicker growing and produce a higher yield of active compounds. Australian growers need to be involved in such research and development activities in order better access new seed varieties that will help improve commercial viability in Australia.

To address this challenge, strategic alliances should be established between growers in Australia and leading research counterparts in North America and Europe. It is only through information sharing and co-operation that local growers will have access to appropriate propagation materials and technical knowledge. The government's role in terms of research and development is the perfect vehicle to facilitate strategic alliances with leading research authorities and growers in North America and Europe.

3) Quality Assurance

The medicinal herb industry is often subject to controversy. Examples of misidentification, adulteration and contamination of natural health products have been widely recorded both within Australia and around the world. For example, *Parthenium integrifolium* is often mistaken for *E. purpurea* as the two plants have an uncanny resemblance when cut and sifted. The adulteration of *Parthenium integrifolium* was so widespread that it was included in reference samples of *E. purpurea* root.

Although the health impacts of these failures in due diligence or deliberate misrepresentation are sometimes benign, there have also been tragic consequences. Beyond serious health risks to consumers, the impact on industry credibility is often crippling. The Pan Pharmaceutical incident in 2003 is a good example of the adverse impact to industry when there is a collapse in consumer confidence.

To maintain consumer confidence, processors are increasingly demanding that growers implement quality assurance processes to ensure product safety and integrity. There is increasing pressure for growers to adopt international quality standards such as:

- Hazard Analysis Critical Control Points (HACCP)
- Good Agriculture Practices (GAP)
- Good Manufacturing Practices (GMP)

Such quality measures are increasingly being implemented across the entire supply chain. The object of implementing good practices is to ensure effective and practical tools are available to allow accurate identification of medicinal herbs. Authentication of the plant identity at the grower end is unquestionably the most effective means of promoting quality, accuracy and consistency of the botanical product.

The adoption of such quality measures will also allow growers better access to a supply of reliably identified raw material for use in cultivation. Growers have an important role in both rewarding and demanding accurate plant identification from their suppliers. This 'push-pull' effect has the potential to create more widespread use of proper identification practice for herbs. Processors are demanding quality practices to maximise return and minimise risk. Not only are the potential benefits of proper identification significant, but processors also stand to lose the most (in terms of liability and loss of potential future sales) from misidentification leading to product contamination.

Agriculture and Agri-Food Canada prepared a guideline document (<http://www.saskherbspice.org/Good%20Practices%20for%20plant%20identification.pdf>) in February 2004 for the Saskatchewan Herb and Spice Association outlining good practices for herbal plant identification. The document provides a good template for industry to follow and implement the necessary procedures to ensure consistent supply of safe and traceable plant materials.

4) Understanding the Needs of Processors

To achieve higher farm gate prices, growers need to better understand the needs of processors especially in how quality is defined and measured. Most processors these days require batch samples to be provided for testing and analysis.

Growers need to better investigate and understand the certification and analytical requirements of processors for their products. There is on-going scientific research to seek acceptable procedures to determine botanical identity, pharmacologically active constituent levels, purity and cleanliness. Growers need to monitor these developments in order to implement practices that ensure they meet the needs of processors.

In Australia, the quality requirements in the acceptance process of all plant materials for therapeutic use are controlled by the Australian Therapeutic Goods Administration (TGA) through the Code of Good Manufacturing Practice. The three key standards against which raw material are assessed are:

- Identification – through macroscopic and microscopic examination of plant parts, organoleptic assessment (appearance, odour and taste) and chemical fingerprint analysis through Thin Layer Chromatography (TLC) or High Performance Liquid Chromatography (HPLC)
- Purity – assessed against four standards: presence of extraneous materials; an assessment that the material is sufficiently dry (if it is supposed to be dry material); the presence of any microbial contamination in the form of pathogens, yeasts and moulds or aflatoxins; and the detection of any residues (herbicides, pesticides, heavy metals or radiation); and
- Potency – the presence of a required level of active chemical constituents is determined by TLC, HPLC, Gas Chromatography and Mass Spectrophotometry

Processors and manufacturers are also increasingly demanding herbs to be organically cultivated. In Australia, the National Association of Sustainable Agriculture (NASA) and Biological Farmers of Australia (BFA) are the leading bodies for organic certification.

Most importantly, growers need to implement practices to ensure they are indeed growing the species and genome they think they are growing, as it is too easy to get confuse and grow different genotypes/sub-species of herbs. Growers also need to monitor the levels of active constituents in the herbs they are growing and how this affects the buying requirements and specifications.

Another buying requirement of processors is that they tend to only source herbs from established growers – ability to determine safety, cleanliness, purity and product origin. New growers wishing to supply *E. angustifolia*, *E. purpurea*, skullcap and goldenseal will have to provide proof that they can consistently deliver on safety, cleanliness and purity. The involvement of processors through collaboration and communication will go some way in showcasing Australia's ability to produce high quality herbs addressing their specific requirements.

