THE USE OF CAPER PLANT IN PHARMACEUTICAL INGREDIENTS: IN TRADITIONAL MEDICINE AND MODERN MEDICINE

Saeed Sardari 1, Faramarz Fallahi 2, Fatemeh Emadi 3, Ali Davati 4, Mohammad Gholami 5, Narjes Khavasi 6,7, Seyed Saeed Esmaeili 8
1 Department of Traditional Medicine, Faculty of Medicine, Shahed University, Tehran, Iran, dr_sardari@yahoo.com
2 Department of Cardiology, Faculty of Medicine, Shahed University, Tehran, Iran, fallahi@shahed.ac.ir
3 Assistant Professor, Center for Clinical Trials of Traditional Medicine, Shahed University, Tehran, Iran, f.emadi@shahed.ac.ir
4 Associate Professor, Department of Social Medicine and Health, Faculty of Medicine, Shahed University, Tehran, Iran, a_davati@yahoo.com
5 Assistant Professor, Department of Vital Statistics, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran, gholami4510@gmail.com
6Department of Traditional Medicine, Faculty of Medicine, Zanjan University of Medical sciences, Zanjan, Iran
7 Department of Traditional Medicine, Faculty of Medicine, Tabriz University of Medical sciences, Tabriz, Iran, narjes.khavasi@yahoo.com
8 Department of Traditional Medicine, Faculty of Medicine, Faculty of Medicine, Shahed University, Tehran, Iran, dr.esmaeili@chmail.ir

Abstract:
Background and Objective: Nowadays, the general interest in complementary medicine and traditional medicine is increasing. Traditional Iranian medicine is one of the oldest forms of complementary medicine. The aim of this study is to introduce Caper drug combinations and their application in the treatment of diseases based on traditional medicine sources, with the goal of establishing complementary studies for the development of effective drugs in the treatment of multiple diseases.
Method: A review of the traditional medicine books on Caper drug products and the introduction of Caper properties in new findings has been done in the present study.
Findings: Caper with the scientific name of (Capparis soinosa) is of the cappariaceae family. Due to its unique and diverse pharmaceutical and nutraceutical properties, Caper is widely used today. Caper is widely used in traditional Iranian medicine. In traditional medicine sources, it has been used in various forms of medicine and nutrition for the treatment of diseases. Today, various Caper products (tablets, capsules, oils, pickles, etc.) are available in the food and pharmaceutical market of Iran and the world. In this study, a variety of pharmaceutical products based on traditional Iranian sources of medicine is introduced. Nine types of food-drug and ten types of drug products are listed for Caper. The most famous and most commonly used forms of medicine are pills, syrups, powders and poultice. According to this study, the most common use of Caper is in the treatment of spleen, digestive, musculoskeletal, infectious and respiratory diseases. Many cases of Caper usage have been confirmed based on new findings. Using the results of this study could be the basis for evidence-based and supplemental studies in the treatment of diseases.
Keywords: Traditional Iranian Medicine; Caper; Pharmaceutical; Pharmaceutical product

Corresponding author:
Seyed Saeid Esmaeili,
Department of Traditional Medicine,
Faculty of Medicine, Faculty of Medicine,
Shahed University, Tehran, Iran, dr.esmaeili@chmail.ir

Please cite this article in press as Seyed Saeid Esmaeili et al., The Use of Caper Plant in Pharmaceutical Ingredients: In Traditional Medicine and Modern Medicine, Indo Am. J. P. Sci., 2018; 05(01).
**INTRODUCTION:**
Caper with the scientific name of Capparis spinosa is one of the most prominent medicinal herbs in the capparidaceae (Caryophyllaceae) family. This plant is scattered in the Mediterranean, Western and Central Asia, in countries such as Iran, France, Spain and etc (1). This wild plant grows in different regions of Iran, including the Alborz, Northern, and Northwest and Center of Iran (2). According to new studies, Caper possesses special nutraceutical and pharmaceutical properties (3). It has a great application in the world of complementary medicine (4). Traditional Iranian medicine is considered as one of the most important components of complementary medicine (5).

Caper had a special role as a medicinal plant in the Iranian traditional medicine. For example, Heravi has mentioned it as a noble drug (6). In traditional medicine sources, Caper has been used as a medicine alone or in combination with other medicinal herbs in various forms of medicine (7). This study introduces these forms of medicine and its compounds in traditional Iranian medicine. Many of the properties mentioned on the basis of traditional Iranian texts for Caper have also been confirmed in recent studies. The purpose of this study is to introduce the specific medicine forms of Caper and its uses.

