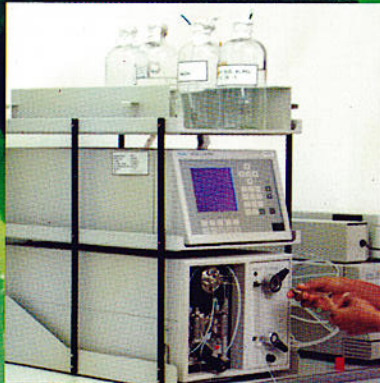


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EDITORIAL

The present era is characterized by the formidable advances in science and technology. These advances have greatly impacted the lives of ordinary citizens to diffuse even into remote rural areas. Do not rural farmers today use mobile telephones and electronic calculators? Yet one area where all these developments have failed is to ensure an enhanced quality of life. In the health sector though the advances are too numerous to recapitulate, yet the elusive factor is contentment and a sense of wellbeing. Although there have been spectacular developments in diagnostic techniques and designer crafted therapeutic agents, many diseases are still intractable, and some are old ones. New diseases like HIV, and those caused by unidentified viruses defy control. The approach has been a materially based approach, and this is perhaps the flaw. Modern society still suffers from preventable heart diseases, cancers, strokes, infectious diseases, rheumatoid arthritis, diabetes and mental illnesses. Large sections of society while not perhaps sick are not in a true state of health, or wellness. This state of affairs touches both the affluent as well as the poor. It was the Nobel Laureate Professor Abdus Salam who identified the two types of disease as "diseases of the Rich and diseases of the Poor". The diseases of the Rich according to the noted scientist were the result of having too much, and those of the poor the result of having too little.

It is in this regard that the age old methods and philosophies of Ayurveda can help. In Ayurvedic concepts, health is more than the absence of definable disease. Ayurvedic philosophy considers health, as very much more than just "nirogi"- or without illness. Health is conceptualized as a symbiotic and dynamic relationship between the environment, the human body, mind and spirit. Quite simply, health is a state of wellbeing of body and mind.

The science of Ayurveda is our legacy and is an enormous resource. Broadly it is stated that every expression of human endeavour whether

it be Art, Science, Medicine, or Agriculture etc., is structured in the laws of nature which govern and order our existence. A celebrated authority of both western and Ayurvedic medicine, Dr. Sunil V. Ghosh, has recorded thus::

"I probed more deeply into Ayurvedic theory and clinical practice and became impressed by its logic and charmed by the power and completeness of its comprehensive understanding of life. It describes a vital connection between individual life and the whole of nature. Human life is perceived as a microcosm of the entire universe."

The basis of Ayurveda the *Panchkarma*, is considered to be a "comprehensive system of knowledge and practices to purify the body of toxins and restore it to balance, with natural law." The increasingly rapid pace of modern lifestyles, the galloping environmental degradation, and the disengagement from the natural rhythms of life, are taking a heavy toll on health and contentment. People are beginning to lack motivation and enthusiasm, and, anxiety and depression are common syndromes. Ayurvedic philosophy and practices if truly engaged, appears to have the capacity to deal with many of the problems of the modern day. Ayurveda is not merely a healthcare system, but a complete approach to living. It offers a rich comprehensive conception of life and health that accommodates all facets of human existence. The answer therefore is to induce the powers that be to engage Ayurveda as well as modern medicine in a joint effort to combat the diseases of the rich as well as the diseases of the poor. The pharmaceutical companies direct their attention only towards the former as the profit driven pathway dictates. But the repertoire of Ayurveda can well be employed in a collaborative effort in national health care. For this to be accommodated Ayurveda itself has to engage the benefits of modern science and technology. No longer can it be argued, as Nehru once observed, that "the last word could have been said thousands of years ago"

ITS "QUALITY" THAT MATTERS

Yamuna Dassanayaka* and R. O. B. Wijsekera

PREAMBLE

In industrial practice one comes across terms such as :- Quality Assessment, Quality Control, Quality Assurance, Total Quality Management, which are often for convenience enshrouded in such abbreviations as QA, QC, TQM etc.

In terms of serious industrial usage it is advantageous to know and understand what these terms mean? What then is the real meaning of the term "Quality"? Is it a function of the price of the article or the prestigious nature of the company that produces it? For example an SLR digital camera is a quality product based on a production pattern that has been evolved by considerable research. Is it therefore superior to a simple camera that is relatively far less expensive? It is, in respect of its versatility and the functions it can perform, which the latter may not be able to do. But both are quality products with different target customer groups. The one is for the serious professional photographers. The other targets the simple enthusiast who wishes to record events with the least possible complexities. The important point is that they are both products of "Quality", - the outcome of rigorous research and development prior to entering the market. However they are designed for different purposes and to serve two different target groups, both of which are of importance to the producers. Accordingly the following definition of Quality arises.

" A product that conforms to quality standards is one that is unequivocally fit for its intended use."

Quality control (QC) is the process, which is designed to ensure that a given product meets the predetermined specifications that are necessary for its intended use. This process of QC includes appropriate sampling as well as established testing methodology.

Quality assurance (QA) has a more expansive implication. It covers surveillance of all factors that may influence the quality of a given product. TQM or Total Quality Management, is to

ensure that there is control and management over the entire continuum of operations that go to produce the product, which would have predetermined specifications and a circumscribed intended use.

COMPONENTS OF TOTAL QUALITY MANAGEMENT

Every sizable production outfit must ensure that the components of Total Quality Management are in place. These components are the following :- (With special reference to the herbal Pharmaceutical Industry)

(a) RELIABLE DOCUMENTATION

There is a requirement for ensuring that documents on matters of policies, procedures, instructions, and obligations are in place. The contents of such documentation must be regularly explained to all relevant personnel. They should be available in languages understood by all relevant personnel.

Some readily available off-the-shelf quality systems that may be conveniently applied to a situation are the following :-

- | | |
|----------------|--|
| ISO 9001 | - Quality Management System |
| ISO 14001 | - Environmental Management System |
| MRP II Class A | - Manufacturing Resource Planning |
| GMP | - Rules and Guidance for Pharmaceutical Manufacturers and Distributors |

Unfortunately there are no universally accepted Rules and Guidance for the Phytopharmaceutical Industry.

In Link Natural Products Pvt. Ltd. For example the following documentation is available to anyone, which conforms to ISO 9001 Quality Management System Requirements:-

1. A System manual
2. A Process manual

* Yamuna Dassanayake is the Senior Production Manager, at Link Natural Products Pvt. Ltd.

The System manual of Link Natural Products describes the company, as well as the following:

- Quality policies
- Environment policies
- Organization structure
- Quality management system
- Environmental management system
- Responsibility matrices
- Process interaction matrix
- Documentation system
- Management responsibilities
- Planning
- Resource management
- Product realization
- Quality management procedures and
- Environmental management system procedures

In the Process manual the following core processes are illustrated in flow charts.

- Customer related core process
- Product development core process
- Purchasing core process
- Storage and handling core process
- Material preparation core process
- Manufacturing core process
- Engineering core process
- Product verification core process

In addition work instructions for each step in the manufacturing procedures are described in the Sinhala language as well. The following additional features are also included in the manual.

- Operational control instructions,
- Emergency preparedness and response procedures,
- Safety instructions,
- Sanitary instructions

(b) VALIDATION

The prescribed goal of a manufacturing process is to produce a given product which invariably conforms to the predetermined standard. Ensurance of the above is what is known as validation. (see LNP Digest Volume 1 No 2 pg 17-18)

The individual in charge of validation in a company must be familiar with the respective process parameters that constitute the Scientifically Optimized Process Protocols (SOPP), that are employed in the production of the various products.

This constitutes, in the Herbal Pharmaceutical Industry, such parameters as the following :-

- Extent of drying and cominution of raw material

- The extraction parameters (temperature, solvent, time etc)
- Speed of stirring
- Method of mixing ingredients
- pH and other relevant physical factors

Just as the SOPP has been designed by extensive R & D so must the Validation Protocol (VP). This must include:

- Outline of SOPP
- Critical individual process parameters
- Specifications against which the parameters are tested.
- Define the testing required to establish the process as valid

(c) INSTRUMENT CALIBRATION

A processing plant in the phytopharmaceutical industry comprises of a complex array of equipment to accommodate a number of individual processes. eg: drying, sieving, cominution, extraction, distillation, etc.

