

# Experiments with the Medicinal Properties of Essential Oils

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A couple years ago, my wife suggested that I experiment with essential oil. So I complied with her wishes. Generally when I do something I go all-in and this was no exception. I bought various books on the subject, ordered a multitude of essential oils and tools. I devised experiments and carried them out, attempting to be as analytical as I was able.

The purpose of this paper is to document the basic tools, the approaches, and the methodology encompassing my personal experience in experimenting with the medicinal properties of essential oils.

Essential oils are highly concentrated natural aromatic compounds and volatile liquids extracted from the seeds, roots, bark, stems, leaves, flowers, resins, and other parts of plants. These oils provide plants with protection from disease, insects, and make plants more appealing to pollinators. The plants developed defenses or attributes over millions of years to aid in their survival. But these oils, the essence of individual plant species, also provide healing properties for humans and other animals.

For millennia, mankind has relied on the medicinal properties of plants to treat disease, injuries and illnesses. It has only been rather recently, during the past century, that chemistry has begun to play an ever-increasing roll in medicine.

You might say that I became New Age in my Old Age. I found it difficult to read many of the books on the subject. They definitely had a New Age slant and probably only one step away from voodoo science. Some authors were blatantly anti-science. It was as if they hated modern medicine. They viewed doctors and pharmacies as adversaries. Others are profiteers that push an exclusive monopoly. For example, only a certain essential oil will work and these oils have to be produced on a certain farm in France, otherwise they are somehow unsuitable. Implying that if the oil was

extracted from the exact same plant grown in the United States, it was somehow defective. And by chance these certain recommended oils were only available through their company and as a result were extremely expensive. One of the statements that I came across in one of these books was the author lamented that all the early historical knowledge in herbal medicine in the United States was lost forever as pharmacology made the transition herbal constituents to chemistry. I found that statement to be inaccurate. A simple search turned up the knowledge that existed a century ago. As a result I published a book *Early American Pharmacology: Medicinal Properties of Organic Matter including Herbs and Essential Oils* which summarized this information and this book is available for free on my website.

Over a couple years, I developed essential oil blends to aid in the recovery of many diseases, sicknesses, and adverse health conditions included: arthritis, tumors, cancer, tinnitus, hearing loss, ear congestion, obesity, the plague, insomnia, bronchitis, bedsores, erectile dysfunction, coughs, eczema, the flu, Alzheimer disease, corns, vertigo, COPD and chilblain. Some of these formulas appeared to work. While others formulas were totally ineffective. A few formulas such as an essential oil blend to deal with the Bubonic Plague could not be tested because I had no subjects available to test the formula upon.



Figure 1 Essential Oils

## General Notes

There are several different approaches in which essential oils are used for medicinal purposes. The English model uses a diluted mixture of essential oils mixed with a carrier oil. This mixture or blend is applied directly to the body. Sometimes this approach is integrated with massage therapy. The French model applies undiluted essential oil directly to the body (called the *neat* topical application) or these oils are ingested internally, such as adding the essential oil to tea or bread. The German model uses inhalation of essential oils called aromatherapy. My approach uses the English model solely. As a result everything I experimented with was for external use only and not for ingestion. General cautions included: *Do not use on broken skin. In the event of skin irritation, discontinue use.*

In the beginning of my experimentation, I spent a lot of time on the mechanics. This included obtain a uniform oil drop size and clean up. This photograph shows the final set of tools of the trade.



Figure 2 Tools of the Trade

Essential oil blends can degrade under sunlight. Therefore it is important to use dark amber glass bottles to store the blends in. This will minimize the degradation and prolong the shelf life of the essential oils. I purchased a bag of 180 glass amber bottles with airtight plastic caps in bulk for around 39 cents each. These bottles can hold 0.5 ounces or 15 milliliters of liquid. This size was a good working size.