**MATERIAL AND METHODS:**
This descriptive study is conducted on Caper drug products and its use in Iranian traditional medicine sources. For this study, traditional medicine books on medicinal herbs and treatment of diseases were used. Then, all findings are categorized based on the drug form. Firstly, different forms of medicine in traditional medicine of Iran are described. Then, formulations containing Caper are sorted according to the site of its use and its application. For the overall compliance with new findings, the keyword Capparis has been searched in Google scholar, Pubmed, and Scopus.

**RESULT AND DISCUSSION:**
In the traditional medicine of Iran, Caper and its compounds are used in the form of food and medicine for the treatment of diseases (8). In this study, the drug products and their applications are only introduced. Traditional medicine practitioners used a variety of drug forms to treat illnesses based on the site of its use, type of composition, and conditions of the patient (9). Oral and topical forms of Caper include tablets, powder, syrup, poultice, oil, Tela (lotion), smoke, enema, and gurgle.

**Definitions of different forms of medicine in Traditional Iranian Medicine**
1. Tablet and Pill: Among other forms of medicine, they are used in traditional medicine, which are used in the same way as current pills. Pills often had a cylindrical shape and had easier swallowing (10).
2. Caper syrup: Syrups that are often referred to as "wine" in traditional medicine sources, are liquid and edible form of pharmaceutical compounds (11).
3. Caper powder: refers to a variety of oral drugs. It is the best drug for stomach and peppermint and also is the best drug used for weak liver, spleen and kidney (10).
4. Poultice: This category includes powdered and screened medicines that are mixed with liquid and fluid and put on the members. Poultices are often used to relieve pain, swelling, etc. (10).
5. Tela: is a semi-solid product, often used in dermatological and mucosal diseases (10). Tela is almost the equivalent of Lotion (11).
6. Oil: has a variety of uses in traditional medicine. The major use of oils is locally (10).
7. Smoke: In Iranian traditional medicine, smoke of herbal medicines id used to locally treat skin and sometimes sinusitis treatment (10).
8. Gurgule / Mouthwash: Mouthwash astringent drugs are used to treat oral and dental illness. The patient throws it out of the mouth after mouthwash using medicine. The drugs used for Gurgle are used to rinse the throat in order to treat throat and mouth diseases (11).
9. Enema: is one of the treatments in traditional medicine of Iran. It means getting medicinal fluids to the body through the vagina or the anus. This therapeutic method is a few thousand years old since Hippocrates and Galen. In modern medicine, enema is also used to treat many diseases (12).

**The use of Caper in pharmaceutical compositions of Iranian traditional medicine for the treatment of diseases:**

**Teriagh (anti toxin)**
From the perspective of physicians, Teriagh is any singular or compound drug that has an antidote property. This drug has the potential to eliminate toxins and is resistant to toxins. This toxicity may be due to the stinging of animals, the ingestion of poisons, or corrupt temperament (11). Since one of the mentioned effects of Caper is its Teriagh property (9), it has been used in many pharmaceutical compositions of anti-inflammatory drugs. Depending on the composition, the application of these Teriagh is different. Teriagh may be used as anti-venom insect bites or some medications (Table 1).

**Spleen:**
The main application of Caper in Iranian traditional medicine is the treatment of spleen diseases (13). Our studies have shown that in most
products with similar compounds used in
problems, stuttering occurs because of the abnormal amount of uric acid for aper.
Compounds are effective in... processes affecting the spleen are relaxation of neural transmission and the normal movements in the members (13).

The use of Caper in some diseases of the spleen in traditional medicine includes splenomegaly, spleen rigidity, pain in the LUQ area, and a specific type of spleen disease called "inflammation" (Table 2). Splenomegaly occurs for any reason, including deposition of waste materials (13). Traditional Iranian medicine is divided into four temperaments. These temperaments include melancholic (black bile), sanguine, phlegmatic, and choleric (yellow bile). Any change in the rate or quality of these temperaments in any organ leads to disease (14).

The large size of the spleen may be due to the sedimentation of each of these temperaments. Spleen stiffness is often due to excess soda deposits. Inflammation in traditional medicine has the same definition of fluid infiltration and excessive substances. One of the functions of the spleen is the extraction of excess soda from the blood. Any impaired spleen function causes obstruction. Occasionally, this obstruction occurs due to a change in the nature or degree of temperaments, especially soda in the spleen (13, 15).

