

Studying the Pharmaceutical; Elements and Bio-Effect of the Chamomile Plants as a Medicinal Plant

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ABSTRACT

In this research to measure the concentration of elements in the plant chamomile and effectiveness of these items on the biological processes of the human person and the benefits arising from this plant and plant use alternative chemicals used in the pharmaceutical industry. It was measured elements (Fe, Cu, Zn, Pb, Cd) in three different ways depending on the process used to reach the best results and to measure the concentration of the elements and compare them with each other. It has also been on the search study the effect of the measured concentrations of the elements on the Rights of the benefits and harms of health has also been studying the benefits of chamomile for humans and how to take advantage of it. And knowledge of the work of each of these elements with the last element association for the purpose of organizing its work within the human body in biological processes and their effectiveness in regulating vital biological processes. The concentration of elements in the chamomile plant was measured in this research and the effectiveness of these elements on human biological processes, the benefits of this plant, the use of plants as an alternative medicine for

the chemicals used in the pharmaceutical industry, and elements (Fe, Cu, Zn, Pb, Cd) were measured in three different ways depending on the process used to achieve the best results and measure and compare their concentration Together. The research also examined the impact of the trickiness of measured elements on human health from harmful benefits and benefits, and the benefits of the human chamomile were studied and how it could be used. The working of each of these elements is linked to another element for the purpose of organizing their work within the human body is vital processes and their effectiveness in the organization of biological and biological processes.

Keywords: pharmaceutical; medicinal; chamomile plants; bioactive.**Correspondence:**Suaad Abd Al – Mahdi Abd Noor
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INTRODUCTION

Chamomile of the most important and famous medicinal plants and chamomile herbal around the plant with a height of approximately (15-35 cm) Quick. Barmaid many branching growths and blooming after (6-8) weeks of Grow and leaves alternating Richer and fragmented into small sections elongated linear and plant a distinctive refreshing scent and flowers surrounding white interior and pipe flowers and the color yellow. And knows chamomile scientifically as (*Matricaria chamomile*), a wild-type, while there is another type known as (*Anthemis nobilis*) and shape different from the first type, and both contain the active substances or influential part of the plant used chamomile flowers blooming is chamomile of the most famous medicinal plant absolutely native to the Orient and the Arab Maghreb, Turkey and the Caucasus and all over Europe is almost (*Sarris, J; Panossian, et al.2011*). Growing chamomile plants in environments with fertile soil like some kindergartens and water slopes of the mountains and in the fields and on the edge of the valleys. Flowers Chamomile contains a volatile oil up to another (1.5%) from the dry flowers and extracted oil using a method of steam distillation and oil chamomile means heavy strength goeey color Blue freezes cooling in zero Celsius degree and it smells known chamomile and most volatile oil Alpha Basiabol contents (Alpha bisabolol) Baseball dioxide and A (Bisabolol oxide A) and Baseball dioxide B (Bisabolol oxide B) the active Ingredients found among the contents of the oil are the substance (Alozulin) and are earning chamomile impact heals. And properties they Olive as oil which contains unsaturated fatty acids are many fast chemical familiarity fusion materials and other uses for the installation of such materials there are several medical uses of chamomile, where previous studies show there are lists of more than 100 diseases. Different chamomile which was traditionally used to treat these diseases and heart disease

and blood vessels, colds and diarrhea in children, eczema and gastrointestinal hemorrhagic cystitis, hemorrhoids, and skin infections, insomnia, and heal wounds (*Saller R, Beschomer M, Hellenbrecht D, et al.1990, Janmejai K Srivastava, et al.2011, Ahmed Gohar, Ahmed Zaki 2014*). Drowsiness or sedation and the ability to stimulate the uterus must when be preparing herbal medicine to be familiar with the experience and when you do not know properly can lead to counterproductive because they interact with other herbs and medicines were not informed of chamomile (*Ross SM.2008*). The effect of chamomile in treating thyroid disorders has also been studied (*Elena Riza ,et al.2015*). It has also found an effect of chamomile in treating cancer (*Shumacher M.; M. A.et al.1991*). It has an effect in treating diabetes (*Rafraf M; et al.2015, Saira Khan, Rahila Najam; et al.2014*).