These are associated with several measuring instruments. It is crucial to process validation that these instruments are regularly tested and calibrated.

The individual responsible for this task must have an intimate knowledge of the processes involved and all their parameters as well as knowledge of instrumentation. If such a person is not available, calibration will have to be assisted by a qualified instrument technician. Most often lack of a suitable electronics technician is a serious obstacle. This requirement may be met adequately if it is foreseen in the acquisition of instrumentation hardware.

(d) QUALITY AUDIT

One of the final components of Total Quality Management is the Quality Audit. This is quite simply, checking if the TQM system is operating in the manner for which it was designed.

This presupposes the existence of a definite TQM system, which is documented. In addition the industry has also adopted ISO 9000 quality system, that would provide an additional framework of reference.

CONCLUSION

In conclusion, it may be stated that "Quality" is the secure foundation on which an industry can thrive and prosper, Quality ensures customer confidence in the industrial concern and the products generated by it.

LINK NATURAL ENRICHED PASPANGUWA

Romero Lindon*

Driven by a unique corporate philosophy and a passion for excellence in all quarters of its business, Link Natural saw the birth of "Link Natural Enriched Paspanguwa" - yet another new brand product to further strengthen its current portfolio and its competitive position in the market.

"Paspanguwa", meaning five portions or parts, is the term inherited by the trusted home remedy used for common ailments such as the common flu, influenza, fever, aches and pains etc for centuries. Also known as "Peyawa" or "Kasaya", this traditional remedy consists of five medicinal herbal ingredients. The original combination has been altered with time due to the substitution of some ingredients on account of unavailability or scarcity.

The peyawa now commonly consists of

- Ginger - *Zingiber officinale*
- Coriander - *Coriandrum sativum*
- Venivel - *Coscinium fenestratum*
- Katuwel batu - *Solanum xanthocarpum*
- Pathpadagam - *Hedyotis corymbosa*

It is a trusted item on the household shopping list irrespective of the consumer's social strata.

Based on absolute belief in the paspanguwa, nearly every member of every household consumes this product regularly though quality has deteriorated as a result of poor manufacturing standards and quality control. This has led to consumers falling victim to paspanguwa preparations with ingredients of very poor quality (often including adulterants), visibly infested with insects (and contaminated by their faecal matter) and fungi which can be detrimental to the consumer's health defeating the very purpose of the product.



This means that there is a yearning cry for an authentic paspanguwa - and this triggered the idea for the development of Link Natural Enriched Paspanguwa.

WHAT THEN IS "ENRICHED" PASPANGUWA?

Link Natural always believes in giving the consumer the very best. Hence, rather than merely reproducing a high quality paspanguwa, Link Natural developed a far superior product by including three additional "booster ingredients" to enhance bioavailability, efficacy and produce faster relief while presenting all its ingredients in a washed, dried and coarsely ground form for easy and efficient preparation and better medicinal extraction during preparation. All this is presented to the consumer in an air-tight triple laminated foil pack that preserves the quality and aroma of its ingredients in their original form for the full period or its shelf-life.

Link Natural took pride in introducing this all new innovative brand product to its distributor network at a solemn ceremony held in Colombo on the 16th of March 2007 - the moment of truth when many years of hard work by the Link Natural Team brought yet another unique idea to life.

Consumer response to Link Natural Enriched Paspanguwa has been extremely encouraging to-date and it is firmly believed that this brand will develop to be and remain a firm favourite amongst consumers of all walks of life.

*Romero Lindon is the General Manager (Sales & Marketing), at Link Natural Products Pvt. Ltd.

Prof. PETER AND Dr. MAGDOLNA TETENYI OF BUDAKALASZ, HUNGARY.

by R. O. B. Wijesekera

In the tranquility of the Hungarian suburb of Budakalasz, not far from Budapest itself, nestled a unique Institute dedicated to the study of Medicinal and Aromatic Plants. This Hungarian Institution and its Director for many decades Professor Peter Tetenyi, has been very well known to those interested in Phytomedicinals throughout Europe, Africa, and Asia. A pioneering authority on "chemosystematics" - the science of classifying plants based on their chemical constituent secondary metabolites, - Professor Tetenyi and his wife and collaborator, Magdolna nee Erdosy, are universally identified with their book entitled: "Infraspecific Chemical Taxa of Medicinal Plants."

Professor Tetenyi, and Magda Tetenyi realized only too well, the dichotomy resulting from the renaissance of interest in medicinal and aromatic plants, which was a prominent phenomenon of the decades following the 1970's.



Prof. Peter Tetenyi and Dr. Magdolna Tetenyi in their home in Budapest

Those in the developing part of the world knew well that the interest in these plants had scarcely declined. But in the wake of this renaissance a twin danger became apparent; that the constituents of these plants and the plants themselves were fast in danger of becoming sacrificial to the industrial process, and as a consequence the damage to the biodiversity, mostly in the countries of the Third World, by excessive and unsympathetic utilization. Professor Tetenyi, as the President of the Medicinal and Aromatic Plants Section of the International Society of Horticultural Science (ISHS), was mindful of this dilemma. Together with Dr. H.H. van der Borg, the secretary-general of ISHS he set forth to foster a dream of commemorating the 500th anniversary, of the expedition of Christopher Columbus to the Americas. It was believed that this was the landmark event in the exchange of germplasm from the vast Americas, to Europe.

This dream of his brought forth a unique event where the world's specialists on medicinal and aromatic plants gathered together to discuss the aspects of human welfare and the plant systems. Thus was born the First World Congress of Medicinal and Aromatic Plants for Human Welfare or WOCMAP, which was staged in Maastricht, Netherlands, in July 1992. The record of this highly successful and very scientific congress is published in *Acta Horticulturae* of 1992.

WOCMAP brought together not only over 350 scientific personnel representing a variety of disciplines, but also the UN agencies, FAO, WHO, UNIDO, and UNESCO who all had interests in the area. This initial effort inspired by Tetenyi continues, and now like the ASOMPS inspired by Finn Sandberg, (See LNP Digest vol.2 issue 2, p.09), continues to this day and has been staged in a variety of venues.

On a personal note, this author and his wife were privileged to share a special relationship with the Tetenysis, and frequently enjoyed their

hospitality at Budapest Uniquely, we spent my sixtieth birthday at the Tetenyi's and enjoyed the hospitality the fine cooking of Magda.; and also a special birthday cake made by her.. We shared common interests in the subject area of medicinal and aromatic plants. The home of Magda and Peter was a delightful experience for us. In 1996 the author and his wife Marina again visited the Tetenyis during the World Science Congress in Budapest. He was recovering then from a heart condition. Fortunately, they are both well and spend a comparatively quiet life with sons Peter, Tomas and the families.

Tetenyi served as a UNIDO expert and visited many countries in Africa, with a special interest in Rwanda. Known universally for his modest bearing and his wife for her warm welcoming personality, Peter and Magda Tetenyi are a most popular scientific couple among many international friends.

Several Sri Lankans have spent their training in the Medicinal Plants Research Institute of Hungary in Budakalasz, during the period Tetenyi was at its helm.

The Digest wishes the Tetenyi's good health and many more years.

PHYSICIAN - SCIENTISTS AS AN ENDANGERED SPECIES

If a country's medical research enterprise is to make the contributions it is poised to deliver, the progressive dangerous decline in the number of physician-scientists must be reversed. This decline-most pronounced among trainees and young investigators-has resulted from societal pressures toward careers in primary care, economic disincentives, a shift in funding priorities, and the growth of managed care. Because physician-scientists are indispensable participants in the bi-directional flow of information from bedside to laboratory, and because no single agency can correct this problem alone a major national effort is recommended to establish a climate in academia conducive to creating physician-scientists, to set up a network of clinical research units to enlist the support of foundations, biopharmaceutical companies and managed care entities, as well as government and academia, and to set up a national database of physician scientists.