Medicinal compounds affecting the spleen are tablet, powder, enema and poultice (Table 2).

Central and peripheral nervous system diseases
The three members of the brain, the heart and the liver in traditional medicine are among the main members of life that are considered as the main and vital members of body (15). Caper is directly effective in the brain and liver.

Traditional medicine believes that physiopathology of epilepsy is the existence of barriers to neural transmission and the normal process of brain function. These obstructions lead to abnormal movements in the members (13). These types of obstructions may be vascular or in the brain itself (neuronal cells). As an auxiliary therapy, in addition to antiepileptic drugs, Caper and its combinations may also be used in the form of gurgles to treat epilepsy. Gurgles of boiled Caper is also used as an auxiliary treatment for amnesia (16, 17).

Some of these barriers in the nervous system sometimes have symptoms such as sneezing. Caper-containing syrup is used to treat this disease, which is called "relaxation" in traditional medicine (8, 13) (Table 3).

A headache has different causes in traditional medicine. Headache treatment is done based on the elimination of its cause and its effects (13). Based on the view of traditional medicine, the Caper drug in the form of pill, poultice and enema is effective in the treatment of some of these headaches (Table 3).

In traditional medicine, stuttering occurs due to problems with the nervous system and muscle of the tongue. Rinsing the mouth with the boiled Caper can improve stuttering by disposing waste materials and improving muscle function and possibly local nerves of tongue (17).

Liver and digestive system
Caper is used as pharmaceutical and nutraceutical products for the gastrointestinal tract. We have introduced effective drug combinations below.

The liver, as one of the main members, has an effective role in supplying the natural body force through interactions and digestion (15). The effect of Caper on liver is, direct or indirect. Enema containing Caper can be also used in the treatment of obstructive jaundice which is still not feverish (possibly without cholangitis) with the ability to eliminate obstruction. In the traditional medicine viewpoint, due to the role of the spleen in the excess soda removal, Caper indirectly improves liver function (13) (Table 2).

In traditional medicine, Caper oil (all Caper parts or just the seed alone) along with cupping therapy is locally very effective in the treatment of bloat (18).

Caper root peel smoke with Citrulluscolocynthis, Myrrh, and Cupressus nutmeg are used to treat hemorrhoids (19).

Skeletal System and Joint Diseases
According to traditional medicine, the cause of pain and swelling in the joints is the presence of abnormal temperament. Any drug or drug combination that can penetrate joints and remove temperaments from the joint can affect the pain and swelling of the joint (13) (Table 3).

We know that sciatica pain is due to problems with the joints of the spine or muscles of the waist and pelvis. Caper compounds are effective in improving and reducing referral and sciatica pain. Caper products with similar compounds used in joint pain are used to treat arteritis (Table 3).

Gout is one of the metabolic diseases that occurs due to the abnormal amount of uric acid for various reasons, especially in the joints.

Infectious and parasitic diseases
Drinking boiled Caper with Trachyspermum is helpful in treating acute fever (20).
In pharmaceutical compositions, Caper is used in the form of tablet and enema to dispose and eliminate intestinal parasites (Table 3).

**Uterine and genital tract**

In traditional medicine, poultice is used after taking oral medications to remove kidney stones. A poultice containing Caper is used in cases when the patient is unable to take oral medication (13). This poultice is produced by combining the Caper root peel with a number of other herbs (Table 3). Most aquatic treatments are used in the treatment of kidney stones as urinary duct and pain killer. Compounds of this aquatic extract include boiled Caper root peel, petiolate, chamomile, marmalade, dill, cabbage, alfalfa, pomaceum, perissauchan, fenugreek, isphagula, purslane, violet and sesame (21).

Caper alone is emmenagogue (9). Jorjani, quoted from Bou-Ali Sina, says that Caper leaf can be locally used for the treatment of cancerous masses of the womb. In general, Caper is used to treat a variety of masses (17).

**Oral, teeth, and throat**

Caper Tela is used to improve the color of enamel. This drug contains Caper root peel, along with mastic gum, and rose oil (13).

In addition to the treatment of enamel color change (22), rinsing mouth with boiled Caper is useful in improving the pain of dental caries (23), and bad breathe (13). Gurgle of the boiled Caper removes hoarseness (13, 22).