Growers need to realise such relationship development with processors require time and that they need to be in it for the long term to achieve required returns.

In summary, the recommendation to industry includes:

Challenge	Recommendation	Responsibility
<p>Improve co-ordination across the sector</p>	<p>One organisation to play a co-ordinating / facilitating role across the sector. It should:</p> <ul style="list-style-type: none"> ➤ Catalyse and promote action by different stakeholders ➤ Mobilise financial, human and technical resources ➤ Balance diverse interest and act as an ‘honest broker’ and arbitration service ➤ Execute and follow through on agreements, identifying and agreeing roles and responsibilities and ensuring actions are undertaken as agreed ➤ Co-ordinate actions 	<p>A support organisation that is objective and not aligned to any of the supply chain players or organisations in the public sector should take on this role.</p> <p>The support organisation would require donor funding initially but in the longer term could either withdraw from the sector (having achieved its objectives) or seek financial independence based on fees/revenues charged for services.</p> <p>It is proposed that this support organisation be industry based to ensure actions are consistent with industry needs.</p>
<p>Improve access to certified (or reliably identified) sources of seed material knowledge and technical expertise</p>	<p>Establish strategic collaboration with leading herb research organisations in North America and Europe and identify lessons which can be applied to the local industry</p>	<p>The support organisation recommended above should liaise with their counterparts in North America and Europe with the view of developing strategic collaborations to derive practical learning for industry.</p> <p>Such information should also be made available to processors so they are kept informed of new developments in Australia</p>
<p>Improve transparency and flow of information between growers and processors</p>	<p>Having a facilitator to drive the flow of information between growers and processors</p>	<p>The support organisation recommended above with support from relevant Federal and State agencies.</p>
<p>Improve quality and consistency of delivery</p> <p>Not all growers realise the importance of quality standards such as HACCP, GAP and GMP.</p> <p>Growers wishing to supply organic herbs also need to consider standards set by NASA and BFA</p>	<p>Train growers in:</p> <ul style="list-style-type: none"> - Botanical species recognition - Appropriate cultivation techniques - Harvesting - Post harvest treatment and packaging <p>Register qualified growers</p> <p>Increase awareness and understanding of HACCP, GAP, GMP, NASA and BFA</p> <p>Provide access to training services</p>	<p>Growers have the responsibility of ensuring they are properly trained.</p> <p>Training conducted by public sector or service providers.</p> <p>Collectors register by the support organisation recommended above.</p> <p>Support organisation to promote awareness and understanding</p> <p>Donor support may be required.</p>

Challenge	Recommendation	Responsibility
<p>Improve critical mass/volume from individual growers to provide sufficient scale</p>	<p>Establish and develop an association of growers. This would enable:</p> <ul style="list-style-type: none"> ➤ Growers to collectively market their capability and provide the volume demanded by processors ➤ Pool resources to undertake quality improvement initiatives including training, quality assurance, skills transfer, knowledge sharing etc. 	<p>Growers have the responsibility for organising themselves. Support would be required from external facilitators.</p>
<p>Improve market information (likely demand and prices in export markets) to allow for better business planning</p>	<p>Provide market information / market analysis concerning prices and potential demand</p>	<p>A potential function of the support organisation with significant inputs from processors.</p>
<p>Improve the recognition of Australia as a quality supplier of medicinal herbs and therefore ability to command a price premium</p>	<p>Develop a Quality Logo which depicts the quality assurance process used to cultivate high quality medicinal herbs in Australia.</p> <p>The Quality Logo will form the brand recognition for high quality Australian grown herbs.</p>	<p>The growers, through the support organisation should take the lead in developing a quality assurance program. Growers complying with the assurance program will be allowed to use the Quality Logo.</p> <p>Assistance from government and processors may be necessary.</p>
<p>Develop a commercial model/template that industry could adopt</p>	<p>Develop and test commercial models on a small/pilot scale to see what works best. Key issues to be addressed could include:</p> <ul style="list-style-type: none"> ➤ Industry wide co-ordination of all stakeholder groups in the supply chain ➤ Access appropriate propagation materials and technical knowledge ➤ Better flow of information between growers and processors ➤ Better supply of market information ➤ Training for growers ➤ Use best practices and certification ➤ Develop and introduce a Quality Logo, and the QA program underpinning it. 	<p>Representatives from all stakeholder groups in the supply chain would be involved in the pilot project. The lead would probably need to be taken by donors interested in supporting the sector or the support organisation recommended above.</p>

List of Industry Contacts Who Contributed Their Time and Views

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TP Health Ltd – Nick Rojo
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Phytomedicine – Jorgen Vaideck and Gabriel Perrera
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Focus on Herbs Consultancy – Kim Fletcher

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