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ISSUE
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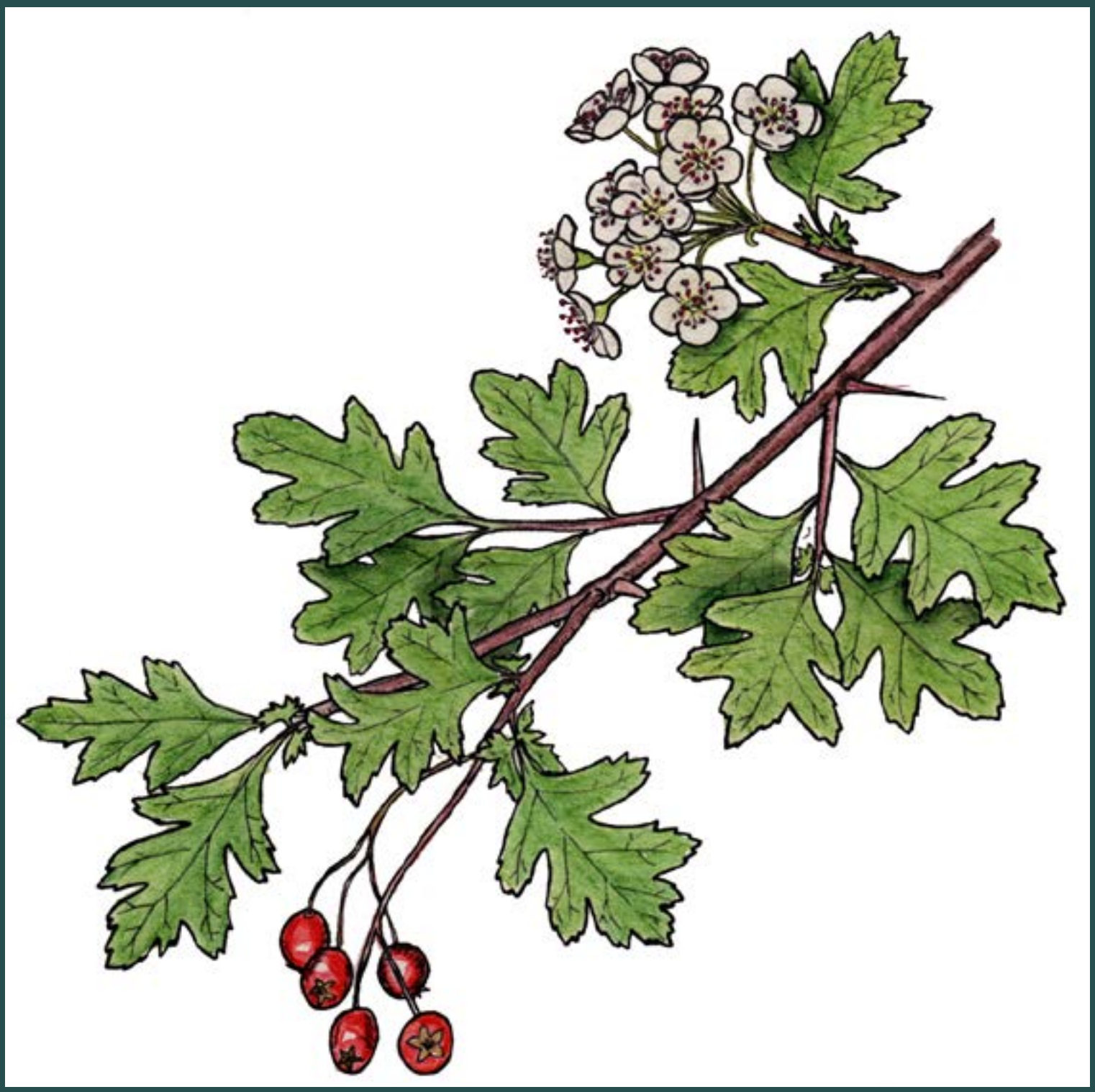

Hawthorne

Healthy Heart Medicine

Welcome

My name is Yaya (pronouns: they/them) and I am an artist, generational rootworkers, and MS candidate for Clinical Herbalism. I am also in love with herbal honey, rest, and dream medicine. I am commited to building and imagining a future that centers food & medicine sovverignty, autonomous self-lliberatiob, and deep ancestral healing.