Source:

L. E. Rosenberg, Department of Molecular Biology, Princeton University, NJ 08544 USA in Science 15 Jan 1999 Vol 283 p 331-2.

PARACELSUS - THE PHYSICIAN - CHEMIST WHO SHAPED THE DESTINY OF CHEMISTRY AND MEDICINE.

Phillip Theophrastis Bombast Von Hohenheim Paracelsus, b. Switzerland 1493 is the subject of a Book by Phillip Ball (Winner of 2005 the Aventis prize for science books) called "The Devil's Doctor".

Ball reckons that Paracelsus who lived at the beginnings of modern medicine and science, who practised medicine and Chemistry, should have ranked with the greats of renaissance science -such as Galileo, Copernicus, Newton, Boyle, Vesalius, and Harvey.

It was his temperament that may have been responsible for this lapse. He was also strongly wedded to superstition, magic and religious

belief. The sixteenth century was all of this and out of the moves towards rational thinking modern science came about.

The book is reviewed by George Mills Chem World. 2006, p62.

Paracelsus has his place in the History of Science for the identification of Chemistry with Medicine. Early Chemistry and the therapeutic agents were largely plant-based.

Sourced from Chem World.4,62(2006)

TOUCH RESEARCH & MASSAGE THERAPY.

By Vickrama

I. INTRODUCTION.

The history of massage therapy is as ancient as the organized life of mankind. There is evidence that this form of touch therapy existed even in the days when mankind was nomadic. So "touch healing methodology", has been an integral part of human experience for many millennia. It is therefore a misconception that massage therapy is a new age invention of modern times. In ancient times in China, in the Arabian civilization, in the Indus valley civilization, in the Roman empire, in Greece, in North and South America, massage therapy had found application in overcoming the effects of strain and stress.[1-5]

One of the earliest recorded works was the famous Chinese text known as the "Yellow Emperor Classic" which describes the type of body manipulative work now identified as massage or touch therapy. Similar skills were recorded in the ancient Ayurvedic texts of India. The Chinese *Ah Shi Points* closely resembles present-day neuromuscular therapy (NMT), but predates this by thousands of years. The early physicians of the western world, such as Hippocrates, Galen, and later, Ambroise Pare, employed the techniques of massage therapy in their curative work. Evidence of sophisticated massage techniques is also found in the Egyptian scrolls, which depict methods of deep tissue bodywork. The techniques of massage had gained immense popularity in the middle ages and in 1363 Guy de Chaulic published a book about surgery wherein was described



different body manipulations. Paracelsus (see page 6) found these techniques valuable and essential in therapy.

In the nineteenth century the techniques now identified as Swedish massage were founded by Henrik Ling a doctor and a gymnastic coach, who cured himself of rheumatism and then founded the Royal Gymnastic Central Institute in Stockholm. Ling drew much from the techniques used in China, Egypt, Greece, and Rome. He also established a Society of trained masseurs in 1894.

Today massage therapy is universally practiced in every type of medical system, and there is much ongoing research (Touch Research) that has now placed this ancient art on a scientific basis. For a time, the unsavory image created by "massage parlours" seemed to eclipse the actual value of the technique but scientific intervention has placed massage therapy once again on a firm basis as an integral part of healthcare practice. [1-5]

II. WHAT IS MASSAGE THERAPY?

Let us briefly consider the present concepts of what is called Massage Therapy or MT. The American Massage Therapy Association (AMTA) defines massage as follows:[6]

"Massage is a manual soft tissue manipulation that includes holding, causing movement, and/or applying pressure to the body"

And massage therapy is defined as:[6]

"A profession / practice in which the practitioner applies manual techniques, and may apply adjunctive therapies with the intention of positively effecting the health and wellbeing of the client."

Massage is therefore an old art gaining stature in the medical establishment on account of the expansion in understanding its scientific basis. From the Chinese methods that were described in the Yellow Emperor Classic some basic concepts of massage therapy came to be accepted in accordance with extensive practice. Some of the

Chinese methodology came also to be incorporated in the systems that prevailed elsewhere. In Egypt in 2300 BC within the tomb of Akhmahor are depicted figures that convey the techniques of massage therapy at the time. These have come to be incorporated in Asian systems, and in particular within the Ayurvedic system. There undoubtedly were similar systems handed down from the Vedic practices which were the beginnings of Ayurveda and this made it easy to incorporate similar techniques prevalent during these times. "Rubbing" is extensively recommended in Ayurvedic texts for cures of various diseases such as arthritic conditions. In Asian massage therapy there developed a theory that energy flows along specific lines along the body, and it is believed that this is the basis of what is now identified as the "Thai Massage System" In 400 BC Hippocrates used the technique of "rubbing" to improve joint functioning and muscle tone, and records show the strokes were in the direction of the heart.[3]

In medieval times in Europe massage was frowned upon and discouraged. Churchgoers in Europe were told that it was a form of the work of the devil. After 1500 when the French physician Ambroise advocated massage, and Paracelsus used it to improve the circulation in the body that it came to be reinstated.

It was the Dutch practitioner Johan Georg Mezger who is credited with having developed the four canonical strokes now identified as Swedish massage.[4]. Presently various modifications of massage are recognized in Europe and the United States.

III. WHAT ARE THE BENEFITS OF MASSAGE THERAPY?

Massage therapy comes in many forms. [7]. It is said to improve the functioning of the circulatory, lymphatic, muscular, skeletal and nervous systems of the body. There is the Swedish mas-



sage, the Pressure Point Therapy, Thai and Japanese Variations, Ayurvedic massage which employs a variety of herbal oils and herbal baths in conjunction with manipulative massage therapy. Most common of all this day is the Sports massage which focuses on the muscle groups that are most relevant to the particular sport. Modern scientific intervention has identified the following beneficial effects of massage therapy.[7,-10]

- Reduction of muscle tension.

Massage therapy affects all the muscles of the body as well as the soft tissues. It renders taut muscles loose, and can stimulate flaccid muscles. Muscle tension can cause restriction of blood circulation and movement of lymph.

- Improvement of blood circulation.

The oxygen capacity of the blood is known to increase after massage therapy. By stimulating nerves that control internal organs, blood vessels of these organs dilate and permit a greater flow of blood to them.

- Induction of better lymph movement.

Lymph is the fluid that drains waste products such as toxins from the tissue cells, and massage stimulates such detoxification.

- Enhancing the mobility of joints.

By exercising a gentle stretching action on muscles and surrounding tissues these are maintained elastic.

- Soothing of the nervous system.

Massage has a soothing and a calming effect on the nervous system

- Improving the digestive function.

Massage, in addition to the above has a stimulating effect on the digestive system, by increasing its secretions and metabolic rates.

- Enhancing skin condition.

Massage enhances the functions of the sebaceous and sweat glands, improving the skin condition.

Besides the above, massage therapy is known also to have subsidiary benefits such as these :- Benefits of the internal organs, the immune system, reduction of stress, promoting and enabling relaxation.

IV. WHEN IS MASSAGE THERAPY BEST EMPLOYED ?

Modern massage therapists postulate that there are several identifiable conditions or "dysfunctions" that respond to clinically directed massage therapy. These dysfunctions are listed as follows:[7]

(a) Fascial Plane Dysfunction..

The human body is covered with a continuous layer of connective tissue that surrounds every muscle, organ, and bone and this is called the fascia or fascial sheathes. All major blood vessels and nerves follow these fascial sheathes, through the body. Properly aligned and released, fascia are crucial to good health notably the operation of the circulatory and nervous systems. Injury, postural patterns, chemical imbalances can cause dysfunction in respect of the fascia. Massage therapy can correct any ailments connected with such dysfunction.

(b) Myo-fascial Pain and Dysfunction.

Many symptoms such as headache, nausea, migraine, urinary infrequency, deafness, blurred vision can often be associated with this dysfunction. Scientists have developed extensive maps where points have been identified, from which these symptoms originate.. These are known as trigger points and are within muscles and their fascial tissues. Massage Therapy can alleviate the symptoms and give relief.



