Clinical Use of Essential Oils and Activated Essential Oils

Dan Kenner, Ph.D., L.Ac.
Essential Oil of Lavender
The Ancient Egyptians Used Essential Oils
Essential Oils Preserve Tissues and Organs
Urns of Aromatic Plants were Stored in Caves near the Dead Sea
Queen Esther and Oil of Myrrh
Crown Chakra
The Quest for Access to the Spices of the Orient
The Black Plague (Bubonic Plague)
Medieval Physician During the Plague
The Legend of the Four Thieves
René-Maurice Gattefossé, M.D.
Jean Valnet, M.D.
Isoprene combines to create terpenes. All essential oils have terpenes, which have strong penetrating powers. Complex terpenes, such as triterpenes and polyterpenes have interesting properties.
Steroid Structure Develops from Terpenes

Short terpenes have a linear structure but when they lengthen into triterpenes and larger they fold into a structure similar to the steroid molecular type.
Table 1: Antimicrobial activity of the compound geraniol as an isolated compound vs. geraniol, chemotypes of Thyme and Geranium

<table>
<thead>
<tr>
<th>Category of Bacteria</th>
<th>Species of Bacteria</th>
<th>Geraniol (100% geraniol)</th>
<th>Geranium (42% geraniol)</th>
<th>Thyme (22% geraniol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gram Negative</td>
<td>E. coli</td>
<td>++</td>
<td>0</td>
<td>++++</td>
</tr>
<tr>
<td></td>
<td>Pseudomonas</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td></td>
<td>Klebsiella</td>
<td>++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td></td>
<td>Enterococcus</td>
<td>++</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Gram Positive</td>
<td>Staphylococcus</td>
<td>++</td>
<td>+++</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Streptococcus</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
</tbody>
</table>
Aromatograms of Oil of Savory
A MICROBICIDAL EFFECT FROM ESSENTIAL OILS IS PRODUCED DESPITE THE FACT THAT THE CONCENTRATION *IN VIVO* IS FAR TOO LOW TO KILL MICROORGANISMS BY DIRECT CONTACT.
ESSENTIAL OILS ARE NOT NECESSARILY SPECIFIC TO CERTAIN MICRO-ORGANISMS IN VIVO, REGARDLESS OF HOW THEY BEHAVE IN A GLASS DISH.
THE SENSITIVITY OF THE MICROBE TO THE ESSENTIAL OIL IS A FUNCTION OF THE HOST ORGANISM, i.e., THE CONDITION OF THE PATIENT'S TERRAIN.
THERE IS NO PHENOMENON OF ACQUIRED RESISTANCE OF MICROORGANISMS TO ESSENTIAL OILS. FOR A GIVEN MICROBE ISOLATED AT A GIVEN MOMENT, THE ESSENCE WILL RETAIN ALL OF ITS EFFICACY.
Cajeput

Especially good for problems in the throat. Used for respiratory infections when there are fever and chills, sluggish bowel, and moderate perspiration. It softens hardened secretions and can relieve pain of otitis media taken orally or used locally in the ear.

Principal indications:
Bronchitis, enteritis, dysentery, asthma, nervous vomiting, chronic laryngitis and pharyngitis, dermatoses, cystitis, urethritis, menstrual pain, gout, rheumatism

Physiological properties:
* sympatholytic
* parasympatholytic
* oxytocic
* uterolytic (pelvic decongestant)
Eucalyptus

Good for clogged sinuses and sinus headaches, high fevers, complications of measles, pulmonary bacterial and viral infections

Principal Indications:
Pulmonary infections, bronchial infections, hemoptysis, colds, influenza, complications of measles, diabetes, arteriosclerosis, hypertension, febrile disease, diabetic arterial hypertension and arteriosclerosis, neuralgia, malaria, rheumatism, influenza, diphtheria

Physiological properties:
* hypoglycemiant
* astringent
* hemostatic
* antispasmodic
Lavender

Volumes could be written on the uses of lavender. Its anticoagulant properties are the only precaution to be observed. It is a very gentle and effective cleansing agent for virtually all tissues of the body, from the skin to the vaginal mucosa. Despite its gentle effect, it is quite an effective antibacterial agent.

