



Eden Labs LLC
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edenlabs@gmail.com

**ABOUT
THE COMPANY**

**COMMERCIAL
EXTRACTORS**

HOME EXTRACTORS

**VACUUM PUMPS &
COMPRESSORS**

HERB PRESS

**EXTRACTION
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**EXTRACTION
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**HIGH PRESSURE /
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**STRONG
HEART
FORMULA**

*The Herbal Herbal
Alternative for Cholesterol
and Heart Health*

Welcome to the Eden Labs LLC Homepage.

We specialize in the design and manufacture of a wide range of botanical extraction equipment. Distillation / Extraction, Fuel Ethanol Distillation, Herb Presses, High Pressure Solvent Extractors, and Supercritical Fluid Extractors are among the units we produce.

We have units to meet the needs of industry as well as the [individual herbalist](#).

Eden Labs is also available to do research, samples, and commercial processing of botanicals. Call or [E-mail](#) for details.

Please enjoy our web page and don't hesitate to call or [E-mail](#) if you have any questions.



Eden Lab's Supercritical Fluid Extractor at the Food Sciences Lab at Loyalist College. Loyalist College is offering a "hands on" training course in supercritical CO2 extraction. Click [here](http://www.loyalistextractions.ca/) for more details.



Commercial Vacuum Distiller



Herb Press



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About The Company

The mission of Eden Labs LLC is to provide the best equipment available for extracting botanical products. The company was founded on the "Coldfinger" extraction process which was developed by Eden Labs LLC President, Fritz Chess. We have many designs to choose from, but our specialty is building custom equipment to your individual specs.

The name Coldfinger was derived from the modified coldfinger condenser which is the centerpiece of the design. The coldfinger process was developed as a way to dramatically improve the soxhlet distillation process which is used to extract solid materials in University and private laboratories throughout the world. Studies prove our method is superior to the soxhlet and we believe that the coldfinger will eventually replace the soxhlet as the industry standard.

Eden Labs LLC is also the only company to capitalize on the pioneering work of the USDA food sciences research facility in Peoria, Illinois. USDA scientists found that pressurized ethanol and/or water was often superior to other methods including supercritical co2 in extracting natural products. Eden Labs LLC is the only place to purchase high pressure solvent extractors that are based on this research. This method coupled with a vacuum distiller for concentrating the extracts is almost always the best method to produce the highest quality commercial extracts.

Most of the industry focus is moving towards supercritical co2 extraction. Eden Labs LLC has pioneered a supercritical fractionation technique in which extracts separate into specific constituents and precipitate into different vessels in a one step extraction process. We also have developed a method of adapting the coldfinger distillation process to distilling co2 under pressure to do extracts which is a radical departure from any other co2 work being done. Co2 distillation often yields extracts more pure than other methods which are far more complicated and expensive.

There are other compressed gases that have excellent extraction properties. Refrigerant gases, propane, butane, and dimethyl ether offer alternatives that are often the best solvent choice in certain circumstances. Eden Labs manufactures its' own compressed gas pump which is superior to all other pumps for the extraction of botanicals because it is very efficient and it is constructed to explosion proof and food grade standards.

Steam distillation is a centuries old extraction technique which is still widely used today particularly in the production of flavors and fragrances. The high temperatures needed to create steam often cause thermal degradation which compromises the quality of the oils as they are extracted. Eden Labs solved this problem by developing a vacuum steam distillation process which creates steam vapor at much lower temperatures. Temperature sensitive plant oils can now be steam distilled without being damaged.

Eden Labs LLC can also do the extractions for you. We can run small samples of as little as a 1/4 lb. of material to commercial runs of hundreds of kilos. Call or e-mail for a quotation.

We also offer more traditional systems such as presses, maceration tanks, and percolators. We have a full machine shop and scientific glassblowing lab. So if you have your own design in mind or you simply need parts for your existing facility, please let us give you a quote.

Please enjoy our web page and don't hesitate to call or [E-mail](#) if you have any questions.



Round Bottom Professional Unit



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[Commercial Vacuum
Distillation](#)

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Commercial Vacuum Distillation

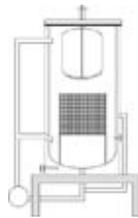




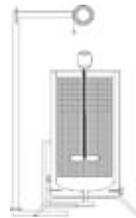
Strong Heart Formula is a revolutionary product from Eden Labs LLC!



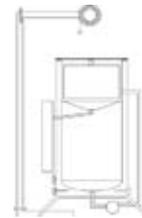
[Commercial Vacuum](#)



[Coldfinger Extraction](#)



[Stirred Reactor](#)



[Accelerated Solvent Recovery](#)



[Fractionating Column](#)



[Vacuum Steam](#)

[Download a PDF brochure of all our Commercial Vacuum Models](#)

High Pressure / Supercritical

Eden Labs offers two styles of high pressure extractors. The first style which is shown to the right is our versatile high pressure version which can be customized to use CO2, high pressure alcohol and/or water, or compressed gases such as refrigerant gases, propane and butane. This unit is rated to a maximum pressure of 2,500 psi.

We also make a full supercritical unit that works up to 10,000 psi and can be fitted for automation and computer controls.

Both styles start with 5 liter extraction vessels but we offer customized units of higher capacity upon request.

Standard high pressure units start at \$13,000.00 (pump and accessories not included)

Supercritical units start at \$50,000.00



Commercial Distillation

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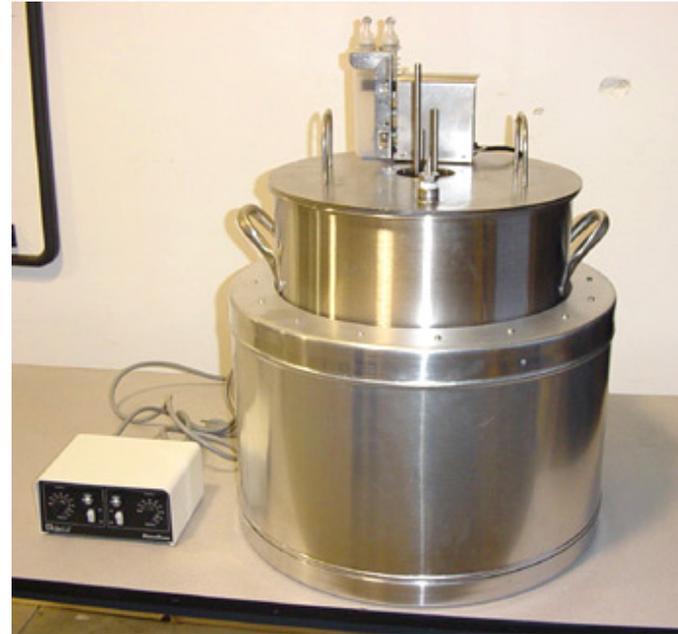
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The Professional SP is the perfect unit for a small commercial herbal extract business. It was specifically designed to be as large as possible and still be easy for one person to clean in the kitchen sink. Sturdy stainless steel construction means it is nearly indestructible. This unit will extract 8-10 lbs. of herb per batch in a 24 hour period. Setup is approx. 1/2 hr. and then it does the work unattended. This is the same unit Eden Labs uses for toll processing and we have seen it generate \$500.00 per day. Highly recommended.

Pricing starts at \$7,500.00



Hydraulic Press

Hydraulic Press available from 10 - 250 ton pressures. Can be used to squeeze the solvent out of extracted herb or to press fresh fruit and vegetables for natural juices and purees'. All stainless steel construction.

Prices Start at \$6,000.00





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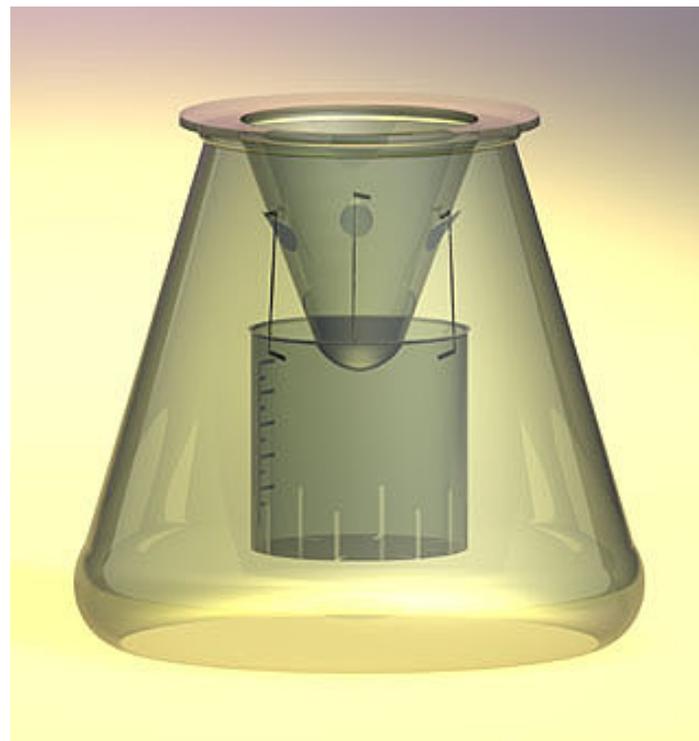
PICTURE GALLERY

Home and Light Commercial Units

The Home Unit

The Coldfinger Home Unit is elegant in its simplicity. This small self contained unit takes less than five minutes to set up and can extract 2-4 oz. of herb at a time. It can use an electric stove top range or hot plate as a heat source.

Price.....\$325.00



The Apothecarian



Strong Heart Formula is a revolutionary product from Eden Labs LLC!

The Apothecarian is a hybrid of the home and professional units. It combines the convenience of a sophisticated water cooled condenser with the simplicity and lower cost of the home unit. With two sizes to choose from, this is the obvious choice for most herbalists.

Prices

4 Liter \$500.00

6 Liter \$800.00 (Includes Heater)



Mushroom Cap

The mushroom cap is based on a design used by medieval alchemists for extracting essential oils and fragrance essences. Steam passes through the plant material stuffed in the inside of the cap, condenses on the walls of the mushroom cap and runs out in to the outside flask carrying the desired oils with it. This unit can be purchased as an accessory to the other glass units or individually.



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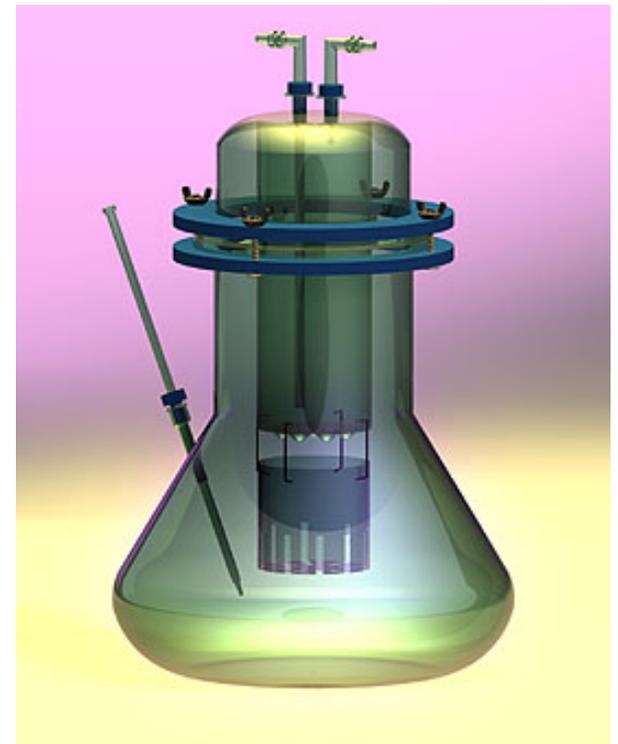


Complete unit (shown above) - \$270.00 Mushroom Cap Accessory - \$195.00

Professional Unit

The Coldfinger Professional unit is ideal for the full-time herbalist. The high capacity soxhlet basket will hold up to one half pound of ground herb for extraction. The extra long inverted condenser provides a heavy flow of solvent to speed your extraction process. The heating unit provides pinpoint temperature control and a warm air convection current that wraps around the whole unit providing the ideal environment for solvent evaporation and condensation.

