

Fundamentals of Aromatherapy



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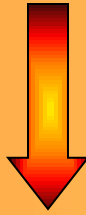
Aromatherapy

- ❖ *Cure with aroma.*
- ❖ *The art-and science of using plant oil for treatment.*
- ❖ *Wholistic therapy, taking into account of the mind, body and spirit of the person .*

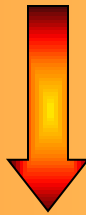
Modes of Action of Aromatherapy

- **Pharmacological**
- **Physiological**
- **Psychological**

Essential Oil

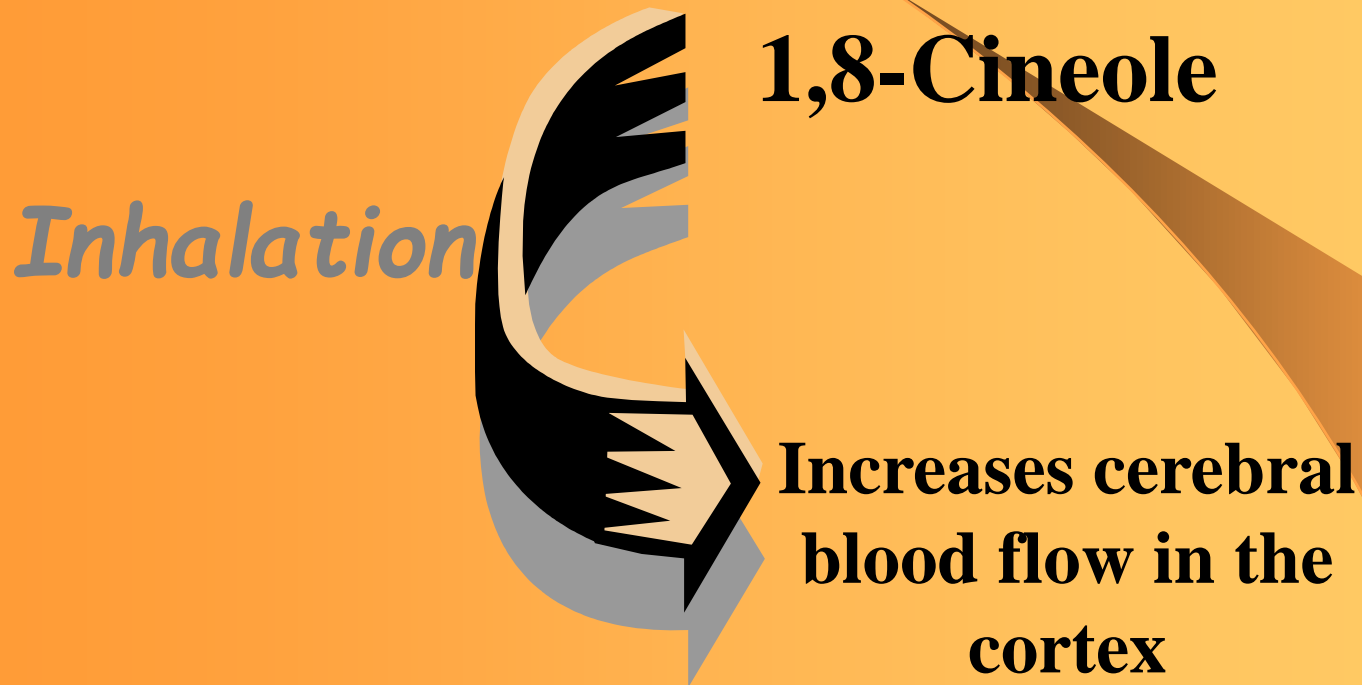


Do have specific effect



**But in combination they
behave
*Synergistically***

Modern & Ayurvedic Evidences of Aromatherapy



(Jager et al. 1996, Pharmacokinetic studies of the fragrance compound 1,8–cineole in humans during inhalation, *Chem. Senses*, 21(4): 477–9).

Linalool & Linalyl Acetate

↓ *Mixed at 2%*

Peanut oil

↓ *Applied Over*

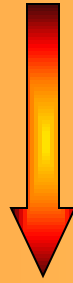
Human Skin

↓ *After 90 min. Detected in*

Blood Plasma(20ng/ml)

(Jager, W. et al. 1992, Percutaneous absorption of lavender oil for a massage oil, *J. Soc. Cosmet. Chem.*, 43(1): 49–54).

