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Aromatic Wisdom Podcast Episode #008

5 Reasons Every Aromatherapist Should Learn Essential Oil Chemistry

This is the Aromatic Wisdom Podcast, Episode #08. In today's show, I'm going to talk about the importance of learning Essential Oil chemistry if you are an aromatherapist. It's what separates the amateurs from the pros.

You're listening to the Aromatic Wisdom Podcast with your host, Liz Fulcher.

If you're interested in learning about Essential Oils, hearing interviews with industry experts, and discovering ways to grow your own Aromatherapy business, this is the podcast for you.

For more information and show notes, visit the website at www.AromaticWisdomInstitute.com. Now sit back. Relax. Take a deep breath and enjoy as Liz shares a dose of Aromatic Wisdom.

Hi, Everyone. My name is Liz Fulcher, and I am your humble host for this Aromatic Wisdom Podcast. I'm a clinical aromatherapist. I have, good Lord, almost a quarter century of experience and research and education and just doing it, that I am more than happy to share with you every week. I love Essential Oils, aromatherapy, natural health, plant medicine—call it what you like—it's all good. And I love sharing it here in this podcast. Time is precious. Thank you very much for giving me a little bit of yours and hanging with you today.

Now, before I get into our big juicy topic, I do want to give a shout out to someone who has been very, very supportive of my journey into podcasting. That is, Herb Ruplinger. Herb is a student, a friend, and has been incredibly supportive with every single one of my podcasts, and he's given me really good feedback, and has always been honest. Herb sent a really nice note last week after he listened to Episode #7 called *How To Create A Digital Vision Board For Your Aromatherapy Goals*, and I wanted to share it with you. He wrote:

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Liz, Great podcast! In fact, I'm going to share this with my artist group. We have done vision boards in the past and I think a few of the folks may enjoy the podcast and the great resources you mentioned.

How very cool is that? That a group that's not even consisting of aromatherapists can benefit. Thank you, Herb, for your notes and for your support. Anyone else who would like to send me a love note, would not hurt my feelings one bit. You can write to me at liz@aromaticwisdom.com, you can give me a shout out and say hello on FaceBook (I'll put that resource in the show notes), and of course, send me questions, comments, anything. I love hearing from listeners.

Onward and upward and on to Essential Oil Chemistry! Are you excited? C'mon, you're excited, aren't you? Everyone's excited about chemistry! No? Not so much?

It's really not so bad. I teach a 235-hour aromatherapy certification program in Pennsylvania and it is grounded in science. In the class I teach, a lot of things, but basically within the scope of chemistry we learn ten different chemical families and how they affect the Essential Oils. When people sign up for this class there are two things the students are most nervous about when they come into the program. One is the ten-page paper that they are expected to research and write. The second is the chemistry. I think a lot of students fear they are going to be subjected to some really highly advanced and complex subject full of molecular structures and that it's going to be their complete undoing in the program. I usually hear this from 99% of the people who take the certification program. No one has failed yet. Honestly, by three or four days into the program, they are beginning to grasp the concept and have a lot of fun and feel empowered by having that knowledge.

In general, whenever you are taking Essential Oil Chemistry it's usually laid out in a way that is easy to learn. I know in my classroom there is a lot of layering; a lot of the information is layered and repeated, and it's done in a way that is also fun. And then there is a lot of blending to accompany what we're learning in the chemistry. So there's hands-on, lecture, hands-on, lecture. It makes it really fun to learn and, honestly, by day two students are sighing with relief because it's not as hard as they thought. Of course a lot depends on how it's taught, so I think that my method works pretty well.

Some of the other concerns that people have, especially people who work with the non-physical part of aromatherapy, the people that work with Energetics, Vibrational, Subtle Aromatherapy, feels this clinical science takes away from the magical, intuitive, beautiful

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and energetic aspects of this healing art. This has so not been my experience. In fact, I found that when I really started to increase my knowledge about Essential Oil chemistry, it not only heightened my respect for the oils, these incredible gifts of nature, it also helped me understand the energetic component as well. Honestly, it is about balance; having a balanced perspective. You need to look at the Essential Oil from all points of view—from the mystical, magical—I call it the PFM, Pure Freakin' Magic—component of Essential Oils to the chemistry. The hard science and that's what we're going to talk about today.