This resource has been created for Philly Herb Hub. The Philly Herb Hub is a free community apothecary, currently available to Black folks in Philly. Through a growing mutual aid network of local growers, medicine makers, and herb enthusiasts, Philly Herb Hub is able to provide herbs and workshops free of charge.

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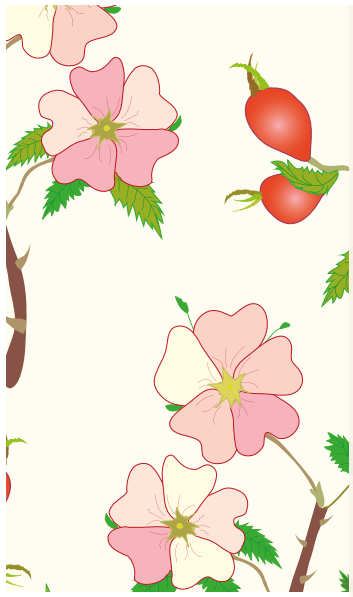


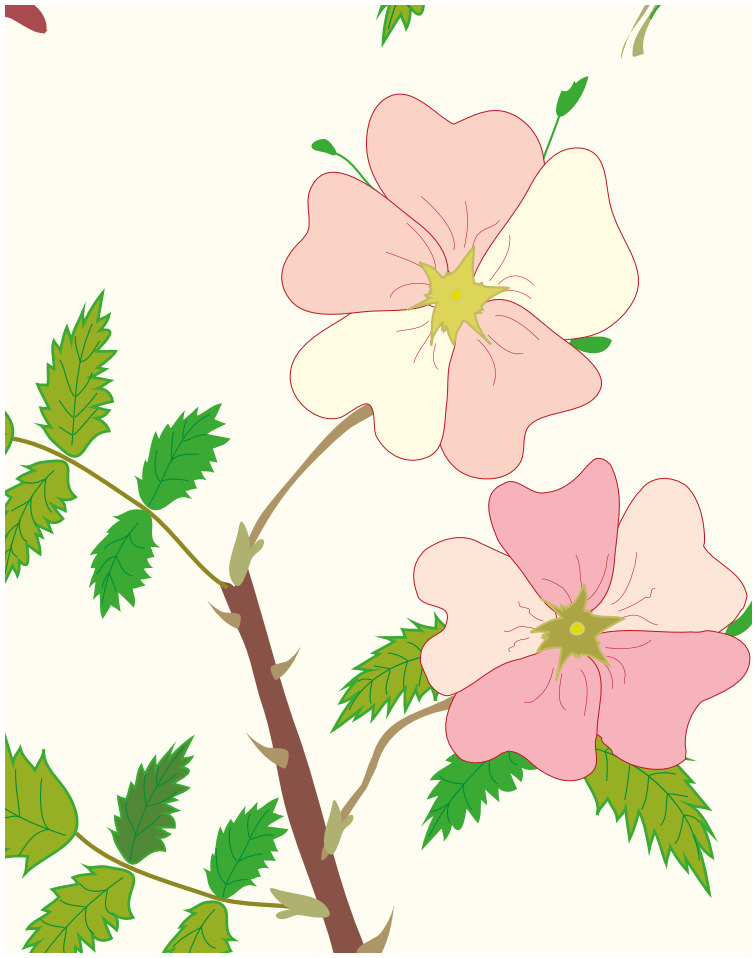
Content

We will be discussing the heart health properties of Hawthorn. After that I'll describe a few other bennefits and review some recent research in the field of herbal medicine.

Overview

Parts Used: Berries, flowers, leaves, and sometimes tips of branches

There are three main parts that can be harvested for teas, tinctures and the like. Primarily we are interested in the flowers (spring), or berries (fall), but leaves are also used, and I have noticed that some of the research using a combination suggests some of the activity is in the leaves. The flowers are gathered when open, typically May. The fruit, in the Northeast US is typically red in mid September and can often be picked until late October, though may become soft, pithy or bruised from cold temperatures. Deep red by firm is the target. You are not concerned with an especially good tasting berry, though it will taste better at this time, relatively. From here the berries can be tinctured, dried, made into glycerite or jam, wine, or frozen. If you had picked the flowers in the spring you would most often tincture them, make glycerite or gingerly dry them for tea, or to be powdered once dry.