Initially I tried to use 9-inch long narrow glass pipettes to move the essential oil to the amber bottles for mixing. But the droplet size was too small and the pipettes were difficult to work with,

especially with the thicker oils. So in the end, I resorted to using 4-inch long glass medicine dropper. The droppers had a removable rubber blub which facilitated in clean up. These droppers also gave me a uniform large drop size that was fairly controllable. I found that it was important to have a large number of these medicine droppers, one for each essential oil used in the formula, in order to avoid cross contamination of the essential oils. So I purchased 24 of these medicine droppers so that I could deal with the more complex formulas.

In experimenting with the medicinal properties of essential oils it is critically important to work with only pure oils. Because of the high cost of these oils, some unsavory types have resorted to creating adulterated, synthetic, or counterfeit oils in order to turn a profit. This is unacceptable. Most manufacturers of essential oils guarantee pure therapeutic-grade oils and are willing to back up their claims with standards and testing such as gas chromatograph and mass spectrometry testing.

Essential oils are highly concentrated. One hundred pounds of lavender produce a single pound of lavender essential oil, and two tons of Bulgarian roses produce just one pound of rose essential oil. It only takes a very miniscule amount of essential oil to obtain the desired therapeutic effect capturing the plant's medicinal properties in a formula. As a result, most oil blend formulas dilute the mixture using a vegetable carrier oil, such as almond oil, aloe vera oil, avocado oil, calendula oil, evening primrose oil, grape seed oil, hazelnut oil, jojoba oil, olive oil, etc. Carrier oils are delicate and can go rancid within a few months if exposed to heat.

Essential oils have a long shelf life if properly stored. But carrier oils do not. So in my experimentation I deviated from common practice and solely used a synthetic carrier oil. The oil I used is called Bio-Oil. The primary component of Bio-Oil is PurCellin Oil, a synthetic version of the preen oil which is secreted by ducks. This oil helps duck feathers become waterproof. The oil acts as an effective delivery system for the product's other ingredients speeding up absorption and improving spreadability. Bio-Oil also contains Vitamin A, Vitamin E, Lavender, Calendula, Rosemary oil and Chamomile. I have used this product for almost 3 years now to remove the fine wrinkles on my face. (I am 68 years old.) I was very well pleased with the results and this is the reason why I



Figure 3 Bio-Oil

selected it for this formulation. This oil is also very stable and does not appear to go rancid over time. Because it is used on the face it means that it is a very gentle oil. As a result, I considered it a good candidate for infusing the essential oils for the various formulas. Bio-Oil is available at CVS and Wal-Mart and I suspect a variety of other drug stores.

Some essential oils are thick like molasses, while others are thinner than water and can evaporate in the air. The thick oils are very difficult to dispense a measure drop size. The thin ones may evaporate before the oil blend is completed. Therefore it is important to add a little carrier oil to the bottom of the bottle, to absorb the thin oils and delay evaporation. On the thicker oils, one may have to use a pipette instead of an eyedropper just because of the viscosity.

## Methodology

In experimenting with these oils, I used all subjects including myself, my wife and children and grandchildren and also our pets (cat and dog). There is always some ailment within the family that needs to be looked at. The goal of the experiment is to heal or assist in the healing process of those ailments.

The following was the approach I used in developing formulas to experiment with.

1. Books and the Internet contain a wealth of essential oil formulas tailored for specific ailments. So generally I start here. I look at the individual ingredients within each formula and identify the specific oils most commonly used. These oils generally became the core of my formula and have higher concentration levels.
2. I always add a few drops of lavender essential oil to any formulation. This was a take-away from reading Bethany Patchin book *Effortless Essential Oils*. She views lavender as a type of synergistic oil. Lavender appears to increase the efficiency of any blend by allowing the oils to integrate well together and increase the potency of the other individual oils in the formulation. According to the philosophy from French phytotherapy, lavender facilitates the penetration of the oil through the skin and into the bloodstream. Lavender also has a very pleasant aroma that it imparts to any essential oil blend.
3. I then reviewed the properties of individual essential oil for the conditions that I desired to treat. These become my secondary ingredients. I add these to my formula but at lower concentrations.