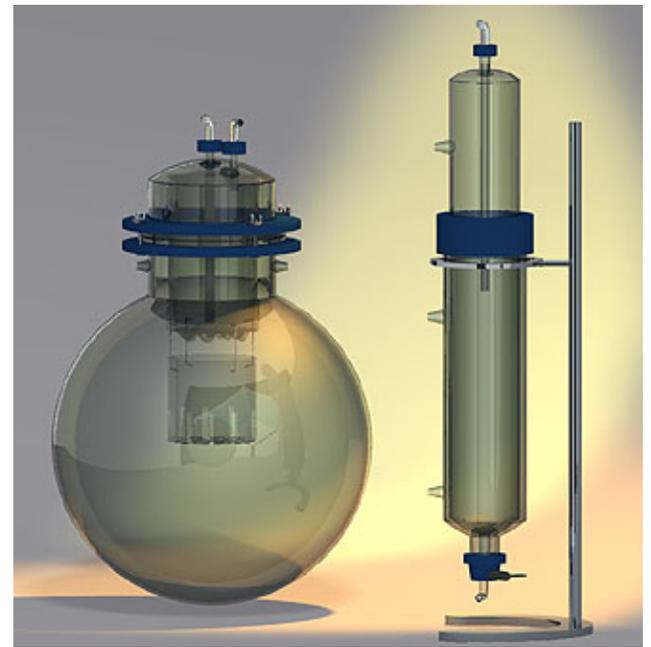
Price.....\$1,400.00 (Includes Heater)



Round Bottom Professional

The Professional Round Bottom unit performs the same functions as the standard Professional unit with the added benefit of being able to pull a deep vacuum. The use of vacuum enables the user to distill at much lower temperatures and do extractions much faster. The unit comes complete with a cold trap to capture solvent vapors and return the solvent to the main flask. It also comes with a high quality vacuum pump which pulls a vacuum of 20 microns and a CFM of 4, and a heating mantle with controls.

Price.....\$3,900.00





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Vacuum Pumps and Compressors

Robinair Vacumaster Vacuum Pumps 4 or 6 C.F.M.

Features:

- Two Stage System.
- Iso-Valve isolates pump from the system for accurate vacuum readings.
- Offset rotary vane design.
- Fine mesh filter inside pump intake prevents outside contaminants.

Specifications

CFM	Vacuum (Microns)	Motor Size (H.P.)	Oil Cap. (Oz.)	Length	Width	Hieght	Price
4	20	1/3	13	15"	5 5/8"	9 3/4"	\$575.00
6	20	1/2	13	15"	5 5/8"	9 3/4"	\$650.00





Eden Labs Exclusive Compressed Gas Pump

Features:

- Food Grade
- Explosion Proof
- Pumps Liquids or Vapors
- Pumps up to 340 psi
- Pulls a vacuum of 28" of mercury

\$16,0000





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Extraction Services

Eden Labs offers a variety of extraction services. Please contact us and give a detailed description of your needs and we will give you a quote. We are capable of doing anything from research samples to commercial scale processing.





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Eden Labs LLC supports a variety of different methods for performing extracts. Please review these methods to decide which systems applies to your needs. Feel free to call or E-mail any questions you may have.

DISTILLATION/EXTRACTION

This is the original extraction method that Eden Labs was built on and it continues to be the backbone of the company. Technically, our distillation devices are "modified soxhlet extractors." The original soxhlet extractor was developed by Franz Von Soxhlet, a German agricultural chemist, in the early part of this century. Our patent pending modifications to his basic design make it possible for the operator to distill at much lower temperatures and it enables one to recollect the solvent that was used to extract the plant material back out of the extract for re-use.

Within an enclosed flask there is an inverted condenser pointing down into the flask from the top. Just below that condenser will be suspended either what's called a soxhlet basket or a recovery vessel depending on whether you're extracting or recovering solvent. The condenser will have cold liquid circulating through it to keep the condenser cold. In the bottom of the main flask solvent is placed. To do an extraction, the ground plant material is placed in the soxhlet basket which is a vessel with perforated sides and bottom so that liquid can fall through it. When gentle heat is applied to the main flask, the solvent begins to evaporate and the solvent vapors reach the cold condenser at the top of the flask and begin to liquefy on the sides of the condenser. (much the same way that a cold glass of water becomes wet on the outside of itself on a hot day) The re-condensed solvent on the sides of the condenser begin flowing down the sides of the condenser and begin dripping off of drip points on the end of the condenser. This solvent drips into the top of the soxhlet basket where it saturates the herb being extracted. The solvent flows through the basket and out the holes in the bottom of the basket carrying the extract with it into the bottom of the flask.

The extract laden solvent falling from the soxhlet basket is dark in color and as it becomes clearer you know that the plant material is leached out and the process is finished.

At this point you can do one of three things: 1. Stop the operation and pour the extract infused solvent out of the main flask. 2. Hook up the recovery vessel and remove the solvent from your extract which generally leaves a paste behind. 3. Dump and squeeze out the spent plant material in the soxhlet basket, then start a fresh basket of herb in the extractor using the same solvent which continually re-distills and extracts regardless of how much extract is infused into it in the bottom of the main flask.

The recovery vessel is simply a cup which is suspended below the condenser. As solvent vapors re-condense and fall off the tip of the condenser, they fall into the cup and are thus separated from the extract itself.



Strong Heart Formula is a revolutionary product from Eden Labs LLC!

Our most sophisticated units which use this process are also vacuum compatible. Applying a vacuum to this inside of the main flask lowers the boiling point of the solvent enabling the operator to distill solvent at much lower temperatures and to distill much more quickly. When using vacuum, solvent vapors will migrate out of the port through which the vacuum is being pulled. To capture these vapors before they go into the vacuum pump, a cold trap is utilized which is a different type of condenser which re-condenses solvent vapors and then sends the liquid solvent back into the main flask. (see Professional Round Bottom unit)

COLD PERCOLATION

This is a traditional method of extraction used by herbalists throughout the world and it's very simple. Above a flask or vessel is suspended a cone or tube. The bottom of the tube has a perforated base which holds ground herb in place. Solvent is poured into the top of the tube where it soaks through the herb leaching out the extract and then falling out the bottom end of the tube into the flask. If desired, the percolation tube can be wrapped in heating tape to help facilitate the extraction.

Percolater cones or tubes can be ordered as accessories to any of our basic distillation units. Please contact us for details and prices as these our custom made to customer request.

AGITATION/DISTILLATION

This is the accepted method used by most large, industrial operations which are in the business of processing herbal extracts. The main reason for this is that the distillation/extraction method outlined earlier becomes cost prohibitive and very time consuming when sized up to industrial scale. (Our largest distillation/extraction unit is the size of a 55 gallon drum. Beyond this size, that design becomes impractical.)

The first stage of this process involves the use of a large mixing vat or tank. The tank is heated by a water jacket and has a big mixing arm with blades on it extending down through the top of it. Ground herb and solvent are put in the tank and agitated for a determined period of time. In the bottom of the tank is a three-way valve. During agitation the valve is closed. After agitation, the valve is opened to let the liquid out but the plant material is retained for further agitation. The liquid that is recovered from this first run is very thick with extract and is suitable for immediate use if a liquid extract is the desired form.

To completely leach out the plant material, more solvent must be introduced into the agitation vessel whereby the process is repeated. This process may be repeated 2-4 times to completely leach out the extract from your herb with each successive run yielding a leaner batch of extract. When the last run is complete, the valve is opened up so that the spent herb and the solvent all run out thus draining the



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tank. To recover the solvent from these batches of extract, a distillation vessel is used to strip the solvent out of the extract similar to the solvent recovery method outlined in the distillation/ extraction section. A press or centrifuge is used to squeeze the liquid out of the spent plant material.

High Pressure- Supercritical/Subcritical Extraction

This is the most technologically advanced extraction system in the world. Research into the techniques and applications of this amazing process is ongoing and Eden Labs is at the forefront of these investigations.

Super Critical Fluid Extraction (SFE) involves taking gases, usually CO₂, and compressing them into a dense liquid. This liquid is then pumped through a cylinder containing the material to be extracted. From there, the extract laden liquid is pumped into a separation chamber where the extract is separated from the gas and the gas is recovered for re-use. CO₂'s solvent properties can be manipulated and adjusted by varying the pressure and temperature that one works at.

The advantages of SFE are the versatility it offers in pinpointing the constituents you want to extract from a given material and the fact that your end product has virtually no solvent residues left in it. (CO₂ evaporates completely) The downside is that this technology is quite expensive.

There are many other gases and liquids that are highly efficient as extraction solvents when put under pressure. Please click on our section titled High Pressure Supercritical Fluid Extraction for more details.



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SUPERCRITICAL FLUID AND HIGH PRESSURE SOLVENT EXTRACTION

High pressure extraction is the most effective and efficient way to extract valuable constituents from botanicals. The simplest way to explain this process is that you take the plant material and put it in a pressure vessel and pump a particular liquefied gas or liquid solvent through it at a specific pressure and temperature.

The pressure forces the solvent into the cell walls of the botanical and separates the desired constituent rapidly. The process of separating the extract from the solvent varies from one solvent to another. Eden Labs has conducted in depth studies and trials with all the most important solvents and designed equipment which can utilize all of them. Here is our summary of findings. Following the summary you will find starting prices for units that will utilize the solvents of your choice. Keep in mind that we can design units that utilize a variety of solvents if you choose that option. Eden Labs can provide consulting and sampling to help you. Carbon Dioxide CO₂- Carbon Dioxide is the king of extraction solvents for botanicals. It is an all natural product which leaves no toxic residues behind. Its extraction properties can be widely and precisely manipulated with subtle changes in pressure and temperature.



It is inexpensive and widely available. The capability of processing botanicals skillfully with CO₂ gives a company an added edge of status and prestige.

There are two basic types of CO₂ extraction. Low pressure cold extraction involves chilling CO₂ to between 35-55 degrees F and pumping it through the plant material at between 800-1,500 psi. Supercritical Fluid extraction involves heating the CO₂ to above 87F and pumping it above 1,100 psi. Usually this work is done between 6,000-10,000 psi. Supercritical Fluid CO₂ can best be

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described as a dense fog whereas the first method described uses the CO₂ in a dense liquid state.

Low pressure CO₂ is often the best method for producing high quality botanical extracts. CO₂ has a high loading rate in this state meaning that you will have to pump many volumes of CO₂ through a given volume of botanical. The loading rate is typically 10-40 volumes. For this reason, it is important to have a high flow pump and a CO₂ recycle system unless wasting high volumes of CO₂ is not a concern.

Supercritical CO₂ has a much faster loading rate 2-10 volumes and a wide range of uses. The downside is that some extracts can be damaged by either the high pressure breaking molecular ring structures or the fact that moisture in the botanicals can react with the CO₂ and form carbonic acid which can turn some oils rancid. Following proper procedures can avoid these problems.

Eden Labs has pioneered a method of fractionating supercritical extracts so that constituents with different molecular weights fall out in to different separators during extraction. Below is a picture of a supercritical unit with this feature we manufactured at a research lab at Loyalist College in Belleville, Ontario.



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Ethyl Alcohol or Ethanol- The majority of extracts are made with ethanol and it is the most widely accepted method in use. There are many ways of extracting with alcohol but high pressure is the best. It is faster, does a more thorough job and requires less alcohol per volume of herb than other methods. It is a good idea to purchase vacuum distillation equipment with your high pressure alcohol extractor so that you can remove alcohol from the extract. High pressure alcohol equipment can also utilize compressed water which is very effective in many cases.

Propane- There is a little known school of thought in the natural products industry which believes that propane is the ultimate solvent for extracting botanicals. Eden Labs has tested this theory thoroughly and we have come to the conclusion that there is something to it. Although propane cannot be as widely manipulated through temp. and pressure as CO₂, it produces very similar results, sometimes better. It has an amazingly small loading ratio 1-4 volumes and it can be recovered quickly. This means much faster production times. It leaves no toxic residues and it is an all natural, organic solvent. The material data safety sheet, MSDS, says it is harmless except for the fact that is flammable. Because it works at relatively low pressures, 80-150 psi, the technology costs much less than a full supercritical CO₂ system and can be very competitive in terms of quality and speed of production.

The downsides to propane is that it is highly flammable so precautions such as sparkless rooms with powerful ventilation are a must. The fact that is is not widely understood or accepted can also be an issue.

Butane/IsoButane- In some cases where propane doesn't do the job, butane works better. It has all the pros and cons of propane and requires identical equipment for utilization.

R134a and other refrigerant gases- There has been a lot of talk in recent years about using R134a and related gases in natural product isolation. Our experience has shown that R134a has similar extraction properties to low pressure CO₂. It works better than anything for isolating fragrance and perfume essences.

The downsides are that it becomes highly toxic if overheated and there a number of conflicting patent and intellectual property claims regarding its use.