Essential oil



**Blood Brain Barrier
&
Detected in Brain Tissues of Mice**

(Buchbaur, G. 1993, New results in aromatherapy research, 24th International Symposium on essential oils, Berlin, Technical University)

1,8-Cineole (*Eucalyptol*)



Absorbed through Skin

Muscles

when an applicator was used the absorption rate
increased 320%

(Wyres, W. and Brodbeck, R. 1989. Skin absorption of volatile oils. Pharmacokinetics, Pharm. Unserer Zeit, 18(3): 82–6).

Essential Oil



Interfere with metabolism of micro organism



By changing rate of enzyme reaction



**Thereby influencing nutrient intake affecting
enzyme synthesis at nuclear or ribosomal level**

Rosemary Oil
*(1,8-cineole
rich)*



Activating, refreshing, remedy against exhaustion

*(The locomotor activity of test animals
increased significantly after inhalation of this
oil)*

(Kovar, K.A. et al. 1987. Blood levels of 1,8-cineole and locomotor activity of mice after inhalation and oral administration of rosemary oil, *Planta Medica*, 53: 315–8).

Modern & Ayurvedic
evidences of
aromatherapy

Jasmine oil



*Effect similar to
caffeine*



**Proved by
increased CNV
after inhalation**

Lavender oil



*Effect similar to
tranquilizers
(sedation)*



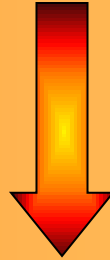
**Proved by
decreased CNV
after inhalation**

CNV: Contingent Negative Variation

Upward shift in brain waves recorded by electroencephalogram (EEG)

In perfumery, *The Psychology and Biology of Fragrance*,
Toller and Dodd (Eds.) Chapman & Hall, 107-120).

Lavender & Sandalwood oil



Increases α -wave activity in EEG
(showing mentally relaxed state or meditation)

Sugano, H. 1992, Psychophysiological studies of fragrance, In: The Psychology and Biology of Fragrance, Toller and Dodd (Eds.), London, Chapman & Hall, 221–8)

Sandalwood oil



**Antiviral activity against Herpes simplex 1&2,
by interfering to replicate it**

(Benevicca, F. and Courreges, M. 1999. Antiviral activity of sandalwood oil against Herpes simplex viruses 1 and 2, *Phytomedicine*, 6(2): 119–23).

Roman Chamomile



**Anti-inflammatory & is comparable to
Hydrocortisone**

(Aerteets P. et al. 1985. Pharmacological investigations with compounds of chamomile: Investigations on the antiphlogistic effects of chamazulene and matricine, *Planta Medica*, 49: 67–73).

Cumaldehyde (*Cuminum cyminum*),
1, 8-Cineole (*Luvunga scandens*),
Eugenol (*Ocimum sanctum*),
Caryophyllene



**Established strong activity against many pathogenic
fungal organisms**

(Garg, S.C. and Dengre, S.L.,1992, *Pharmazie*, 47, 467–468).

