

Scientific Evidences of Aromatherapy



Shakti Vinay Shukla

Fragrance & Flavour Development Centre

A Govt of India Autonomous Society

Ministry of MSME

Kannauj



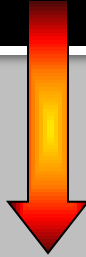
Aromatherapy

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

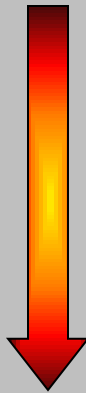
Modes of Action of Aromatherapy

- Pharmacological
- Physiological
- Psychological

Essential Oil



Do have specific effect



**But in combination they
behave**

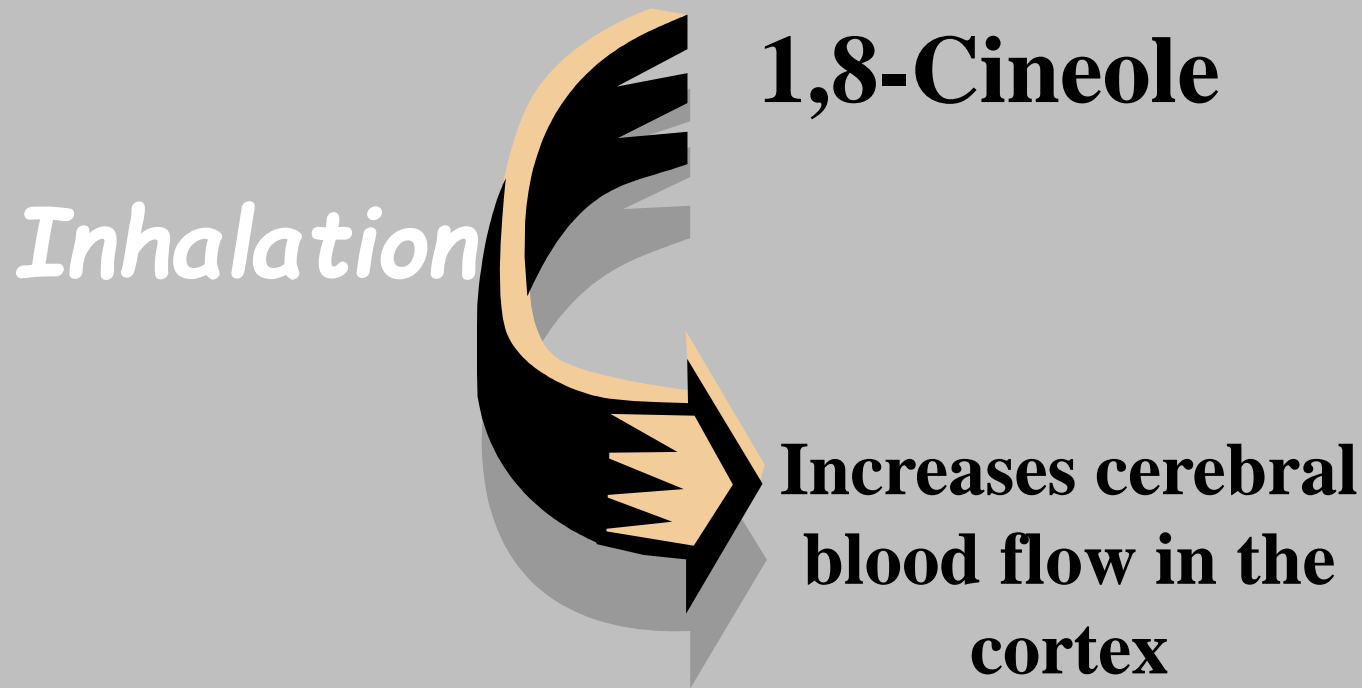
Synergistically



Scientific Evidences of Aromatherapy

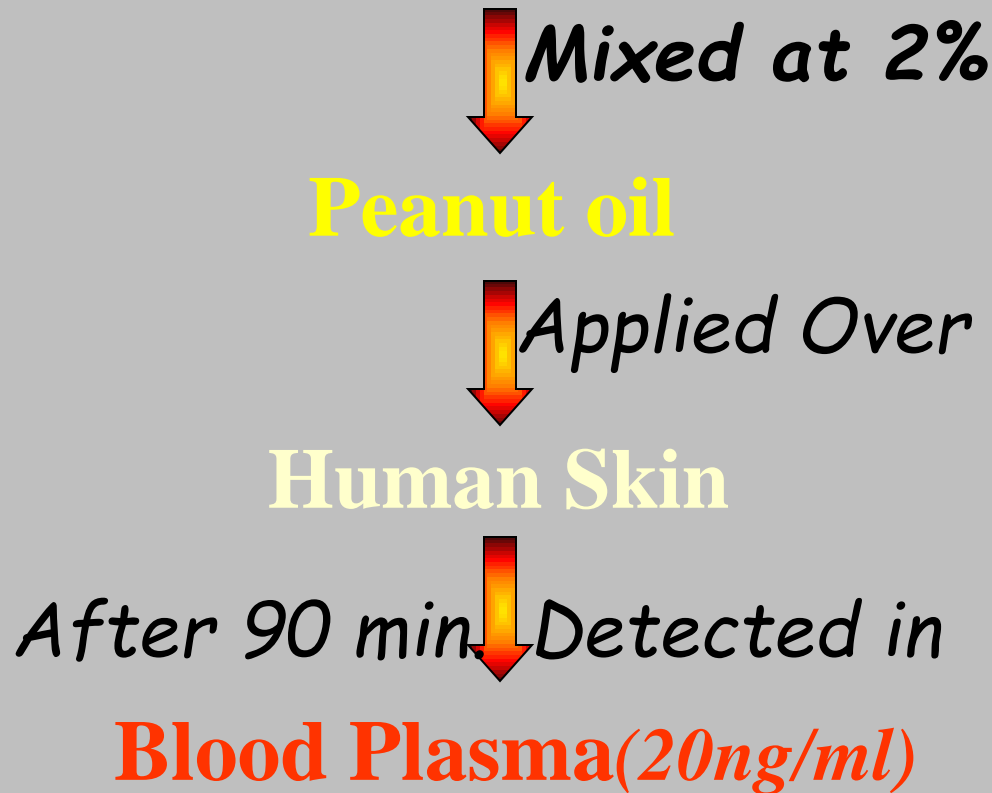
- **Modern Science**
- **Indian Ayurvedic System of Medicine**





(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



(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*)



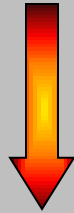
Absorbed through Skin

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).

Rosemary Oil
(1,8-cineole
rich)

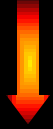


Activating, refreshing, remedy against exhaustion

*(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).

Jasmine oil

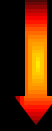


*Effect similar to
caffeine*



**Proved by
increased CNV
after inhalation**

Lavender oil



*Effect similar to
tranquilizers
(sedation)*



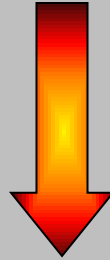
**Proved by
decreased CNV
after inhalation**

CNV: Contingent Negative Variation

Upward shift in brain waves recorded by electro
encephalogram (EEG)

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

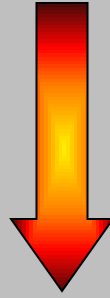
Lavender & Sandalwood oil



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)

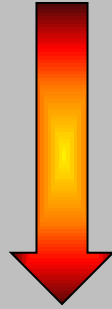
Tea Tree Oil



Effective against Methicillin Resistant
Staphylococcus aureus bacteria

Carson, C.F. et al. 1995. Susceptibility of methicillin resistant *Staphylococcus aureus* to the essential oil of *Melaleuca alternifolia*, J. Antimicrobial Chemother., 35 : 421–4).