Shown here is our basic 5 liter pilot plant high pressure extractor. It comes with an extraction vessel measuring 2"x4" id, an 18"x6" receiver vessel and all necessary plumbing and valves. The internal walls are smooth as glass and the vessels are rated for 2,500 psi so it is suitable for all the



Strong Heart Formula is a revolutionary product from Eden Labs LLC!

solvents listed except the high end of supercritical CO₂. This system lists for \$13,000.00 (no pump or accessories included). Add \$10,000.00 for low pressure CO₂. If you want to work with propane, butane, refrigerant gases or any other gas with a vapor pressure between 20 and 340 psi, the complete unit is \$30,000.00. If you want to add high pressure alcohol to one of these units add \$2,000.00.

Included are pictures of larger units Eden Labs has built. These are custom jobs that we designed per customer specs. We can do the same for you!





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**VACUUM PUMPS &
COMPRESSORS**

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**EXTRACTION
SERVICES**

**EXTRACTION
METHODS**

**HIGH PRESSURE /
SUPERCRITICAL FLUID
EXTRACTION**

**FREQUENTLY ASKED
QUESTIONS**

TERMS

PICTURE GALLERY

**STRONG
HEART
FORMULA**

*The Herbal Herbal
Alternative for Cholesterol
and Heart Health*

Frequently Asked Questions

I need a custom design for a specialized application. Can Eden Labs accommodate me?

Absolutely. At Eden Labs LLC we pride ourselves on being able to meet the specific needs our customers. Your engineers and chemists can work directly with our designers to build the exact system you need.

What is the best solvent to use?

Generally speaking, most herbs are best extracted with a 50-50 mix of ethanol and water or Vodka. In some cases a desired constituent is not soluble in alcohol or water and must be extracted in a more exotic solvent like chloroform or ether. If that is the case, you will need one of the Professional units that seal up so solvent vapors don't escape. Ultimately, carbon dioxide is often the ideal solvent because it has different solvent properties at different pressures and leaves no traces or residues in the final product.

Will heat damage my herbal extract?

Different herbs have varying sensitivities to heat. It is usually good to have some heat when processing herbs. Moderation is the key. Temperature ranges from 100-150 degrees Fahrenheit are usually ideal. All of Eden Labs products will operate in this temperature range. Many herbalists believe that herbs should be extracted at room temperature. If you want to follow this rule, a cold percolation unit, the Professional Round Bottom unit, or a mixing tank is the way to go.

How are solvents removed from the extract?

Solvents are distilled out under gentle heat or gentle heat and vacuum or just vacuum if no heat is desired. This can be done because your solvents have a much lower boiling point than your extract. Therefore when heat or vacuum is applied to the extract infused solvent, the solvent begins to vaporize and rise out of the extract whereby it is collected into another vessel.



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Terms and Conditions

Eden Labs LLC accepts Personal and Business checks as well as Visa, MasterCard and Discover. We also accept wire transfers.

We require payment in advance for all glass units. Shipment occurs in 1-4 weeks depending on the glassblowers schedule.

Commercial units require 33% down, another 33% one month from original deposit, and full payment prior to shipment.

Units which are left with Eden Labs LLC more than 30 days after completion are subject to a \$200.00 a month storage charge. All orders not paid for within 14 days of final billing are subject to a restocking charge of 20% and may be sold elsewhere by Eden Labs LLC.

Customers are welcome to visit the Eden Labs LLC machine shop in Columbus, Ohio to view the progress of their unit. Training is provided as part of the original contract if done in Columbus. On site setup and training at your location requires all travel and sleeping accommodations be covered by the client as well as \$500.00 per day.





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Product Picture Gallery

Click on any of the below images to see a larger photo of the product. Images will open in a new window.



Commercial Vacuum Distiller



Pilot Plant Supercritical Fluid Extractor



PICTURE GALLERY

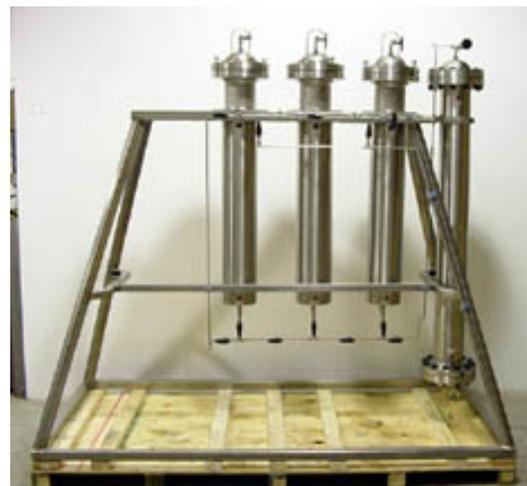


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High Pressure Alcohol Extractor



All Stainless Steel Herb Press w/100 Micron Filter
Basket



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EXTRACTION

Supercritical Extract Receiver Vessel



CO2 Recovery System



High pressure extractor configured for CO2 and
compressed gases. (refrigerants, propane, butane,
etc.)

CO2 Extractor w/ Freeze Dry Accessory

EXTRACTION SERVICES

EXTRACTION METHODS

HIGH PRESSURE / SUPERCRITICAL FLUID EXTRACTION

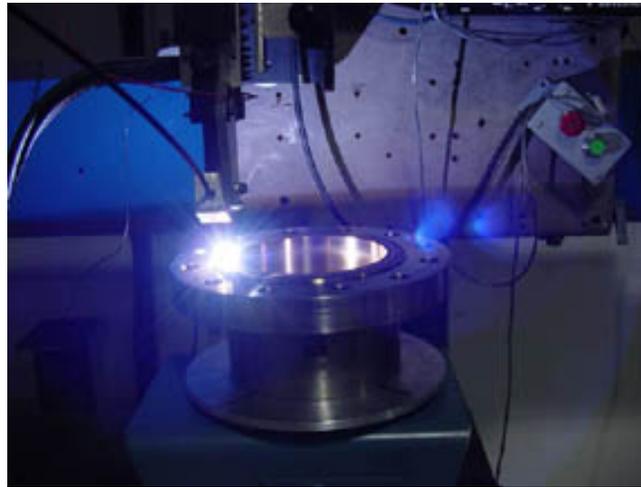
FREQUENTLY ASKED QUESTIONS

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PICTURE GALLERY

STRONG HEART FORMULA

The Herbal Herbal Alternative for Cholesterol and Heart Health



Automated Welding of Pressure Vessel



Commercial Extraction Rack



Round Bottom Professional Unit



Commercial Vacuum Distiller/Extractor



Strong Heart Formula:
*The Herbal Alternative for Cholesterol
and Heart Health*



After using Strong Heart Formula for 30 days my cholesterol reading went from 212 to 170. I am amazed!
Bernard Beck, Columbus Ohio

- Reduce Your Cholesterol
- Lower Your Blood Pressure
- Improve Heart Rhythm*



Strong Heart Formula is just \$19.95 per 4 oz. bottle.

Satisfaction is
Guaranteed

[LEARN MORE](#)

[CLICK HERE](#) for an article on Arjuna and other Heart Healthy Herbs

[CLICK HERE](#) for an article about the benefits of Turmeric as published in The Wall Street Journal

[CLICK HERE](#) for a scientific study discussing Arjuna and its effect on smoking related health issues.

[CLICK HERE](#) for an article on Turmeric from Knight-Ridder and Newsday.com

***THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THIS PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT, CURE, OR PREVENT ANY DISEASE.**

Questions or Comments?
Email

eden_labs@yahoo.com

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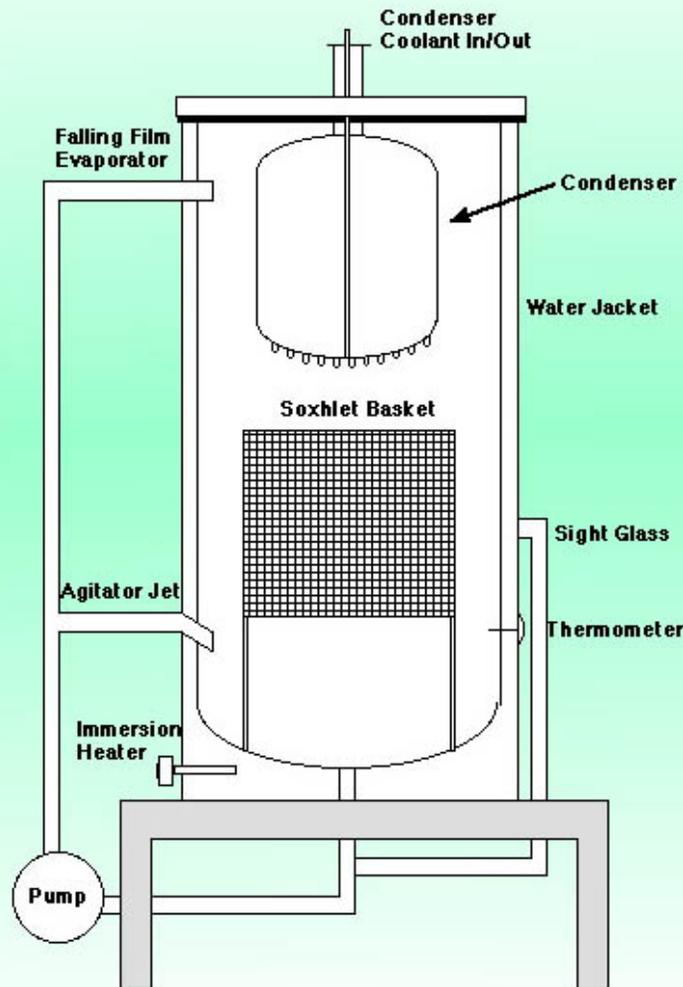
**STRONG
HEART
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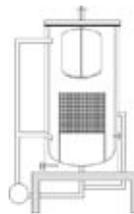
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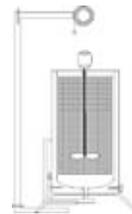
The herb basket measures 18"x18" and holds approx. 40-50 lbs. Set-up takes about 20 minutes and is like loading a giant coffee maker. Then the unit runs for 1-3 days. At the end of the process, you will have approx. 30 gallons of very concentrated high quality liquid extract.



[Commercial
Vacuum](#)



[Coldfinger
Extraction](#)



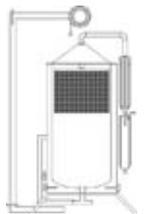
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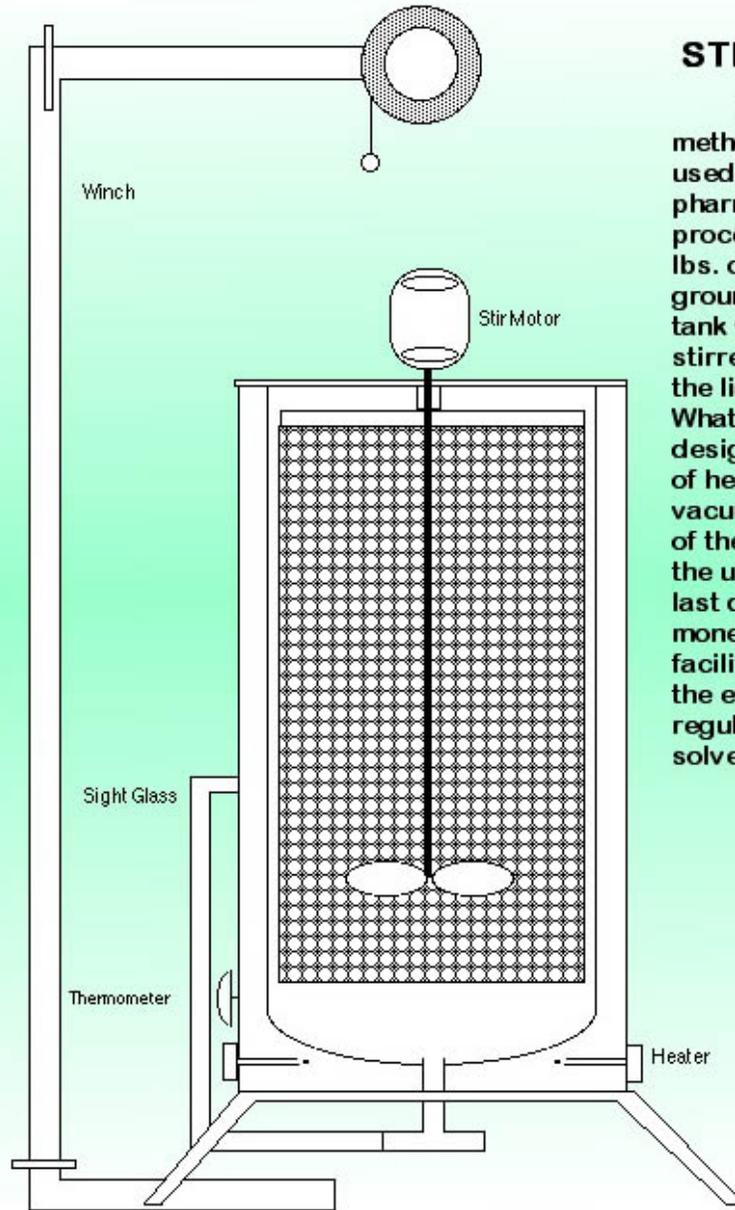
**FREQUENTLY ASKED
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PICTURE GALLERY



*The Herbal Herbal
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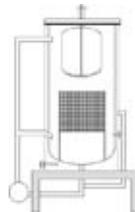


STIRRED REACTOR

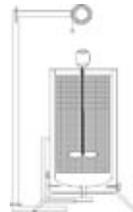
This is the standard method of making extracts used by countless food, pharmaceutical and herb processors world-wide. 8 lbs. of solvent to 1 lb. of ground botanical is put in the tank where it is heated and stirred for 90 minutes. Then the liquid is drained off. What makes the Eden Labs design unique is the option of heating and putting vacuum to the tank at the end of the process. This allows the user to recover every last drop of solvent saving money and bringing your facility into compliance with the ever expanding regulations regarding solvent vapor emissions.