Preparation: Flowers can be carefully dried and stored for a short time for use in tea, or tinctured. The fruit is more robust and lasting in flavor and action and can be dried, frozen, made into jam or syrup, but as a medicine tincture, powder or solid extract seem bit more exact.

James Green suggests tincturing fresh material at 1:2, 100%, or dry material at 1:5, 40-70% regardless of the part used. Leaves are sometimes included in teas or tinctures of the fruit or flower.

Tea is best made of flowers or leaves and flowers (basic infusion) the berries can be decocted, or made into wonderful syrups or glycerites.

What is a herbal monograph?

An herbal monograph is an easy guide to botanical and therapeutic information about a plant. It's a lists of facts about individual plants, how to identify them, and their herbal properties.

hawthorn (*Crataegus spp*)

Hawthorn, Haw, Thorn, Thornapple, Mayblossom, Mayberry, May bush, Hawberry. "Haw" is an old English name for hedge.

01/

Family:
Rosaceae

02/

Habitat & Habit:
Hawthorne, of which there are many species, varies in shape from wild and shrubby, to wisened and treelike. Hawthorne trees typically have characteristic thorns on their branches or trunks. The flowers and leaves are harvested in the spring, and the berries are harvested in the fall.

03/

Energetics:
Cooling, Bitter, Strengthening

04/

Actions:
Cardiotonic, cardioprotective, antioxidant, collagen stabilizing, mild astringent, hypotensive, antiarrythmic, diuretic, hypotensive, anti-ischemic, positively-inotropic, antioxidant

05/

06/

Contraindications:
Heart Medications – but most doctors are familiar so feel free to ask!

Preparations:
Tea, tincture, elixer, topical, essential oil (volatile oil extraction), steam, bath/soak infusion

07/

08/

Indications:
Congestive Heart Failure, coronary heart disease, atherosclerosis, hypertension, or hypercholesterolemia, chest pain, heart failure, blood circulation problems, high blood pressure, anxiety, depression, burn-out, chronic stress

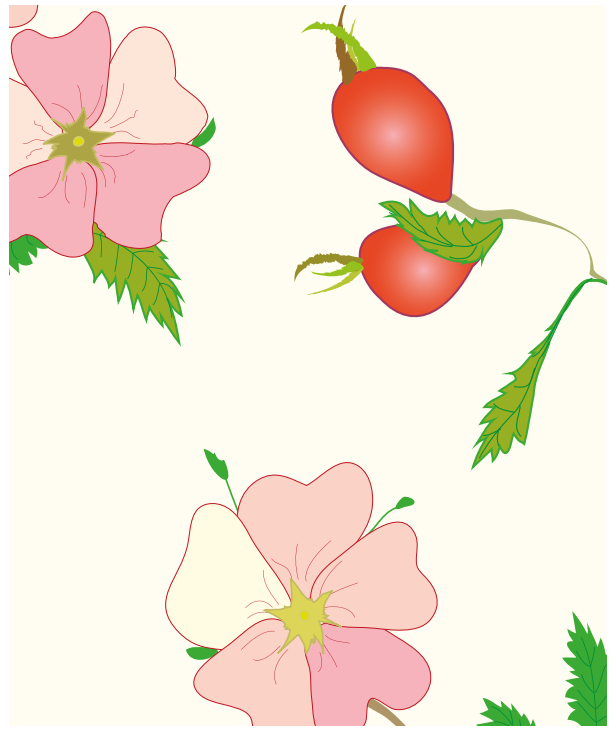
- **Did you know that apples and roses are from the same family? Apples, peaches, pears, and plums are all from the Rose family (Rosaceae). Almonds, strawberries, and cherries are too.**

Heart Healthy

One very specific action of Hawthorn is anti-ischemic, related to its documented action of improving coronary circulation, dilating coronary arteries and relieving cardiac hypoxemia[1]. Ischemia is pain, and if sustained, potentially tissue damage that occurs when a smooth muscle is not properly perfused with oxygenated blood. Believe it or not, this can occur in the heart muscle itself and describes a state that over time can lead to heart attack. It also refers to damage that occurs to the heart as a result of a heart attack.

In western herbalism some consider it the most significant herb for ischemic heart disease[2],[vii] an epidemic disease with no other outstanding therapeutics outside of the extremes; lifestyle, diet, exercise, and emergency medicine.