Next, I develop a base formula for the blend of essential oils. I begin with an initial light basic blend. Generally this consisted of a combined total of approximately 15 drops of essential oils blended in a 15 milliliters amber glass bottle and the remainder of the bottle filled with a carrier oil (Bio-Oil). After examining the results of experiments using the specific formula, I might revise the formulation, depending upon its success/failure. There is two approaches that I use to revise the formulation: increase the concentration, or experiment with the addition of other single oils.

One of the more difficult elements of the process is to try and assess the benefits of the oil blends analytically rather than subjectively.

Essential oils have a unique ability to penetrate cell membranes and travel throughout the blood and tissues. I generally apply a dab of oil blend to one wrist and then rub my wrist together. The oil passes through my skin and into my blood supply and through experimentation; I can detect the effects of the oil beginning to take hold in around 8 minutes.

After creating a formula, clean up is very important. It prevents cross-contamination of the oils; keeping them pure. In mixing the blends, I use one eyedropper for each essential oil in the formula. I take an old pot and fill it half way with water and put it on the stove. I heat the water almost to the boiling point. I take the used eyedroppers one at a time and dip the glass portion into the water and swish out the insides several times. Then I take the eyedropper apart. I take the rubber bulb and depress it and try to remove any water that may have gotten in. I take the glass part and wipe the outside with a paper towel. I found that Puritan 6" long Sterile Cotton Tipped Applicators worked well for cleaning out the inside of the eyedroppers. Then I let the glass dropper air-dry.

## Cautions

In general, my experience with essential oils on the market is that they are safe and do not produce adverse reactions even under high concentrations. Most essential oils are considered GRAS (Generally Regarded as Safe). This leads to my first rule. **Rule #1 – whenever I mix up a new formula of essential oils, I always try the formula on myself for a couple days to make sure I do not detect any adverse reactions.**

As I order essential oils, I review the known cautions associated with the individual oils. For example Bergamot oil, which comes from the citrus family (cross breeding between a lemon and orange tree). The oil has a safety precaution that reads "avoid applying to skin that will be exposed to sunlight or UV light within 36 hours." Due to its bergamottin and bergapten content, which absorbs ultraviolet light, bergamot oil may induce photosensitivity (oversensitivity to the sun) and may lead to extreme sunburn and other complications. So generally if one uses this oil, they might apply it to the soles of their feet, which is not normally exposed to sunlight. Or the other method is to purchase a Bergamot (Bergaptene Free) oil that has the Bergaptene removed. This type of essential oil is a little more expensive but then it has fewer issues to worry about.

These oil blends are for topical application only. They are for external use, not for ingesting. These guidelines are due to the fact that a synthetic oil (Bio-Oil) is used as a carrier oil in the formulations. This creates a problem when they are applied to animals. The first problem is many animals have fur. It is difficult to apply oil blends on hair. It doesn't always reach the skin. The second problem is that animals such as dogs like to lick their wounds and thereby ingest the oil. Cats are meticulous about cleaning themselves by licking their fur. Therefore they ingest the oil. Since I use a synthetic oil as a carrier oil, it is probably best in the case of cats to switch over to vegetable base oil as the carrier oil.

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## Superman Formula

One of the oil blends that I developed I named the *Superman* formula. The formulation and the usage posed a few unique problems and fostered some interesting solutions. So I decided to include a discussion in this paper.

My grandchildren were always coming down with colds and the flu. It seemed like every week my daughter was hauling them off to visit their pediatrician. So I decided to make a formula to protect them. Schools are a breeding ground for all types of germs. This is not all bad because children need to be exposed to a wide variety of germs in order to properly build up immunities and

strengthen their immune system. I designed this formula to combat virus, bacteria, fungus exposure and even the plague. It uses a total of 21 essential oils in the blend. I named it *Superman* because its purpose was to provide a protective ring around them from all germs by peaking the performance of their immune system. The grandkids liked the name immensely. It seemed they were enamored with the idea of taking something that would make them somewhat like Superman [or Supergirl]. This blend had a simply fantastic aroma. And I think the smell also helped in promoting its usage.