I'm going to share some of the basics of Essential Oil Chemistry and why it's really, really important to understand this aspect of aromatherapy, even if you are a total beginner. In fact, if you are a beginner, lucky you! You are learning right from the get go about the chemistry and the fundamental science of Essential Oils. So, the title of this show is *Five Reasons Every Aromatherapist Should Learn Essential Oil Chemistry.*

Before I get into the five reasons, I want to lay down a little foundation and start be defining what I mean by "Essential Oil Chemistry". We know that Essential Oils are extracted from plants. And we know that Essential Oils are composed of natural plant chemicals. These are called components or constituents. The components are actually molecules. Honest to goodness physical substances that have measurable therapeutic activity. So if people tell you that Essential Oils aren't real, they have no idea what they are talking about. Essential Oils are real. The therapeutics of Essential Oils is real. It is real plant medicine. The molecules that make up Essential Oil components are all validated through research. There is a book—a kind of heavy book—both physically heavy and it's a thick book, and it's also dense with a lot of material to look through. But if you really want to get a handle on Essential Oil chemistry, I recommend you get Robert Tisserand's new book, second edition, *Essential Oil Safety*. I will put a link to where you can buy that book in the show notes.

These molecules give the Essential Oil their activity. So some molecules will make the oil calming, some molecules will make the oil stimulating, some molecules will make the Essential Oil anti-inflammatory, and so forth. When you understand the molecules do and how they affect the properties of the oil, it adds a whole new dimension to your relationship with the oil. Having this information really impacts and helps you make blends that will be so much better therapeutically. You'll have a much deeper relationship with the oils you are working with.

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So now we're going to get deeper into the "geekiness". If you need to get comfortable and put the podcast on pause, maybe get a cup of coffee or herbal tea? You may want to get a pen and paper to take notes.

We've established that Essential Oils are made of molecules and when you know more about the molecules, you'll know more about the oil. How do we know what molecules are in the oil? How do we even know what the oil is made of? This is done with two very expensive, very sophisticated laboratory instruments called a Gas Chromatograph and a Mass Spectrometer. The report that these machines puts out and tells us what molecules are in the Essential Oils is called a Gas Chromatography/Mass Spectrometry report or analysis. That's quite a mouthful, so what you'll hear it commonly called is a GC/MS. So you'll hear the terms GC/MS report or GC/MS analysis.

Here is what these two instruments measure. The GC—Gas Chromatography—actually separates out the volatile compounds in the Essential Oils into each of the individual components. The MS—Mass Spectrometry—identifies the components and their percentages. One basically takes the components out and the other one identifies and measures them. Isn't that fantastic? That you can take a drop of Essential Oil, put it into this system, and what you'll get out is a piece of paper that will tell you every single molecule that makes up that Essential Oil. The GC/MS analysis gives us the list of components in the Essential Oil along with the exact percentages of each component present.

Now Essential Oils can have five or six or two or three even, molecules, or they can have 200 different components. This breaking down of the chemical components of the individual oils, determining what each on of the molecules are that make up that oil, is really important. The therapeutic benefits of essential oils can often be determined by these chemical components.

Now, to blow your mind a little further: this testing should be done on each fresh batch of Essential Oil. Essential Oils change from season to season, from distillation to distillation, from country to country and if you are going to be using these reports in your work as an aromatherapist, you've got to use them "batch specific". Not just one that represents two or three distillations. You need a report after every Essential Oil has been distilled and you have a fresh batch. That's called "batch specific" reporting. The suppliers of Essential Oils, the people who sell them, any reputable supplier of Essential Oils, should be dedicated to knowing what they are buying from the distillers and what they are selling. When they have their oils tested, they can provide their customers with these batch

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specific GC/MS reports. In my opinion, this is the sign of a first-class Essential Oil supplier. When they have their oils tested and can provide their customers with batch specific GC/MS reports--that is the highest standard in Essential Oil work as far as I am concerned.