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



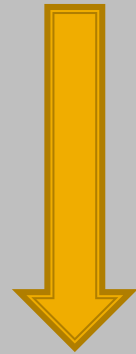
**Anti-inflammatory & is comparable to
Hydrocortisone**

(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).

Effects of aromatherapy massage using lavender, chamomile, rosemary and lemon oil

Anxiety and self-esteem experienced by Korean elderly women.

Each session of
20 minutes

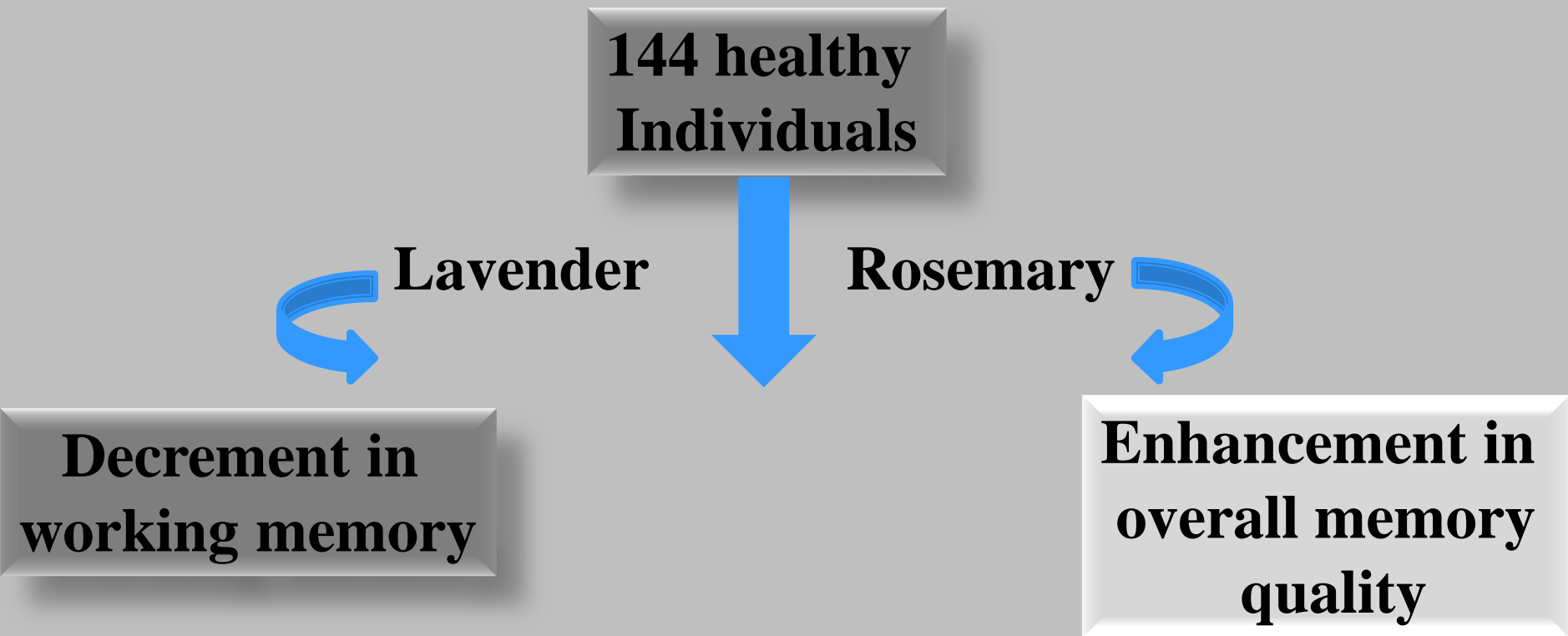


3 weeks period,
3 times /week

Significantly lower anxiety & higher self esteem

Rho, K., Han, S., Kim, K. & Lee, M. (2006). Effects of aromatherapy massage on anxiety and self-esteem in Korean elderly women: a pilot study. International Journal of Neuroscience, 116, 1447-55

Effect of Lavender & Rosemary on Cognitive performance & mood



Moss, M., Cook, J., Wesnes, K. & Duckett, P. (2003). Aromas of rosemary and lavender essential oils differentially affect cognition and mood in healthy adults. International Journal of Neuroscience, 113,15-38.

