

Title: Positive Effect of Ylang Ylang On Performance

Intro and Purpose

The aroma store where I work has many clients who buy diffuser oils, body oils, essential oils (rarely), incense sticks and other aroma products. Over the course of time, I noticed that a good number of our female (especially of Southeast Asian origin) and a handful of male clients purchase ylang ylang (*Cananga odorata*) oils on a regular basis. Since I started working in the field of aromatherapy, I have been listening from many of our clients that ylang ylang is a very effective method to calm their tensions by balancing their mood. Upon asking questions (such as why are they interested in this oil) the consensus was summarized as: It helps them to calm their mood so that when they get home tired after a long day of work, so they can finish their household work at a good pace without feeling jittery about it. Some stated that since their childhood, they have seen their families use ylang ylang to push away anxieties or chronic stresses. Few of those clients also mentioned that the use of ylang ylang aids them to uplift their mood by inducing a feeling of joy and happiness.

From my conversations with clients, my synthesis was that the workplace and workload makes us stressed: a woman's responsibilities (according to the women I regularly talk to) does not end at the workplace as they need to go home and carry on household tasks of cleaning, cooking, serving and taking care of the elderly or children by a certain time. Those clients use ylang ylang to de-stress themselves so they are able to complete their tasks in a timely, orderly and energetic manner. In other words, they do not want to prolong their working hours if they can manage to wrap it all up by a certain time by keeping a cool head about it.

I felt enthusiastic regarding the impact of ylang ylang on human nervous systems. Plenty of research has already been conducted about how the brain wave patterns are stimulated by the inhalation of certain essential oils. I felt eager to learn more about the use of ylang ylang. In the book Aromatherapy by Kathi Keville and Mindy Green, it is noted that, "[...] ylang-ylang['s ...] fragrance is very relaxing, [...it...] can also reverse fatigue. (214).¹" Based on further readings and testimonies from the clients, I continued to gather information whether there is a direct correlation between the inhalation of ylang ylang and mental effectiveness. However, most of the buyers do not have much knowledge regarding the distinction between the synthetic and the pure essential oil and are just as happy to buy the cheaper synthetic version of the ylang ylang like any other aromatic oil. Perhaps those buyers are motivated only by the traditional idea of applying the scent of ylang ylang to experience a positive aura around them. I became curious to

find out if the synthetic version of ylang ylang has the same effect as the pure essential oil.

I tried the oil on myself in few instances. During the end of the month, the workload really gets a bit too much, in regards to bookkeeping and managing my business. I need to put in few additional hours after a long day of work. As I started feeling stressed, just by thinking about my piled up backlog, I reminded myself to put a few drops of ylang ylang in the mist humidifier and turn it on. Prior to the use of the humidifier, there were some days when I did not even finish my tasks due to the lack of energy. The workload normally takes about 3-4 hours for more for me to complete with a tired mood (without using ylang ylang). In comparison, each time I used ylang ylang, I felt that I was completing the workload sooner and with a better mood. I experimented more by sitting down with my regularly pending workloads and had been able to make myself productive at least for couple extra hours. For the sake of experimentation, I tried it with the synthetic version of ylang ylang a few times, however the uplifting effect was not the same as I experienced with the essential oil. I continued my trial with other essential oils (neroli, lavender etc.) but did not find the others as effective as using the essential oil ylang ylang.

It took few seconds for me to feel a sense of positivity while testing. I thought I must find out that regularly how long does it take for a brain to response after breathing in an essential oil. Study shows that after breathing in, it takes about five seconds for the brain to respond to the positive effects of the essential oil: “The quickest and most effective method of using essential oils is through inhalation. An average person takes about five seconds to breathe, two seconds to inhale and three to exhale”.²

There is no doubt that workload and time pressure bring stress for most of us in daily life. I continued to explore if ylang ylang has de-stressing power that will keep us more productive even after a full day of work. A full day of work adds stress, stress makes us tired and tiredness creates negative emotions towards further work. The following quote from Mindtools accurately sums it up:

*As we become uncomfortably stressed, distractions, difficulties, anxieties and negative thinking begin to crowd our minds [...] the more our brain is overloaded, the more our performance can suffer.*³

Chronic stresses make us less productive by lowering our ability to handle our workload within a certain timeframe.