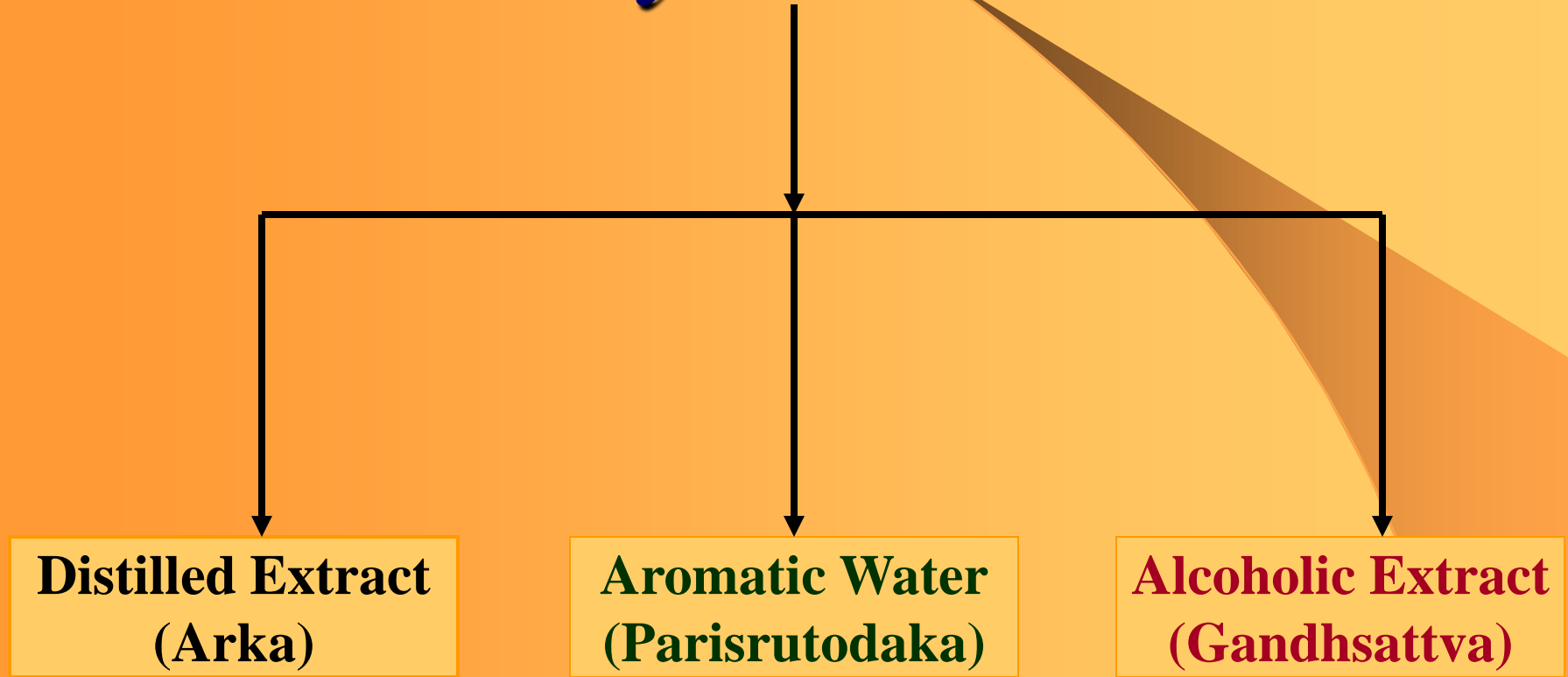
*“Tryambakam Yajamahe Sugandhim Pushtivardhanam
Urvarukamiva Bandhanam Mrityor Mukshia Mamritam”*

Rigveda VII 59.12

Om; Ecda ;tkegs lqxfU/ke~ iqf"Vo/kZue~A
mOokZ#dfeo cU/kukUe`R;kseqZ{kh;
eke`rkr~AA

_Xosn % llre~ 59-12

Extracted Aromatic Materials in Ayurveda



Natural Fragrant Material in Ayurvedic Literature

S. N.	Fragrant Material	Part used	Uses	Main Constituents	Ayurvedic Literature
1.	Turmeric	Rhizome	Skin Care	ar-Turmerone Curcumin	Atharva Veda
2.	Sandal Wood	Heart Wood	Skin disease Anointment	α -Santalol β –Santalol	Ramayana Sushruta Smhita
3.	Cedar wood	Heart Wood	Antiseptic Diuretic	Cedrol α – Himacchalene β – Himacchalene	Charak Samhita
4.	Jatamansi	Rhizome	Deodorant, Hair care	Jatamansone	Sushruta Samhita
5.	Nutmeg	Fruit	Mouth Freshner	Pinene,Myriticin, Dipentene	Sushruta Samhita
6.	Kadamba	Flower	Laxative		Bhavaprakash Nighantoo (4.34)
7.	Kamala	Flower	Lactation		Kaiyadev Nighantoo (1.1445)