In pharmaceutical medicne, Cardiac glycosides used in emergency medicine impact the contractile fibers of the muscle directly and instantly, which is to say they immediately elicit a strong contraction of the heart muscle which is useful in controlled doses in heart failure, but can be dangerous. Hawthorn is different, its **positive-inotropic** action works by directly affecting cells of the heart muscle also, but it does this by enhancing the availability and utilization of energy by these cells. This has both immediate and long term benefits, in effect helping the body maintain, promote and potentially even repair the function of cardiac cells,



Cardio-protective

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Hawthorn is an indisputable cardioprotective. The 'protective' terms are used with respect to organs or systems and indicate not only that a substance is generally safe for use in healthy individuals, but also has a multitude of preventive effects, and possibly even mitigation and or reversal of damage to tissue and function of a specific organ or system after disease or acute damage.

The 'protective' terms usually encompass a group of actions. In this case **positive-inotropic**, **anti-ischemic** and **hypotensive**, together encompass remarkable benefits.

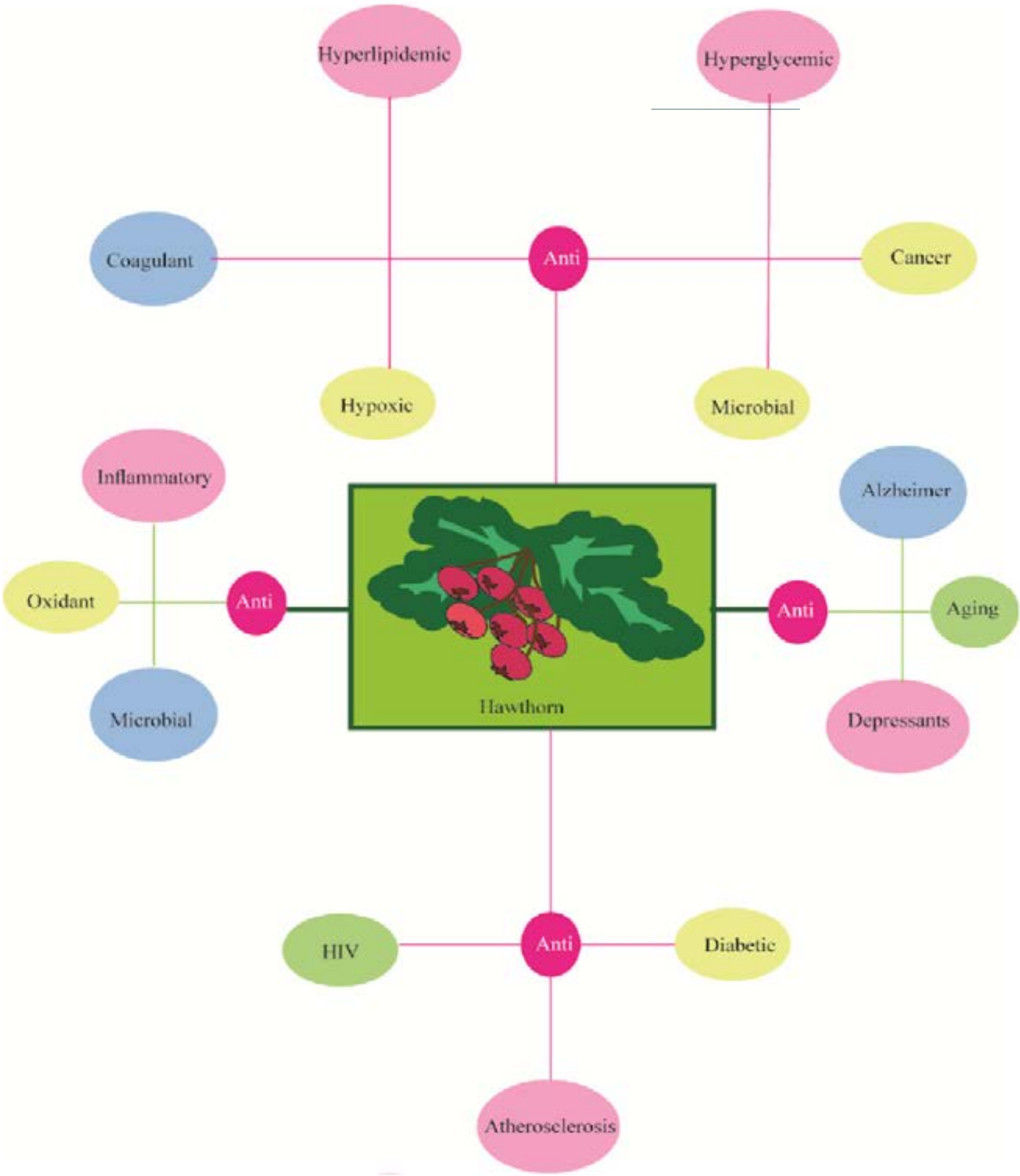


Figure 1. Scheme of the hawthorn therapeutic properties.

Overview of Hawthorn Bennefits

Nazhand, A., Lucarini, M., Durazzo, A., Zaccardelli, M., Cristarella, S., Souto, S. B., ... & Santini, A. (2020). Hawthorn (Crataegus spp.): An updated overview on its beneficial properties. Forests, 11(5), 564.

Table 2. In vitro reported activities for hawthorn.

Experimental Conditions: In vitro		
Activity	**Effect**	**Reference**