Practical part

The following are three different ways to get the combination plant chamomile lotion with distilled water and sampling them and measuring the concentrations of elements (Fe, Cu, Zn, Pb, Cd) of the plant under study using atomic absorption device.

1-The first way: Were taken in equal weights of the plant chamomile with equal volumes of distilled water was mixing water with plant chamomile was the mixture heated on a regular basis and gradually using thermal controlled heater on the temperature and took a sample of the mixture every five temperatures starting from (30, 35,40,45,50, 55,....., 100) ° C were obtained (15) a sample. Where was painted absorbance values against the concentration of the element. Then the focus was drawn to the element versus temperature values.

2-The second method: Distilled water was heated curb boiling and then was added to the plant chamomile mechanism and mix them together and then take samples of

the mix after each period of (10 min.) (10, 20,30,40,50 min.) And thus was obtained five a sample. Then it was painted absorbance values versus concentration. And then draw the focus of the component values versus time.

3 - The third way: It was taking a certain weight from a plant chamomile with a given volume of distilled water and mix with each other under normal conditions of temperature without heating and left for a period of (24 hours) and after the sample was taken from the mix was measured proportions of the items in the plant under study. Drawing was a focus for every element values. The use of samples concentration using the unit of (ppm) and was also used atomic absorption device for measuring the concentration of elements (Fe, Cu, Zn, Pb, Cd) in the plant chamomile. As has been the study of the effect of temperature on the

concentration of elements in the plant chamomile. As well as the time factor.

RESULTS AND DISCUSSION

A study of the impact of concentrations of elements in the chamomile plant on humans. And the effect of the change of temperature and time on the concentration of each of them in the plant.

Iron Element

Notes of figure (1) iron concentration in the chamomile plant, where the highest concentration of it at a temperature (55 ° C) within the first part of our way.

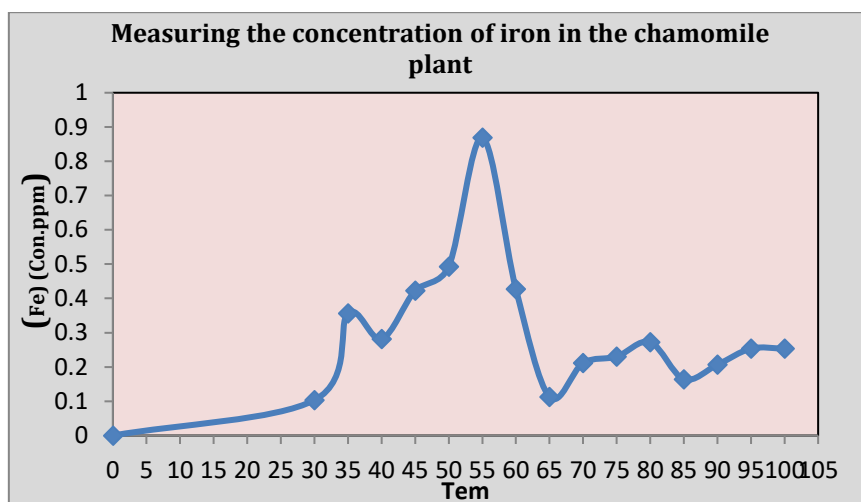


Figure 1: Shows the concentration of iron (Fe) in the plant chamomile varying degrees heat

Also, it studied the effect of changing times on the iron concentration in the plant chamomile, as shown in Figure (2) as it shows a better concentration of the element within

the second part of the modus operandi is after (30 min.) after the addition of plant chamomile to boiling water.