(c) Neuromuscular dysfunction.

Muscular activity requires that nerve impulses are dispatched to the muscle to be activated as well as to all adjoining and associated muscles. The nervous activity and muscular response is coordinated. The more complex the muscular activity is, there is a proportionate complexity in coordination. In reality the coordination can break down causing muscle fibers and whole muscles to lock in opposition to their natural activity.

This can cause neuromuscular stress and pain, which can be addressed by MT.

(d) Dysfunction of the Tonus system.

When muscles are overused they may tend to remain taut instead of relaxing. In this condition they tend to harbor myofascial trigger points and give rise to pain and stress on muscles and joints. This condition too can be addressed by MT.

(e) Dermatonic and Spondylogenic Dysfunction.

If a nerve is constricted at the point it leaves the spine or along its route, there will be pain. An example of this is the frequently occurring ailment known as sciatica, when the effected nerve is the sciatic nerve. When the joints of the spine are compressed or otherwise impaired they can cause another type of pain - spondylogenic pain.

Both these conditions can be treated by MT by loosening the muscles and other soft tissue that surrounds the area of the joint and nerve.

V. MASSAGE THERAPY, TOUCH RESEARCH AND MODERN HEALTHCARE

Massage therapy has been ongoing for several millennia, and the practice must indeed have had substantial benefits to survive to this day. Furthermore research in modern times has fortified these benefits and developed on them. It is recorded that [11] anxiety and respiratory rates of a group of medical students at the New Jersey Medical School were diminished after MT prior to an examination. Cancer patients at the James Cancer Hospital and Research Institute, were found to be better able to bear pain and suffer less from anxiety after MT. A Study at the University of Carolina revealed that those who had suffered a recent bereavement were less depressed following MT. At the University of Miami, School of Medicine scientists of the Touch Research Institute have found that MT was helpful in decreasing the blood pressure in people with hypertension, alleviating pain in migraine sufferers, and improving productivity among office workers.

The Touch Research Institute is a uniquely new organization founded in 1992, by Dr Tiffany Field. It is the world's first institution devoted to the scientific study of Touch and its effects on health. The TRI has conducted a series of studies pertaining to its subject area of interest. These are extensively reviewed in the institute's publications as well as in various related scientific journals. [11,12].

The TRI has studied the impact of MT on various age groups from infants to the elderly, and for a series of conditions as varied as rheumatoid arthritis to anxiety syndromes and debilitating and terminal diseases. In all cases the scientific evidence is unmistakably clear in that MT makes a measurable positive difference to the health as well as quality of life.

The findings may be condensed in summary as follows :-

- Regular MT tends to decrease levels of the stress hormone - cortisol. Massage is believed to stimulate the vagus, (one of the twelve cranial nerves in the brain, which in turn slows down the production of cortisol).
- Several resulting advantages are stated as:
 - a. deeper sleep
 - b. reduction in risks of stress related disease
 - c. improved immune function
 - d. increased resistance to disease.
 - e. Improved lymphatic function
- A midweek massage generates a surge of mood-enhancing serotonin. (TRI scientists believe that the body naturally produces serotonin in the state of complete relaxation.)
- Regular MT keeps the spine supple and thus prevents possible vertebrae fusion.

A large number of studies have been devoted by TRI scientists to the benefits of Aromatherapy combined with MT.[12]

This is now emerging as a vast area of complementary medicine given the proven efficacy of Aromatherapy itself. The use of aromatic essential oils, incorporated into massage oils with an inert fixed oil medium, is one of the re-discovered practices now known as **Aromatherapy massage**.

TRI scientists have demonstrated the use of such therapy to combat mental as well as physical stress conditions. The methodology has also been used to control and manage the craving syndrome as for example in controlling smoking.

Many are the benefits of massage therapy as revealed in the extensive researches conducted on rigorous scientific lines by the researchers at the TRI.[11]

VI. TRADITIONAL AYURVEDIC MASSAGE THERAPY

Massage therapy, as observed heretofore is indeed no new art. It was part of ancient Ayurvedic practice, and an integral part of essential therapy. [1-3]. The traditional practice maintained that massage was a daily family health ritual where family members administered therapy on other members. Massage was believed to also serve as an exercise for the practitioner and a form of essential relaxation.

It is recorded, that massage had the effect of:-

- Stimulating and toning the muscles.
- Restoring agility and facile movement to joints.
- Reducing symptoms of premature ageing
- Improving the texture of the skin.
- Retaining body shape and elasticity
- Strengthening nerves and the immune system.

In addition to the above effects massage therapy, which was always associated with the use of herbs and their essential oils, enhances the effect of these oils and their relaxant effect. There are various types of massage therapy recognized in the Ayurvedic system. In one of them the healing benefits are outlined as:[1-3 ,]

- *Jarachar* - removal of manifestations of old age
- *Saran Har* - minimizing effects of fatigue
- *Vata har* - removal of wind related ailments
- *Oreshti Prasad kar* - improvement of sight
- *Pushti kar* - improvement of physical strength
- *Ayu kar* - longevity
- *Swapn kar* - inducing regular sleep
- *Twk drith kar* - improvement of skin
- *Klesh sahatwa* - enhances disease resistance
- *Abhigat sahatwa* - promotes healing of injuries
- *Kapha vata nirothak* - control of ailments caused by wind and mucous
- *Mriya barn bal prad* - enhances skin condition

Ayurvedic massage recognizes the role of three circulatory systems of the human body which respond to massage therapy (MT).

These are the Blood Vascular System, (BVS), the Nervous System (NS) and the Lymphatic System, (LS). The LS is the one most directly involved in massage therapy (MT). MT stimulates the lymph flow. The heat generated by the rubbing and the application of oils helps to cleanse and vitalize the body and retards the build-up of toxins. **Lymphatic Massage is an old Indian massage technique which employs essential oils in a medium of fixed oils such as mustard seed oil and almond oil. It is a precise gentle type of massage therapy which focuses on the lymphatic pathways of the body.**

In general massage therapy is recognized as being ideal for older people whose bodies are slow to replenish vital fluids lost in daily movement or exercise, and are therefore unable to counter the strain imposed on muscles and tendons.

VII. SOME CAUTIONARY MEASURES.

This brief general review of massage therapy and the connected aromatherapy massage will not be complete without reference to some safety factors, contra-indications and precautions. It is well recognized by Ayurvedic practitioners, who practiced the art in ancient times, as well as by modern Touch Research Scientists that, massage must not be recommended in cases of certain medical conditions. This applies in cases following major surgery, cardiovascular ailments, and heart diseases, especially such conditions as high blood pressure, thrombosis, phlebitis, and undiagnosed oedemas.. **Therefore MT must be conducted after a physical check-up and under the supervision of qualified practitioners.** There are some obvious precautions too. Massage should never be carried out on infected skin conditions, burns, warts, or boils. Varicose veins too must never be massaged. Massage over the abdomen in the case of pregnant women must be carried out under medical care. In the case of cancer patients specially trained personnel must carry out the massage therapy. There is now specialized training for MT as applicable to different disease syndromes. Touch Research is now a major discipline.

The above precautionary measures notwithstanding, massage therapy, particularly when allied to Aromatherapy is a powerful old weapon that has been rediscovered, and now revisited, and thereby vastly improved with

the intervention of modern scientific inputs.[12].

For humankind it is another means, simple and natural, of combating disease, poor health, the deficiencies caused by the ageing process, and above all a means towards ensuring a better quality of life.



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BITTER GOURD (KARAVILA) - A MEDICINAL PLANT AND A VERSATILE VEGETABLE.

R.OB. Wijesekera¹, S. Wickramarachchi¹ and J. Welihinda²

INTRODUCTION.

The popular vegetable *cum* medicinal plant known in botanical terms as *Momordica charantia*, Linn., (Family:CUCURBITACEAE), has been cultivated in Asia and Africa for a long period of time. The fruits are used as a vegetable although it has a bitter, though quite acceptable taste. When cooked with the ubiquitous tomato or cut into slices and deep fried, the bitterness is considerably reduced. It has long been utilized within the Ayurvedic as well as the Unani systems of medicine. It is known as Karaila or Karela in the Indian sub-continent and as pawikkai in the Tamil language. In Sinhala it is Karawila.