Antimicrobial	Apigenin-7-O-glucoside and luteolin 3,7-diglucoside extracted from hawthorn were the most potent chemicals to eliminate *Ureaplasma urealyticum* with minimum inhibitory concentration value ranges of 0.48–3.9 µg/mL and 0.48–1.95 µg/mL, respectively.	[89]
Antioxidant and anti-inflammatory	Ursolic acid and oleanolic acid extracted from hawthorn showed anti-inflammatory and antioxidative effects in PC12 cells by decreasing the cell death induced by 1-methyl-4-phenylpyridinium ions (MPP+) and hydrogen peroxide (H_2O_2) as well as reducing lactate dehydrogenase leakage.	[90]
Anticancer	Crataequinone A exhibited cytotoxic effects on Hep3B and HepG2 cell lines with IC_{50} values of 24.90 µM and 12.24 µM, respectively.	[43]
Anticancer	Quercitin 3-O-galactoside and kaempherol-3-O-glucoside inhibited the culture of MCF-7 human breast cancer cells.	[44]
Anticancer	Pinnatifidanin BVI extracted from hawthorn had a preventive effect against Mrc5 human lung cells.	[45]
Antioxidant	Naturally occurring compounds from ethanolic and aqueous extracts of *C. monogyna* showed antioxidant and hydrogen peroxide scavenging properties.	[91]
Anti-inflammatory	Aqueous hawthorn fruit extract inhibited the expression of ILInterleukin-6, Interleukin-1β, Tumor necrosis factor-α and cyclooxygenase-2 genes, and prevented NO formation in RAW 264.7 cells.	[92]

In Vitro Studies*

*performed or taking place in a test tube, culture dish, or elsewhere outside a living organism.

Antimicrobial : A compound that kills microorganisms such as bacteria or mold, or stops them from growing and causing disease.

Antioxidant : A compound that inhibits oxidation, a chemical reaction that can produce free radicals and chain reactions that may damage the cells of organisms.

Anti-Inflammatory: A compound that reduces inflammation (redness, swelling, and pain) in the body.

Anticancer: A compound used in the treatment to stop or prevent cancer growth.

Table 3. The main studies in animals involving hawthorn.