**Caper in new researches**

Today, commonly used forms of Caper are often edible. In most studies, roots, fruits, seeds, stems, buds and leaves of Caper have been used. These forms include pills and capsules, which often contain an aqueous or alcoholic extract of a Caper part or Caper seed oil. Caper is known as a plant with a variety of pharmaceutical properties (24).

Caper has hepatoprotective properties against some toxins (25, 26). It has anti-oxidant, anti-inflammatory (27-29), antimicrobial (30, 31), antifungal, antiviral (32), immunomodulatory (33, 34), antiparasitic (35, 36), anti-diabetic (4, 37), hypoglycemic (38), and hypolipidemic (39) properties. Also, the effects of Caper in melanogenesis are anti-allergic (3), antihistamine (40), and anti-complement (41).

One of the anti-microbial properties of Caper is its effect on stomach helicobacter pylori (42).

Caper has positive properties in joint pain (43). The anti-inflammatory properties of Caper are important in arthritis inflammation (44) and prevention of joint damage in inflammation (45, 46).

Caper is used as an additive with anticancer properties (47). Caper oil and extract have anticancer properties (48).

The organs used in these studies, which have been done in invivo and invitro, and human specimens, include seed oil, alcoholic and aqueous extracts of fruit, buds, foreign organs, and root of Caper. Accordingly, the form used in modern medicine is edible (24, 49).

Taghavi et al. showed that besides the beneficial properties, Caper has no adverse effect on the pancreas, kidneys, liver and stomach.

### Table 1

<table>
<thead>
<tr>
<th>Usage</th>
<th>Composition</th>
<th>Explanations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Grasshopper bite</td>
<td>Caper root peel, Colocynthia, Roman absinthie, round Aristolochy, wild chicory</td>
<td>Asgari Teriagh</td>
<td>19</td>
</tr>
<tr>
<td>2 Insect bites</td>
<td>Caper root peel, Gentian, absinthie, Round aristolochy, wild chicory</td>
<td>Take with fig or milk</td>
<td>50</td>
</tr>
<tr>
<td>3 Eight temperament Teriagh</td>
<td>Aristolochia longa, Chinese Rhubarb, Caper root peel, oregano, Gentian, Galangal, Turmeric, Myrrh</td>
<td>Mix with honey in a glass container after 40-60 days</td>
<td>8, 9</td>
</tr>
<tr>
<td>4 Millipede bite</td>
<td>Aristolochia longa, Gentian, Caper root peel, vicia herlila flour</td>
<td>Mix with honey.</td>
<td>9</td>
</tr>
<tr>
<td>5 Scorpion bite</td>
<td>Caper root peel, Aristolochia longa and round, absinthie, wild chicory</td>
<td>Mix with honey.</td>
<td>23</td>
</tr>
<tr>
<td>6 Mouse bite</td>
<td>Caper root peel</td>
<td>Mix with bovine oil</td>
<td>21</td>
</tr>
<tr>
<td>7 Rat bite</td>
<td>Peppers, Aristolochy, Orris, Nardin, Rabbit tennet, Auricle, Nigella Sativa, Nutron, pomegranate, Cinnamon, Lacquer, Opium extract, clastophilia, Myrrh</td>
<td>Mix with Caper water and Take with medical rubbing or fleawort or fresh milk</td>
<td>50</td>
</tr>
<tr>
<td>8 Poisoning with opium</td>
<td>Garlic, Caper and nutmeg</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>9 Mouse bite</td>
<td>Caper root</td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>
Table 2:

<table>
<thead>
<tr>
<th>Usage</th>
<th>Composition</th>
<th>Pharmaceutical form</th>
<th>Explanations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spleen</td>
<td>Caper root peel, rheum, Euphorbia milii, aloe vera, celery seed, polyergus off, borax</td>
<td>Pill</td>
<td>Take with Salix alba and honey</td>
<td>(51)</td>
</tr>
<tr>
<td>Splenomegaly</td>
<td>Caper root peel, Chinese rheum, aloe vera, Euphorbia milii, celery seed, polyergus off, borax</td>
<td>Pill</td>
<td>Mix with orange blossom water and Salix alba and Take with honey.</td>
<td>(8)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, cucumber seed, rose leaf, chicory, chestnut, burned pumpkin, Tamaricaceae, Chinese rheum, orris</td>
<td>Tablet</td>
<td>Moderate temperament</td>
<td>(8)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Chicory seed, pumpkin seed, aper root peel, fennel root peel, orris, Aristolochia longa, Rubia</td>
<td>Tablet</td>
<td>Nearly moderate temperament: Take with Sekanjabin</td>
<td>(13)</td>
</tr>
<tr>
<td>Spleen pain without fever</td>
<td>Caper root peel, lemon balm seed, Aristolochia longa, ruta leaf, Acorus, Nigella Sativa, Ammoniaicum</td>
<td>Tablet</td>
<td>Mix Ammoniaicum with vinegar. Take with honey and Sekanjabin</td>
<td>(13)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, Vitex agnus-castus, Scolopendre, Aristolochia longa, dried ruta, Peganum harmala, Acorus, Nigella Sativa, Ammoniaicum</td>
<td>Tablet</td>
<td>Mix Ammoniaicum with vinegar.</td>
<td>(13)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, Ammoniaicum, Vitex agnus-castus, pepper, Aristolochia longa</td>
<td>Tablet</td>
<td>Mix Ammoniaicum with vinegar. Take with Sekanjabin</td>
<td>(52)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, Aristolochia longa, lemon balm seed, black pepper, Ammoniaicum</td>
<td>Tablet</td>
<td>Mix Ammoniaicum with vinegar. Take with Sekanjabin</td>
<td>(53)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, Vitex agnus-castus, Rubia, lavandula, asatabacca, mastic, Absinthium extract</td>
<td>Tablet</td>
<td>Take with Sekanjabin</td>
<td>(17)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, Aristolochia longa, Vitex agnus-castus, black pepper</td>
<td>Tablet</td>
<td></td>
<td>(8)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Dried hyssop, Caper root peel, Solanum alatum, Perissauchan, Vitex agnus-castus, Ruta seed</td>
<td>Powder</td>
<td>Take with Sekanjabin</td>
<td>(8)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Dried hyssop, Caper root peel, Solanum alatum, Perissauchan, Vitex agnus-castus, Ruta seed</td>
<td>Powder</td>
<td>Take with Sekanjabin</td>
<td>(54)</td>
</tr>
<tr>
<td>Spleen</td>
<td>White mustard, Vitex agnus-castus, Trachyspermum, Fennel, Anisum, Dried Ruta, Dodder, Hyacinth, Rhubarb</td>
<td>Powder</td>
<td>Take with Sekanjabin</td>
<td>(19)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root, Ammoniaicum, Sekanjabin, fig with grape vinegar</td>
<td>Immortal</td>
<td></td>
<td>(9)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Mustard, Caper root peel, Netron, lime</td>
<td>Poultice</td>
<td>In the form of poultice with vinegar</td>
<td>(13)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, dill seed, Orris, mustard, Myrrh</td>
<td>Poultice</td>
<td>In the form of poultice with honey</td>
<td>(13)</td>
</tr>
<tr>
<td>Spleen</td>
<td>Caper root peel, Dodder, chicory seed, pomegranate, wild chicory leaf,</td>
<td>Poultice</td>
<td>In the form of poultice with vinegar</td>
<td>(13)</td>
</tr>
<tr>
<td>Usage</td>
<td>Composition</td>
<td>Pharmaceutical form</td>
<td>Explanations</td>
<td>Reference</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>1 Dismissal of worms and insects</td>
<td>Caper root peel, Chinese rheum, burned Euphorbia milii, celery seed, polyporus off, clack salt</td>
<td>Pill</td>
<td></td>
<td>(13)</td>
</tr>
<tr>
<td>2 joint's pain</td>
<td>burned Euphorbia milii, aloe vera, celery seed, white polyporus off, borax, caper root peel, Chinese rheum</td>
<td>Pill</td>
<td>Mix with Salix water and Take with honey.</td>
<td>(13)</td>
</tr>
<tr>
<td>3 Headache</td>
<td>Caper root peel, Ammoniaccum, Aristolochia, sweet costus, dried ruta, lemon balm seed</td>
<td>Tablet</td>
<td></td>
<td>(17)</td>
</tr>
<tr>
<td>4 Some types of headaches</td>
<td>Caper along with vinegar</td>
<td>Poultice</td>
<td>Use as poultice with basil wine. Best for headaches in the temporal region</td>
<td>(17)</td>
</tr>
<tr>
<td>5 Some types of headaches</td>
<td>Caper root peel, Allium schoenoprasum, Euphorbia, Gum</td>
<td>Poultice</td>
<td>Use as poultice with basil wine. Best for headaches in the temporal region</td>
<td>(17)</td>
</tr>
<tr>
<td>6 Mass of the womb</td>
<td>Caper root peel, Cheese</td>
<td>Poultice</td>
<td>Use with honey.</td>
<td>(17)</td>
</tr>
<tr>
<td>7 kidney stone</td>
<td>Caper root peel, dill, cranberry, Carthamus seed, cabbage seed</td>
<td>Poultice</td>
<td>Use with jasmine oil.</td>
<td>(19)</td>
</tr>
<tr>
<td>8 Sciatica pain</td>
<td>Caper root peel, radish seed, water corn, Anamirta paniculata, Colchicum, Withania Somnifera, mustard, horseradish seed, castor oil</td>
<td>Enema</td>
<td>Mix with castor oil with a ratio of one to ten.</td>
<td>(19)</td>
</tr>
<tr>
<td>9 An auxiliary drug in some types of headaches</td>
<td>Caper root peel, Colocynth, Carthamus seed, Roman nattle, Lavender</td>
<td>Enema</td>
<td>Boletus and olive oil</td>
<td>(13)</td>
</tr>
<tr>
<td>10 Hip joint pain</td>
<td>Formula 1: caper root, Colocynth, water corn</td>
<td>Enema</td>
<td>With Sorrel and cresses and Commiphora opobalsamum</td>
<td>(13)</td>
</tr>
<tr>
<td>11 Hip joint pain</td>
<td>Formula 2: Caper root peel, Tribulus</td>
<td>Enema</td>
<td>Costus oil, Nardin, violet.</td>
<td>(13)</td>
</tr>
<tr>
<td>Table</td>
<td>Item</td>
<td>Formula</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>---------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Gout and arthralgia</td>
<td>Caper root, Achillea millefolium, Aristolochia, fumitory, mustard leaf, water corn, thyme, colchicum, Colocynthis, mezerium</td>
<td>Enema</td>
<td>Formula 2 and if not effective, formula 1 (55)</td>
</tr>
<tr>
<td>13</td>
<td>Gout, Arthralgia</td>
<td>Salt, bran, Tribulus Terrestris, Senna, dill, chamomile, Ruta, water corn, caper root peel, celery root, Foenugreek, cumin, borax</td>
<td>Enema</td>
<td>Along with sesame oil (55)</td>
</tr>
<tr>
<td>14</td>
<td>Anti-parasite</td>
<td>Boiled Caper root</td>
<td>Enema</td>
<td>Boletus, olive oil (13)</td>
</tr>
</tbody>
</table>