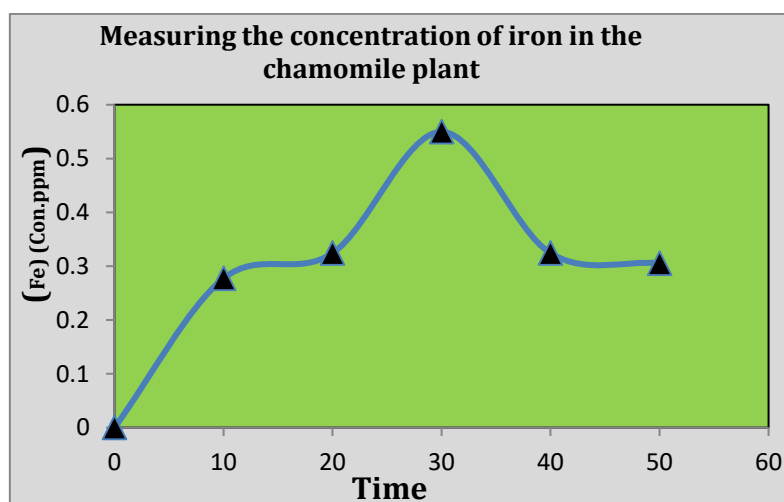


Figure 2: Shows the concentration of iron (Fe) in the plant chamomile change time

Copper element

It is measured copper concentrations in plant chamomile, as shown in Figure (3) where it was noted that the highest concentration of copper was at a temperature (30 ° C)

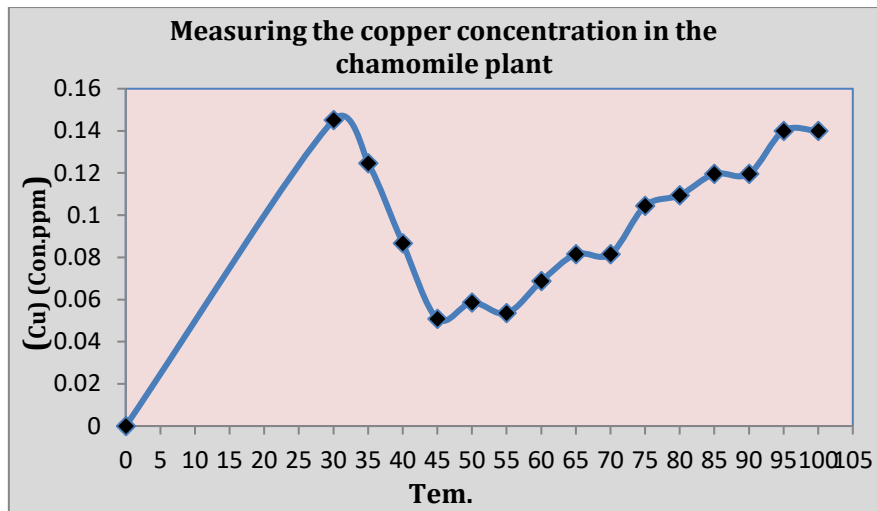


Figure 3: Shows the concentration of copper (Cu) in the plant chamomile varying degrees heat

As for the impact of changing times on the copper concentration in the chamomile plant it was later (30 minutes) and at the time (50 min.), as shown in Figure (4).

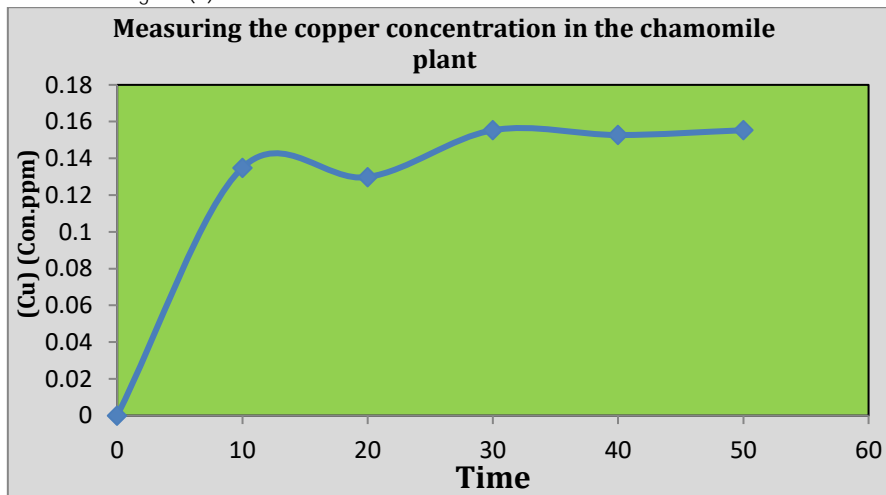


Figure 4: Shows the concentration of copper (Cu) in the plant chamomile change time

Zinc element

Is measured zinc concentration in the plant chamomile, as shown in Fig. (5) where it was noted that the highest

percentage of the concentration of the element was at a temperature (65 °C).