Experimental Conditions: In Animal Model		
Activity	**Effect**	**Reference**
Anticataract potential	*C. pinnatifida* leaf extracts used three times a day reduced the level of malondialdehyde and increased serum levels of catalase and superoxide dismutase in rats with selenite-induced cataracts.	[109]
Dyslipidemia therapy effect	*C. pinnatifi* fruit extract (250 mg/kg) for 7 days in high-fat-diet-fed mice with hyperlipidemia reduced blood lipid and lipid degradation by enhancing the hepatic expression of peroxisome proliferator-activated receptor α.	[110]
Anti- atherosclerosis effect	Oligomeric proanthocyanidins extracted from *C. oxyacantha* in Wistar rats decreased the differentiation of monocytes to macrophages via the downregulation of inflammation and the reduction of monocyte chemoattractant protein -1 and vascular cell adhesion molecule-1 levels.	[111]
Antibacterial effect	Hawthorn fruit extract (including monomers of (+)-catechin, (−)-epicatechin gallate and (−)-epigallocatechin) could control methicillin-resistant *Staphylococcus aureus* (MRSA) in septic mice by enhancing the accumulation of daunomycin inside MRSA cells and by downregulating the expression of *norA*, *norC* and *abcA* mRNAs (the main efflux pumps of MRSA).	[112]
Anti-inflammatory effect	The administration of *C. pinnatifida* dried fruit extract reduced the expression of hepatic cyclooxygenase-2 and nitric oxide synthase.	[113]
Radioprotective effect	The treatment of mouse bone marrow cells with phenolic compounds extracted from hawthorn (200 mg/kg) caused a reduction in 2-Gy γ-radiation-induced stress and genotoxicity.	[114]
Anti- atherosclerosis effect	The administration of sugar-free *C. pinnatifida* aqueous extract in atherosclerosis-induced rats resulted in the regulation of endothelial function and reduction of inflammatory responses and serum lipid levels.	[115]
Cardioprotective effect	The administration of aqueous extract of *C. tanacetifolia* leaf (100 mg/kg) for 4 weeks in rats prevented hypertension.	[116]
Cardioprotective effect	The administration of alcoholic extract of *C. oxycantha* (0.5 mL/100 g body weight/day) for a month prevented isoproterenol-induced myocardial infarction through a reduction in enzymes involved in the Krebs cycle. It also prevented peroxidative injury of mitochondrial lipids and preserved the mitochondrial antioxidant balance.	[117]
Analgesic and central nervous system activities	The administration of hawthorn seed and pulp extracts (1000 mg/kg) in mice reduced pain, sleep disorders, nervousness and stress with low toxicity.	[118]

Animal Studies*

* Resent research show that proof of efficacy or safety in animal models does not always lead to very good prediction of the same in humans. Then there's the ethical question of whether we have the right to test without permission. As of 2021, there is exciting new precedent in the development of testing without using animals.

Anticateract : A compound that prevents growth, and countering cataracts.

Dyslipidemia Therapy Effect : A compound that counteracts and reduced the effect of Dyslipidemia. Dyslipidemia is the imbalance of lipids such as cholesterol, low-density lipoprotein cholesterol, (LDL-C), triglycerides, and high-density lipoprotein (HDL). This condition can result from diet, tobacco exposure, or genetic and can lead to cardiovascular disease with severe complications.

Anti-atherosclerosis Effect : an agent that prevents or counteracts atherosclerosis. Atherosclerosis is the buildup of fats, cholesterol and other substances in and on the artery walls. This buildup is called plaque. The plaque can cause arteries to narrow, blocking blood flow. The plaque can also burst, leading to a blood clot.

Antibacterial: A compound used to prevent the growth or spread of bacteria.

Anti-Inflammatory: A compound that reduces inflammation (redness, swelling, and pain) in the body.

Radioprotective Effect: A compund that helps protect healthy tissue from some of the side effects caused by radiation therapy

Cardioprotectice Effect: A compound used to protect the heart or coronary arteries from injury, disease, or malfunction.

Analgesic and Central Nervous System Activities: A compound used to relieve pain without altering sensory awareness and consciousness or blocking the conduction of nerve impulses; aids in sleep; aids in reduction of nervousness

Table 4. Examples of studies in humans involving hawthorn.

Experimental Conditions: Clinical Trials			
Activity	**Administration**	**Main Findings**	**Reference**
Anti-inflammatory effect	Patients with diabetes (n = 37) received hawthorn vinegar (20 mL) diluted with water (40 mL) after meals for a month.	The treatment reduced serum levels of triglyceride, LDL, cholesterol and glucose, as well as decreased glycated hemoglobin, blood pressure and body weight.	[149]
Anti-hypertensive effect	Patients (n = 21) randomly received 1000 mg, 1500 mg and 2500 mg of hawthorn extract twice per day for four days.	The treatment lowered blood pressure.	[150]
Anti-hypertensive effect	Hypertensive patients (n = 60) received 450 mg of hawthorn extract twice per day for three months.	The treatment elevated the level of high-density lipoprotein and reduced the level of low-density lipoprotein, total cholesterol, diastolic blood pressure and systolic blood pressure.	[151]
Antihypertensive effect	The administration of hawthorn hydroalcoholic extract in subjects with primary mild hypertension.	A reduction in diastolic and systolic blood pressure after four months.	[152]
Treatment of patient with New York Heart Association class II heart failure	The administration of *Crataegus* berry extracts (30 drops, three times per day) in subjects with NYHA class II heart failure.	An improvement of confirmed tolerability and an enhancement of exercise tolerance after eight weeks.	[153]
Treatment of patient with New York Heart Association class II heart failure	The administration of *Crataegus* extract in subjects with congestive heart failure (NYHA class II).	A confirmation of the well-tolerated nature and safety of *Crataegus* extract based on in vitro parameters and treatment of congestive heart failure (NYHA class II) after 12 weeks.	[154]