S.N	Fragrant Material	Part used	Uses	Main Constituents	Ayurvedic Literature
8.	Saffron	Flower	Skin care	Safranal	Dhanvantari Nighantoo (3.13)
9.	Keora	Flower	Foul Smell Aphrodisiac	Phenyl Ethyl Methyl Ether	Bhava Prakash Nighantoo (4.41) Shaligram Nighantoo (382)
10.	Champaka	Flower	Wound	Benzyl Alcohol, Cineole, iso- Eugenol	Raj Nighantoo (10.241)
11.	Malti	Flower	Blood Disorder		Bhava Prakash Nighantoo (4.26) Astanga Sangraya (Su 12)
12.	Hazara	Flower	Haemorrhage Wound	Tagetone,Linalool	Puspayurveda(24)
13.	Holy Basil	Flower	Pain & Blood Disorder	Eugenol	Bhava Prakash Nighantoo (4.61)
14.	Sultan Champa	Flower	Lactation		Dhanvantari Nighantoo (3.17)

S. N	Fragrant Material	Part used	Uses	Main Constituents	Ayurvedic Literature
15.	Bilva	Flower	Thirst & Vomiting	α -Phellandrene Citronellal, Citral	Kaiyadeo Nighantoo (1.23)
16.	Bela	Flower	Aphrodisiac	Benzyl Acetate, Benzyl Alcohol	Bhavaprakash Nighantoo (4.38) Raj Nighantoo (10.226)
17.	Juhi	Flower	Skin Disease		Bhavaprakash Nighantoo(4.27-28) Raj Nighantoo (10.253)
18.	Clove	Flower	Aphrodisiac, Mouth Freshener	Eugenol	Bhavaprakash Nighantoo(3.42) VishnudharmotarPurana
19.	Vetiver	Roots	Skin Disease	Vetiverol, Vetoveryl Acetate	Ayurvediyam Navnitkam
20.	Eucalyptus	Leaf	Pain, Antiseptic	1, 8-Cineole	Charak Samhita
21.	Nagarmotha	Rhizome	Hair care	Bi & Tricyclic Sasquiterpene Ketone	BhaisajyaRatnavali
22.	Rose	Flower	Skin Care Aphrodisiac	Rhodinol, Geraniol, Phenyl Ethyl Alcohol	Arka Prakash

Ayurveda + Aroma + Therapy

*Ayuroromatherapy:
Aromatherapy from Ayurveda*

Ayuromathery

- *Ayurvedic evidence of use of aroma*
- *Unlimited use of no. of fragrant material*
- *Self explanatory nature of name*

Rates of Absorption of Essential oil Through Skin

Essential oil

Absorption time

Turpentine

20 minutes

Eucalyptus & Thyme

20 – 40 minutes

**Anise, Bergamot &
Lemon**

40 – 60 minutes

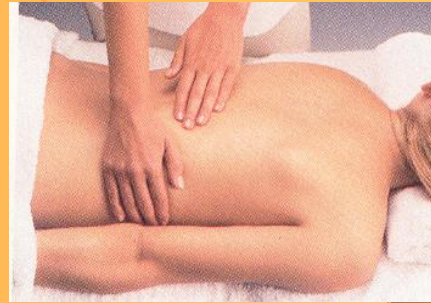
**Citronella, Pine, Lavender
& Geranium**

60 – 80 minutes

Coriander & Peppermint

100– 120 minutes

Methodology of Action of Essential Oil Through Human body



Inhalation & Massage

Blood & Cortex

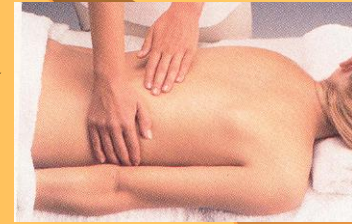
Gas Chromatography – Spectroscopic Method
(Parts per billion level)