Principal indications:
Hypertension, arrhythmias, tachycardia, excitability, anxiety, intestinal spasms, headaches, bronchitis, common cold, pulmonary infections, pertussis, depression

Physiological properties:
* central nervous system sedative
* sympatholytic
* parasympatholytic
* antispasmodic
* vasodilatator, cardioregulator
* cholagogue

Precautions: Overdose can cause nausea, diarrhea, hypotension. Has anticoagulant properties.
Lemon

Lemon clears up "dampness" and blood stasis. It is used for all applications of dissolving mucus or hyperviscosity of the blood, even lithiases of the biliary or urinary tract. It is also a powerful disinfectant and has been used to treat typhus, diphtheria and malaria.

Principal indications:
Biliary dyskinesia (also lithiases), gastric hyperacidity, gallstones, venous pathology, high cholesterol, rheumatism, arthritis, jaundice, vomiting, asthma, bronchitis, gout, rheumatism, fevers
Myocardial congestion, arterial hypertension, arteriosclerosis, hyperviscosity of the blood, hemorrhage, fevers, leukopenia, acute infectious diarrhea, pancreatic insufficiency, obesity, malaria, anorexia, gastric hyperacidity, gastric ulcer, asthma, bronchitis, pulmonary tuberculosis, typhus, asthenia, anorexia, bronchitis, asthma, diphtheria, urinary lithiases (uric), osseous tuberculosis, gout, rheumatism

Physiological properties:
* sympathomimetic
* cholagogue
Niaouli (MQV)

Niaouli is a respiratory and urinary disinfectant with a particularly strong influence on the nasal and sinus mucous membranes. It's effective for drying up watery secretions in the respiratory tract.

Principal indications:
- sinusitis
- rhinitis
- pharyngitis
- bronchitis
- pertussis
- dysentery
- intestinal parasites
- cystitis
- urethritis

Physiological properties:
* epitheliogenic
* parasympatholytic
Oregano

One of the most powerful anti-infectious and antiparasitic agents, it's also effective for fluidifying bronchial secretions.

Principal indications:
- Acute or chronic bronchitis, asthma, tuberculosis, diarrhea, amenorrhea,
- sluggish digestion, indigestion, aerophagia, gastric or intestinal spasms,
- anorexia nervosa, rheumatic pain, amenorrhea, intestinal parasites

Physiological properties:
* antispasmodic
* sympatholytic
* parasympathomimetic

Precautions: do not use externally except as a rubefacient.
Ravintsara

Used mostly for viral infections, it is also an excellent lymphatic stimulant topically or internally. It clears "wind."

Principal indications:
viral infections, hepatitis, herpes, varicella, shingles (both topically and internally), ophthalmic herpes, chronic fatigue, influenza, neuromuscular pain and fatigue, irregular menses, amenorrhea, dysmenorrheal, cardiac arrhythmias, angina pectoris, nervous insomnia, cervical lymphadenopathy, rhinitis, sinusitis, pharyngitis, bronchitis, dyspnea, colitis, viral enteritis

Physiological properties:
* pituitary stimulant (ACTH, gonadotrophins, prolactin, oxytocin)
* choleretic
* expectorant
* cardiotonic
* antispasmodic (neuromuscular)
Savory (*Satureja montana*)

**IMMUNE:** immunostimulant; **ID:** antibacterial: gram +, gram -, antifungal, antiviral, antiparasitic, antiprotozoal; **GI:** eupeptic, carminative, astringent, rebalances intestinal flora; **ANS:** sympathomimetic beta > Alpha; **ENDO:** Cortico: adrenal cortex stimulant (general), Gonado: increases serum androgens; Ortho: anti-rheumatic; **NEURO:** anti-neuralgic

**USE:** spasmodic colitis, gastroenteritis, diarrhea, candidiasis, all infectious disorders, neurasthenia, depression, asthma, rheumatic disorders, topical infections

**CONTRAINDICATIONS:** pregnancy, nursing, hemorrhoids, hemorrhagic disorders, Crohn’s (esp. rectal administration of EO), Relative: adrenal over-stimulation, hypertension (especially people taking beta blockers), gastritis, hepatic failure.
Thyme (\textit{Thymus vulgaris})

