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# Investigating Hydrosols: An Interview & Compilation for the Curious Aromatherapist

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*"When it comes to hydrosols, nothing is fixed or static. By its very nature, water is a changeable, dynamic substance. When you incorporate varying botanicals and distillation methods into the equation, answering "what's the difference between essential oils and hydrosols?" becomes a challenge." – Liz Fulcher*

When I think of hydrosols, I think of two things: 1) I don't understand them and 2) Liz Fulcher.

Before researching for this column, my understanding of hydrosols was that it involved plants and water, but the rest was somewhat foreign to me. The second thought I had regarding hydrosols was of a person who sits on our board of directors at AIA-- Liz Fulcher.

I met Liz as a student in her aromatherapy energetics course when I was ready to commit to some serious studying of essential oils. On a personal note, I clearly remember her kindness and patience toward each individual in her classroom, regardless of their aromatherapy experience. Of course, her vast knowledge of the practice, science, and use of aromatherapy is equally memorable. I also remember her huge copper still sitting on a side table; I was fascinated with its beauty. She mentioned hydrosols to me then and suggested that I return to her classroom to learn more. That being said, with my lack of knowledge on this very topic, she was the first person I thought of as I began to prepare for this article.

I approached Liz for an interview, and she was very excited to assist with my efforts. We took a deep dive for ninety minutes, and I will share with you a snapshot of the interview results, as well as some supporting information.

Jennifer Langsdale / Alliance of International Aromatherapists (JL/AIA): What is the difference between a hydrosol and essential oil?

Liz: “The process that creates an essential oil also creates a hydrosol. Water plus heat create steam that rises through the plant material. The steam collects the essential oil and many other constituents that make up the plant. As the steam returns to its liquid state and pours into the receiver, the polarity of the water causes the oil and water to begin to separate with the essential oil [usually] floating on top and the hydrosol underneath. As a result, the distiller is actually creating two unique plant extractions that are sold as two separate products.”

***Why choose hydrosols?***

***"Safety, sustainability, and avoiding sensitization." - Liz Fulcher***

Liz explained further that for users of essential oils, it is important to understand that while the distillation vessel and processes for creating essential oils and hydrosols can be the same, there are differences in the end products. Those who distill plants specifically for their hydrosols will have a better final hydrosol. Those who distill for the essential oil will optimize their process for essential oils--the processing time and the vessel being used vary depending on the desired outcome. Liz gave me my favorite tip concerning finding a supplier: ask if the distillation that produced the hydrosol was optimized for essential oil as the primary product or hydrosol as the primary product. When you are looking for a supplier, this is something you will want to ask!

Liz: "In my experience, copper is the best material for distillation when the objective is to produce a hydrosol. Stainless [steel] is terrific for essential oils, but when plants are distilled in stainless, they may contain a 'still note' which may be somewhat unpleasant. It eventually passes, but since hydrosols don't have a long shelf life, I prefer to have a sweet hydrosol from the moment of distillation- which you'll get with copper."

JL/AIA: What are some of the everyday uses of hydrosols?

"Great question! From your medicine cabinet, you can use them as a gargle, mouthwash, to soothe the skin topically, and are gentle enough to be used on the genitals for issues like postpartum healing of the perineum and for hemorrhoid relief. They are wonderful for the skin, and misting them on your face is an easy and lovely way to use hydrosols every day. Put some in your fridge on hot summer days to refresh your skin or soothe sunburn. Just like any aromatherapy tool, we can use them for mood

support as well. The nice thing is you can recommend them to anyone, even pet owners, with little risk of overuse or injury."

JL/AIA: Why would I want to use hydrosols over choosing essential oils for a healing protocol?

Liz: "Safety, sustainability, and avoiding sensitization."

JL/AIA: (I loved this-- the three S's!)

JL/AIA: The terms used for hydrosols may be confusing. It is very important, just like with essential oils, that we understand what we are purchasing, using, and educating others on. Can you help us clear up the confusion?

Liz: "Excellent question!

Hydrolat(e) is most commonly used in Europe, but means the same as Hydrosol, which is the term commonly used in the United States. The terms are interchangeable as they both describe the aqueous product that results from distillation.

Distillate Water is another description of hydrosols and is a term often used by the distillers.

Aromatic Water is just a description, not a real term for a product, so you will have to do some research when purchasing to determine whether or not this is a real hydrosol or a marketing term.

Floral Water could be anything. It could be a hydrosol- but could also refer to many things that are not hydrosols. It could be a mixture of water, essential oils, and absolutes. This is okay, as long as that is what you really want to purchase."

There are so many takeaways I received from this interview, so here is a short summary of some of the things I learned about hydrosols from my conversation with Liz:

In previewing Liz's online hydrosol course, I learned that the aroma differs between essential oils and hydrosols because the end products contain different components. If the still being used is not copper, the aroma may fall short of what you hope for with hydrosols.