Cosmetic Aromatherapy



Medical Aromatherapy



Aromatherapy Massage



Simple Aromatherapy



Aromachology

DOSE LEVEL OF AROMATHERPAY OIL

➤ *GENERAL DOSE LEVEL*

2.5%

➤ *MUSCULAR PAIN/RHEUMATISM*

3.0%

➤ *DEPRESSION/STRESS*

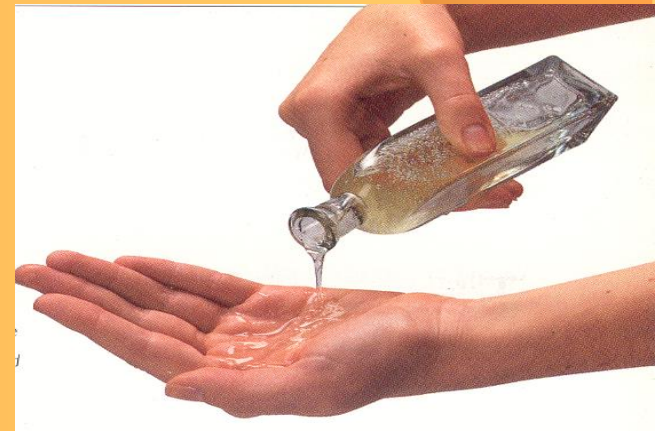
1.5-2.0%

➤ *FACIAL LOTION*

0.5-1%

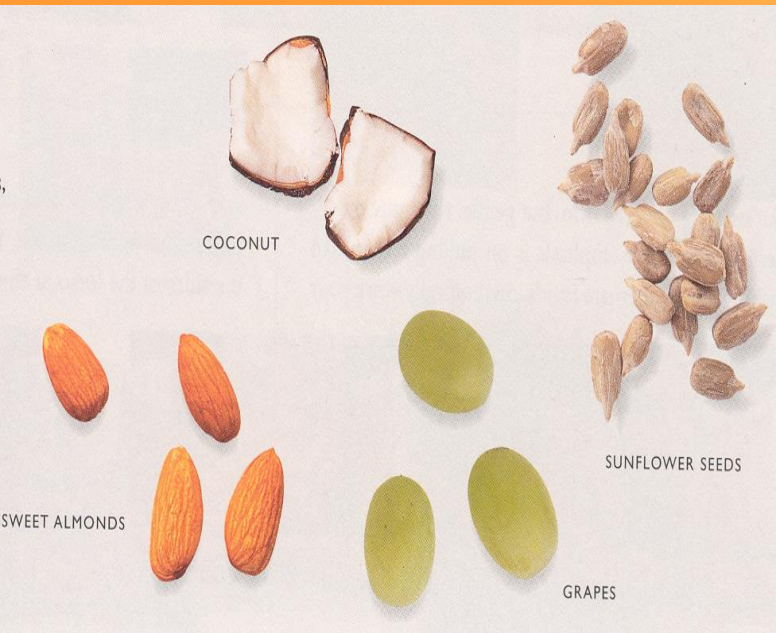
➤ *BABIES & PREGANT WOMAN*

0.5%

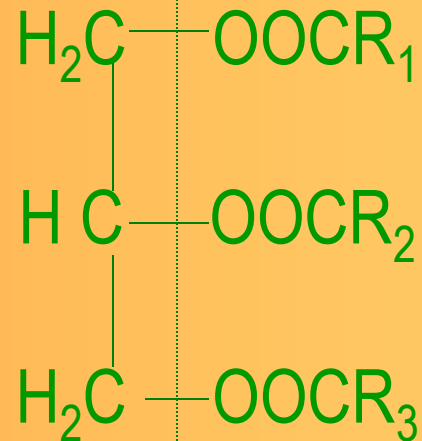


CHEMISTRY OF CARRIER OILS

THEY ARE TRYGLYCERIDES ESTERS OF LONG CHAIN
FREE FATTY ACIDS



Mol. Wt.
41



Mol. Wt.
650-970

SOME IMPORTANT CARRIER OILS

➤ *ALMOND OIL (Prunus amygdalus)*

Myristic (1%), Palmitic (4.5%), Oleic (77%), Linoleic (17%)

➤ *APRICOT OIL (Prunus armeniaca)*

Saturated fatty acid (3.6%) , Oleic (61%), Linoleic (30%)

➤ *GRAPE SEED OIL (Vitis vinifera)*

Saturated fatty acid, (8-16%) Un-Saturated fatty acid (85-90%), Palmitic (4-11%), Stearic (2.5-5%), Arachidic (Traces), Oleic (12-33%), Linoleic (45-72%), Linolenic (0.2%)

➤ *OLIVE OIL (Olea Europa)*

Myristic (0.1-1.2%), Palmitic (7-16%), Stearic(1-3%), Arachidic (0.1-0.3%), Oleic (65-85%) Linoleic (4-15%)