**IMMUNE:** anti-infectious (ENT, pulmonary, intestinal, pharyngeal, urinary, genital, cutaneous), antifungal, antibacterial (gram +, gram -), antiviral, anti-herpetic, wide spectrum anthelminthnic, vermifuge; immune stimulant; antioxidant, anti-inflammatory; febrifuge; **PULMONARY:** Mucolytic, expectorant, antitussive; **DIGESTIVE:** neurotropic digestive carminative, eupeptic, choleretic, antigastritic; **ANS:** parasympatholytic (strong vagolytic)

**ENDOCRINE:** Adrenal: adrenal cortex stimulant, Gonad: emmenagogue, binds to estrogen, progesterone receptors; **NEURO:** Analgesic **NEUROMUSCULAR:** spasmolytic; **RENAL:** volumetric diuretic; **USE:** dysmenorrhea, paralytic fear, spasmodphilia, hypotension, infections, digestive disorders, rheumatic disorders

**CONTRAINDICATIONS:** Pregnancy, glaucoma, hyposecretory states
Sage (*Salvia officinale*)

Astringent, choleretic, hepatoprotective, stimulates endocrine and exocrine pancreas (alcohol extract contains zinc, nickel and cobalt, which aid in pancreatic support)

Antimicrobial: fungicide, bactericide, bacteriostatic, activates thymus phagocytosis, supports adrenal and thyroid function

Endocrine: estrogenic, thyroid stimulant, prolactin antagonist, mild sympathomimetic (β), volumetric diuretic. *Salvia officinalis* is more anti-mitotic (anti-cancer) than *Salvia sclarea*.

CONTRAINDICATIONS: There is a possible interaction with anti-epileptic medications because it contains ketones like thujone.
TI TREE (Melaleuca alternifolia)

Ti tree, also called “tea tree oil” and “oil of Melaleuca,” has become a popular item in natural food stores and is used in whole lines of products from toothpaste to housecleaner. It is an excellent antifungal, but also antibacterial and antiviral. It is especially helpful for fungal infections of the skin.

Principal indications:
Skin infections - tinea, ringworm, herpes; vaginitis; urinary tract infections

Physiological properties
* epitheliogenic
LYME DISEASE

Flu-Like Symptoms
- Headache
- Fatigue
- Fever
- Chills
- Sore Throat
- Muscle Aches

Hearing Loss

Paralysis of Face

Heart Complications
- Rapid or Slow Heart Rate
- Chest Pain

Syncope, Palpitations, Dyspnea

Hot, Swollen, Painful Joints

Rash at the Site of the Tick Bite - Itching

Psychological Complications (Long Term)
- Depression
- Dementia

Insomnia
Lyme Co-infections

- Bartonella
- Ehrlichia/Anaplasma
- Babesia
- Fungal infections
- Viral infections
- Mycoplasma
- Other bacteria and parasites
Components of Treatment

- Disinfection: cleansing terrain, destroying pathogenic microbes
- Drainage: especially liver, heavy metals
- Symptomatic treatment: pain, brain fog, fatigue
- Regulating the terrain: Neuroendocrine regulation, acid-base regulation
- Boosting immunity (the first four will probably do that)
- Tissue repair: Healing membranes, especially gut; nourishing the tissues
# SIX-PHASE TABLE