This formula turned out to be the most complex formula that I created. Generally I work with the concept in essential oils, the more types of oil the better. On one hand, I felt it was important to include a large variety of essential oils in this formulation but on the other hand I wanted to make sure the essential oil concentration remained low. Essential oils are very potent and even a fractional drop of oil can impart healing.

Problem #1. The first problem I encountered was creating a low concentration formula with 21 individual essential oils. [In this case, it worked out to a total of 12.5 drops of essential oil mixed with a carrier oil in a 15 ml. glass bottle.] There wasn't enough control in drop size using an eyedropper. It wasn't practical to add a fractional drop of each individual oil to the blend. I solved this problem by mixing up a concentrated version of the blend in one amber bottle and then splitting this mixture between 4 bottles and then filling the remainder of each bottle with the carrier oil.

Problem #2. Mixing this blend of 21 essential oils took time. Some of the essential oils that I used were so very light that they seemed to evaporate into the air and were lost. I solved this problem by first placing a small amount of the carrier oil in the bottom of the amber glass bottle that was to hold the concentrate. Then I added in each essential oil to the blend so that each oil could be quickly absorbed in order to minimize this evaporation of the light volatiles.

This blend was not intended to be used daily on a continuous basis. The directions that I gave the grandkids were *whenever there are more than 3 kids missing from class or if a family member has the flu/cold or if a known bug is going around, then a dab of this formula should be applied twice daily [once before going to school and once when they return home]*. There are two locations on the body that essential oils are normally applied. These are the wrist and the soles of the feet. My daughter had them apply the oil to their feet. It was interesting that the grandkids were very self-motivated in using this blend. They didn't need to be reminded. Even the littlest one who was preschool didn't want to be left out and would apply the oil and leave a trail of footprints around the house. Anyways, this leads to problem #3.

Problem #3. Kids being kids, they sometimes spilled the contents of the bottle. My daughter solved this problem by purchasing a roller ball cap for dispensing the oil so it would make the dispenser spill proof. That worked well.

My grandchildren have been using this *Superman* blend for a couple years now and it really cut down the number of doctor visits.

I also experimented on myself with this blend. Over my long life I have experienced many bad episodes of the flu. Generally it would start with a sore throat. Then after a couple days fever and headaches set in. Then my nose would begin to run and I would get stuffed up. This would lead to headaches and body aches. Then after a week or so, when I thought I finally got over it, the sore throats would come back with a vengeance. After this it would begin to work its way into my lungs.

Eventually this would lead to severe bronchitis. I would cough so hard that I would see stars. This would go on for a total of 3 months. Finally I would give up and make my way in to see my doctor. He would say that I was almost over it but if I wanted he could prescribe something for it. I would go to the drugstore and pick up the medicine and then a few days later it worked its way out of my system, making 3 months of my life very miserable in the process. During my middle age, this cycle went on for several decades, like clockwork. It would always strike in the fall or early winter and I would eventually recover in the springtime.

My personal observations from using this formula were the blend is very effective. If I caught it early when I first detected any symptoms and applied a dab of *Superman* oil to my wrist and rubbed my wrist together around every few hours during the night, it was gone by the next morning. If I waited and the symptoms began to take hold during the next day or two and then I began applying the oil, it firstly reduced the severity of the symptoms and secondly shortened the entire flu episode down to a duration of one week.

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### **ADT4 Formula**

My dog, Casey, was an 8-year old white Boxer. A tumor developed on the front leg of my dog. The dog found it extremely irritating and very itchy. He would periodically find a bush and rub his leg back and forth across the bush to try and find relief. The tumor appeared similar to a skin tag but it was larger and the new tender skin was itchy and inflamed.

I developed a blend of essential oils I called ADT (Anti-Dog Tumor) to treat his condition. I applied the first treatment to dog on 29 October 2015. I applied the oil directly on the tumor once per day in the morning, using my fingers. But after a few days, I noticed that the treatment was ineffective.