The plant is a much branched climbing annual, the stem is angled and grooved and the young tender parts densely hairy. The flowers are lemon yellow. The fruit itself, which is the vegetable, varies from pale greenish yellow to deep green depending on the variety. The seeds turn a bright vermilion colour when ripe with the skin reflecting a yellowish orange hue. The skin is ribbed with numerous triangular tubercles giving it the appearance of crocodile skin. Indeed the fruit itself resembles a miniature model of a toy crocodile. The unripe fruit contains a series of cream or greenish seeds, compressed, oblong and sub-bidentate at base and apex.



According to the traditional systems of medicine, such as Ayurveda and Unani, the bitter fruit is said to be cooling, and has anthelmintic, properties. It is said to be an appetizer, to cure biliousness, blood diseases, anaemia, urinary disorders, and ulcers. [1],[2].

Its use in diabetes was pre-eminent and this has now enabled it to be established as a significant medicinal herb.[3][4][5]

In the southern part of Sri Lanka another member of the same species is seasonally available and is known as Thumba-Karavila. Some regard this species as endemic, though it bears a close resemblance to the variety identified in Kerala as *Momordica dioica*. [6][7]. This variety, as a vegetable, is regarded as a delicacy, and is most popular. Its medicinal properties are not so clearly identified.

THE CHEMICAL CONSTITUENTS OF KARAVILA.

There are a number of chemical constituents isolated singly or in groups from the fruits of *Momordica charantia*. However there is no clear



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indication as to whether the constituent compounds work in unison to provide its established anti-diabetic effect. At least three different groups of compounds present are deemed to possess the potency attributed to the plant. These include a group of compounds of the steroidal, saponin category designated Charantin, an alkaloidal substance called, momordicine,, to which are attributed the characteristic property of suppressing neural response to sweet taste stimuli,; and peptide substances which are supposed to imitate the actions of insulin.[8].

HYPOGLYCAEMIC ACTIVITY OF KARAWILA.

Even though karawila is not mentioned in Sinhala traditional medical texts or in Ayurveda texts as a drug to be used in the treatment of diabetes, many people in Sri Lanka now use it for that purpose.

Investigations regarding the hypoglycaemic effect of karawila suggest that it has the potential to be developed as a hypoglycaemic agent. The ability of Karawila to reduce the fasting blood glucose level and improve the glucose tolerance of rats has been shown [9]. The hypoglycaemic effect of karawila on human subjects has also been demonstrated [10].

Investigations carried out by Sri Lankan scientists has also established that Karawila extract acts in two ways to improve the blood glucose levels. First, it has been shown, through in vitro experiments, that Karawila juice enhances the uptake of glucose by tissues without the intervention of insulin [11]. Secondly, the ability of the Karawila juice to stimulate the secretion of insulin by isolated mouse islets has been shown[12]. In vivo studies carried out subsequently using rats has established that the serum insulin level increases on oral administration of karawila juice [13].

As far as toxicity is concerned, feeding of large doses of Karawila juice to rats has failed to show any toxic effects in rats [13]. However caution must be exercised before recommending the consumption of Karawila juice to a diabetic in the absence of data from detailed clinical trials and toxicity studies on humans.

SOME QUOTED CLINICAL STUDIES ON KARAVILA [14]

Bitter gourd has been used in various Asian traditional medicine systems for a long time. Scientists have now proved these medicinal values.

The best-substantiated use of bitter gourd to date is for people with diabetes mellitus. Researchers have reported that at least 3 different groups of constituents in bitter gourd have hypoglycemic effects in diabetes mellitus.

Laboratory tests suggest that the two proteins in bitter gourd, named as alpha and beta momorcharin might be effective for treating HIV infection.

The discovery of an entity which suppresses the enzyme, guanylate cyclase will be hopeful for people who are suffering from leukemia and for cancer patients, since this enzyme is supposed to have a link with those diseases.

Also recent researchers have focused on the anti-tumour ativity, antiviral activity, immunostimulant effect, antimicrobial effects of bitter gourd and antagonistic effect of the juice to protozoan like *Entamoeba histolytica*.

Clinical studies have reported the low oral toxicity of bitter gourd. Other studies have shown that fruit and leaf extract are safe when ingested orally during pregnancy.

Further studies, however, have cautioned users as the plant may reduce fertility in both males and females and therefore, is not to be used during fertility treatment. The seeds however can have the ability to induce abortions as shown in test rats and mice. The same part has shown the ability to reduce fertility in female animals and lessen sperm production in males.

The juice expressed from the fruit of *Momordica charantia* L. was found to significantly improve the glucose tolerance of diabetic patients[15].

It is believed that the hypoglycaemic effect does not result from an insulin-mediated mechanism[16,17], but from a gluco-corticoid mediated mechanism.

VARIED CULINARY USES OF KARAVILA

In the Sri Lankan cuisine karavila is utilized in several ways. The bitterness is removed by repeated washing in salt water and cooking with the pre-ripe local variety of tomato. Cooking is generally in the form of a curry with the usual ingredients that are used to cook any vegetable curry. Another variation is frequently done in local households. The fruit is cut, rid of the seeds and sliced thin. It is then either deep fried, or sun-dried, and consumed as a salad with lime juice and plenty of red onions sliced into it. The local chefs involved in the major hotels have evolved other variations for western-style preparations. Indian and Filipino cuisine too has many variations of karavila dishes.

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HERBAL HEALING - A THAI TALE OF A SUCCESSFUL VENTURE

- Annissa

The Lampang Herb Conservation Club (HCC) was the brainchild of a retired school teacher Manop Pralomrama. It is open daily and includes a herbal spa, medicines, cosmetic products and seedlings of medicinal and aromatic plants. The club which has over 100 members, cultivates over 150 species of herbs in the Muany district of Lampang. Manop taught farming in the Lampang province for over 20 years in a non-formal education center. In 1997 having retired from teaching he and his wife Bunyarat started the HCC. The pair updated the knowledge of herbs and herbal healing. The HCC has in addition to spa treatment and medicines, a library of information on herbs. A 500 meter walkway which has been laid with stones of various kinds to provide a kind of foot massage, is lined on either side with medicinal plants all complete with their names. They believe that they could influence people to be interested in herbs, propagate knowledge of them and help conserve them. The center grew from a wooden house, and now has an added factory that produces the herbal medicines. The raw materials are produced by members of the HCC. The herbal products are processed and formulated as capsules, pills and teas.

NB :- The example is a splendid one and one which will incur laudable comment from all conservationists, and those believing in the benign efficacy of herbal health care. The Lampang example is a good one for simple entrepreneurs in Sri Lanka to emulate. But most important of all follow the example of Mr and Mrs Pralomrama, who took relevant scientific advice in their venture; Correct botanical authenticity and Good Agricultural Practices are crucial to success.

SOURCE:

Keranjana Karjaatawe
Bangkok Post 4 San 2007

VANILLA – AN ORCHID, WHICH GIVES RISE TO A MOST POPULAR FLAVOUR

Ayesha.

INTRODUCTION.

The culture of “ice cream” may have arisen in Europe, but today, nothing is more universal, on a warm afternoon than the lure of an ice cream. In these modern times when flavours are so varied and so numerous, the original classical vanilla flavour is still the most popular and most widely enjoyed. Vanilla is derived from a plant of the family Orchidaceae, and is of Mexican origin. It is now cultivated throughout the tropics. The botanical name for the widely cultivated variety is *Vanilla planifolia*, but other varieties do exist, but their content of the aroma-giving substance vanillin, is lesser. Vanilla is a climbing vine and needs to be supported on some existing tree or pole.



Vanilla flower

The fruits, - elongated seed pods, often referred to as beans, - results from the pollination of the flower, one flower giving rise to one bean. Growers generally use artificial pollination as insects shy off from the toxic plant. The method of pollination used is one originally devised by a 12 year old slave named Edmund Albius of Reunion..