<table>
<thead>
<tr>
<th>Organ system</th>
<th>Humoral Phases</th>
<th>Matrix Phases</th>
<th>Cellular Phases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin</strong></td>
<td>Excretion Phases</td>
<td>Inflammation Phases</td>
<td>Deposition Phases</td>
</tr>
<tr>
<td>Nervous system</td>
<td>Episodes of sweating</td>
<td>Acne</td>
<td>Naevi</td>
</tr>
<tr>
<td>Sensory System</td>
<td>Difficulty concentrating</td>
<td>Meningitis</td>
<td>Cerebrosclerosis</td>
</tr>
<tr>
<td>Locomotor System</td>
<td>Tears, otitis media</td>
<td>Conjunctivitis, otitis media</td>
<td>Chalazion, cholesteatoma</td>
</tr>
<tr>
<td>Respiratory Tract</td>
<td>Joint pains</td>
<td>Epicondylitis</td>
<td>Exostosis</td>
</tr>
<tr>
<td>Cardiovascular System</td>
<td>Cough, expectoration</td>
<td>Bronchitis, acute</td>
<td>Silicosis, smoker's lung</td>
</tr>
<tr>
<td>Gastrointestinal System</td>
<td>Functional heart complaint</td>
<td>Endocarditis, pericarditis, myocarditis</td>
<td>Coronary heart disease</td>
</tr>
<tr>
<td>Urogenital System</td>
<td>Heartburn</td>
<td>Gastroenteritis, gastritis</td>
<td>Hyperplastic gastritis</td>
</tr>
<tr>
<td>Blood</td>
<td>Polyuria</td>
<td>Urinary tract infection</td>
<td>Bladder stones, kidney stones</td>
</tr>
<tr>
<td>Lymph System</td>
<td>Reticulocytosis</td>
<td>Leucoectasis, suppuration</td>
<td>Polycythemia, thrombocytosis</td>
</tr>
<tr>
<td>Metabolism</td>
<td>Lymphedema</td>
<td>Lymphangitis, tonsillitis, lymphadenitis</td>
<td>Lymph-node swelling</td>
</tr>
<tr>
<td>Hormone System</td>
<td>Electrolyte shift</td>
<td>Lipid metabolism disturbance</td>
<td>Gout, obesity</td>
</tr>
<tr>
<td>Immune System</td>
<td>Globus sensation</td>
<td>Thyroiditis</td>
<td>Goitre, adenoma</td>
</tr>
<tr>
<td>Immune System</td>
<td>Susceptibility to infection</td>
<td>Weak immune system, acute infection</td>
<td>Weak reactions</td>
</tr>
<tr>
<td>Psyche</td>
<td>Alteration*</td>
<td>Reaction*</td>
<td>Fixation*</td>
</tr>
<tr>
<td>Psyche</td>
<td>Functional psychological disturbance, nervousness*</td>
<td>Reactive depressive syndromes, hyperkinetic syndrome</td>
<td>Psychosomatic manifestation, neuroses, phobias, neurotic depression</td>
</tr>
</tbody>
</table>

*Phase nomenclature in psychology.
<table>
<thead>
<tr>
<th>Tissue</th>
<th>Excretion phases</th>
<th>Reaction phases</th>
<th>Deposition phases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ectodermal</td>
<td>Perspiration,</td>
<td>Furuncles,</td>
<td>Atheromas,</td>
</tr>
<tr>
<td>d) epidermal</td>
<td>ear wax, sebum</td>
<td>erythema,</td>
<td>warts,</td>
</tr>
<tr>
<td>b) orodental</td>
<td>Saliva, colds,</td>
<td>dermatitis,</td>
<td>keratosis,</td>
</tr>
<tr>
<td>c) neurodermal</td>
<td>Gastrointestinal</td>
<td>Stomatitis,</td>
<td>clavi etc.</td>
</tr>
<tr>
<td>d) sympathetico-</td>
<td>secretion etc.</td>
<td>rhinitis,</td>
<td></td>
</tr>
<tr>
<td>dermal</td>
<td></td>
<td>tinnitus</td>
<td></td>
</tr>
<tr>
<td>2. Entodermal</td>
<td>Gastro-intest.</td>
<td>Pharyngitis,</td>
<td>Polymyelitis</td>
</tr>
<tr>
<td>a) mucodermal</td>
<td>Secretion,</td>
<td>laryngitis,</td>
<td>In febrile stage,</td>
</tr>
<tr>
<td>b) organodermal</td>
<td>toxins with fæces</td>
<td>entritis,</td>
<td>herpes zoster</td>
</tr>
<tr>
<td>3. Mesenchymal</td>
<td>Intestinal</td>
<td>Parotitis,</td>
<td>Benign neumomas,</td>
</tr>
<tr>
<td>a) interstitial</td>
<td>substance,</td>
<td>pneumonia,</td>
<td>neumalgalgal etc.</td>
</tr>
<tr>
<td>b) osteodermal</td>
<td>Maturation,</td>
<td>hepatitis,</td>
<td></td>
</tr>
<tr>
<td>c) hemodermal</td>
<td>Blood and antibody</td>
<td>cholangitis etc.</td>
<td></td>
</tr>
<tr>
<td>d) lymphodermal</td>
<td>Lymph etc.</td>
<td>Abscess,</td>
<td>Polyhydramnios</td>
</tr>
<tr>
<td>e) carodermal</td>
<td>Liqueur, synovia</td>
<td>phlegmon,</td>
<td>Membrane,</td>
</tr>
<tr>
<td>4. Mesodermal</td>
<td>Urine with metallic</td>
<td>carbuncles etc.</td>
<td></td>
</tr>
<tr>
<td>a) nephrodermal</td>
<td>End products</td>
<td>Abscess,</td>
<td></td>
</tr>
<tr>
<td>b) serodermal</td>
<td>Secretions of</td>
<td>phlegmon,</td>
<td></td>
</tr>
<tr>
<td>c) germunodermal</td>
<td>the serous</td>
<td>carbuncles etc.</td>
<td></td>
</tr>
<tr>
<td>d) mesodermal</td>
<td>Lactic acid,</td>
<td>Pleurisy,</td>
<td></td>
</tr>
</tbody>
</table>