The initial formula for ADT contained the following essential oils – Helichrysum, Niaouli, Lavender, Cumin, Geranium and Lemongrass. I considered Helichrysum and Niaouli to be the primary ingredients, so the formula contains these two essential oils in higher concentrations. In his book, *The Healing Intelligence of Essential Oils*, Kurt Schnaubelt recommended using Helichrysum and Niaouli in cancer treatment to reduce inflammation, promote healing and improve immune response. Some clinical research has shown Helichrysum inhibits cancer tumor growth. I included Lavender in the formula because of its synergistic qualities. Lavender, Cumin, Geranium and Lemongrass are believed to have anti-tumor or anti-cancer medical properties.



**Figure 4 Tumor on dog's leg**



I suspected the tumor was not a fatty tumor (lipomas) but rather it was malignant skin tumor and cancerous. One indication was the fact that the tumor was hairless. Another indication was the fact that the dog was losing his hunger. He refused to eat for several days. That was very unusual for my dog. The tumors were spreading. A new tumor suddenly appeared on the dog's right rear leg and two smaller tumor just started to appear on the dog's left rear leg. The initial tumor on the dog's right front leg was growing quickly. Since it was probably cancerous, I figured a more aggressive treatment was in order.

I reasoned that this basic formula was ineffective because the concentration levels were too low. On 1 November, I increased the concentration of the essential oils six-fold. This very concentrated revised formula I called ADT1.

I noticed some improvements almost immediately. The dog regained his appetite. The hairless skin on the tumor began to form a crust, especially on the small newly formed tumors. It began to harden like a callus. The oil appeared to take the inflammation away and the itching was reduced. The large tumor growth rate appeared to slow down significantly. The largest tumor was about 0.6 inches in length at this point. The dog also appeared to like these treatments.

As the tumors hardened, it formed a crust. I thought at first this was an adverse allergic reaction and considered applying the oil treatment not directly on the tumors. I used my fingers to apply the oil and saw no adverse reaction on my flesh. I came to understand that the crust was actually a good sign, so I continued to apply the oil directly on the tumors.

Over the next several weeks, the large tumor continued to grow but at a much reduced state. I modified the formula creating ADT2 and shortly after ADT3 revisions. In ADT2, I added Anise essential oil to the formula. Anise has been used in herbal treatments for over 1,700 years. It was first listed in Dioscorides' *De Materia Medica* in 78 A.D. It has been used to treat cancer and has anti-tumor and anti-inflammatory properties. In ADT 3, I added Frankincense and Tea Tree essential oil to the formula. Frankincense has been used as herbal medicine since the 16<sup>th</sup> century B.C. and one of its medical uses was to treat cancer. It is mentioned in one of the oldest known medical records, *Ebers Papyrus*, an ancient Egyptian list of 977 prescriptions and recipes. Tea Tree has been used for hundreds of years by the indigenous people of Australia and New Zealand to treat many common health ailments. Recent research has shown Tea Tree possess anti-cancer properties. Tea Tree essential oil has been used in formulas to reduce skin tags and the dog tumor appeared similar to a skin tag. After one day of treatment with the ADT2 formula, the largest tumor appeared to have a crust forming on a couple spots. The largest tumor was now 0.8 inches long. It appeared that ADT3 oil blend greatly reduced the growth of the largest tumor.

My dog is like a free-range dog. We live out in the country in a small forest and there is plenty of land for him to roam free. But he was also rather independent and sometimes would disappear for several days at a time. The dog missed approximately 3 days of treatments. As a result his large tumor, which had been very stable grew from 0.9 inches to 1.2 inches, almost overnight. This meant that his treatments must be applied every day on the large tumors. His small tumors seem to be stable.

At this point, I added a few more essential oils to the formula (specifically White Fir Needle, Camphor White and Cardamon) and I doubled the concentration of all oils in this formula. White Fir Needle is believed to possess anti-tumor and anti-cancer properties. Cardamom was called "Grains of Paradise" since the Middle Ages and has been used medicinally by Indian healers for millennia. It was mentioned in the oldest medical record, the *Ebers Papyrus* (dating from 16<sup>th</sup>

century BC). It has shown anti-tumor properties. Camphor White possesses anti-itch properties. This fourth revision of ADT became known as ADT4.