If left on the plant, the mature seed pod ripens and opens at the end releasing the characteristic aroma of vanilla. The seeds are numerous, tiny like specks, and flavourless. Growers use vegetative propagation for reproduction. Cuttings with six or more leaf nodes with a root opposite each leaf are planted in loose soil at the base of a support.

HISTORICAL

The Spanish following the historic voyages of Christoforo Columbus, first brought vanilla to Europe. The Aztecs used vanilla as a flavouring agent, for their chocolate drinks. In Ancient Mexico the Totonac people, were noted as the producers of the best vanilla. This region, the present-day Veracruz, continued to be the main producers throughout the nineteenth century. The French colonists traded their knowledge of artificial pollination with the cultivators of Mexico for the traditional Totonac knowledge of curing and seasoning the vanilla pods. Soon the vanilla bean was being cultivated in the French colonies such as Reunion, Comoros, and Madagascar, today's main supplier. Vanilla is a tropical crop and grows well in countries such as Madagascar where it is cultivated. The vines are trained using support posts and/or support trees. Natural pollination can only be brought by a species of Mexican bee, and a type of Mexican Hummingbird. They are capable of penetrating the tough membrane that separates the plant's pistol and stamen. When planters first transplanted vanilla, into other countries, they were unable to obtain the beans. In 1836, A Belgian Botanist, Charles Morren recognized that for the flowers to be pollinated some external intervention would be needed. It was after that, that the



successful methods of the slave Edmund Albiun came to be universally applied by cultivators.

GLOBAL PRODUCTION

Presently several countries are on record (FAO statistics) as producers of vanilla. (Table 1.)

TABLE 1

COUNTRY	PRODUCTION (TONNES)	%of Global Production.
Madagascar	6200	59
Indonesia	2399	23
China	1000	10
Mexico	189	-
Turkey	170	
Comoros	140	
Tonga	130	
Belgium	100	
Uganda	70	
Australia	---	



Vanilla beans

Other minor producers are, Uganda, French Polynesia, Reunion, Malawi, Zimbabwe, Portugal Kenya and Guadeloupe. (FAO. <http://faostat.fao.org./site567/DesktopDefault.aspx?PageID=567>. Australia is a newcomer in the trade.

The Coca-Cola Corporation is the largest consumer of natural vanilla. The introduction of synthetic vanilla dramatically hit the producers of natural vanilla for a time but later trends restored the market for natural vanilla. Weather patterns, Typhoons and political vicissitudes, resulted in vanilla prices soaring upwards to an astonishing level of US\$.500 per kg.in 2004. By the mid 2005 prices leveled again at around US\$ 40-50 per kg.

PROCESSING AND CURING.

The method of processing of the vanilla pods is an elaborate one and experience in the art is a key issue in the production of quality material. The individual steps of the production process are as follows:

* Harvesting of the Pods.

The pods are harvested when still green. They are then odourless.

* "Killing" or Inactivation of vegetative tissue

Several methods are used. Direct sun drying, Hot water blanching, Oven heating, Or Freezing.

* Sweating / Curing

The pods are boiled and held at 45-60C, for 7-10 days in cloth covered containers. This initiates the curing process by enzyme action.

* Drying / Curing

The next stage of the curing process is drying in subdued sunlight or even shade with strong air-movement. This may take weeks. When the maximum aroma development has been reached (loss of about 60-70% of original moisture content), the curing process is complete.

* Grading

The pods are sorted out and graded according to aroma, size, and quality, and particular market demands.



Vanilla vine

There are a few simple guidelines for the selection and grading of vanilla beans. Premium beans from whatever origin always bear a rich aroma, and are oily looking. Stale and brittle beans are generally devoid of the rich characteristic aroma of the premium quality beans.

The beans known by the trade as Bourbon beans, are long and slender with a rich brown colour. They have a strong aroma and a leathery, shiny skin. Inside the pods there are an abundance of the tiny speck-like seeds. Bourbon beans from Madagascar and the Comoros are described as having, " a strong aroma of vanilla, bearing a creamy hay-like and sweet overtones".

Mexican beans are considered by the trade to be very similar to Bourbon beans, while possessing "a more mellow, smooth quality and a spicy woody fragrance."

Tahitian beans which are derived from *Vanilla tahitiensis*, are stouter in shape and contain a higher moisture and oil content. They contain fewer seeds, and the pod casing is thinner. Their aroma is described in the trade as " fruity and floral, with the overtones of cherries, liquorice, prunes or wines".

PRODUCTS FROM THE VANILLA POD

The main products from the vanilla pod are:

- * The whole pods after curing and drying
- * Powdered (ground) pods, pure or with sugar or starch.
- * Extract of vanilla - in aqueous alcoholic solution
- * Vanillin powder

Synthetic vanilla is also used in the Food and Beverages industry but the natural vanilla which is superior is generally preferred. Natural vanilla is however vastly more expensive. A common adulterant for vanilla is the chemical coumarin which is a constituent of the Tonka Bean. But the toxic nature of coumarin, prevents its usage in foods.

Vanilla beans once cured and dried will keep almost indefinitely if stored under cool dry conditions. In warm tropical conditions they may best be wrapped in waxed paper and stored in a plastic box. Bourbon beans may, sometimes on storage, develop a "givre", which is a frosting of natural crystals of the constituent vanillin which seeps out of the pod. This is indicative of a good quality bean with a high content of the natural

vanillin. This givre need not be mistaken for mildew. On exposing them to direct sunlight they will reflect the light in the manner of true crystalline substances.

Vanilla beans ground, or comminuted to a fine powder, are a valuable product from the industrial viewpoint. They are better incorporated into large scale bakery products.

Another similar product is the powdered vanilla which is actually an extract of vanilla ribbon sprayed onto a carrier such as sucrose.

It is recorded that there are over 150 varieties of vanilla. Of these only two types are commercially identified, namely Bourbon, and Tahitian.

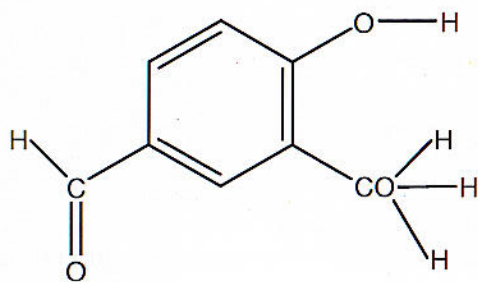
Vanilla extracts are traditionally made by percolating or macerating chopped vanilla beans with food grade ethyl alcohol and water. (A 35-40% mixture is recommended.) The temperatures are not allowed to rise beyond low ambient levels, ie. (18-28 C.), in order to preserve the high volatile aroma components. Some manufacturers believe that heat is needed to gain complete extraction. A time frame of 40-60 hours is generally needed for complete flavour extraction, and after this the extract is allowed to season together with the beans for sometimes weeks. The extract is then filtered into a storage vessel, in which the bulk amber coloured liquid remains for bottling. Modern methodology depends on percolating the macerated beans with the aqueous alcoholic mixture to obtain a saturated extract.

Vanilla extracts will continue to develop body and depth for about two years after which they stabilize at complete seasoned maturity. They will keep indefinitely if stored in a cool dark place. Refrigeration of the extracts are not needed, as the vanillin may crystallize.

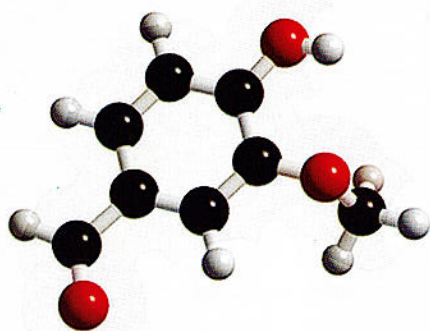


CHEMISTRY .

The cured vanilla pods have a large variety of compounds within them. However, the main aroma-giving compounds are Vanillin, which is : 4-hydroxy-3-methoxy-benzaldehyde. (I), and ethyl vanillin, 4-hydroxy-3-ethoxybenzaldehyde.. Detailed studies on the chemistry of vanilla, revealed the presence of over 250 compounds, albeit some of them, in only trace quantities. All of these presumably combine to give vanilla its unique flavour. Ethyl vanillin is stronger in aroma than vanillin itself but the overall flavour of an extract of natural vanillin combines the effect of all of the compounds present in the cured pods.