Figure: Tonsilitis (reaction phase)

- **Tonsilitis**
- **Polyarthritis**
- **Nephrilis**

Lingering illness

- **Impregnation phases**
- **Degeneratory phases**
- **Neoplasm phases**

- **Congenital diseases**

- **Sarcoidosis**
- **Scleroderma**
- **Diabetes**
- **Agranulocytosis**
- **Nephrosis**

- **Histological section**

- **Lymphocytic infiltration**
- **Myeloid infiltration**
- **Anjiosarcoma**
- **Chondrosarcoma**

Essential Oils and Phytochemicals Destroy (Reprogram) Viruses
Essential Oils are Solvents
Dissolving Biofilms

“About 80% of human infections affecting the gastrointestinal, genitourinary and respiratory systems, oral mucosa and teeth, eyes, middle ear and skin are caused by biofilm-associated microorganisms. Therefore, the search for modern strategies is even more important as microbial biofilms resistant to conventional antibiotics, antiseptics and disinfectants are involved in the frequent treatment failures of some chronic inflammatory diseases and wounds. Natural products containing secondary metabolites, such as aromatic compounds, sulphurated derivatives, terpenoids (essential oils)...”

Bernard Christophe, Pharmacist
Ixogon Softgel Caps

Essential Oils:
• Savory (*Satureja montana*)
• Sage (*Salvia officinale*)
• Clove (*Syzygium aromaticum*)

Sunflower Oil
D3 Technology is a method of enhancing the effectiveness of antimicrobial agents by means of:

- Dilution
- Dynamization
- Dispersion
Use of Metals as Antimicrobials

**Silver:** The Phoenicians stored water and other fluids in silver coated bottles to discourage contamination by microbes. Silver dollars used to be placed in milk bottles to keep the milk fresh and water tanks of airplanes and ship that are, 'silvered,' have the ability to render water potable for months at a time.

**Arsenic:** Salvarsan for syphilis

**Mercury:** Mercurochrome, Thiomersal, Calomel

**Copper:** New research has revealed that the use of antimicrobial copper surfaces in hospital rooms can reduce the number of healthcare-acquired infections by 58% when compared to people treated in intensive care units with non-copper touch surfaces.

**Zinc:** Zinc Pyrithione

**Manganese:** Tetraazamacrocyclic complexes of manganese

**Antimony:** Antimony gluconate, antimony tartrate
Research Literature on Enhancement of Antimicrobial Effect with Electrolytes


Electrolytes Enhance Microbicidal Effect
Dispersion:

Liposomal Delivery System

With the dispersing agent, composed of plant cell membranes, which transform the anti-infectious agent into thousands of microdroplets, the problem of safety has been addressed further.
Liposome

Nutrient
Liposomal Delivery
Grapefruit Seed Extract Formulation

Ingredients:
- Grapefruit Seed Extract in organic alcohol
- Specially processed sodium-reduced marine salts; alcohol solution of plant cell membrane phospholipids