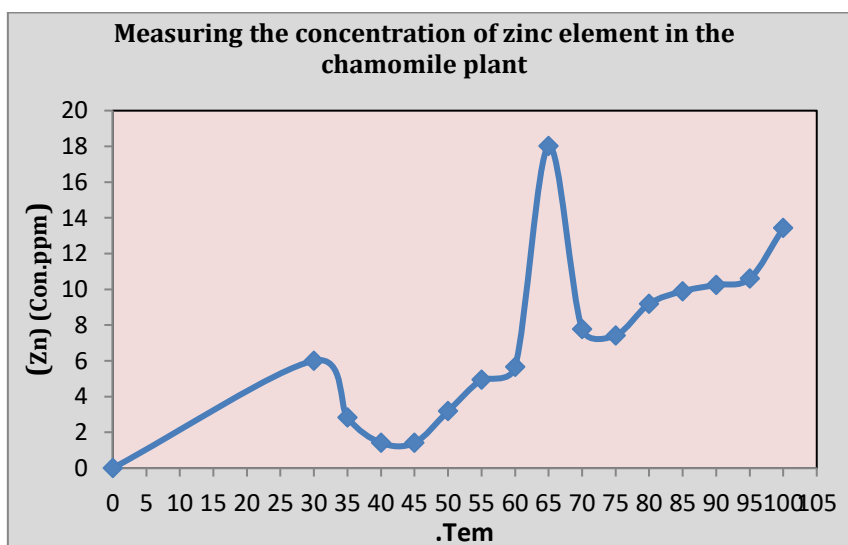


Figure 5: Which shows the concentration of zinc (Zn) in the plant chamomile varying degrees heat

As for the impact of changing times on the concentration of elements in the chamomile plant it was later (40 minutes) and at the time (20 minutes). As shown in Figure (6).

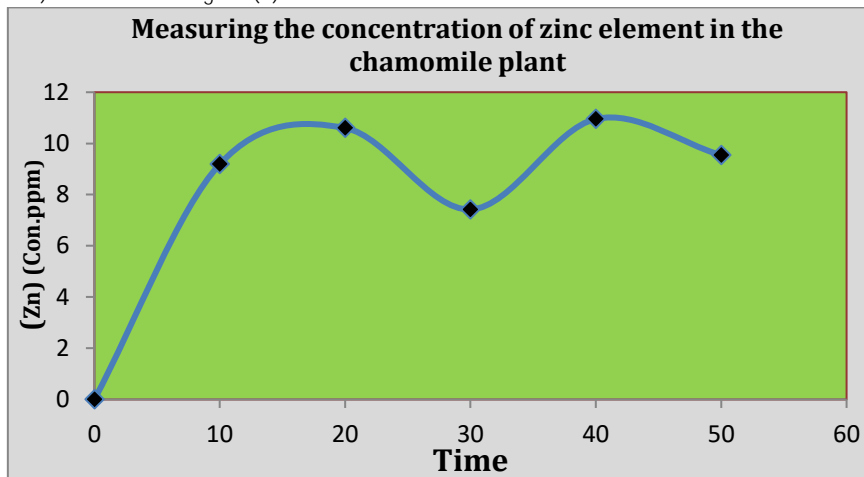


Figure 6: Shows the concentration of zinc (Zn) in the plant chamomile change time

Lead element

Lead is measured element concentration in the plant chamomile, as shown in Figure (7) where it was noted that

the highest concentration of the element in the chamomile plant at a temperature (35 ° C).