Chemical structure of VANILLIN.



Molecular model of VANILLIN

USES

Although the Aztecs used vanilla both as a flavouring agent as a medicine today only the former use prevails. Flavouring of foods is achieved by the use of any of its various products, as well as by the use of cheaper synthetic substitutes. The widest use of vanilla is in the flavouring of ice-creams, and bakery products. Vanilla ice-cream is the most popular flavour.

The perfumery and fragrance industry also uses vanilla in a very pure form. Many cosmetic products made with natural vanilla are popular and are also used by aromatherapists. In the old European medical literature vanilla is described as an aphrodisiac, and a remedy for fevers. These have not been scientifically established.

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Did you know?

Globalisation in the 19th Century was the Prelude to Modernity.

From 1815 to 1914, the key feature was the development of the Global market in subsistence goods, instead of luxury items, and this was symbolised by the poem by Britain' poet laureate John Masfield "**Cargoes**" , which runs as follows:

*Quinquireme of Nineveh from distant Ophir,
Rowing home to haven in sunny Palastine,
With a cargo of ivory, And apes and peacocks,
Sandalwood, cedarwood, and sweet white wine.*

*Stately Spanish galleon coming from the Isthmus,
Dipping through the Tropics by the palm green shores,
With a cargo of diamonds, emeralds and amethysts,
Topazes, **cinnamon**, and gold moidores.*

*Dirty British coaster with a salt caked smoke stack,
Butting through the channel in the mad March days,
With a cargo of Tyne coal, Road rails, pig-lead,
Firewood, iron-ware, and cheap tin trays.*

GERANIUM - AN INDUSTRIAL PROSPECT

Annissa.

The aromatic plant, (*Pelargonium graveolens*), popularly known as Geranium is already cultivated in several developing countries for its essential oils. It generates a rose-scented oil which has a consistently high demand. It is used in the Flavour and fragrance industry for cosmetic products and toiletries as well as for confectioneries. Citronellol and Geraniol are the major constituents of the essential oil of geranium and is responsible for the aroma which is reminiscent of fresh roses. The value of the oil in commerce is dependent on the relative amounts of these two compounds present in the oil.

In India it is a well established crop and several Institutions such as the Central Institute of Medicinal and Aromatic Plants have conducted valuable research on its agrotechnology as well as the study of the compositional variations of the oil. In Madagascar too such research is ongoing, and the oil is exported to industrial companies.



It is an ideal crop for small-holder farmers, provided a central distillation station with authentic technological features is available in close proximity to the site of the plantations. The oil is of high value.

The essential oil is obtained by the steam-distillation of the leaves and the aerial parts of the plant which can be periodically harvested. Field located stills such as is used in Sri Lanka for the distillation of Cinnamon leaf and Citronella can be utilized for this crop as well. Both the yield of oil as well as the quality of the oil is crucial for the economic viability of the crop as an industrial prospect.

Research conducted recently at the CIMAP (Lucknow), a unique institution dedicated to research in this area, combined agro-technology with the right genotype selection, chemical process technology for essential oils, and this has

enabled the institution to develop parameters for viable production. They have successfully established a chain from plant material to marketable products, in other words from farm-gate to market linkage. Research is the key to the success of the industrial venture. CIMAP has shown how research with a multi-disciplinary approach can get translated to successful business, enhanced incomes to farmers, employment opportunities, and entrepreneurship. It has also led to enhanced rural upliftment. It has borne out the significance of mission oriented R&D. This pathway must be commended to the local scenario where usually there is only hit-and-miss efforts sans any research or at best some remote research carried out in an institution which provides it as a paid service without dedicated effort. Entrepreneurs in Sri Lanka are apt to undervalue or ignore the role of research and the resulting endeavour is a failure. We are often unable to compete in the international markets. The cultivation of geranium commends itself to the local scenario for several very good reasons. The crop will grow well here, as, experiments conducted in the 1970's showed. The technologies are also available here and there is a growing essential oils industry. There are companies that can provide the technological inputs and have the marketing expertise. Geranium will indeed grow in local conditions, but where best, how best, must be determined by research with chemistry, biology, and agro-technology applied in goal oriented fashion. This has been carried out for example in Madagascar, where now, Geranium oil is distilled on a field scale and exported.



Photo : Wijesekera

Field Distillation of Oil of Geranium in Madagascar

OLD SPICES THE NEW HEALTH FOODS - CINNAMON AND CLOVES IN THE CONTROL OF TYPE 2 DIABETES

- *Keara*

At a meeting on Experimental Biology (April 4th 2006) held in San Francisco, two new studies were presented which suggest that Cinnamon and Cloves boost insulin function while lowering the level of cholesterol in the body.



The first study reinforced previously reported research (vide Digest Vol 1 Nos 1 & 2), indicating that a quarter teaspoon of the extract of Cinnamon bark, taken twice daily, can stimulate insulin-like activity, while lowering triglycerides, cholesterol, and glucose levels by 10 to 30 %. This communication also reported that the same doses of cinnamon may also alleviate inflammatory conditions such as arthritis.

A second study reported that a few grams of cloves per day would deliver a similar therapeutic effect. Both spices would help diabetic and pre-diabetic patients.



Dr. Richard Anderson and his team at the Nutrient Requirements and Functions Laboratory at the USDA, Beltsville, Md. have studied the effects of consuming one to six grams of cinnamon extract per day. (One gram of extract is about the equivalent of half a teaspoon of powdered cinnamon bark). The team found that cinnamon increased the levels of three important proteins crucial to boosting normal insulin promoting processes, a healthy inflammatory response, and efficient glucose transportation throughout the body. Dr. Anderson concludes: "If you can improve insulin function, the cholesterol goes down, triglycerides go down, glucose goes down, and all this goes towards the alleviation of type 2 diabetes." Clinical trials, designed to understand the mechanism of how cinnamon functions in the control of Type 2 diabetes, are now ongoing.

SOURCES:

Alan Mozes: Health Day Reporter April 5. 2006

ESSENTIAL OILS IN THE TREATMENT OF MALODOURS ASSOCIATED WITH NECROTIC ULCERS IN CANCER PATIENTS.

- *Annissa.*

Malodorous necrotic ulcers in cancer patients cause concerns resulting in social isolation and poor quality of life. Current medications and topical therapies have proven inadequate in their ability to reduce foul smells to acceptable limits according to the authors of a recent publication. Positive experience is here reported, by using essential oils on patients with incurable head and neck cancer and associated malodorous necrotic ulcers.

All patients in the study reported were treated with a standard course of therapy with oral or systemic antibiotics. Ulcers were additionally rinsed twice daily with an anti-bacterial mixture of essential oils (KMPT 70) of composition as follows:

Per gram contains:

Eucalyptus Oil	70mg
Maleleuca Oil	50mg
Lemon grass Oil	45mg
Lemon Oil	45mg
Clove Oil	07mg
Thyme Oil	03mg

-in 40% Ethanol.

The mixture had an acceptable smell and was popular. The researchers observe that the essential oils proved, in the clinical trials, to have both anti-bacterial, as well as anti-inflammatory effects. The topical use promoted a degree of re-epithelialization of neoplastic facial ulcers. The authors further report that "when used topically, essential oils appear to have low toxicity and great efficacy in reducing the morbidity associated with neoplastic ulcers of the face. This makes essential oils or their active components potentially valuable as an additive therapy in cancer treatment"

No allergic reactions were observed.

The researchers recommend a two-fold strategy for the treatment of extra-oral suppurative cancer ulcers as follows:

1. A 5-10 day course of systemic antibiotic cover (600mg clindamycin per os, twice daily. This is standard in palliative care.
2. The ulcers be rinsed with 5ml with the eucalyptus based oil mixture twice daily. The mixture used was KMPT 70 -Klonemax, Central Trilba, NSW, Australia.
3. When the smell ceases the antibiotic need not be extended.