I'm just going to touch on one more thing before I move into the five reasons, and I'm going to talk about chemical families. A chemical family is a grouping of chemical components based in their similarities and their molecular structure. When you have chemical components of an Essential Oil that demonstrate similar therapeutic activity, they are lumped into a family. Every component on a GC/MS report belongs to one specific chemical family. There are ten chemical families and each one of those families has its on list of components, it's own list of molecules. So when you have a group of molecules, how do they determine which family it belongs to? That has to do with the structure of the molecule. Each chemical family is associated with certain therapeutic properties. For most of the families we could make some pretty broad generalizations about the therapeutic properties. In the show notes I'm going to put an actual GC/MS report so that you can see what it looks like. It is a Lavender Essential Oil purchased in India by Pompeii Organics, sent to a chemist who used the GC/MS instruments to measure the components. When the owner of Pompeii Organics, Jessica Grill, received the list of components from the chemist, she then took each one of those molecules and put them into one of the ten categories. Then that report is provided to customers when she sells the oil.

When Essential Oils are classified according to their chemical families it can help us to understand the activity of an Essential Oil. The classification can also help us understand why several oils have the same basic properties. Why do we have these three oils? Why do we have Lavender, and Roman Chamomile, and Rosewood that are all relaxing? Because they have a lot of chemical components, i.e. molecules, in the same family, so their actions are going to be the same.

One of the things I really love about the Essential oils and the chemistry, knowing the actions of each of the families, you can choose from several different oils. If you don't like the smell of this one oil, you say okay, I have this other oil that's very high in these molecules and in the same family, and I know it's going to have the same affect so I can choose this second oil instead. I can't stress enough how understanding the chemistry of Essential Oils, knowing what each of the molecules does, knowing which family they belong to, knowing the properties of the families—I cannot stress enough how

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empowering it is as an aromatherapist. It really, truly will make your blendings spectacular and really effective.

In my classroom, when we do the certification program, I have my students format a GC/MS report. I give my students a GC/MS report as it comes from the chemist's laboratory. It's just a long list of chemical components with percentages. It's not broken into families. Their job is to categorize the components into the correct chemical families. I think this really helps my students feel more comfortable with the reports and the components, and the names, and so forth. They always enjoy that activity.

How are we doing so far? I figure at this point, I've either lost you completely or you've turned off the machine or you've fallen asleep. Or you're starting to get it, starting to dig this chemistry and see how this can really impact your practice.

Now let's move into our five reasons to learn Essential Oil Chemistry. So, again let me say that getting even a basic understanding of Essential Oil chemistry is going to make your life and your work with aromatics so much better and really will bump you into a higher level of professionalism and credibility as an aromatherapist.

Reason #1: Understanding the shelf life of an Essential Oil.

There is a phenomenon that happens called *oxidation* that really, really screws up an Essential Oil. It breaks it down, it makes it caustic and reduces its efficacy and pretty much ruins your Essential Oil. In order to understand the shelf life of an oil you really need to understand carbon, oxygen, hydrogen, and oxidation. Once you get a handle on the chemistry of Essential Oils, the shelf life becomes really clear and easy to understand.

For example, there is a chemical family called *monoterpenes*. The molecules that are in the monoterpene family oxidize really fast, faster than any other of the chemical families. The oils that are high in monoterpenes like the citrus oils, or some of the conifers, have a shorter shelf life because they oxidize more rapidly. As you study an oil you will always need to look back to your GC/MS report to see which families and which components are present in high percentages. This will help you understand the shelf life of an Essential Oil.

Reason #2: Safety

Reason number two for studying and learning Essential Oil chemistry is *safety.* This goes really hand-in-hand with shelf life because when an oil is oxidized, when it has met its shelf

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life, it becomes unsafe. Not disastrously so, but it does become unsafe for the skin and it is very likely to create irritation or sensitization on the skin.