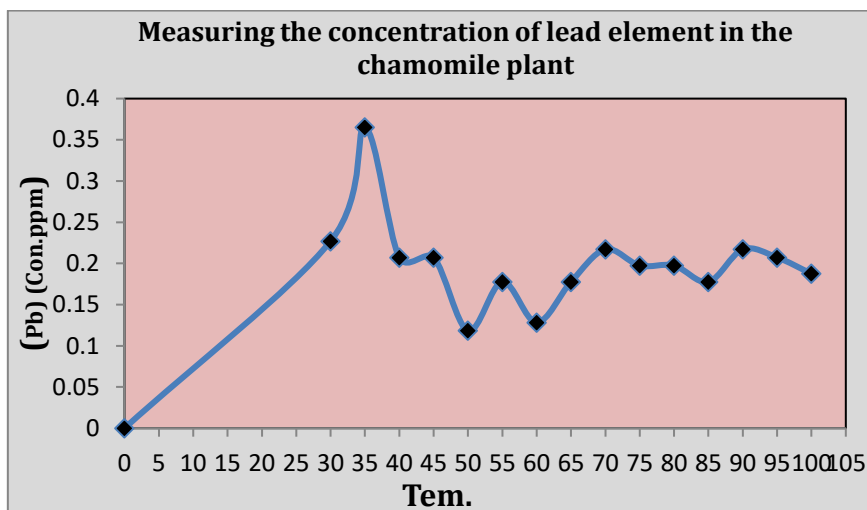


Figure 7: Which shows the concentration of component lead (Pb) in the plant chamomile varying degrees heat As for the impact of changing times on the concentration of lead element of the chamomile plant it was later (20 min.). As shown in Figure (8).

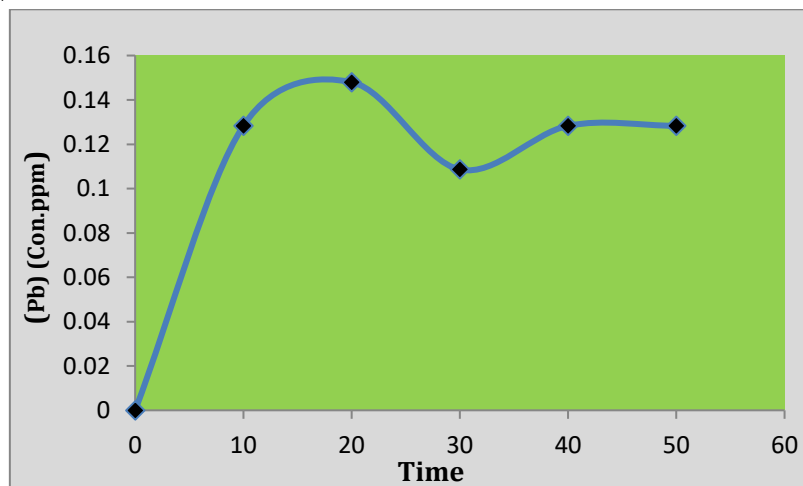


Figure 8: Which shows the concentration of component lead (Pb) in the plant chamomile change time

Cadmium element
Is measured cadmium concentration in the plant chamomile, as shown in Figure (9). Where it was observed

that the highest percentage of the concentration of the element in the chamomile plant when the temperature (70 ° C)

