SSTB
ULUSLARARASI HAKEMLİ AKADEMİK SPOR SAĞLIK VE TIP BİLİMLERİ DERGİSİ
INTERNATIONAL REFEREED ACADEMIC JOURNAL OF SPORTS, HEALTH AND MEDICAL SCIENCES

AN ANTI-INFLAMMATORY HERBAL FOR HEALTH AND DISEASES: SILYBUM MARIANUM (MILK THISTLE) (1)

SAĞLIK VE HASTALIKLAR İÇİN ANTİ-İNFLAMATUAR BİR BİTKİ: SİLİBUM MARİNAUM (DEVE DİKENİ)

Pırıl Ayris GÜRSİLİ[1], Burcu YEŞİLKAYA[2]

[1] Özel Birlik Hastanesi, İstanbul / Türkiye
[2] İstanbul Okan Üniversitesi, Sağlık Bilimleri Fakültesi, İstanbul / Türkiye

ORCID ID: 0000-0003-2134-49481, 0000-0001-9986-6119[2]

Öz: Amaç: Son 10 yılda hayat çok hızlı değişti. Hareketsiz yaşamın adaptasyonu, yeme alışkanlıklarının değişmesi ve diğer olumsuz çevresel faktörler insan vücudundaki reaktif oksijen türlerinden oluşuyordu ve bağışıklığın za-yıflamasına neden oldu. Bununla, kronik hastalıkların prevelansı artar. Artan hastalıklara karşı önlem almak ve ilerlemelerini durdurmak için çok fazla ilaç kullanımı gözlemlenmiştir. İlaç kullanmak istemeyen insanlar, doğadan gelen bitkisel ürünleri kullanmaya başladılar. Bitkiler, yaşam ve hastalıklar için vazgeçilmezdir. Tüm bitkiler, bir hastalık için tedavi olabilecek farklı ve karmaşık bileşiklere sahiptir. Özellikle devedikeni bitkisi, antioksidan, anti-enflamatuar ve antifibrotik etkileri olan vücut mekanizmasına ve hastalıklara fayda sağlamak mümkün olmuştur. Besin değeri ve biyoaktif bileşikleri insan yaşamı için çok önemlidir. **Yöntem:** Deve dikeni besin değeri, biyoaktif bileşikler ve hastalıklar üzerindeki etkilerini ile açıklamak için mevcut çalışmalarla özetlenmiştir. **Bulgular:** Birçok çalışma, devedikeni ilaçların bir bileşeni olarak önemli bir rol olduğunu ve doğal formun kendisi-nin sağlık için büyük bir besin değerine sahip olduğunu göstermiştir. **Sonuç:** devedikeni doğal olarak tedavi edilecek insan vücudu üzerinde yararlı bir etkiye sahiptir ve faydaları bulaşı-cı olmayan hastalıklara karşı faydalara odaklanmıştır. Çoğu kronik hastalığın tedavisi için, hastalıklara karşı iyi-leşmelerini, korunmalarını ve ilerlemelerini durdurma avantajları vardı. Birçok çalışmanın olumlu etkileri olmuştur ancak daha fazla çalışma yapılmalıdır.

Anahtar Kelimeler: Devedikeni, Beslenme, Antienflamatuar, Silibum Marinaum, Antioksidan

Abstract: Aim: Life has changed very fast during last 10 years. The adaptation of sedentary life, changes of eating habbits and other negative environmental factors consisted of reactive oxygen species in the human body and causing immunity to weaken. The prevelance of chronic dieases are increased caused by this reason. To take precautions against increasing diseases and to stop their progress, too much medication usage has been observed. People who don't want to use medicine, started to use natural herbal products. Herbals are essentials for life and diseases. Herbals have different and comlex compounds which can be a cure for a diease. It has been possible to benefit the body mechanism and diseases with antioxidant, anti-inflammatory and antifibrotic effects. Thistle is one of the major herbal that is used for both as a cure and a nutrient. Its nutritional value and the bioactive compounds are important for a human life. **Method:** Current studies reviewed to explain thistles with its nutritional value, bioactive compounds and effects on diseases. **Result:** The thistle has important role as a component of medicines and also the natural form itself has a huge nutritional value for health. **Consclusion:** thistle have a beneficial effect on human body to be treated naturally, and its benefits are focused on noncommunicable diseases. Treatment of most chronic diseases, they had the advantages to stop their healing, protection and progression against diseases. Many studies have had positive effects. however, more studies should be done.