Effect of Orange, Geranium & Lavender in postpartum mothers

**Postpartum Mothers
at Tokyo**

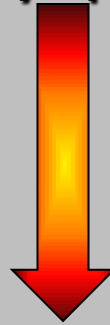
**Orange made 90%
of them comfortable**



**Sweet orange, lavender
& Geranium**

Imura, M., Ushijima, H., & Misao, H. (2004). Study on the preferences of postpartum mothers for sweet orange, lavender, and geranium as well as postpartum factors.

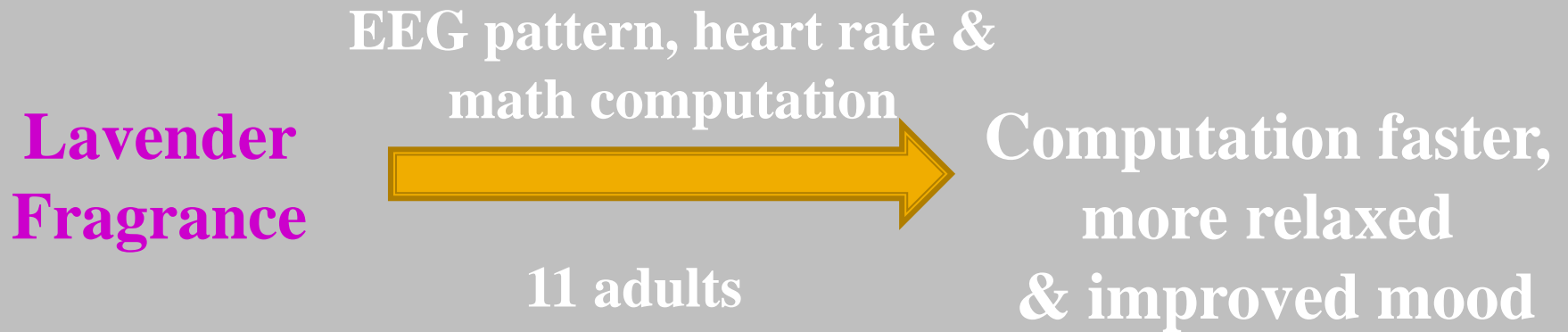
Cumaldehyde (*Cuminum cyminum*),
1, 8-Cineole (*Luvunga scandens*),
Eugenol (*Ocimum sanctum*),
Caryophyllene



Established strong activity against many pathogenic
fungal organisms

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

Impact of Lavender fragrance on alertness, mood & math computation



*Field, T., Diego. M., Hernandez-Reif, M., Cisneros, W., Feijo, L., Vera, Y., Gil, K., Grina, D. & Claire He Q. (2005).
Lavender fragrance cleansing gel effects on relaxation.
International Journal of Neuroscience, 115, 207-22.*

Inhalation of Ylang-Ylang, Lavender & Bergamot to reduce blood pressure

**Blend of Lavender,
Ylang- Ylang & Bergamot**

**52 Subjects once
daily
for 4 weeks**

**Blood pressure, cortisol level
& psychological stress
reduced**

Hwang, J. (2006). The effects of the inhalation method using essential oils on blood pressure and stress responses of clients with essential hypertension. Taehan Kanho Hakhoe Chi, 36,1123-34.