Research Idea

Does ylang ylang relax the human brain in a manner that increases the efficiency by reducing the total completion time on a job? When a person feels tired it hinders their ability to work. By approaching work with negative emotions, a person is often creating the preconditions for performing at a lower, less-efficient level. Low or negative energy appears as a big obstacle even when finishing regular tasks. The total time to finish a work that we are even familiar with becomes lengthy (by time). Application or inhalation

of ylang ylang may aid us in reducing the time it takes to complete a task. I set up an environment where I would examine the ratio of productivity or performance after breathing in the essential oil ylang ylang by cross-examining it with real time.

Many researchers fortify my idea as well. The web site Pure Plant Essentials notes that, “Ylang ylang synchronizes the mind and emotions [and] stimulates feelings of enjoyment and self-confidence and can be helpful for overcoming performance anxiety⁴.”

History and Analysis

The Latin name of ylang ylang is *cananga odorata*. It is a tropical tree that belongs to the Annonaceae botanical family. The original home of *cananga odorata* is in the region of Southeast Asia. It is well established in the regions of Burma, Malaysia, Indonesia, Papua New Guinea and the Philippines. It has been introduced into tropical countries in Africa and Asia as an essential oil plant. “Its name, ylang-ylang, derives from the native language of the Philippines where it is known as *alang-alang* which means ‘Flower of flowers’. (Perez).”⁵ The perfumed essential oil is steam-distilled from the flowers. Aromatherapist Beverly Hawkins explains the four phases of distillation process that ylang ylang goes through: “The first distillation produces ylang ylang extra and then first, second and third grade. The extra grade is considered to be the most superior and expensive grade, traditionally reserved for use in perfumery (135)”⁶. The extra grade is used as a raw material for some of the most famous perfumes—when blended by experts with other scents such as rose, bergamot and vanilla it produces some of the well-known French perfumes. As the Ylang Ylang extract is collected, the distillation process stops and repeats resulting in Ylang Ylang I, Ylang Ylang II and Ylang Ylang III. The distillations are generally referred to as *fractions*, with each subsequent distillation being used where a less-potent ylang ylang aroma is necessary. Within holistic aromatherapy, typically the extra-grade oils are preferred. For my experiment, I ordered the *extra* grade Ylang Ylang.

Major Chemical Components of Ylang Ylang

According to the West Coast Aromatherapy Reader, the major components in ylang ylang include: Esters (15%), Sesquiterpene (40%), Monoterpene (0.4%), Alcohol (20%), Phenol (10%). “When distilled from plant matter, sesquiterpene compounds are known to stimulate the liver and endocrine glands.”⁷ Ylang ylang oil may have more direct effects on some areas of the brain, an area of clinical aromatherapy that is currently being explored in some therapeutic trials.

According to Gabriel Mojay’s [Aromatherapy for Healing the Spirit](#), The medicinal properties in it were first recognized in the 20th century by a few French chemists. Further research findings show that ylang ylang has a calming action on the heart, in addition to its other reputed medicinal properties. According to many researchers, the essential oil of ylang ylang has power to lower hypertension. Also, it

helps to treat intestinal infections, impotence and frigidity. Ylang ylang is also known to be an aphrodisiac.⁸

Abstract

The use of ylang-ylang as a mood-lifting agent has been recognized throughout history and across cultures. This experiment attempts to validate this claim, as well as to confirm whether the pure, natural essential oil is superior when compared to a synthetic version or a placebo. Furthermore, the experiment seeks to apply these findings to work efficiency by conducting a controlled test. This experiment is done with the aim of providing a healthy, safe and natural alternative to psychoactive drugs or other forms of treatment for stress or low mental energy.

Hypothesis

I hypothesize that a pure essential oil version of ylang ylang will be more effective than a synthetic or placebo for uplifting and/or rejuvenating the mood in order to increase the duration and effectiveness of cognitive function.

Design

With all these points in mind, I now needed to find a testing group (preferably professionals who worked a challenging load all-day) that would be free in the afternoon or early evening. I would then have this group perform some tests while they are experiencing the effects of the aroma. Ylang ylang oil in clinical aromatherapy may be vaporized in a diffuser or applied topically in an oil massage. I chose to use a mist (anion) humidifier, since all participants would be experiencing the oil equally. These conditions would allow me to closely reproduce the situations I noted from my customers.