Oxidation is not the only reason to know about chemistry in terms of safety. The safety issues of Essential Oils are pretty much determined not only by the components, but also, of course, by does and application. The precise breakdown of the chemical components is so important because the therapeutic benefits and the safety are determined by the chemical make-up. All of the safety concerns about Essential Oils are based on chemistry.

I'm going to give you an example. There is a family, we talked about the ten chemical families, there is one chemical family called *Phenols*. The molecules in the Phenol family have chemical names like *Eugenol and Carvicrol*. When you find an Essential Oil with the phenolic molecules, those very molecules will create some wonderful therapeutic properties that are very good against bacteria and infection, but those same molecules are very irritating to the skin. When you use the phenolic Essential Oils or if you get your GC/MS report and you see that there is a high percentage of Phenol molecules or if you see the Phenol family has a high percentage, even if you don't know a lot about those molecules, just say, "Wow. There is 60% of Eugenol in Clove. Therefore, I don't know a thing about Clove, but I know if it's high in Phenols it's going to be super irritating to the skin and I'd better darn well use a carrier. I'd better darn well not take this in my mouth, because it will burn my tongue to pieces." If you look at GC/MS report you can learn about the specific molecules that have safety concerns, like the Phenols—there is another family called Aldehydes, there are Ethers and Ketones—that all have very specific safety concerns. That all goes back to the chemistry.

It makes you a very responsible aromatherapist, and again it's empowering because you have more control over what is safe for your clients. It really does become easier for you to protect them.

Reason #3: Essential Oil behavior

Reason number three is probably overstating the obvious, but it's about understanding Essential Oil behavior or activity. It's always helpful to look at the GC/MS report and as you study it, you start to get a picture of what this oil does. You start to have a window into the Essential Oil. Another thing my students do in the final exam for the ACP (Aromatherapy Certification Program) is they are actually given a GC/MS report and they don't know what the oil is. I have all of the information there, all of the components, and the molecules, but I don't tell them the name of the oil and they have to answer a few

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questions about the oil just based on what they see on the GC/MS report. One of the questions might be: Is this a relaxing oil? Does this oil have safety concerns? Would this oil be good to be used on children? Would this oil be safe for the skin? The students at this point, after three months in the program have learned the safe molecules, the relaxing molecules, the dangerous molecules, and they look for those molecules and can see straight away without knowing what the oil is, what the molecule is and whether it's safe or not.

This is another tremendous reason to know how to read a GC/MS report. When you look at that piece of paper, you immediately have a snap shot of the Essential Oil, of its safety features, and of its therapeutic benefits, and all of its activities and its properties. It starts to give you a lot of control over your blends and makes your blends much more effective, because you start looking for very effective molecules to add to your blend to get certain behaviors and certain activities from your formulas. And that segues nicely into…

Reason #4: Why every aromatherapist should study chemistry: formula efficacy—blends that work.

If you're going to go to the expense of buying high quality Essential Oils and take the trouble to create a blend for someone you want it to work. When we use our GC/MS reports and our knowledge of chemistry to protect our clients from harmful blends or harmful molecules, we use that same information to create helpful blends. You can make formulas that are so tightly targeted towards an issue by using the chemistry that it is amazing. There is a molecule called *Myrcene*, for example, which awesome for pain. In fact in the classroom I call it "merciful Myrcene". If you see high amounts of Myrcene on a GC/MS report, right away you know that it's going to be good for pain. *Beta-caryophyllene* is also good for pain, so perhaps you want to use one oil that's high in Myrcene and one oil that is high in Beta-caryophellene, and mix them together for a really good blend for pain.

You can use the chemistry very much to your advantage to create a powerful formula that gives you super results and makes people come back and want to have more of your products and more of your blends because they work.

Reason #5: Why every aromatherapist should learn Essential Oil chemistry: professional credibility.

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At the beginning of this podcast I said that knowing the Essential Oil chemistry is what separates the amateurs from the professionals, and I'm sure you understand why that is now. You will also find it much easier to read professional journals. The top essential journals such as *The International Journal of Professional Holistic Aromatherapy, The Journal of Clinical Aromatherapy*, even *Aromatherapy Today*, which isn't quite as clinical, still talks about Essential Oil chemistry. You cannot get away from it anymore and it is actually giving a lot more credibility to the industry as a whole, and honestly, if you are looking to move forward in your career; if you really want to be serious about making blends that help people, you need to learn your chemistry.