- Plants that are not distilled for their essential oils, such as rosehips or nettles, can be distilled for hydrosols.
- Stick to Hydrolat or Hydrosol when referring to the actual product, or when purchasing.
- Liz gave me a free tour of her online hydrosol training, and I found it to be in the best interest of both the user and the buyer. I recommend it not only as a starting point, but also for those who need to brush up their hydrosol education. I am sure there is something new to all in her course.

| | Hydrosol | Essential Oil |
|---|---|---|
| Source | Come from same plant source | Come from same plant source |
| Safety | Extremely safe<br>Low-to-no risk of sensitization<br>Can be used frequently and does not need to be diluted in most cases | Many safety cautions and contraindications<br>Risk of sensitization<br>Highly concentrated, so only using a little, and needs to be diluted |
| Chemistry | Lots of alcohols, acids and esters which is why they are so good and gentle for the skin<br>Oxygenated, compounds like alcohols (monoterpenols, sesquiterpenols) and plant acids are drawn to the water during distillation. There are still many unknowns about hydrosol chemistry.<br>Plant acids are found in the hydrosol, yet not the essential oil, which is partially what makes these waters so skin nourishing.<br>Hydrophilic<br>.02-.15% plant volatiles (this will tell you a lot about safety) | Terpenes have amazing benefits but also risks<br>Many essential oils are high in terpenes. Some essential oils contain phenols and ketones which necessitate safety precautions.<br>Lipophilic<br>100% plant volatiles |
| Uses | Wound healing<br>Rashes<br>Eczema<br>Scabs<br>Facial care<br>Mouth wash & gargles<br>Replace in products where you would use water<br>Neti pot (diluted half-and-half)<br>Generally safe to use with infants and in pregnancy<br>Sunburn<br>Possibly for pets; more research is needed<br>Most are safe to ingest; choose the freshest available | For Topical use, diluted:<br>Wound healing<br>Rashes<br>Eczema<br>Scabs<br>Facial care<br>Mouth wash & gargles<br>Sunburn<br>Possibly unsafe for pets<br>Great care is needed when formulating for vulnerable populations (elderly, immunocompromised, pregnant, etc.)<br>Not for use on infants<br>Not enough research to substantiate safety for ingestion |
| Storage | Clear bottles<br>Cool, dark, dry location<br>Minimize headspace, if possible<br>When stored properly, can be used up to one year from the date of distillation | Glass bottles<br>Cool, dark, dry location<br>Minimize headspace, if possible<br>Expiration will depend on the oil itself and how often the bottle has been opened |

## Research

The research being done with hydrosols varies. One study evaluated rosemary hydrolat's ability to aid cognitive functioning (Moss, 2018). A Saudi Arabian study tested the antibacterial effect of certain herbs using their hydrosols (Al-Turki, 2007). The study showed that all of the herbs chosen: Thyme (*Thymbra spicata*), Peppermint (*Mentha piperita* L.), Sage (*Salvia fruticosa* subsp. Hirtum), Black Pepper (*Piper nigrum* L.), and Garlic (*Allium tuberosum*), demonstrated antibacterial properties when tested on *Bacillus subtilis* and *Salmonella enteritidis*, which are common food-borne pathogens.

The scientific study of hydrosol chemistry is still in its infancy and analyzing the waters is more complicated and expensive than it is for essential oils. Nevertheless, Liz shared that Ann Harman is making strides at Circle H Institute where you can find a database of hydrosol GC/MS reports.

## Conclusion

During our interview, I asked Liz if the properties of hydrosols mirror those of their counterpart essential oils regarding therapeutic actions or properties. I wanted to understand whether we can clean or heal wounds with these waters, and the answer is yes-- the user just needs to discern the effect they wish to obtain.

We know that the essential oils are powerful and have some risks to using them, but the hydrosols are substantially gentler. As an aromatherapist, I am frequently asked if my clients can use my products, or essential oils in general, on their pets. I always say no. I am not an animal aromatherapist, nor do I have the training to recommend such a thing, but I do recommend hydrosols due to their low-risk nature.

**References**

Al-Turki, A. (2007). Antibacterial effect of thyme, peppermint, sage, black pepper and garlic hydrosols against Bacillus subtilis and Salmonella enteritidis. *Journal of Food*, Agriculture and Environment. 5.

Moss, M., Smith, E., Milner, M., & Jemma, M. (2018). Acute ingestion of rosemary water: Evidence of cognitive and cerebrovascular effects in healthy adults. *Journal of Psychopharmacology*, 32(12), 1319-1329. doi:http://dx.doi.org/10.1177/0269881118798339

**Hydrosol Resources**

Ann Harman & Circle H Institute: https://circlehinstitute.com/hydrosol-chemistry/

Liz Fulcher, AIA Board of Directors: AromaticWisdomInstitute.com and Hydrosols for Health online course.

Jennifer is an AIA volunteer member of the Research Committee and contributes quarterly to *Aromatics in Action*'s research column on behalf of the AIA research committee. Her love of research and science comes from her studies in her Master of Science in Aromatherapy from the American College of Healthcare Sciences. She currently resides in NE Ohio with her two children. She is a small business owner of two holistic businesses, Heaven & Earth Aromatherapy and Women, Yoga & The Moon. Her passion is teaching holistic and yoga education, writing, and creating well-researched and gorgeous smelling aromatherapy products. Learn more at www.heavenandeartharomatherapy.com & www.womenyogamoon.com