Effect of Orange & Lavender on anxiety, alertness & calmness

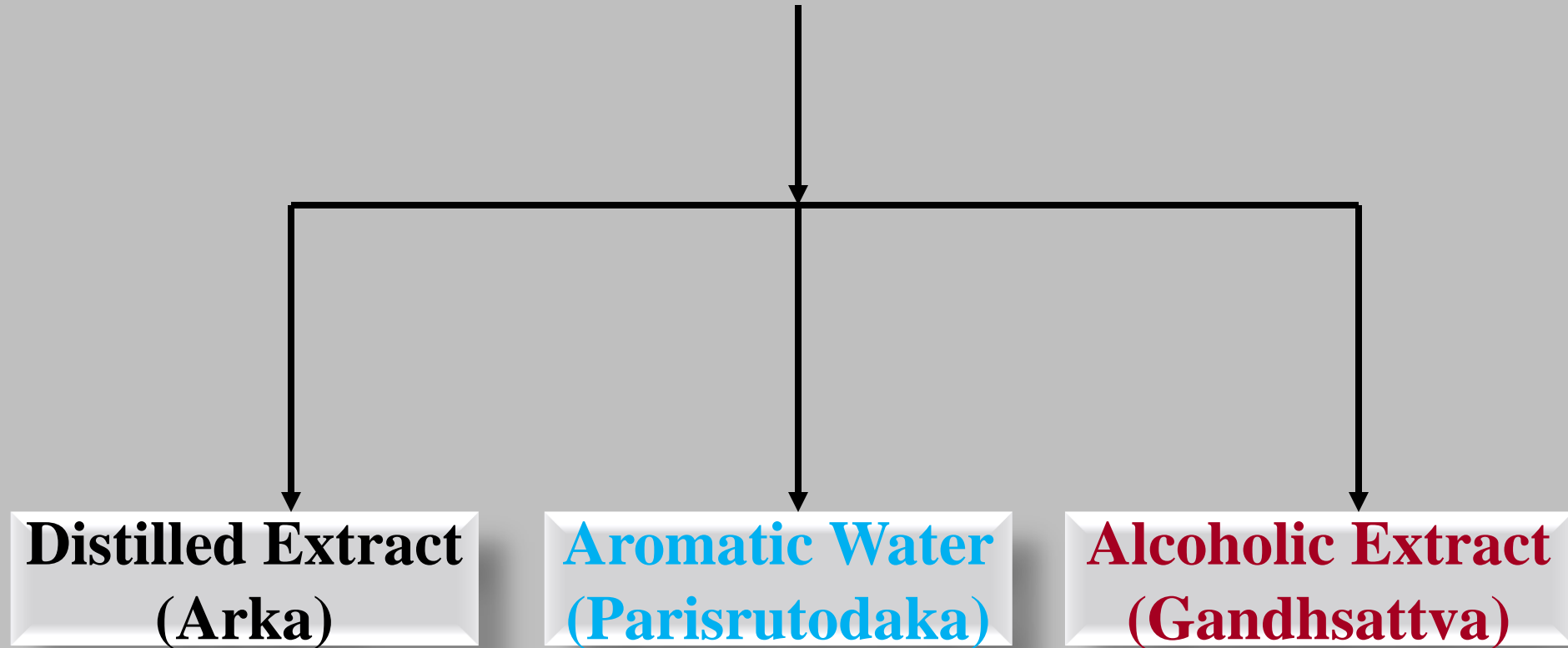
**200 Dental Patients
(18 to 77 years age)**

**Exposed to Orange &
Lavender
Odour while waiting**

Reduced anxiety

*Lehrner, J., Marwinski, G., Lehr, S., Jhren, P. & Deecke, L. (2005).
Ambient odors of orange and lavender reduce anxiety and improve
mood in a dental office.
Physiol Behav, 86, 92-5.*

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

Ayuromatherapy:
Aromatherapy from Ayurveda

Ayurromatherapy

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

Conclusion

- *Aromatherapy is in infancy.*
- *Holistic approach for R & D in Aromatherapy where Scientist, Doctors & Industry need to work together.*
- *Leading to have new life style filled with fragrance for all.*

Thanks for patient hearing.

shaktifdc@gmail.com