SOME IMPORTANT CARRIER OILS

➤ *SESAME OIL (Sesamum indicum)*

Myristic (Traces), Palmitic (7-9%), Stearic(4-5%), Arachidic (0.4-1.0%), Oleic (37-49%) Linoleic (35-47%)

➤ *WHEAT GERM OIL (Triticum)*

Palmitic (11-16%), Stearic(1-6%), C-20-C22 saturated (0-1%), Oleic (8-30%), Linoleic (44-65%), Linolenic (4-10%)

➤ *COCONUT OIL (Cocos nucifera)*

Caproic (0-.8%), Caprylic(5-9%), Capric (6-10%), Lauric (44-52%), Myristic (13-19%), Palmitic (8-11%), Stearic (1-3%), Arachidic (0-.4%), Oleic (5-8%), Palmitoleic (1%) Linoleic (Trace)



ESSENTIAL OILS FOR COMMON PROBLEMS

SANDAL WOOD OIL (Santalum album linn)

ACTION : Antidepressant, Antiseptic, Aphrodisiac
Sedative

USES : Skin care (Acne, dry, cracked & chopped skin), depression, nervous tension & stress related complaints

CLOVE BUD (Szygium aromaticum)

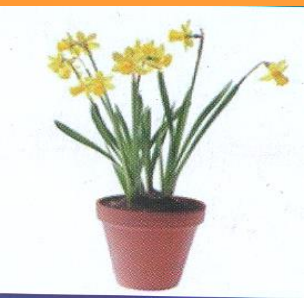
ACTION : Antioxidant, Antiseptic, Antibiotic,
Antirheumatic

USES : Skin (Acne, cuts, burns), Arthritis, sprains, rheumatism, insect repellent

CITRONELLA OIL (Cymbopogan nardus)

ACTION : Antiseptic, deodorant, fungicidal, diuretic

USES : Skin care (oily skin), depression, headache, migraine, insect repellent.





ESSENTIAL OILS FOR COMMON PROBLEMS

PALMAROSA OIL (Cymbopogon martini)

ACTION : Antiseptic, bactericidal

USES : Skin care (Acne, dermatitis, scars, wrinkles, moisturizes the skin, stimulate cellular regeneration)

LEMONGRASS OIL (Cymbopogon citratus)

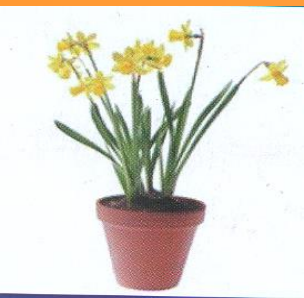
ACTION : Analgesic, Antidepressant, Antiseptic, Antimicrobial, bactericidal

USES : Skin care (Acne, Athlete's foot), muscular pain, headache, stress related conditions, insect repellent (fleas, lice ticks).

JASMINE (Jasminum officinale)

ACTION : Analgesic (mild), Anti-inflammatory, Antiseptic, Sedative

USES : Skin (Dry, greasy sensitive skin), Labour pain, depression , stress related condition



Storage of Essential Oil

Reactions Responsible for Deterioration

- *Oxidation*
- *Resinification*
- *Polymerisation*
- *Hydrolysis of Ester*
- *Interaction of Function Group*

Air (Oxygen)
Heat

Light
Moisture

What will happen if improperly stored?

**High terpene
Essential Oils**
Citrus, Pine, Tagetes,
Turpentine



**Prone to Oxidation
& Resinification**

**High Ester
Essential Oils**
Lavender & Bergamot



**Essential oil with
High Acids**

**High Aldehyde
Essential Oils**
Lemongrass



**Reduced aldehyde
contents**

Storage of Essential Oil

How to remove moisture, metal ?

- *Smaller sample*
- *Bulk*

- *Anhydrous sodium Sulphate*
- *Rectification*

- *Centrifuging at high speed rpm more than 15,000*

- *Metallic Impurities in Clove, Bay*

- *Treat with Tartaric acid & filter*

Long Shelf Life of Essential Oil

- ❖ **Storage in Cool Place**
- ❖ **Storage in Dry Environment**
- ❖ **Protection from Sunlight**
- ❖ **Removal of Air**
- ❖ **Removal Of Moisture**
- ❖ **Removal Of Impurities**



Thanks for patient hearing