After treating the dog for approximately 14 weeks with these anti-tumor oil blends, I took him in to the Veterinarian to have the large and medium tumors removed on 2 February 2016. The smallest tumor had completely disappeared by this time. I felt the essential oil experiment was successful in that it controlled the spread of the tumors and growth of the individual tumors provided he was treated daily. Therefore the dog could continue to live the rest of its natural born life.

#### **Revision 4 Anti-Dog Tumor [ADT4]**

40 drops Bio-Oil carrier oil  
60 drops Helichrysum essential oil  
60 drops Niaouli essential oil  
24 drops Lavender essential oil  
24 drops Cumin essential oil  
24 drops Geranium essential oil  
24 drops Lemongrass essential oil  
24 drops Anise essential oil  
24 drops Frankincense essential oil  
24 drops Tea Tree essential oil  
24 drops White Fir Needle essential oil  
24 drops Camphor White essential oil  
12 drops Cardamom essential oil

After the dog underwent surgery, I continued the ADT4 treatments for about a month and then I discontinued treatment. I checked his condition and his one remaining small tumor has not grown nor does the dog have any new tumors.

My mother had been in a nursing home for several months when she developed a tumor on her rectum. The tumor looked very similar to the dog's tumor except it was smaller, only about a half an inch in length. She visited a surgeon on 16 February 2016 and she was scheduled for surgery a few days later on the 19<sup>th</sup>. I thought this formula might be beneficial to her especially if the tumor turned out to be cancerous. But nursing homes are very strict about following doctor's orders. I lived a fair distance from the nursing home and it was not practical to visit my mother every day to apply the ADT4 oil. That is where *gatekeepers* are useful. I had taken my mother for her doctor appointments for several years. As a result, her general practitioner knew me personally and knew I had the best interest of my mother at heart. I also was my mother's Health Care Power of Attorney. So just prior to surgery, I talked to her general practitioner and requested the nursing home administer this blend of essential oils to her on a daily basis. He wanted to know what essential oils were contained in the formula so I provided him a list. The doctor approved and wrote a script. The nursing home gave her one treatment prior to surgery. Discontinued for 3 days after surgery under doctor's orders and then began the treatment again. After the tumor was removed and sent to the lab for a biopsy, it was determined that it was a form of skin cancer (squamous cell carcinoma). I had this ADT4 treatment continued for several months after the surgical removal. It has been almost a year after this surgery and no tumors reappeared. I felt that it was important to have the treatments start prior to the biopsy because many times when a cancer tumor is removed, the cancer quickly spreads to other areas of the body. So it is very important to stop the cancer cells dead in its track during this stage.

My wife developed an inflamed area on her hand, located between her index finger and her thumb. It was intensely itchy and painful. Over several months, she tried almost every lotion and ointment to find something that would heal it and stop the itching. I remembered the intense itching that the dog experienced. So I applied ADT4 on the inflamed region. Around 24 hours after first treatment, the inflammation began to decrease and a scab began to form. After about a week or two, the inflammation was gone and I stopped treatment. Also the age spots on her hand where she applied the oil disappeared. Over a month later, a white splotch appeared on the skin of her hand. This condition was similar to a condition called vitiligo. This was the same area where she applied ADT4 around a month or two earlier. So it may be related. It seems logical that something that would remove age spots could also produce a condition that affects skin pigmentation. But why it took over a month to manifest itself seems mysterious. Probably should be very cautious to use this on individuals with freckles.

*In Closing:*

- *Even though the initial results from ADT4 look promising, there are many different forms of cancer and the results may not be permanent and long lasting.*
- *I am not going to go out on a limb and say this is a cure for cancer because it is not. But it might be an aid in their treatment. If you can keep the tumor from growing larger and if you can keep the cancer from spreading, then you take the big scary out of cancer.*
- *For anyone wishing to experiment with the medicinal properties of essential oils, be observant, be methodical and take good notes.*
- *Animals are valuable partners in this journey we call life. Perhaps cancer research clinical trials should incorporate small town veterinarians as researchers into the mix. Animals, our pets, also suffer from many of the same ailments that we do.*