FURTHER REFERENCES:

1. Allan P.(2001) Tea tree Oil. The science behind the antimicrobial hype. *Lancet* 13,358 9289, 1225.
2. Cox S.D. et al: The mode of antimicrobial action of tea tree oil. *J.Appl.Microbiol.*, 88(1), 170-5.

SOURCE:

P.H.Warnke et al. *Phytomedicine* 13, (2006),463-467.

AYURVEDA KNOWLEDGE IN A DIGITAL LIBRARY.

The Ayurvedic multi millennia old medical system is being rapidly embraced worldwide as complementary even as an alternative, to the modern allopathic conventional system. This places an additional strain on the supplier nations in respect of plant resources. Rare plant species in South and Southeast Asia are fast disappearing amidst concerns loudly expressed by bodies such as the IUCN, and even national conservationists.

Dr. V. K. Gupta, Director of India's National Institute of Science Communication and Information (NISCI) Resources in New Delhi is quoted (Time. 2006 Aug 7-14 pgs 58-59) as saying

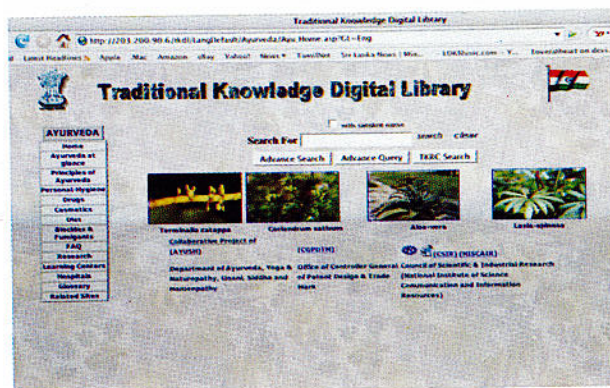


"Ayurveda is the accumulation of thousands of generations worth of knowledge. But we have to modernize it in order to mine it."

In Ayurveda, the medicinal properties of herbs are exhaustively documented in the literature. How each plant ingredient is identified, how it should be harvested and how prescriptions of many plants are chosen and prepared into medicines are among the valuable information recorded. The synergistic effect of some plants on others is also recorded. These medical texts were originally written in Sanskrit and some have been translated to English and other modern languages.

The information is presently being scanned by NISCI with a view to developing a Traditional Knowledge Digital Library (TKDL). So far over a 140000 recorded traditional treatments have been scanned and uploaded to an online database, and translated to English, French, German, Spanish, Japanese and Hindi. The database (TKDL) is a 2m dollar project and has been ongoing for 5 years. It will provide a means of introducing the knowledge to the world, and will be regarded in modern parlance as "prior knowledge", which then cannot be patented.(The attempt to patent the biological effect of a plant spurred this effort)

There are already several multi volume compendia as Indian Medicinal Plants, but one serious factor is the endangerment of the plants themselves. " The demand for plants is accompanied by



unprecedented deforestation and unsustainable harvesting. Our medical resource base is shrinking before our eyes." -laments Indira Balachandran, author of a compendium on medicinal plants.

One of India's foremost Ayurvedic Institutions Arya Vaidya Sala Koltakal together with Dr. Balachandran runs a multidisciplinary Research Guide to foster means of saving plant species. Using modern biotechnological methods of micro propagation may be an effective means of ensuring that the plants, so valuable will not be rendered extinct.

SOURCE :

Time(2006), Aug7-14, pgs 58-59

TOMATO EXTRACT REDUCES BLOOD PRESSURE IN HYPERTENSIVE PATIENTS.

The American Society of Hypertension's 20th Annual Scientific Meeting & Exposition provided additional evidence that tomato extract helps lower blood pressure in hypertensive patients.

In a random double blind, placebo controlled cross over trial, Dr. Eslher Paran M.D. evaluated the effect of tomato extract on blood pressure, endothelial function and plasma lycopene levels in grade 1 hypertensive patients. A daily intake of a tomato extract preparation available as soft gel capsules was linked to a significant reduction in systolic and diastolic blood pressure after eight weeks of supplementation of a normal diet.

These results confirm two previous studies on natural tomato extract, published in the American Heart Journal (2006).

The results are attributed the antioxidant activity of the extract and the increase on nitric oxide.



NOMENCLATURE OF CHEMICALS AND A CUP OF TEA.

All names are perhaps designed to assign attributes to the objects or concepts they describe.

The great post-Renaissance chemist Antoine Lavoisier (1743-1794) initiated a naming system. He stated: "A well composed language will bring in its train a necessary and immediate revolution in the method of teaching. The logic of sciences is thus essentially dependant on their language"

Of course some of Lavoisier's concepts soon became dated, and have come to be completely replaced by modern systematic nomenclature based on molecular structure. As a result they are only intelligible to those in the know. This hardly includes the lay public. Even the chemical nomenclature of simple compounds, though clear to chemists, would be incomprehensible to most folk. Even natural products, chemicals derived from natural sources, if identified in terms of chemical nomenclature would appear quite unfamiliar to the laymen.



Derek Lohmann in "Sense about Science" cites this extreme example.

"If someone came onto your house and offered you a cocktail of : butanol, iso amyl alcohol, hexanol, phenyl ethanol, tannin, benzyl alcohol, caffeine, geraniol, quercetin, 3- galloyl epicatechin, 3-galloyl-epigallocatechin, and inorganic salts, would you take it? It sounds pretty ghastly. If instead you were offered a cup of TEA, you would probably take it."

SOURCE:

Richard van Noarden in Chem. World(2006),4, p80

The Digest Mail Bag

Letter 1

Dear Sir or Madam,

CABI recently reviewed your publication:

Title: LINK Natural Products Digest
ISSN: 1391-8869

for potential inclusion in the CAB Abstracts/
Global Health databases. Having assessed the publication, we found it extremely useful for news and current topics and would very much like to receive the title on a regular basis if possible.

Claire Williams
Accessions Manager
CABI
PO Box 100, Wallingford
Oxon OX10 8DF, UK.

Letter 2

Addressed to the editor,

I received your new edition of the Link Digest today by e-mail. Going through your table of contents my eye got caught with your knowledge review on "The genesis of aromatherapy" by VIKRAMA. As you know, since years I am leading Europe biggest aromatherapy association FORUM ESSENZIA with approximately 1200 professional members from more than 15 countries from Europe, America and Asia. Twice yearly we publish our journal FORUM with up to date research and review findings on aromatherapy, aromacare and aromaculture for our membership.

I kindly ask you whether we can access an electronic copy of your article by VIKRAMA. I would like to propose to my editorial board of FORUM to review this article and to ask for permission (from you) to translate this article into German for publication in our FORUM journal. I consider your article as a very interesting view point on aromatherapy starting in Sri Lanka and integrating European and American publications and thoughts.

Unfortunately you are not giving reference to our homepage www.forum-essenzia.org, most probably because we publish our journal and homepage in large parts in German language only. We should consider the missing references to Forum Essenzia in your article as a good reason to devote more resources to publish more in English Language.

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NOTE TO POTENTIAL CONTRIBUTORS

Link Natural Products Digest

The DIGEST is a popular publication, albeit a scientific one, dedicated to medicinal plants, herbal healthcare and personal care products, essential oils, aromatherapy, herbal therapy and Ayurveda, and related healthcare systems. It is published bi-annually.

The DIGEST welcomes contributions in English in the category of reviews, brief communications, ethno reports in brief, phytomedical and phytochemical communications, book reviews, and reports on safety and efficacy of phytomedicines.

Potential authors may consult the Editor-in-Chief prior to dispatch of communications, reports and reviews.

Authors may submit manuscripts by post or e.mail to :

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Please forward to the editor one original hard copy and a soft copy in the form of a PC compatible diskette (Microsoft Word).

All manuscripts must include the following :

Title (in brief), author(s), address(es) of affiliated institutions. The authors' names must include initials and/or forenames as required in publication. All papers and submissions are subject to peer review, but the editors reserve the right to regulate the content. No proofs can be sent prior to publication. The decision of the Editor-in-Chief will be final in all matters.