**DISCUSSION AND CONCLUSION:**
There were forms of medicine or what is referred to as the drug delivery system in traditional medicine books. By reviewing various sources of traditional medicine, there were various drug delivery systems in the pharmaceutical drug structure of Caper included smoke, chewing, primates, to the first generation of drug delivery, such as pills, creams and ... (57). Due to the mixing or manufacturing of products with certain drugs that are referred to as drug delivery, they have also used the fourth generation of drug delivery systems. This system is often supplied with vinegar and its derivatives in Caper pharmaceutical products. On the other hand, there are many similarities in the use of Caper drug combinations in traditional Iranian medicine with its wide application and effects in modern medicine. It seems that by combining traditional and modern methods and formulations, it is possible to take an effective step in the treatment of certain diseases. This article provides interested readers with useful backgrounds for these studies.

**REFERENCES:**
18. Ebne Salom Halabi SENol. Ghaya ol Etegh or fi tadbir badan ol ensan (Diseases). Tehran: Iran...
University of Medical Sciences; 16th century. Publish in 2009.

19. Ahmad ARe. Hedaiat ol Mota'alemin fi Tab (Diseases). Mashhad: Mashhad University of Medical Sciences; 10th century.


21. Arzani HMA. Tab Akbari (The Principal's of Traditional Iranian Medicine) 18th century.


51. Taghi SM. New writing from “Tashil ol Alaj” (Diseases) 19th century.
52. Mohamad SAM. Gharabadin Ghaderi (Pharmacy and Industry) (Tehran: Iran University of Medical Sciences; 18th century 2007.
54. majosi aia. kamel-a-sana’at tebiat. qume2008.