To find an adequate testing group, I contacted the staff at public school where I previously worked as a teacher. I explained that for my aromatherapy course, I needed to run an experiment with some of the staff for a day after school (last class ends at 2:25 p.m.). I explained that I need about 21-24 people (more is better) to conduct the experiment whose educational background should be at least up to high school diploma. I also promised it would not take more than 45 minutes of their time. Most of the staff agreed to take part in it. We fixed a date and time. I found out that 21 people all together signed up for the project. On the day, I went to the school little before the last period is over and had the staff gather in the auditorium after school.

Materials

- 3 large anion humidifiers
- 3 gallons of distilled water to be put into the mist
- 0.5 oz. Ylang ylang extra-grade essential oil

- 0.5 oz. synthetic ylang ylang fragrance.
- Pencils
- Stopwatch
- 42 sign in/mood indicator sheets (attached)
- 21 math sheets (attached)

Procedure

To start, I had all participants pick a letter from a hat: A, B or C. This was done in order to divide the groups randomly. None of the participants were aware of what the differences between groups were. Group A was the control group, which was presented with a plain anion humidifier, with no added scent. Group B was the second experimental group: their testing station featured a humidifier with a placebo, which consisted of synthetically produced ylang ylang scent (synthetic oils are reconstructed oils made with chemical and are not suitable for therapeutic use). Group C was the third experimental group; their testing station featured an anion humidifier with the ylang ylang essential oil added to it.

I took each group to three empty classrooms according to their randomly selected groups. After they took their seats, a sheet of paper was given to them to write their name and to circle their current mood. The first column title says “name”. The participants are asked to write their names. On the 2nd column they are supposed to check how they were feeling at the time of entrance (the field noted as “MOOD IN” in the results section). The sheet had five sub-categories to check their mood upon entering (see attached): Very negative, somewhat negative, neutral, positive, very positive). An identical sheet was given to the subjects upon leaving, so that I could gauge their mood after the experiment (the field noted as “MOOD OUT” in the results section). For ease of calculation, I assigned simple integral values to each mood indicator:

-2= very negative, -1=somewhat negative, 0=neutral, 1=somewhat positive, 2=very positive

After they are done circling their mood, I took the paper back from them. Although clinical studies show that essential oils reach and send response within seconds of the inhalation (see the description above), I gave the participants few minutes to acclimate themselves to the area and to the aromatherapy. After this, each participant received a short primary-school-level math questionnaire (see Exhibit A below) and was told to finish it within the leisurely pace of five minutes. Participants were instructed that as they finish they would raise their hand so I can collect the paper from them and note their completion time for my data collection.

Data Gathering Procedure

1. I gave them the mood indicator paper after they sat themselves comfortably.
(please see Appendix A at the end of the paper, Page 17).
2. I gave them the math problem sheet to finish (please see Appendix B, Page 18).

3. I started my stop watch (the time calculation was done by converting the total time in seconds for example “145” would be read as 145 seconds).
4. As each person turns in the completed math sheet, I noted the total time they spent on the sheet
5. I gave each one an identical sheet of paper to measure their exit mood (same as the entrance mood indicator and had them check the box appropriate to their feeling at that time).
6. After each one check in a box of his/her choice to indicate the “mood out,” the person left the room.

Measures

As noted in step one of the data gathering procedure, each participant was given a questionnaire to indicate their mood at the starting and ending of the experiment. The MOOD-IN group was included to create a benchmark level by which I could measure changes in mood. To reiterate, I assigned the values on a scale from -2 to +2 (**-2= very negative, -1=somewhat negative, 0=neutral, 1=somewhat positive, 2=very positive**) and used these numeric values to tabulate my data. The MOOD-IN data is located in the table below:

Participants (Mood IN)	Group A	Group B	Group C
1	-1	-2	-2
2	1	-2	-1
3	-2	-1	-1
4	1	2	2
5	-1	2	-2
6	-1	2	2
7	-2	0	2
AVERAGE	-0.71	0.14	0

I calculated an average of each group’s mood so that my calculations and results may be standardized. The exit mood indicator was very important to check how the test takers’ efficiency relates to the total time invested by each group. Averaging the total mood of the group at the exit correlates the fact that when a person feels relaxed they can finish their on-hand task quicker.

Time completion: (Note, based on my own tests, I set the time range between 120-300 seconds for the test group to finish their test. To reiterate, that is two minutes at best, and five minutes for the slowest participants.)