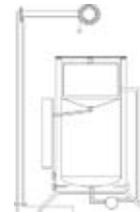
[Commercial Vacuum](#)



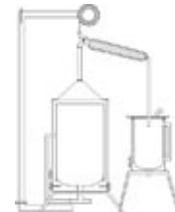
[Coldfinger Extraction](#)



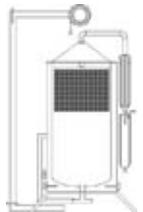
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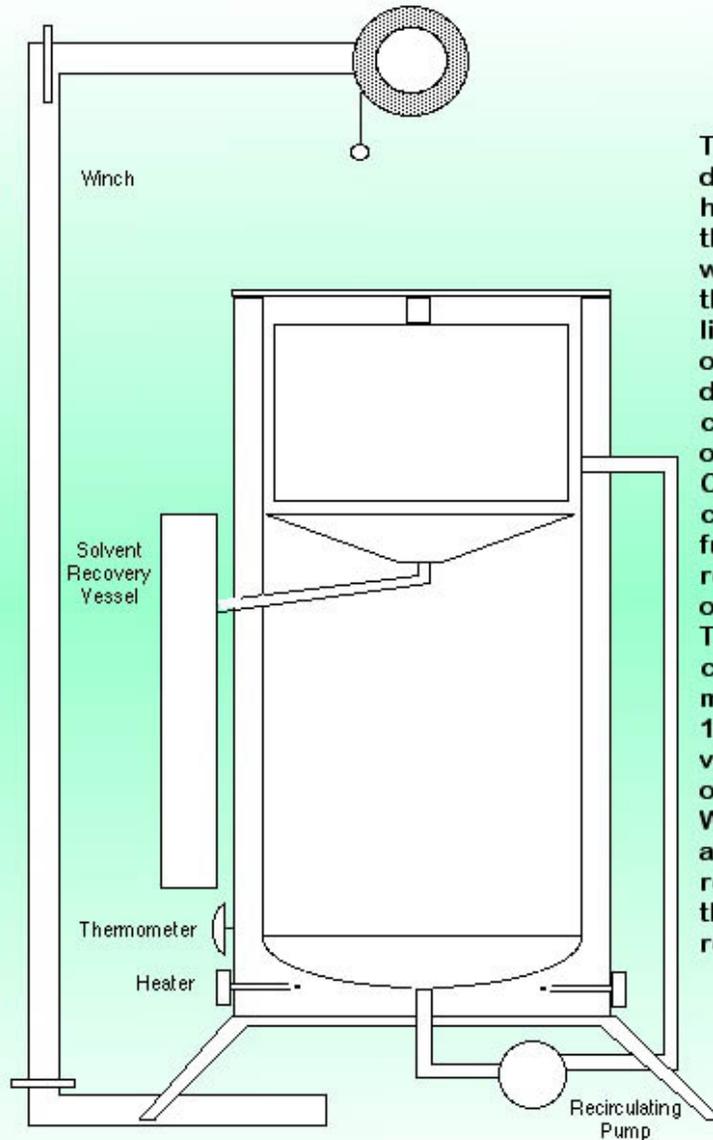
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*The Herbal Herbal
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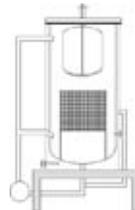


ACCELERATED SOLVENT RECOVERY

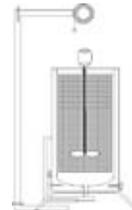
The method of solvent distillation recovery shown here is four times faster than the conventional method whereby vapors flow out of the boiling chamber and liquefy on a condenser outside of the vessel. As the diagram shows, the condenser is inverted inside of the boiling chamber. Condensate drips off the condenser and in to the funnel below it. The recovered solvent then flows out to a separate vessel. Tests show that using the conventional distillation method with the chamber at 120F and 20" of mercury vacuum, one gallon per hour of ethanol will distill off. With the Eden Labs accelerated solvent recovery method show in this diagram, one gallon is recovered every 15 minutes.



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[Coldfinger Extraction](#)



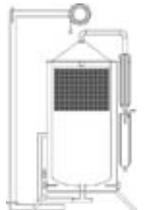
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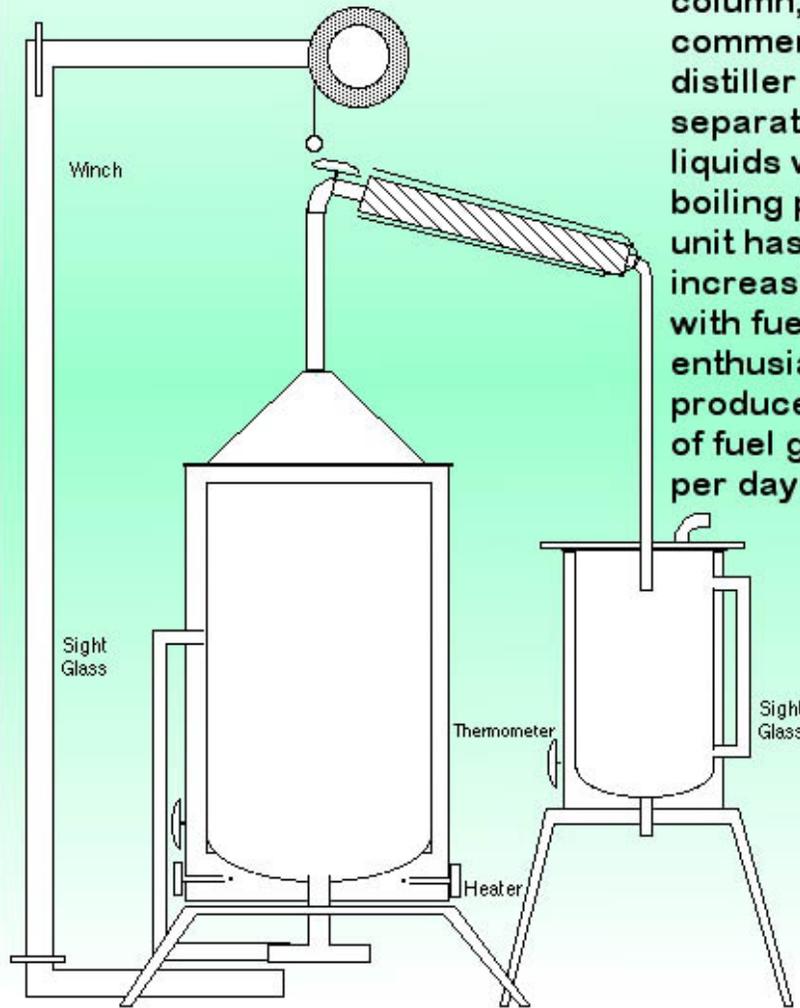
PICTURE GALLERY

**STRONG
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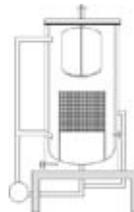
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FRACTIONATING COLUMN

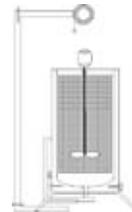
By adding a packed column or fractionating column, the commercial vacuum distiller can be used to separate various liquids with different boiling points. This unit has become increasingly popular with fuel ethanol enthusiasts. It can produce 20-25 gallons of fuel grade ethanol per day.



[Commercial
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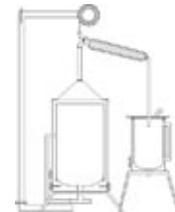
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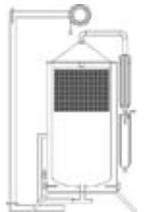
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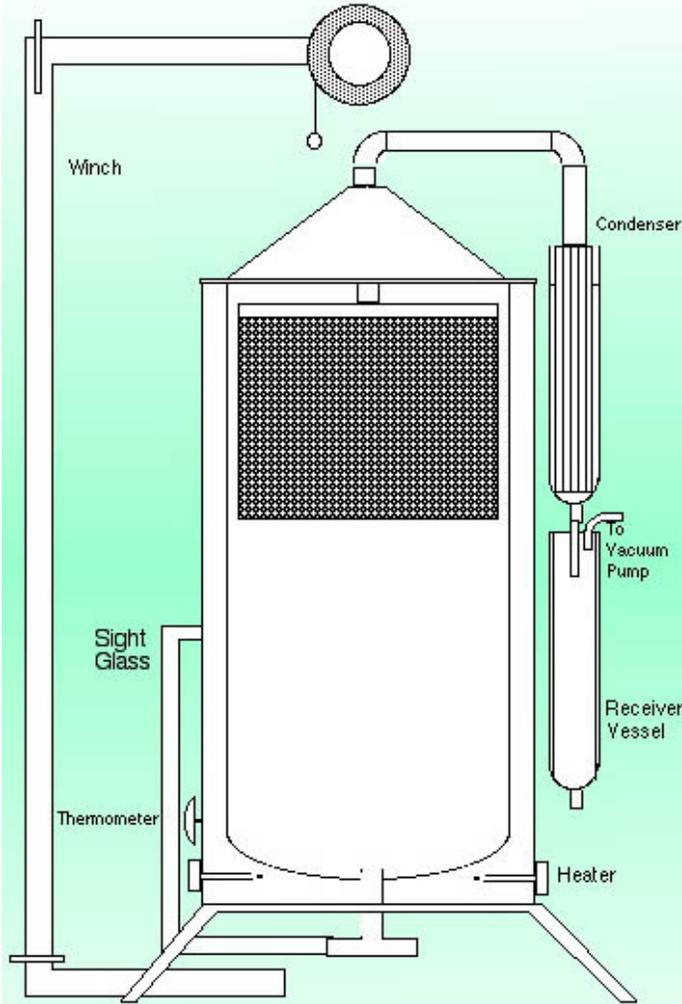
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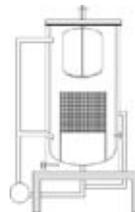
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VACUUM STEAM DISTILLATION

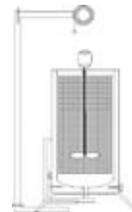
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Commercial Vacuum Distiller