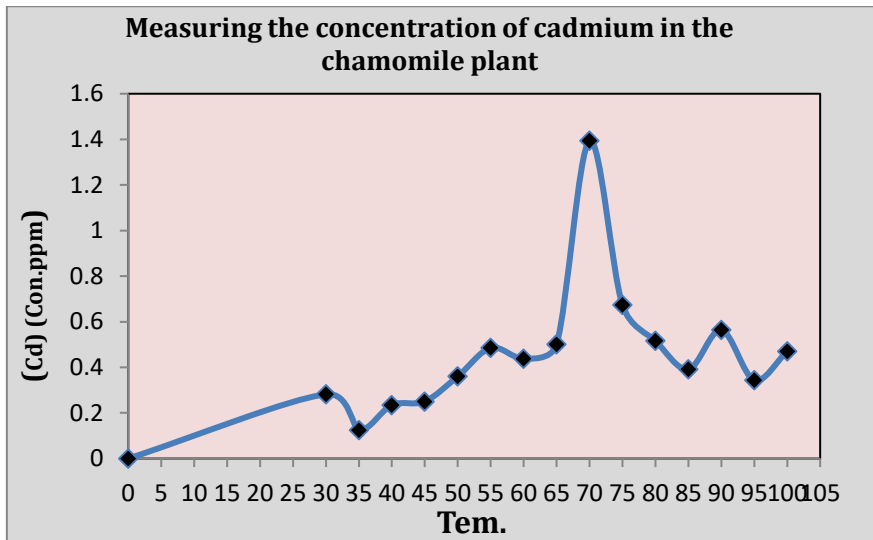


Figure 9: Which shows the concentration of cadmium (Cd) in the plant chamomile varying degrees heat

As for the impact of changing times on the concentration of cadmium in the plant was the highest concentration of him after (40 minutes), as illustrated in Figures (10).

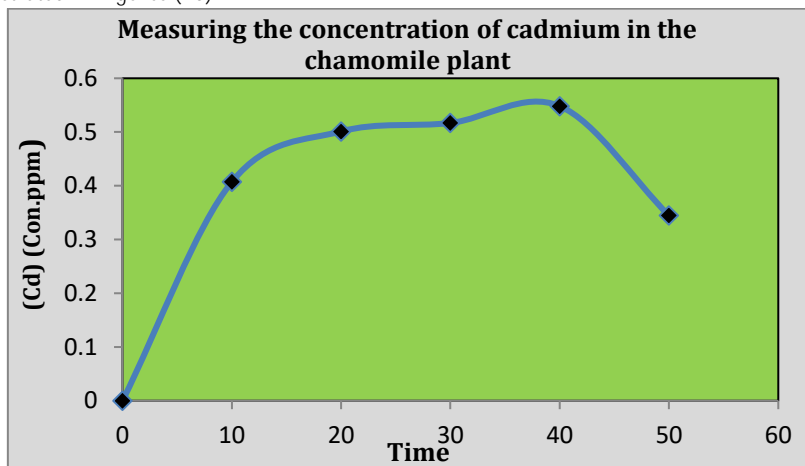


Figure 10: Which shows the concentration of cadmium (Cd) in the plant chamomile change time

Compared to the concentration of elements in the chamomile plant after 24 hours
The comparison between the concentrations of various elements in the chamomile plant after 24 hours of plant Add

to distilled water at normal conditions of temperature. Without external influences, as illustrated in Figure (11) as it shows that the highest percentage of the concentration of elements was the zinc concentration in the following order.