Participants (Group A)	Performance (in seconds)
A1	185
A2	175
A3	185
A4	245
A5	190
A6	229
A7	179
AVERAGE	198.29

Participants (Group B)	Performance (in seconds)
B1	134
B2	189
B3	185
B4	128
B5	269
B6	208
B7	175
AVERAGE	184.00

Participants (Group C)	Performance (in seconds)
C1	124
C2	128
C3	200
C4	150
C5	210
C6	149
C7	124
AVERAGE	155.00

Mood at the time of exit:

Participants (Mood OUT)	Group A	Group B	Group C
1	2	2	1
2	-2	-1	2
3	2	1	0

4	-1	-1	1
5	2	0	1
6	0	1	2
7	-1	1	1
AVERAGE	0.29	0.43	1.14

Data Analysis

I aggregated the “mood in” in order to establish a baseline for changes in mood. It is anticipated that the exit mood should be higher than the entrance mood (at least for the experiment group). Furthermore, it is anticipated that the highest (positive) mood group should finish the math quicker on average than the other two groups.

Results

1. The aggregated mood chart for Group A (control group) upon entrance was the lowest. It was detected as -0.71 (“somewhat negative”) their aggregated math time was 198.29 seconds, their exit mood was 0.29 (“somewhat positive”) on average.
2. Group B (experimental group with cheap synthetic ylang ylang inhalers) entrance mood 0.14 (lower-“somewhat positive”), their total aggregated time for math was 184 seconds, their exit mood was 0.43 (higher-“somewhat positive”) on average.
3. Group C (experimental group with ylang ylang essential oil) entrance mood was 0.00 (neutral), their aggregated math time was 155 seconds, and their exit mood was 1.00 (firmly on the positive end) on average.

Result Analysis

I will analyze the data of the experiment by analyzing the following result two items:

- Each groups’ exit mood (higher is better, from a scale of -2 to +2)
- Each groups’ performance time (lower is better, as measured in seconds)

The control group’s (Group A) average exiting mood was 0.29, which is way lower than the other two groups (nearly **three times less** than that of the essential oil group), Their performance time was longer than other two groups as well (198.29 seconds, as opposed to 184 and 155 seconds). Group B (the experimental group with synthetic version) had their average mood total as 0.42 and performance time was 184 seconds. The performance time was relatively shorter than the control group but longer than group C. Group C (the experimental group with the essential oil) had the largest gains and positive impact: the exit mood average of 1.14 which is higher in positivity from two other groups and their performance time was **the shortest** at 155 seconds (on average). In more concrete terms, it does seem that the use of natural ylang ylang essential oils greatly improves mood, efficiency and productivity when compared to a

synthetic version (or a plain misting humidifier). However, not all the researcher may agree with this conclusion. Some research result may show the effect of ylang ylang on the brain as impairing compared to other essential oils.

Counter-Arguments and Further Studies

I understand that not all the researchers will be in conformity with my research result by calling it to be a natural solution for increasing efficiency. Studies from the National Center for Biotechnology Information show the effectiveness of ylang ylang more as a sedative (because of the existence of opiate-like properties such as morphine or codeine), which could be counter-productive towards producing efficiency. Rather, it may impair or decrease the processing speed instead of enhancing it. They have questioned the efficiency of ylang-ylang as a treatment in studies:

“[...] volunteers were randomly assigned to conditions of ylang-ylang aroma, peppermint aroma, or no aroma control. Cognitive performance was assessed [...] Peppermint was found to enhance memory whereas ylang-ylang impaired it, and lengthened processing speed. In terms of subjective mood peppermint increased alertness and ylang-ylang decreased it...”⁹

In further studies, it would be excellent to test a larger group as well as other types of essential oils to find out which ones truly have the strongest benefits for mental health and ability.

Closing

My data analysis shows me the result that inhalation of ylang ylang essential oil impacts people’s mood positively that leads them to work in less time at ease. While further, longer-term tests would be appreciated and effective, my small-scale examination has yielded results that will have a conclusive effect on my day-to-day treatment of clients and, hopefully, serve as a base upon which other studies may be conducted to further the knowledge and use of aromatherapy.

After concluding this experiment, I am now able to more strongly recommend the use of ylang ylang essential oil (over its synthetic counterpart) to my customers who turn to it as an aromatherapeutic aid.

One final note: The purpose of this research is not an attempt to prove ylang ylang as a miracle mood altering hallucinogen type substance; rather, it tends to prove that absorption of this essential oil may have a relaxing effect on mind that let people be efficient by holding up the performance level for few extra hours when needed. It is my hope that further research is conducted in order to bolster this essential oils’ status as a proper natural and holistic therapy for a variety of health concerns.