Sometimes, a client will ask, "Well, how come this blend worked and the last one didn't work?" We do case studies in the classroom and very often we will tweak a blend that perhaps wasn't good for inflammation, and so my students will look for other molecules that are good for inflammation. The customer may say, "What did you do now? This blend works, and the last one didn't." The student, or the consultant, or whatever level you are working at as an aromatherapist, can say, "Well, I look for certain chemical components in my Essential Oils that I know are really going to be helpful, and so I used a different Essential Oil that I thought would have the components that would be helpful for you." It makes you sound smarter, it makes you look smarter, you ARE smarter, actually, and really puts you in the position of truly being an expert, of being a professional in your field.

There you have it! The five reasons why every aromatherapist should learn Essential Oil chemistry:

1. Understand shelf life
2. Safety concerns with Essential Oils
3. Understand Essential Oil behavior or activity
4. Formula efficacy: Making blends that work well
5. Professional credibility and keeping yourself current in the industry

I really hope this was helpful. I know it was a lot of information, very dense, and if you stayed with me this long, God love ya. Thank you so much! Just having an understanding of chemistry is going to empower you beyond your wildest dreams. It's going to make you own the business of aromatherapy and provides an effective way for you to deepen your relationship with Essential Oils. I encourage you to learn Essential Oil chemistry. If you want to take my class, I have a certification program starting in March in Pennsylvania and it starts again in September. You can go to the website:

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www.aromaticwisdominstitute.com, and you'll see in the top navigation bar "classes" and just click on that and look for aromatherapy certification program. I have another one starting in February; it's just a two-day class that's for beginners where we talk about the chemical families very lightly. Just a mini-introduction to the chemical families. It's in the certification program that we really get into it deeply.

Again, if you have any questions about anything I mentioned today, you can write to me at liz@aromaticwisdom.com, or a shout-out on Facebook. Also, let me know if there is a specific Essential Oil topic that you'd like me to talk about here on the podcast. I had a request yesterday from someone who asked me about Essential Oils and children, so I'm working on that now for the future. If there is a specific subject you want to hear about, just let me know.

So now, we come into that portion of the podcast called ***Smell My Life.***

In the Smell My Life segment of the podcast, I always share an authentic, aromatic moment in my life in the past week.

A couple of days ago, I was doing laundry and feeling like I really wanted, I think because it's January and I'm in the North Eastern United States—it's very grey, it's been quite a dismal winter actually, a lot of grey, a lot of snow, and I was feeling, like Gosh, I wish I could just go to Hawaii! Go to the islands! And I thought, "Oh, Ylang Ylang Essential Oil!" It's a very sweet flower that grows in warm, tropical locations, and I thought I'm going to put Ylang Ylang in my dryer and make my clothes smell like the flowers. So I got a wet washcloth and put three drops of Ylang Ylang on it threw it in the dryer and oh my gosh, everything in the house smelled really great. I'm sure people outside were enjoying it as the vent shot the air outside.

Someone asked if that helps with static cling: it does not. All the Essential Oils will do in the dryer is create an aroma. If you want to get rid of static cling without chemicals, put a tennis ball in and that will help reduce the static cling.

If you don't like Ylang Ylang—it's very, very sweet—this works well with Patchouli, Vetiver, with heavy oils. Because Essential Oils evaporate pretty quickly, the citruses don't work that well, they are just too light. But if you go with a heavy, rich, low base note Essential Oil, it works well to put a few drops in the dryer.

So that is my Smell My Life moment this week!

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That wraps up this weeks podcast. You've been a wonderful, wonderful listener. If you've stayed this long, I thank you. I really hope this was clear, and if you have any questions let me know. If not, I will see you next week when we will talk about some very practical ways for you to incorporate Essential Oils into your life every single day.

Until next time, be well. Be happy.

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