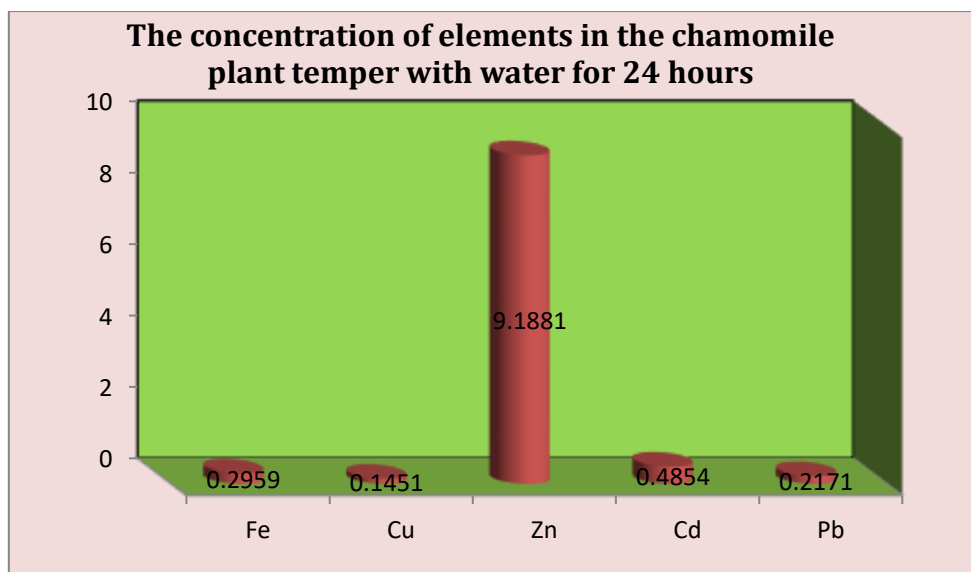


Figure 11: Illustrates the comparison between the concentration of elements in the chamomile plant

Zn > Cd > Fe > Pb > Cu

From the results that have been reached to plant drugs is still used natural condition As a folk medicine known as pharmacists, doctors and patients had come to view medicinal plants as an important source of these beneficial substances in many countries of the world (the United States - China - India) no independent institutes and huge institutions of hundreds of specialists scientists to confine this botanical wealth and benefit from the availability of medication local materials. One of these medicinal plants (licorice, chamomile, fenugreek) and known herbal medicine or herbal medicine as a study of the use of the medicinal properties of the plant (Lack, Caleb W. et al. 2016).

The importance of chamomile plant lies in addition to volatile oil Blue caused material Alkmasulan counter (Chamomile), which deals with skin infections and tonic to the hair follicle. Included in many of the cosmetics and hair acquires beautiful colors. As well as there is a great benefit to the steam Chamomile flower is used gargling for tonsillitis and mouth ulcers (Weston A. Price; 2007, Kyokong O; et. al, 2002, Diane L. McKay; et. al, 2006). It is used to treat all pain cramping such as intestinal colic and kidney and urinary burning and inflammation of the bladder and uterus colic (Aronson, Jeffrey K. 2008, Diana Wells 2018). And also falls within the painkillers from intestinal colic and stimulates digestion and is also used to get rid of constipation (Weston A. Price; 2007).

Through the results obtained from the current study that contain plant chamomile on some metal elements as they have a great interest in the effectiveness of the plant chamomile and therapeutic effectiveness in biological processes within the human body as an iron (Fe) big importance for being concentrated by (60%) of it in the blood (red blood cells) in the liver, spleen, kidneys, bone marrow and muscle. as well as entering in the composition of the enzymes responsible for the oxidation of carbohydrates and fatty proteins and enters in the composition Maoklopan muscle (Myoglobin) responsible

for storing oxygen to be used in muscle contraction and the iron absorption in the upper part of the small intestine in the form of ferrous compounds with the help of gastric juices and vitamin c, which in turn strengthens the immune system and increase the body's ability to resist disease. To absorb iron must be a sufficient amount of hydrochloric acid in the stomach so that the absorption of iron is needed also to the presence of copper element and vitamin A and vitamin B complex to ensure Full absorption of iron and on the other hand, excessive amounts of zinc and vitamin E impede the absorption of iron. And when there is a lack of iron, there will be dry skin and pale and digestive disorders, drowsiness, fatigue and shortness of breath fast and palpitations of the heart and other diseases as a result of a deficiency in the human body, and when increasing the proportion of iron in the body excessively also lead to medical conditions but the danger at least shrink the existence of an increase in the levels of zinc (Fabricant DS, et.al, 2001, Nanami N.; et al. 2005). In addition to that there are several benefits to your weight where interactions involved in anti-oxidants and keeps the senses of smell and taste, as well as playing an important role in the carbon dioxide in the blood transfusion.

As well as his role in the secretion of gastric acid and helps regulate blood pressure and promotes natural growth, as well as the growth of the fetus (Nanami N.; et al. 2005).