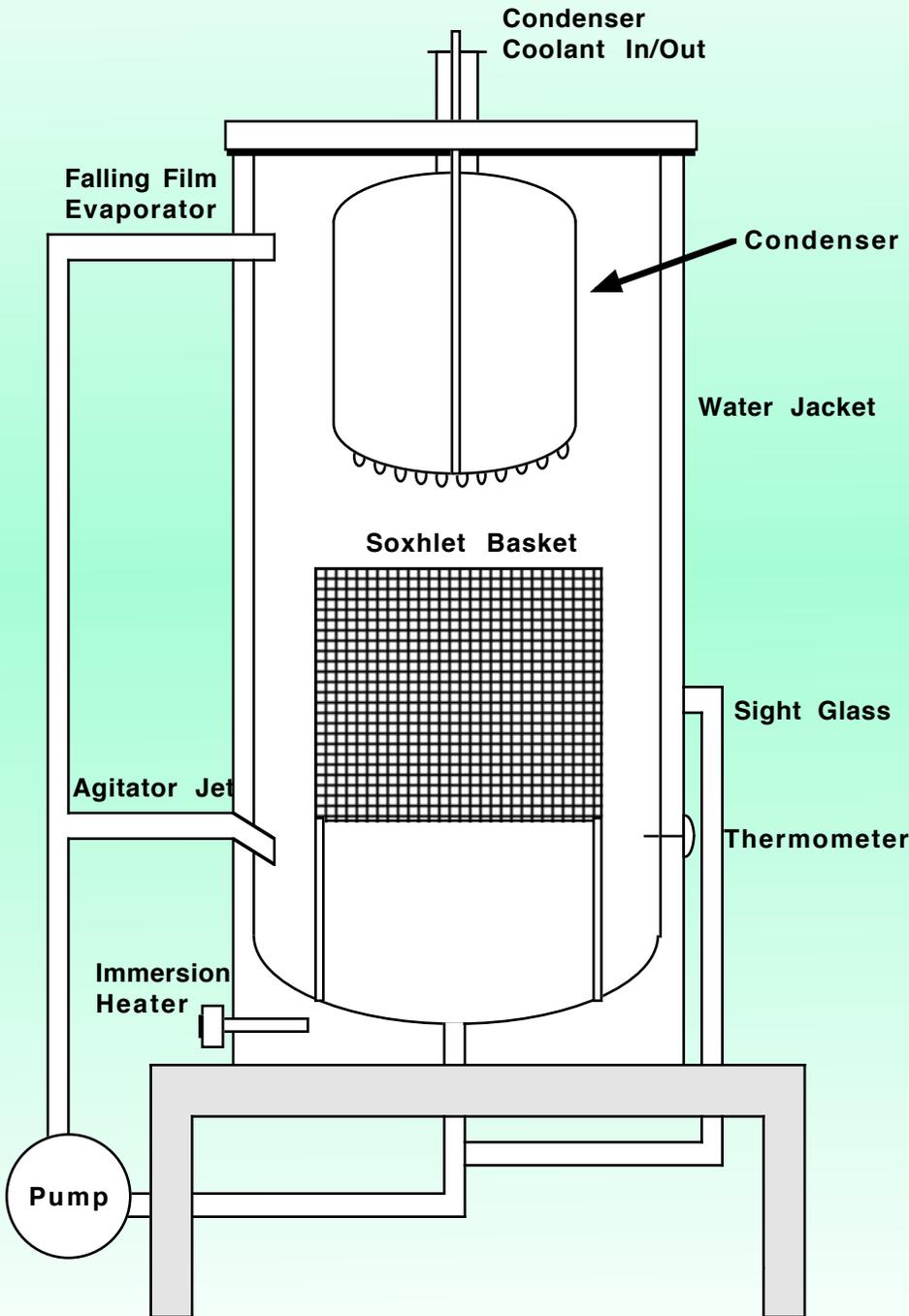
The commercial vacuum distiller is the world's most advanced and versatile extractor. It offers five different methods of extracting botanicals and four different ways of distilling. The heart of the system consists of a 2'x4' id stainless steel processing tank. This tank is surrounded by a heating jacket that is filled with water and warmed with two 4,000 watt immersion heaters. It sits in a stainless steel stand suspended 18" above the floor. An electric winch is included for lifting and lowering components for the tank. A circulating pump is also included.

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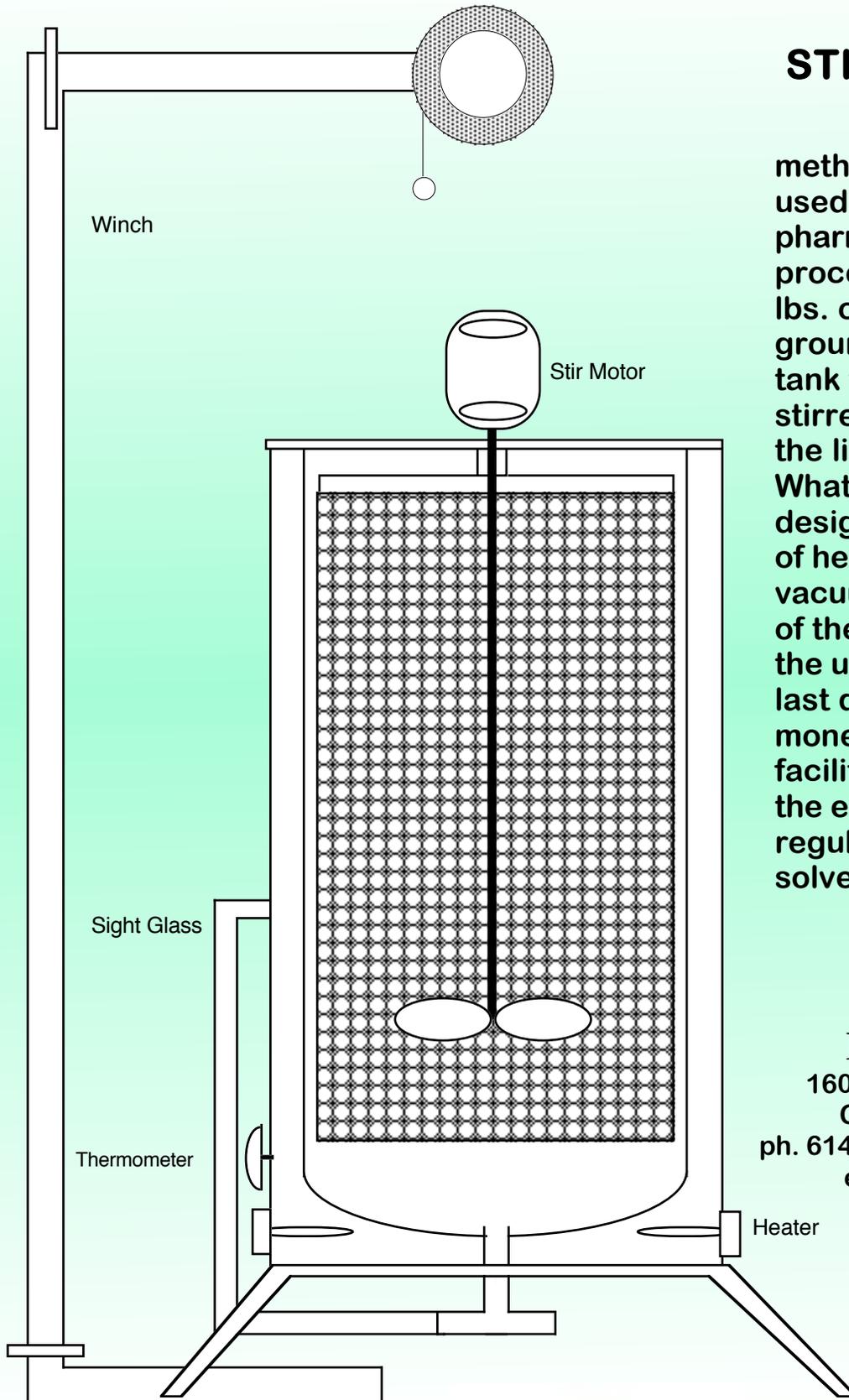
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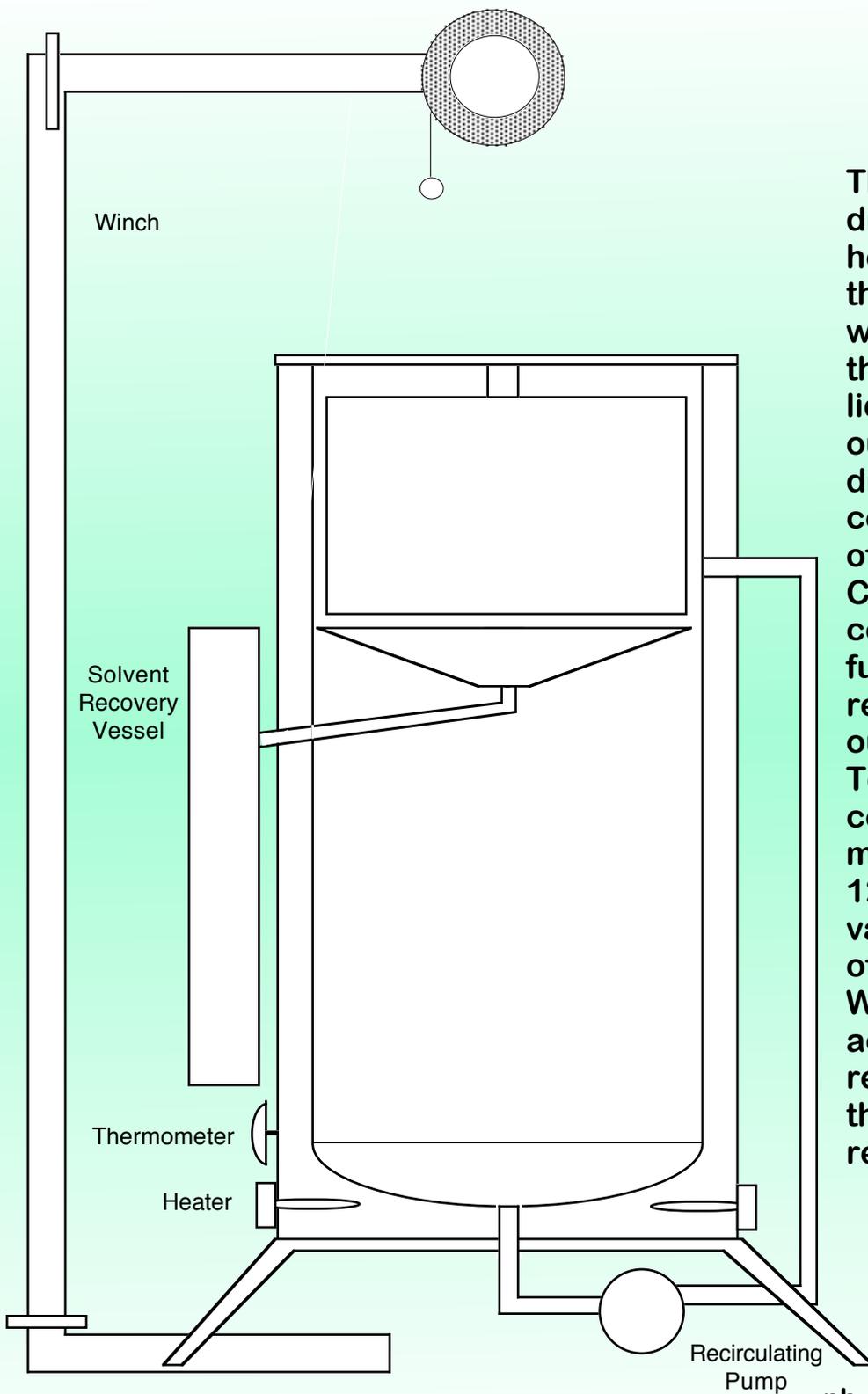