Keywords: Milk Thistle, Nutrition, Anti-Inflammatory, Silybum Marianum, Antioxidant

Doi: 10.17363/SSTB.2020.37.1

(1) Sorumlu Yazar, Corresponding Author: Burcu YEŞİLKAYA "Dr. Öğr. Üye, Asisst. Prof", İstanbul Okan Üniversitesi, Sağlık Bilimleri Fakültesi, İstanbul / Türkiye, burcuyavunc@hotmail.com, *Geliş Tarihi / Received: 09.10.2020, Kabul Tarihi/ Accepted:28.12.2020, Makalenin Türü: Type of article (Derleme / Review) Çıkar Çatışması / Conflict of Interest: Yok / None) Etik Kurul Raporu veya Kurum İzin Bilgisi - Ethical Board Report or Institutinal Approval, Yok/None*

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

INTRODUCTION

Reactive oxygen types caused by environmental factors in the body's normal inner cycle are neutralized by antioxidant mechanisms in the body. However, this internal balance of the body sometimes can be change. Reactive oxygen types that are not neutralized create the oxidative stress. As a result of this mechanism, some biological molecules can be damaged in the body. This damage is considered as the cause of chronic diseases such as diabetes, cancer, high cholesterol, gallbladder diseases and liver diseases (Van Deel et al., 2007: 1305-1313). Prevention and control of chronic diseases is an issue that human beings have been dealing with for years. In a study, block and prevent environmental factors are emphasized. Excess alcohol and cigarette consumption, low physical activity and excessive consumption of unhealthy foods are counted among these factors (Sharkey et al., 2018:106-113).

Plants are used to treat diseases from past to present. Today, the purpose of using these plants for humans is; to treat diseases and prevent the spread of these diseases. It is seen that people, plants and trees consume certain places by adding them to diets. These herbal treatments applied against diseases scientific support was provided by sheltering harmful or beneficial effects as a result of researches (Faydaoğlu and Sürücü, 2011: 52-67).

The focus of researchers in recent years is herbal treatments in diseases (Faydaoğlu and Sürücü, 2011: 52-67). Today, there are patients using complementary and alternative therapy. These patients are avoiding over the counter drug treatment, opting for affordable and no harmfull complement treatment (Çalık and Kapucu, 2017: 79-84). Patients use various herbs for their treatment. A lot of plants such as turmeric, rosehip, broccoli sprouts, and black cumin provide benefits. One of the most important of these plants family is thistle (Bostan and Acıbuca, 2018: 37-44).

Thistle is a medicinal and aromatic herb (Bostan and Acıbuca, 2018: 37-44). It has a positive effect on human health (Çelik and Kan, 2013: 24-31). Thistle (Silybum marianum) consists of three isomer flavonolignans (silybin, silydianin and silychristin), which are known as Silymarin as the active compound. Silybin component has high biological activity (Abenavoli et al., 2010: 1423–1432.). these mechanisms, which make sick cells healthy with their effects, have antioxidant, anti-inflammatory, antioxidative, antifibrotic and immune-enhancing advantages (Kim et al., 2016: 8-23). On the other hand, it is also known to reduce oxidative stress, strengthen immunity, cure gallbladder problems, and be a cure for cancer (Kim et al., 2016: 8-23; Rady et al., 2018: 563-572).

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

AIM

In this study, the anti-inflammatory, antioxidative, antifibrotic effect of thistle are investigated. The active compounds, nutrient content, effect on human health and effects on diseases of thisthe were studied.

CONTENT

This review covers the current informations about thistle and its relationship about health and diseases.

RESEARCH METHOD

Literature search was done using with databases as PubMed, Science Direct. Current and serious results are used to sum up for this review.