Appendix A – Mood Indicator Chart

Copies of this small table below were distributed to each participant immediately before and immediately after the experiment so that their mood could be gauged and controlled for the effects of the essential oil. Please refer to page 10 of the paper for more details.

<i>Name:</i>				
<i>Please Select How You Are Feeling Below (Choose One)</i>				
<i>Very Negative</i>	<i>Somewhat Negative</i>	<i>Neutral</i>	<i>Somewhat Positive</i>	<i>Very Positive</i>
-2	-1	0	+1	+2

Note: I assigned simple integral values that were simple for the subjects to understand, as well as easy to calculate

Appendix B – Math Worksheet

Copies of this math worksheet were distributed to each participant as a light cognitive task which could be used to trigger the effect of the essential oil. (or placebo)

Mathmaster.org

Name: _____

Date: _____

- Find each result.

(1) $12 \div 1 =$

(2) $12 \div 2 =$

(3) $12 + 6 =$

(4) $14 \times 8 =$

(5) $13 + 3 =$

(6) $14 + 7 =$

(7) $14 - 6 =$

(8) $13 \times 5 =$

(9) $12 \div 6 =$

(10) $12 \times 6 =$

(11) $13 - 8 =$

(12) $10 + 2 =$

(13) $12 \div 4 =$

(14) $15 + 5 =$

(15) $11 - 4 =$

(16) $12 \div 3 =$

(17) $10 \times 3 =$

(18) $10 - 3 =$

(19) $12 - 9 =$

(20) $11 \times 1 =$

Biography

Rownak Salam is a pioneer in providing aroma based therapeutic treatments in Los Angeles area. She owns and operates an aroma based business in the heart of Los Angeles by the name of “Incense Route dba Salam Aroma.” Ms. Salam provides skin care treatment, emotional, medicinal and spiritual therapies for her clients. She received her training and certificate from the revered aromatherapy specialist and instructor Beverly Hawkins’s aromatherapy school. As a promoter of Eastern Ayurvedic treatment Ms. Salam has been continuously researching with natural plants and herbs.

Before taking up the aromatherapy as a full time profession Ms. Salam had been a teacher for Los Angeles Unified School District and colleges. She earned her Master’s in political science with the focus in American Government and International Relations from California State University of Northridge (CSUN). As a longtime resident of Los Angeles she calls it her hometown. Ms. Salam can be contacted via her website: www.incenseroute.com or www.salamaroma.com.

¹ Keville, Kathi, and Mindy Green. *Aromatherapy: A Complete Guide to the Healing Art*. Berkeley: Crossing, 2009. Print.

² Fioravanti, Kayla. "The Psychology and Physiology of the Inhalation of Essential Oils." *Personal Care Truth*. Personal Care Truth, 10 Sept. 2010. Web. 29 Nov. 2013.

³ MindTools. "Stress and Your Performance." *Stress and the Impact of Stress on Performance Mind Tools Stress Management Techniques*. MindTools, 9 June 2004. Web. 29 Nov. 2013.

⁴ PurePlant Essentials. "Ylang Ylang III Essential Oil Pure Organic - Healing Relationships | Health Mastery Systems." *Health Mastery Systems*. PurePlant Essentials, 2013. Web. 30 Nov. 2013.

⁵ Perez, Nicole. "Holistic Aromatherapy Course in London, UK - Aromatherapy Massage Training." *Ylang- Ylang "Flower of Flowers"* School of Holistic Aromatherapy, 2004. Web. 29 Nov. 2013.

⁶ West Coast Aromatherapy Reader

⁷ Ibid, p. 101

⁸ Mojay, Gabriel. *Aromatherapy for healing the spirit : restoring emotional and mental balance with essential oils*. Rochester, Vt: Healing Arts Press, 1999. 127. Print.

⁹ Moss, Mark, Steven Hewitt, Lucy Moss, and Keith Wesnes. "MODULATION OF COGNITIVE PERFORMANCE AND MOOD BY AROMAS OF PEPPERMINT AND YLANG-YLANG." Diss. University of Northumbria, Newcastle upon Tyne, United Kingdom, 2008. Abstract. *International Journal of Neuroscience* 118.1 (2008): 59-77. Print.