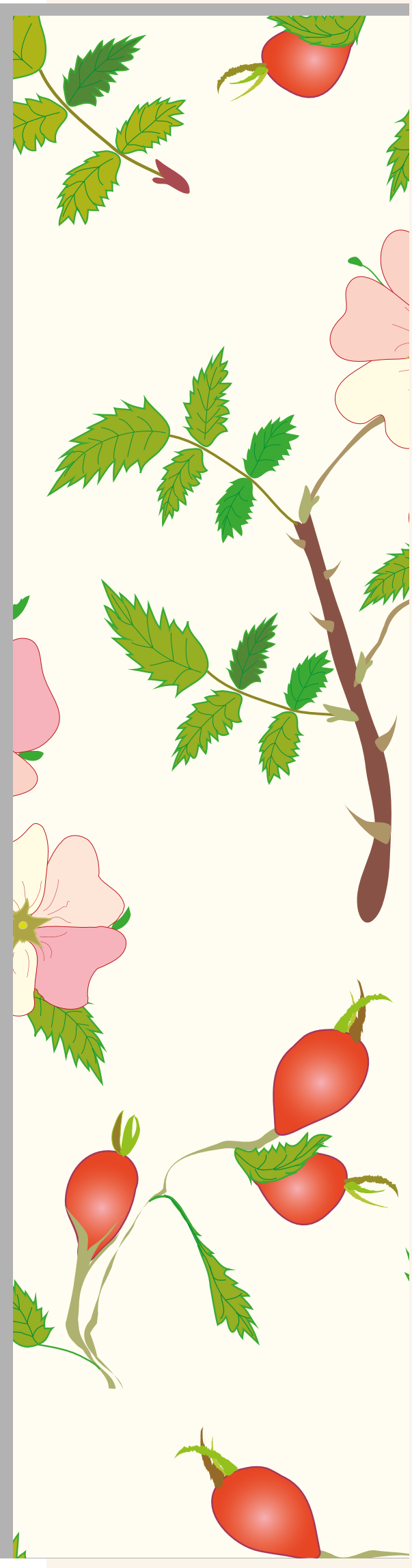
Human Clinical Trials*

*A research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes.

Anti-Inflammatory: A compound that reduces inflammation (redness, swelling, and pain) in the body.

Anti-Hypertension : A compound that is used to lower high blood pressure.

Anti-Heart Failure : A compound that prevents and heals against conditions in which the heart doesn't pump blood as efficiently as it should.



Hawthorne Honey

Ingredients:

1/4 cup dried Hawthorne Berries*
(*1/3-1/2 cup if using fresh Hawthorne Berries)
1 cup honey

I tend to like lighter/milder honey for my infusions. You can taste the chamomile more!

Instructions:

1. Place berries at the bottom of the glass jar and pour honey over. Close the lid tightly.

2. Let the herbs infuse for 2-4 weeks. The herbs will float to the top, so turn the jar over everyday to keep them well coated with honey.

3.Afters the honey is infused, fill the bottom of a small pan with 1 inch of hot tap water and place the jar of honey, without the lid, in the water.

4.Warm up honey slowly over medium heat until melted, about 5 minutes. (Don't worry, the water won't have time to come to a boil and the heat will stay low to preserve the honey).

5. Strain liquid honey into a clean glass jar.

6. Small particles of will pass through the strainer. That's ok, they will rise to the surface within 2 days and you can scoop them out.

You can use the leftover herbs in the strainer to make a tisane! Just add hot water!

Store honey in a cool, dry place, away from direct sunlight and high temperatures. Enjoy this infused honey with your favorite tea!

PHILLY HERB HUB

THIS RESOURCE WAS CREATED BY @SOLAR.YAYA