RESEARCH PROBLEM

Milk thistle plant is used in many areas from medicine production to food supplements in health. The problem of the research has been to reach clear literature information to explain the pros and cons of such an important and effective food.

THEORETICAL FRAME

Thistle

The most important feature of medicinal and aromatic plants is their remedy in diseases. Usually, herbal treatment method has been chosen by developed countries. Although this treatment method is performed under different names, undeveloped countries also use it (Bostan and Acıbuca, 2018: 37-44).

One of the most important plants is Mary Thistle (Silybum marianum). Seeds are an important medicinal plant that has been used for liver problems for nearly 2000 years (Çelik and Kan, 2013: 24-31). It has been used for hepatitis, gall bladder, cirrhosis and liver diseases over more than 2000 years (Özinan et al., 2017: 88–94). In today's world, The positive effect on liver diseases has been proven as a result of the studies conducted. This can be a good example of traditional information. The Thistle Plant is also called the Virgin Mary thistle. Because the plant is a religious symbol according to the Christian religion. In fact, the Indians called sacred thorns, thistles, and read thorns (Çelik and Kan, 2013: 24-31).

Thistle's botanical name is Silybum marianum. Thistle was built in the Akçaköy neighborhood of Balıkesir city center in 2014 - 2015 years. The physical properties of the thistle used were examined. Thistles appear as hairless or hairy. Its height is sometimes short and branches off its tops. Its body has a height of 1. 5 m-2 m and surrounded by thorny flower petals. When we examine the leaves of the plant, it has a hard, long white vein and a spiky corner. There are also thorny flower petals at the ends of the branches. Crown of thistle has purple or red color. The fruit of the

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

thistle, which is 6-8 mm in size, has a brown, single seeded and shelled structure. In addition, the top of the fruit is in a needle like whiteness and hairy dish. Thistle fruits ripen in May and June. Thistle is native to North and South America, South Russia, Central and Southern Europe, Anatolia and South Australia. It is also found in North African countries. In Turkey, thistle is frequently seen in the Mediterranean, Aegean and Marmara regions (Özinan et al., 2017: 88–94).

Nutritional Content and Active Substances of Thistle

Thistles are very rich in nutrients. It is a very useful food that should be consumed for individuals. Thistles seeds contain unsaturated fatty acids. When we examine the contents in detail, it contains 42-54% linoleic acid and 21-36% oleic acid. It is rich in linoleic and oleic acid. Thistle contains 18-31% high fat content (Rady et al., 2018: 563-572). The nutritional values in the thistles are very important. There are various components in this plant, such as alkaloids, glycosides, tars, organic acids, vitamin C (Haydaroğlu., 2009: 85-88). In addition, the fixed fats found in the seed of thıstles are 20-30% (Özinan et al., 2017: 88–94).

In the study conducted in the thistle seed in Iran conditions, palmitic acid was 8.25%, stearic acid 6.67%, oleic acid 31.58%, linoleic acid 45.36%, arachidic acid 4.11%. In another study conducted in Egypt, oil components in thistle seed are; It is shown that the fixed oil rate is 22%. İn the same study, the highest amount of 53.3% linoleic acid and 21.3% oleic acid was stated in the thistle seed. Two of the saturated fatty acids contain palmitic and stearitic acid. This ratio was found to contain 9.4% palmitic acid and 6.6% stearic acid (Çelik and Kan., 2013: 24-31).

Milk thistle is a plant from the daisy family. Thistle is a plant that contains silymarin as the main component among the six main flavonoligans and other small polyphenolic substances (Cai et Al., 2015: 357-372). The thistle (Silybum marianum) consists of three isomer flavonolignans (silybin, silydianin and silychristin) known as Silymarin as the active compound. Silymarin has an andioxidant effect. Silybin component has high biological activity and therefore Silybin constitutes 50-70% of silymarin (Abenavoli et al., 2010: 1423–1432.).