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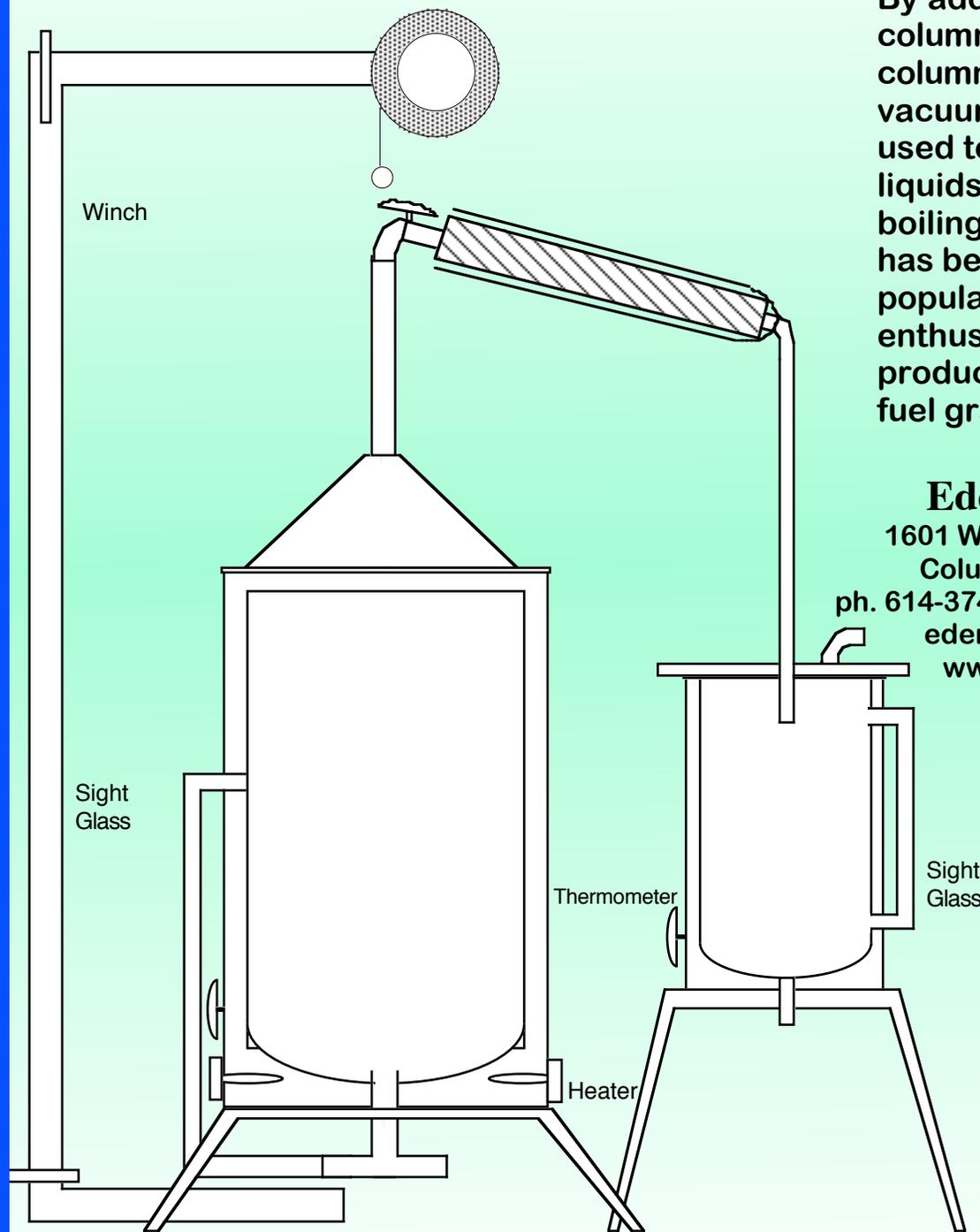
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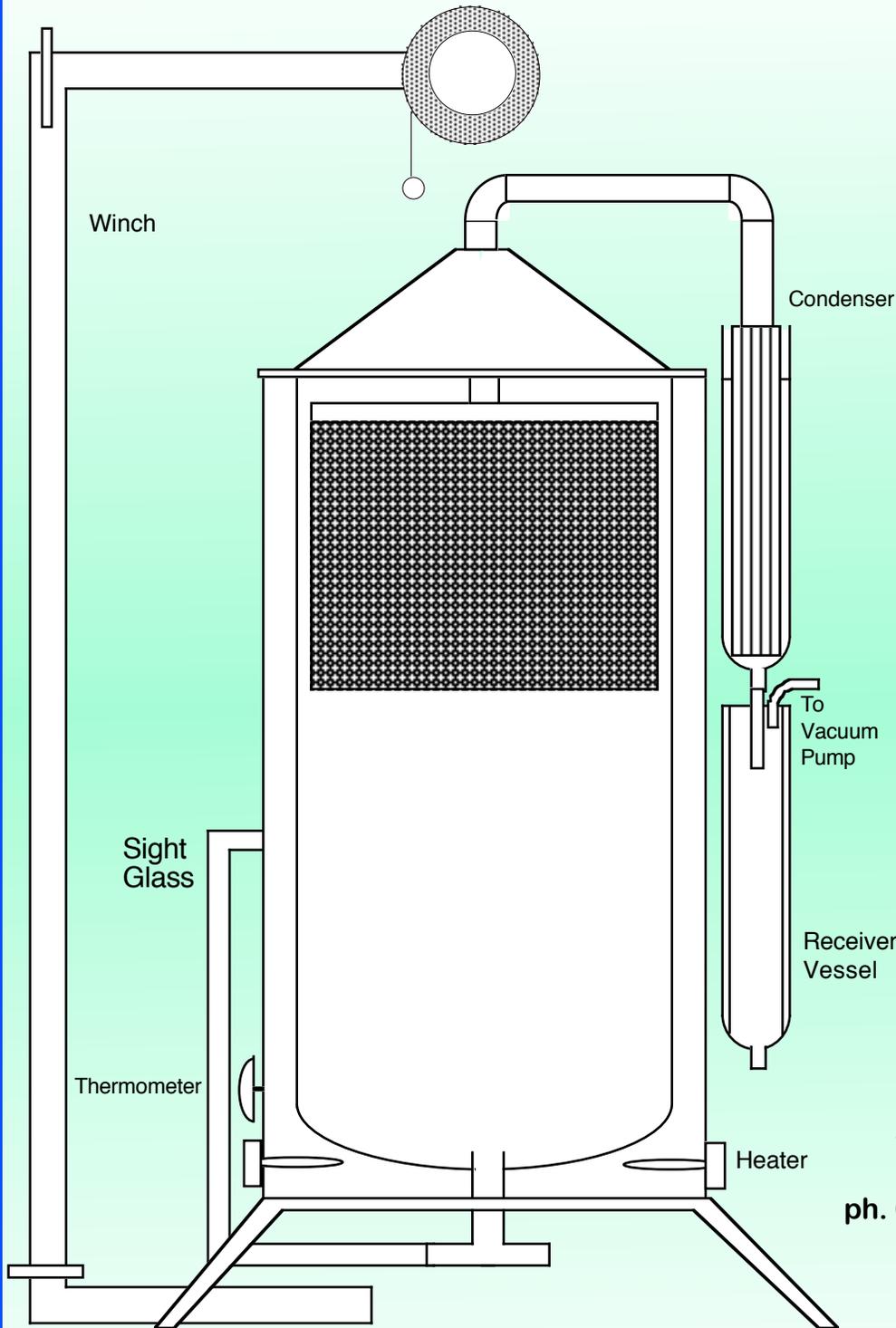
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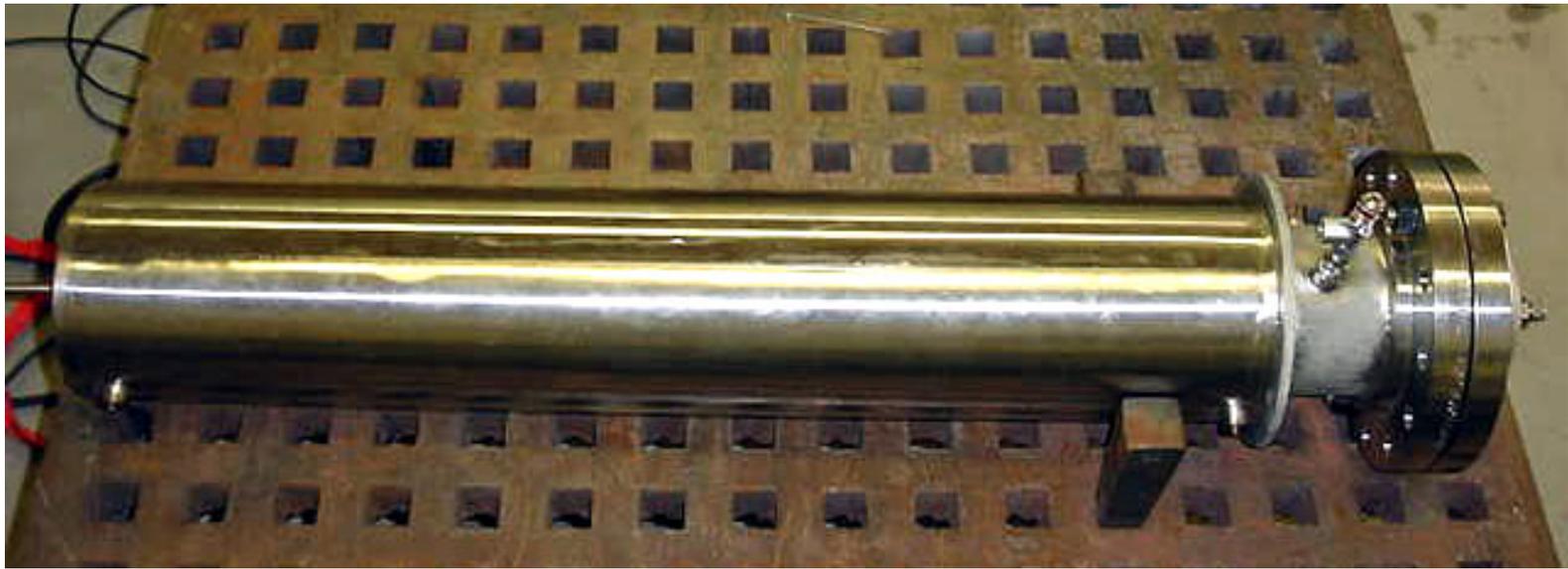