Suggested Use: 20 drops two or three times a day or according to doctor’s prescription
## Minimum Inhibitory Concentration of Grapefruit Seed Extract Preparations and Pathogenic Microbes

<table>
<thead>
<tr>
<th>Reference bacterial strains (100 μL of inoculum)</th>
<th>Negative control 0% growth (sterile culture medium)</th>
<th>Positive control 100% bacterial growth</th>
<th>Grapefruit seed Extract (100 μL)</th>
<th>Grapefruit seed Extract with sodium- reduced marine salts</th>
<th>Grapefruit seed Extract with sodium- reduced marine salts and liposomal delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSA ATCC 1026</td>
<td>0</td>
<td>100</td>
<td>1.00</td>
<td>0.125</td>
<td>0.06</td>
</tr>
<tr>
<td><em>Escherichia coli</em> ATCC 25922</td>
<td>0</td>
<td>100</td>
<td>0.50</td>
<td>0.06</td>
<td>0.03</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em> ATCC 27853</td>
<td>0</td>
<td>100</td>
<td>0.06</td>
<td>0.03</td>
<td>0.015</td>
</tr>
</tbody>
</table>
Ormed Custom D3 Blend

Essential Oils:
• Ravintsara
• Tea Tree
• Niaouli
• Savory
• Oregano
• Specially processed sodium-reduced marine salts
• Alcohol solution of plant cell membrane phospholipids

Suggested Use: 3 drops two or three times a day in water or according to doctor’s prescription
## Tests of Antibacterial Efficacy on *Borrelia burgdorferi* ATCC 35210 *in vitro*

<table>
<thead>
<tr>
<th>Product Tested</th>
<th>MIC of Tested Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niaouli Essential Oil D3</td>
<td>1/16 Dilution</td>
</tr>
<tr>
<td>Savory Essential Oil D3</td>
<td>1/8 Dilution</td>
</tr>
<tr>
<td>Grapefruit Seed Extract D3</td>
<td>1/16 Dilution</td>
</tr>
<tr>
<td>Vitamin C D3</td>
<td>1/4 Dilution</td>
</tr>
<tr>
<td>Propolis D3</td>
<td>1/8 Dilution</td>
</tr>
</tbody>
</table>
Vitamin C D3 formulation

Ingredients:

- Vitamin C (ascorbic acid)
- Specially processed sodium-reduced marine salts
- Alcohol solution of plant cell membrane phospholipids

Suggested Use: 5 drops once or twice a day according to prescription
# Minimum Inhibitory Concentration of Vitamin C D3 Preparations and Pathogenic Microbes

<table>
<thead>
<tr>
<th>Bacterial Strain</th>
<th>Vitamin C 3.5% + alcohol 40% + marine salts 3 mg/L</th>
<th>Vitamin C 3.5% + alcohol 40% + marine salts 3 mg/L + plant liposomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSA</td>
<td>Dilution $\frac{1}{4} = 0.875%$ of Vitamin C</td>
<td>Dilution $\frac{1}{8} = 0.0437%$ of Vitamin C</td>
</tr>
<tr>
<td>ATCC BAA-1026</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Escherichia coli</em></td>
<td>Dilution $\frac{1}{4} = 0.875%$ of Vitamin C</td>
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<td>ATCC 25922</td>
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<td></td>
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<tr>
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<td>Dilution $\frac{1}{4} = 0.875%$ of Vitamin C</td>
<td>Dilution $\frac{1}{8} = 0.0437%$ of Vitamin C</td>
</tr>
<tr>
<td>ATCC 27853</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY OF BENEFITS OF THE D3 PRODUCTION METHOD

• D3 PRODUCTS ARE STRONG ENOUGH BECAUSE OF THEIR EFFICIENT DELIVERY
• THEY ARE CHEMICALLY DILUTE SO VERY LOW TOXICITY, NO CHEMICAL RESIDUE
• PLANT AND NUTRIENT-BASED
• NO SIDE EFFECTS, EXCEPT FOR POSSIBLE DIE-OFF REACTIONS
• CAN BE USED ORALLY OR TOPICALLY