As for copper (Cu) and the job he enters in the composition of many enzymes so inevitable (Stern, Bonnie Ransom ;et.al 2007). To maintain the heart, bones, nerves, and brain and red blood cells healthy. It is also important for proper absorption of iron and if the body does not get the required amount of copper, the production of hemoglobin (red blood hemoglobin) is decreasing and the result is a type of anemia (caused by copper deficiency), as well as a copper deficiency, can weaken the ability of white blood cells to fight infection. Copper is working with the balance of zinc and vitamin C to form (elastin) Yellow flexible element found in tissues (Cordano, A 1978, Jump up to: a b Danks, D M 1988, Klevay, LM 1980, Strain, J. J. 1994). Result in an increase or decrease

key micronutrients (Fe, Zn, Cu) of the undesirable effects (Masud ,K.and M., Jaffar 1997) While the cause of toxic elements of the two elements (Cd, Pb) to the occurrence of many problems as it leads to the occurrence of cadmium (Pyelonephritis, Osteomollica) and matched by bullets that cause cancerous tumors and kidney (Shumacher M.;M. A.et. al,1997). The element of lead is known as an extremely harmful to humans, plants, and is the confiscation of the plants to use some organic fertilizers highest concentration allowed in food is (1 mg/kg).The resulting long-term exposure to lead to an increase of lead in the body and many serious symptoms such as anemia and pallor of the skin and abdominal pain, nausea, vomiting and paralysis in the joints fertility and reduce or increase the chance of a pregnancy failure or the occurrence of birth defects (Grath S.P. Mc .and

S. .Smith1990).As for cadmium, it is toxic element has no function in the plant or animal or human, and when its accumulation in the college remains by causing high blood pressure and kidney disease and are difficult to remove directing and lead cadmium direct damage to nerve cells because it prevents the formation of ethyl Colin and activates the enzyme choline esterase (Colin esterase) and the reduction of embarrassment for cadmium (3-5 mg/kg) (Pendias, A.K. and H.,Pendias 1984). It is necessary to plant the content of these elements to measure it has been allowed for these elements in plants border situation (Cd = 0.5, Cu = 20, Fe = 50, Zn = 100, Pb = 0.1) (Haider S.;V.Naithani; et.al, 2004).

Among the results obtained in this study weights of the elements studied account by following the formula below:

$$\text{Wt.} \times 10^6 \div \text{V liter} = \text{(x) ppm}$$

$$\text{V liter} \times \text{(x) ppm} = \text{(x) Wt.} \div 10^6$$

Table 1: The application of this equation was obtained at the highest weights of these elements in the chamomile plant

Element	Standard weight and allowable(Micrograms / gram dry weight)	The measured weight of the component
Fe	50	0.05918
Cu	20	0.02902
Zn	100	1.8376
Cd	0.5	0.097
Pb	1 (mg/g)	0.04342

Table 2: The nutritional value of boiled chamomile (www.fdc.nal.usda.gov, Retrieved 2019).

The nutritional component	Quantity
water	99.7 ml
Calories	1 cal
Carbohydrates	0.2 gm
Calcium	2 Milligrams
Iron	0.08 Milligrams
magnesium	1 Milligrams
Potassium	9 Milligrams
Sodium	1 Milligrams
Zinc	0.04 Milligrams
Copper	0.015 Milligrams
Manganese	0.044 Milligrams
Vitamin B1	0.01 Milligrams
Vitamin B2	0.004 Milligrams
Vitamin B5	0.011 Milligrams
Folate	1 mgr
Vitamin A	20 unit

RECOMMENDATIONS AND CONCLUSIONS

1. You must measure the proportion of heavy elements of plants and herbal medical knowledge concentration ratios to judge the usefulness or disadvantages compared with the permissible ratios.
2. follow modern scientific methods of oil extraction and processing materials in herbal medicinal plants to be used as an alternative medicine and move away from the use of traditional methods.
3. Do not use medicinal plants as alternative medicine in case of lack of experience in this area and the lack of knowledge and expertise of chemical and natural ingredients.
4. The acquisition of medicinal plants of the few areas of environmental and industrial pollution on either end so as to move away from high concentrations of the elements in the plant and that it is concentrated as a result of pollution in all its forms.
- 5-Non-use of organic fertilizers without knowing because they contain concentrations of elements that may increase the concentration in the herbal plant which are causing many diseases.

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