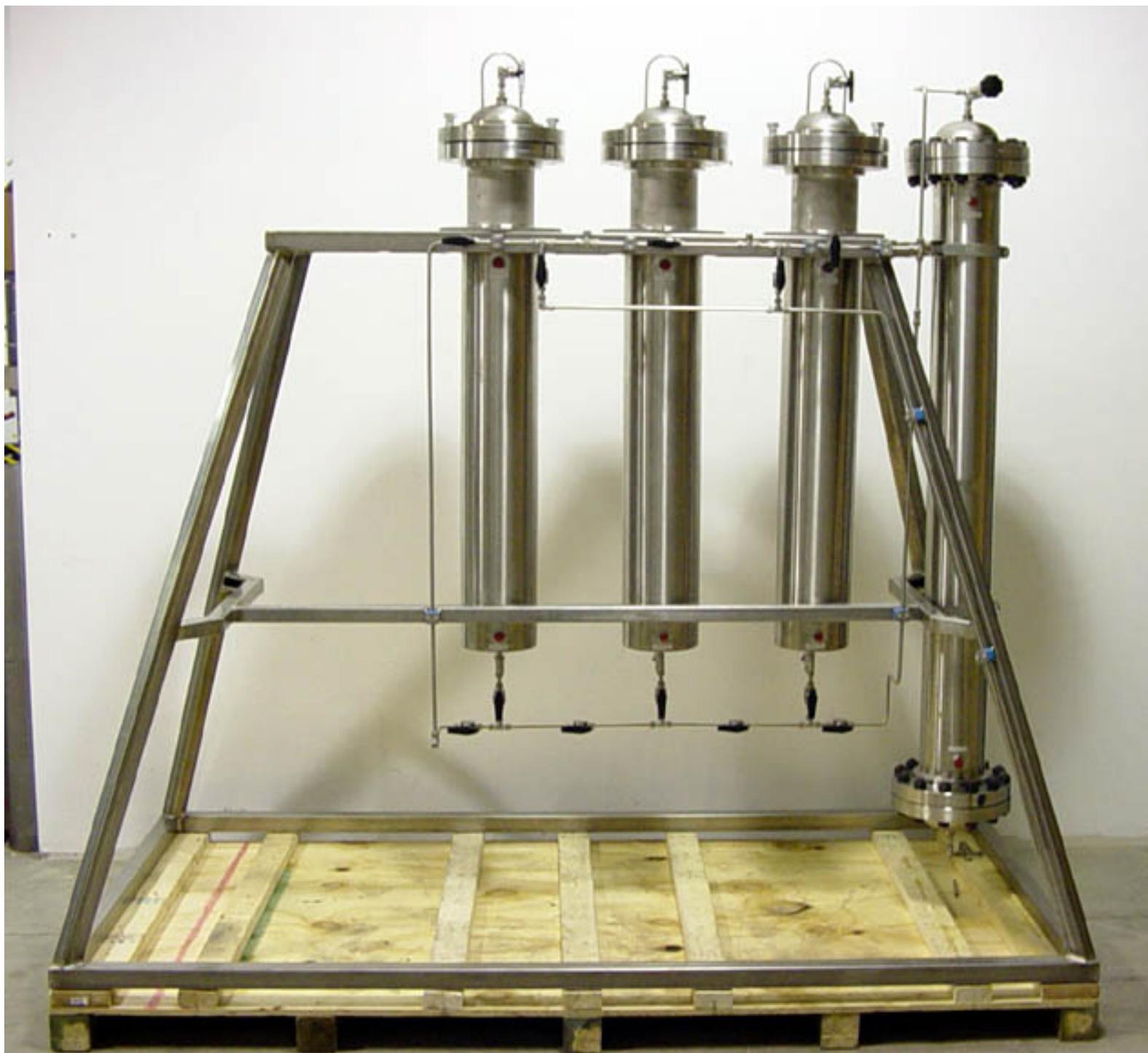






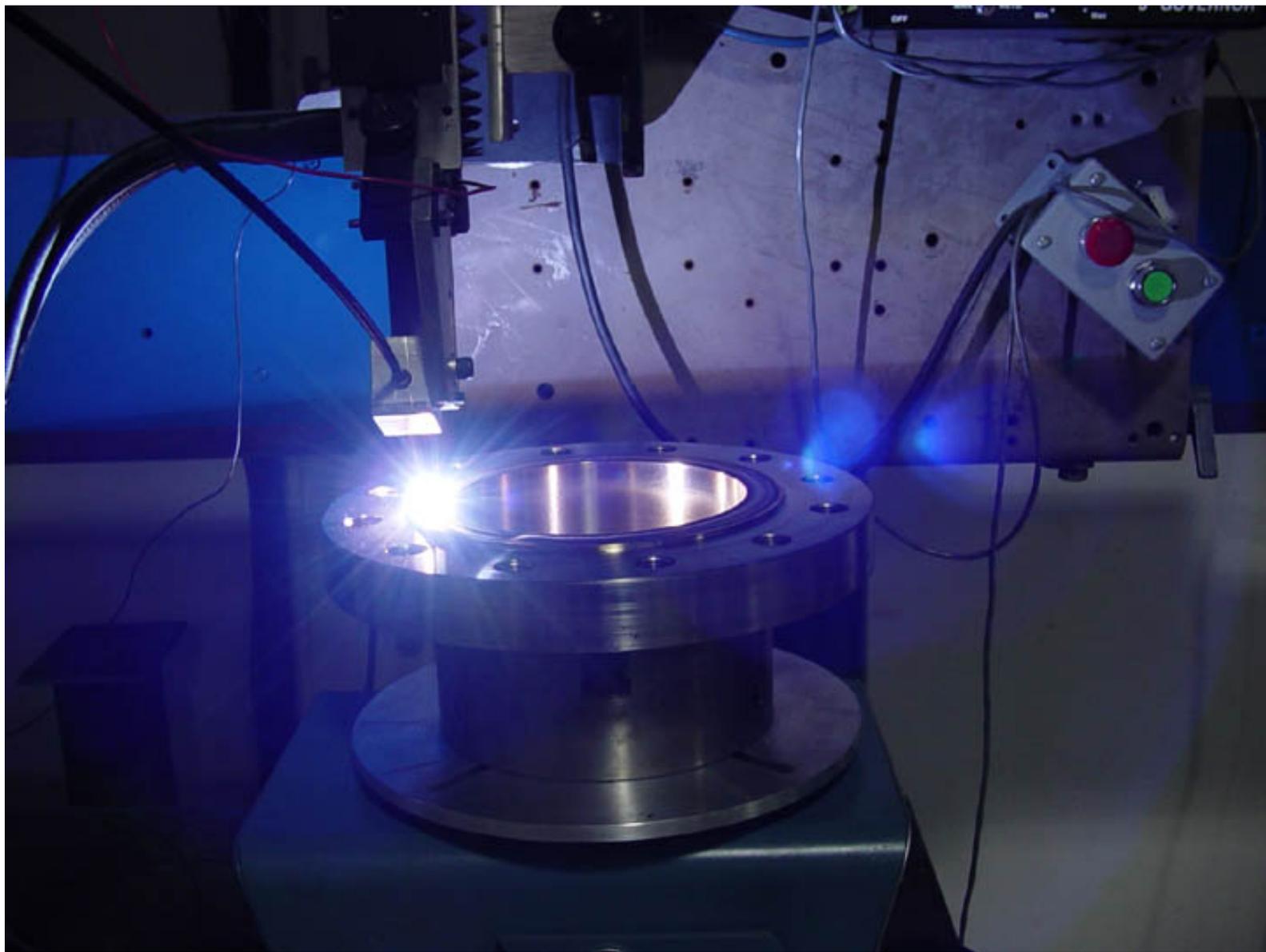




















Strong Heart Formula:
*The Herbal Alternative for Cholesterol
 and Heart Health*

**Strong Heart
 Formula is just
 \$19.95 per 4 oz.
 bottle.**

**Satisfaction is
 Guaranteed**



Strong Heart Formula is a safe and natural herbal blend designed to help maintain cardiovascular health. The two primary herbs in this formula, [Arjuna](#) and [Turmeric](#), have been used in India for thousands of years. Users have reported improved cholesterol and blood pressure readings after only a month of use.* Click here for active [ingredient list](#).

Strong Heart Formula comes in liquid form. The herbal extract is suspended in a solution of water and vegetable glycerin which preserves the active ingredients. The formula is lightly sweet and can be mixed with water, tea, or juice. The dosage is two full droppers in the morning and evening until desired cholesterol and/or blood pressure readings are achieved. Once desired readings are reached, most people can maintain equilibrium with 1 or 2 droppers full per day.

All of the herbs in Strong Heart Formula are recognized as safe by the FDA and have been used safely in this country for many years. Strong Heart Formula comes in a 4 oz. bottle which, at four droppers per day, is a one month supply.

**Strong Heart
 Formula is just
 \$19.95 per 4 oz.
 bottle.**

Your **Satisfaction is Guaranteed**. We suggest that you test your cholesterol before starting our formula and again after using it for 30 days. If you are not satisfied with Strong Heart Formula for any reason, return it within 45 days of purchase for a refund of your purchase price.

***THESE STATEMENTS HAVE NOT BEEN EVALUATED
 BY THE FOOD AND DRUG ADMINISTRATION. THIS
 PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT,**

**Are you looking for an alternative to prescription
 medications for treating high cholesterol and/or high
 blood pressure?**

When Eden Labs President, Fritz Chess, discovered he had high cholesterol and blood pressure he was determined to find a natural solution even though nothing effective was currently on the market. Eden Labs manufactures herbal extraction equipment and herbal extracts so he had the resources to solve the problem.

The answer he was looking for turned out to be in an ancient healing tradition from India known as Ayurveda. One of the herbs known to Ayurveda as a powerful antioxidant, anti-inflammatory, and heart tonic herb is [Turmeric](#). Turmeric is a main ingredient in curry sauces. The other herb, which is relatively unheard of in America, is [Arjuna](#). Arjuna is the most powerful heart tonic herb in Ayurvedic medicine and is often prescribed for high blood pressure and cholesterol. It is also prescribed for heart palpitations and other types of irregular heart beats.

Fritz combined these two heart friendly herbs with some other Chinese tonic herbs also known to have cardiovascular benefits and created Strong Heart Formula. In one month of use his cholesterol went from 226 to 165 and his blood pressure readings dropped to the normal range. His brother Matt, a partner in Eden Labs, also tried it by mixing it in his morning coffee. He achieved similar results. After seeing the same benefits in several other individuals, the Chess brothers decided to bring this revolutionary product to market. They wanted others to enjoy good heart health without the risky side effects of pharmaceutical cholesterol and blood pressure medications.

CURE, OR PREVENT ANY DISEASE.

[CLICK HERE](#) for an article on Turmeric from the American Psychological Association

[CLICK HERE](#) for an article about the benefits of Turmeric as published in The Wall Street Journal

[CLICK HERE](#) for a scientific study discussing Arjuna and its effect on smoking related health issues.

[CLICK HERE](#) for an article on Turmeric from Knight-Ridder and Newsday.com

Questions or Comments?
Email

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Eden Labs LLC
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Strong Heart Formula is a product of Eden Labs LLC

Arjuna and Ayurveda Medecine

HEART disease is a leading cause of death and disability the world over. Heart disease, if let unmanaged, can result in heart attack and death. It is also a major cause of stroke and disability.

Heart disease is due to the narrowing of the coronary arteries that feed the heart. When the coronary arteries become narrowed or clogged by cholesterol and fat deposits – a process called atherosclerosis – and cannot supply enough blood to the heart, the result is coronary heart disease (CHD) or ischaemic heart disease.

If not enough oxygen-carrying blood reaches the heart, you may experience chest pain, and this is called angina. If the blood supply to a portion of the heart is completely cut off by total blockage of a coronary artery, the result is a heart attack. This is usually due to a sudden closure from a blood clot forming on top of a previous narrowing.

Excess cholesterol has been shown to increase the risk of heart disease by forming deposits in the coronary arteries.

In Ayurveda, Arjun is described as an important cardi tonic herb. Other risk factors that contribute to the increased prevalence of heart disease include increasing incidence of diabetes, obesity and other risk factors such as stress, a sedentary lifestyle and poor eating habits such as consumption of foods rich in saturated fats, smoking, and alcohol. Gender, age and heredity also have a role to play in determining who is at risk of developing heart disease.

While early diagnosis and the right medications are important, comprehensive lifestyle changes such as opting for a low-fat, vegetarian diet, stopping smoking, stress management training, and moderate exercise have been shown to bring about regression of even severe atherosclerosis¹.

Ayurvedic perspective of heart disease

In Ayurveda, ischemic heart disease (IHD) is known as Hridroga. There are five clinical descriptions of IHD according to Ayurveda based on vitiated doshas and other causes. If the pain is acute and has a shifting nature, it is known as vata heart disease. If it is associated with a burning sensation, it is called pitta heart disease. If the pain is mild and is associated with heaviness, nausea, and cough, it is called kapha heart disease. If all the representative symptoms are present, then it is identified as tridosha heart disease.

In Ayurveda, kapha (hardening of arteries) is the major underlying mechanism of heart diseases.

Various herbs are used in the Ayurvedic system of medicine for their heart protective actions. These are Arjun (Terminalia arjuna), Ashwagandha (Withania somnifera), Lasuna (Allium sativum) and Turmeric

(*Curcuma longa*).

Arjuna (*Terminalia arjuna*)

Arjun is an important cardiogenic plant described in Ayurveda². It is a large, evergreen tree that grows to heights of 60-90 feet throughout India. It has a spreading crown and drooping branches. The bark is very thick, grey or pinkish green, smooth, exfoliating in large, thin, irregular sheets.

The bark is useful as an anti-ischaemic and cardioprotective agent in hypertension and ischaemic heart disease, especially in disturbed cardiac rhythm, angina or myocardial infarction. *Terminalia arjuna* has been shown to be beneficial for coronary artery disease, heart failure, and possibly for high cholesterol levels. It has also been found to be antibacterial and antimutagenic³ (protection against cancer).

Various studies have demonstrated the heart protective action of Arjun. The effect of *Terminalia arjuna* on angina pectoris (chest pain) and congestive heart failure (where the heart cannot pump enough blood to various organs) was studied in 10 patients with ischaemic heart disease and/or myocardial infarction. Administration of *Terminalia arjuna* improved the left ventricular ejection fraction (which determines the heart's efficiency) in patients⁴.

In another randomised, double-blind study, 58 males with chronic stable angina (NYHA class II-III) received either *Terminalia arjuna* or isosorbide mononitrate or a matching placebo. There was improvement in clinical and treadmill exercise parameters in both groups compared to placebo therapy. These benefits were similar to those observed with isosorbide mononitrate therapy and the extract of Arjun was well tolerated⁵.

The heart protective actions of *Terminalia arjuna* are due to its potent antioxidant and cholesterol-reducing activity.

In a study on 105 patients, it was found that patients on Arjun had a significant reduction in the total and low-density lipoprotein (bad) cholesterol, along with enzymes responsible for initiating oxidative stress⁶.

Studies indicate that *Withania somnifera* possesses anti-inflammatory, antistress, antioxidative and rejuvenating properties.

Ashwagandha (*Withania somnifera*)

Withania somnifera is classified in Ayurveda as a rasayana, a group of plant-derived drugs that promote physical and mental health, augment resistance against disease and diverse adverse environmental factors, revitalise the body in debilitated conditions and increase longevity.

Studies indicate that *Withania somnifera* possesses anti-inflammatory, antistress, antioxidative and

rejuvenating properties.

It also appears to exert a positive influence on the endocrine, cardiopulmonary, and central nervous systems.

Study results show that it helps in the maintenance of myocardial (heart muscle) antioxidant status and contributes to the significant restoration of most of the altered haemodynamic parameters in heart disease⁷.

Ashwagandha and stress

The American heart association classifies "stress" as a "contributing risk factor" for heart disease.

Ashwagandha is an herb that enhances resistance to stress, increases stamina and promotes general wellbeing. It has a rejuvenating effect on the body. It imparts a sense of wellbeing and helps one cope with stress.

According to an Ashwagandha Monograph published in *Alternative Medicine Review* (2004), clinical trials and animal research support the use of Ashwagandha for treating anxiety, cognitive and neurological disorders.

Other commonly used herbs like Lasuna (garlic) and Haridra (turmeric) are potent vessel relaxants and also reduce the atherogenic (hardening of arteries) properties of cholesterol.

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THE WALL STREET JOURNAL, 08/30/2005

By Christina S.N. Lewis

New evidence suggests a common Indian spice is a potent antioxidant that can prevent many diseases. The spice, turmeric, a key ingredient of curry, has been used medicinally for hundreds of years. But scientists are starting to systematically explore the sweeping qualities of the bright-yellow powder.

An increasing body of scholarly research indicates that curcumin, the active ingredient in turmeric, could be used to prevent a range of illnesses, from cancer to skin disorders. Faced with a number of promising laboratory studies and animal trials, scientists are rushing to test curcumin's effectiveness in humans.

The U.S. National Institutes of Health has four clinical trials registered that are recruiting patients to test curcumin for pancreatic cancer, multiple myeloma, Alzheimer's and colorectal cancer.

Curcumin is "definitely on our radar screen," said Niles Frantz, a spokesman for the Alzheimer's Association in the U.S., when asked about a recent Alzheimer's trial.

Curcumin is cheap, widely available and has no known toxicities. Studies have shown that it has anti-inflammatory and cholesterol-lowering properties. And it is a potential Cox-2 inhibitor, the same mechanism targeted by Merck & Co.'s Vioxx painkiller and a promising anticancer sign.

Interest in curcumin was piqued after scientists realized that people living in India had lower rates of certain cancers. Researchers theorized that eating curry, which is liberally spiced with turmeric, could be the explanation. Curcumin isn't related to cumin, a spice commonly associated with Moroccan cooking.

In India, tradition calls for a bride to cover herself with turmeric to prevent wrinkles; some mothers will mix the powder with milk to ease an upset stomach. Johnson & Johnson sells a turmeric Band-Aid in India because the powder is reputed to help heal wounds.

Interest in curcumin appears to be increasing for several reasons. For one thing, alternative medicine has become more acceptable to mainstream doctors.

Also, in 2002, the NIH's National Center for Complementary and Alternative Medicine began actively soliciting grant proposals for preliminary trials in natural therapies, making it easier for researchers to find funding.

Consumers also may be ready to try something new. Several negative studies have affected sales of vitamin E, the most well-regarded antioxidant. Its sales declined about 35% in the past year, according to Grant Ferrier, editor in chief of Nutrition Business Journal.

By contrast, sales of turmeric-related dietary supplements increased 35%, Mr. Ferrier said. But curcumin still represents only \$15 million of sales in the U.S., a drop in the bucket compared with the \$20.3 billion nutritional-supplement industry.

"From the data that I've seen in the laboratory, curcumin could be very potent in terms of killing tumor cells," said Razelle Kurzrock, an investigator at M.D. Anderson Cancer Center in Houston, who studies curcumin and has applied for a patent on an injectable anticancer curcumin compound.

Research activity has exploded. A search of the U.S. National Library of Medicine reveals that 256 curcumin papers were published in the past year, compared with 94 published studies five years ago.

Though curcumin looks promising, it still has to make the leap from promising data to successful clinical trials. "Something can look very good in the laboratory and still not do much for patients," Dr. Kurzrock said.

Even if science bears out curcumin's effectiveness, this doesn't mean eating more curry necessarily will improve your health, since a lot of curcumin is needed to reap anticancer benefits, doctors say. In the Alzheimer's study at University of California, Los Angeles, for instance, patients were given daily four-gram doses, roughly the equivalent of about 120 curry dinners, according to its lead investigator.

Already, some entrepreneurs are trying to cash in on curcumin's promise.

Last month Pure Prescriptions Inc., an Encinitas, Calif., online retailer specializing in natural substances, launched a curcumin-based supplement, marketing it as an all-purpose antioxidant.

A biotechnology venture called Curry Pharmaceuticals, in Research Triangle Park, N.C., is seeking funding to develop curcumin compounds and to research a curcumin cream to treat psoriasis and other skin disorders. Madalene Heng, a doctor at the Center for Dermatology Care in Thousand Oaks, Calif., already sells such a cream, called Psoria-Gold. Martin Yarnell, a 41-year-old lawyer from Oak Park, Calif., said the product has nearly eliminated his lifelong psoriasis.

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KNIGHT RIDDER NEWSPAPERS and Newsday.com

Turmeric: a hot topic in fighting disease

October 25, 2005

WASHINGTON - Turmeric, the Asian spice that makes curry yellow, not to mention French's mustard and Hindu priests' robes, has yet another life: It's a promising potential weapon against several cancers, Alzheimer's disease, cystic fibrosis, psoriasis and other diseases.

"We know that it's an effective preventive at low doses," said Dr. Bharat Aggarwal of the experimental therapeutics department at the M.D. Anderson Cancer Center in Houston. "The question is whether larger doses can be therapeutic" for disease sufferers.

At least a dozen clinical trials on humans are under way in the United States, Israel and England to test the safety and dosages of turmeric's main ingredient, curcumin. It's a hot topic in health journals, too, cited 967 times since 2000 in articles reported on PubMed, the National Library of Medicine's research service.

Used for centuries

The spice, which is a relative of ginger, comes from the stems of the root of a large-leafed plant widely grown in Asia, especially in the province of Maharashtra in southwest India. The stems are boiled, dried and crushed to a powder with a bitter woody taste that's widely used as a spice and in folk medicines to cure stomach ailments and skin lesions. Turmeric was in use when the first Westerner, Marco Polo, visited the region in the 13th century.

Low rates among Indians for colorectal, prostate and lung cancers as well as coronary heart disease and Alzheimer's first drew Western researchers to curcumin. While genetics might have explained the low incidences, the rise in rates among Indians whose parents had moved to Western countries suggested a dietary cause. Subsequent lab tests on diseased cells and in mice strengthened claims for curcumin.

It's been demonstrated in animals to protect the liver, inhibit tumors, reduce inflammation and fight some infections. Curcumin has both antioxidant and anti-inflammatory properties, according to researchers, and may help lower cholesterol.

Cystic fibrosis trials

Unlike newly invented pharmaceuticals, curcumin has been widely used for many years, so a lot is known about it, according to Dr. Christopher Goss of the University of Washington Medical Center in

Seattle. He's recruiting cystic fibrosis patients for a Phase I study of curcumin's safety and efficacy. The patients will take up to 3 grams daily - six of the biggest pills that U.S. pharmacies sell. That's more than 50 times the amount of curcumin in a portion of curry.

Goss also will be seeking insight into findings reported last year in the journal *Science* that curcumin corrects the cystic fibrosis defect in mice. The defect, which suppresses a mutant protein essential to cell health, results in thick mucous that fatally clogs the lungs and pancreas. Researchers from Yale University and the University of Toronto found that curcumin treatment released the protein and enabled cells and membranes to function normally, at least in mice.

Cystic Fibrosis Foundation Therapeutics Inc., a nonprofit drug-research arm, sponsored this study and Goss'. Among Indians and Pakistanis living in England, the cystic fibrosis rate is 1 in 10,000, according to an epidemiological study. That compares with 1 in 2,500 among Caucasians. Rates in India and Pakistan are unknown.

The U.S. National Institute on Aging has launched a clinical trial to assess the safety and efficacy of curcumin for individuals with mild to moderate Alzheimer's disease. A report in the *Journal of Biological Chemistry* in December found that in mice injected with a chemical that mimics Alzheimer's, curcumin reduced by half the buildup of knots in the brain called amyloid plaques, which have been linked to Alzheimer's.

M.D. Anderson, the Houston cancer center, has small trials under way testing curcumin on pancreatic and bone marrow tumors. Colon cancer studies using curcumin are under way elsewhere.

All trials are in the earliest and easiest of four stages, preceding any Food and Drug Administration approval of a curcumin-based pharmaceutical by many years. Many drugs that look promising in mice fail to deliver in humans or prove to have dangerous side effects.

Popularity growing

In the less-regulated dietary supplement industry, curcumin's popularity is surging. Grant Ferrier, the editor of *Nutrition Business Journal*, projects sales of \$20 million in 2005 compared with \$15 million last year.

Curry Pharmaceuticals of Research Triangle Park, N.C., which hopes to sell a purified chemical analog of curcumin, is working on a curcumin salve for skin diseases such as psoriasis. Curcumin salves are popular in India and Pakistan.

Curcumin's side effects are less of a concern, because it's been so widely used for so long. But there's an issue with it: Curcumin consumed in small amounts from an early age may ward off some Western ailments, Aggarwal said. But once someone's contracted these diseases, curcumin's ability to counteract them is largely unproved.

Arjuna (*Terminalia arjuna*)

Arjun is an important cardiotonic plant described in Ayurveda¹. It is a large, evergreen tree that grows to heights of 60-90 feet throughout India. It has a spreading crown and drooping branches. The bark is very thick, grey or pinkish green, smooth, exfoliating in large, thin, irregular sheets.

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Arjuna

Turmeric (Jiang Huang)

Salvia Root (Dan Shen) This herb is used in TCM to treat a variety of heart imbalances. In this formula it helps to circulate the energy and blood through the chest. It aides the heart in pumping by increasing the amount of energy flowing through cardiovascular system.

Reishi Mushroom (Ling Zhi & Red) This herb is called the mushroom of immortality and the herb of good fortune because of its ability to profoundly balance the body, mind and spirit. Reishi is a woody mushroom that grows at the base of old trees in the remote forests of China, Japan, and Korea.

In the last twenty years there has been a flurry of interest in reishi and because of its mass cultivation it is now, for the first time in history, readily available. Traditionally reishi was one of the most prized herbs, and was the exclusive domain of the mountain men who collected them and the emperor of China. Recently there has been a tremendous amount of scientific research done on reishi in China and Japan. Those studies show reishi has a dramatic regulatory effect on the body, especially on the immune system. If taken consistently, Reishi will strengthen the immune function of a weak immune system and lower the immune function of a hyperactive immune system. Reishi has also been shown to powerfully aid the immune system regulate and respond to abnormal and cancerous cells. Reishi also functions to detoxify the liver, regulate the cardiovascular system, and stabilize the emotions. Reishi was famed in ancient China because of its ability to aid in the cultivation of wisdom. Reishi has the ability to open the mind in subtle ways, enabling one to see life in a new and creative way. Reishi is best taken on a consistent basis over a long period of time. There are no contraindications for consuming Reishi.

Dong Gui Root (Angelica Senensis) This herb is the chief blood tonic of TCM. It helps to build the quantity and quality of the blood. It helps to make sure the body has an abundance of blood and helps to invigorate the circulation of the blood.

Hawthorn Berry (Shan Zha) This herb is used to transform fat within the body. The plaque that builds up in the arteries basically comes from having too much fat in the blood. Helping to transform excess fat helps the blood to circulate much more powerfully.

He Sho Wu (Polygonatum Multiflorum) This herb is used to replenish the body's deep reserves of energy. In TCM, this energy is called the essence. By replenishing the bodies deep reserves the body becomes more vital and has more energy to draw upon.

Fresh Ginger (Sheng Jiang) Ginger has a very long recorded history of use in Chinese medicine as both a culinary and tonic herb, and it is one of the most powerful tonic herbs in all of Chinese medicine. The beneficial components of ginger are found in the root. The primary functions of ginger are warming, strengthening and harmonizing to the digestion, and

generally invigorating for the whole body. Ginger also has strong anti-inflammatory functions. It is used to treat nausea, vomiting, motion sickness, arthritis, stomachache, diarrhea, and toothaches. It strengthens the cardiovascular system, and lowers cholesterol. It contains antioxidant, anti-inflammatory, and antibiotic properties. On a personal note, My Uncle Vic suffered for many years with colitis, an inflammatory disease of the bowel. He tried many different allopathic anti-inflammatory medications with no success. One day he read that ginger had anti-inflammatory properties. He began making himself a big pot of ginger tea and drank it throughout the day. Almost immediately he began to see results. Within a couple of months his colitis was gone. He still drinks a big mug of ginger tea everyday. Ginger doesn't have any major contraindications, although pregnant women should use it with caution.

Gardenia (Zhi Zi) This herb is used to cool excess heat in the body. The element of the heart is fire. Often in cardiovascular disorders the fire is imbalanced. This herb helps to prevent "heart fire." Another way to think of what this herb does, is that it combats the side effects of stress.

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