When we examine the components in the thistle seed, there are active substances belonging to the seed. These items are; silymarin, quarsetin, mucilage, taxifolin, albumin formed by flavonolignan are non-volatile oils and bitter substances. However, there is no silymarin in the organs of thistle, such as flowers, roots and leaves. In general, the rate of silymarin (flavanoid) component in the plant

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

is very high. The antioxidant effect has been proven to be quite high due to the high silymarin level (Çelik and Kan., 2013: 24-31).

Effects of Thistle on Health and Diseases

There are lipophilic extracts in thistle seeds. These lipophilic extracts contain 3 important flavonolignans, such as silybin, silydianin and silychristin. These three flavanones are called silymarin. Silybin has high biological activity and high in seeds (Abenavoli et al., 2010: 1423–1432). The best known feature of silymarin in the thistle is that it shows anti-inflammatory, antioxidant and antifibrotic properties (Kim et al., 2016: 8-23). On the other hand, it reduced oxidative stress, strengthened immunity, and improved gallbladder against problems and cancer (Kim et al., 2016: 8-23; Rady et al., 2018: 563-572; Csupor et al., 2006: 301-317.). Even undeveloped thistle seeds are used in traditional medicine. The seeds are used for digestion, depression, headache, and liver problems. However, ıt is used in lactation period (Csupor et Al. 2016: 301-317).

Silymarin is found in thistle and used for liver diseases. It is seen that the extracts obtained from the seeds make the liver healthy. Because these healthy mechanisms provide anti-inflammatory, antioxidative, antifibrotic and immune-boosting advantages (Kim et al., 2016: 8-23). It is known that the thistle extracts have an intense antioxidant effect due to the high content of silymarin. For this reason, the components in thistle seeds are liver protective (Çelik and Kan., 2013: 24-31). Silymarin reduces the production of free-circulating radicals. If radical production decreases, lipid peroxidation decreases. Therefore, it shows that silymarin has antioxidant and antifibrotic effects (Abenavoli et al., 2010: 1423–1432.).

Milk thistle contained naturally silibin and also protective against cancer. Silybin has easy resolution feature. This characteristic is very important. When we take it to our body, there is no change in nutritional value during digestion. In this case, silybin appears to have bioavailability. Increased bioavailability has been thanks to the methods tried. An in vivo and in vitro study for this usefulness, it has been shown to respond positively to liver diseases and is promising against cancer (Polachi et al., 2016: 577-595) We can express the usefulness of herbal products with case studies (Yardan et al., 2008: 75–83).

In another study on animals due to, its antioxidant content, it was seen that good for kidney problems. Because silymarin has been shown to be protective in the cell culture and drug relationship of the kidney. Overall, the studies gave positive answers when tested on animals. More studies are needed to make the effects on human more clear. In line with the

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

information we will obtain as a result of these studies, ıt will be a product that can be used in kidney treatment (Tütüncü and Etiler., 2017).

Liver Diseases and Thistle

Liver is an important organ for sustainability of the circulatory system. Silymarin is used for treatment of liver diseases in thistle. Alcohol increases liver fat. Silymarin reducing effects are seen in alcohol-related liver fattening. This reduction occurs in hepatic fat content (Kim et al., 2016: 8-23; Kadıyoran., 2010).

Alcohol causes to liver dysfunctions. In one study, Silymarin is the most common type of Complementary and Alternatıve Medicine (CAM) therapy for treatment of liver problems. Silibinin, also improved life quality of patients with alcoholic and non-alcoholic cirrhosis with no unhealthy effect (Kim et al., 2016: 8-23).

Mechanisms by which silymarin extracts ameliorate liver disease include anti- inflammatory, anti-oxidative, antifibrotic, and immune-modulating activities. Silymarin decreases the development of alcohol-induced hepatic fibrosis in baboons by preventing collagen type I and decreasing histological process to fibrosis. Silymarin also reduces the elevated serum Aspartate Transamınase (AST) and Alanin Transamınase (ALT) levels, and decreases hepatic lipid in fatty liver in rats. These effects may be through down-regulating the expression in liver tissue. This is the beneficial effect of silymarin on alcoholic liver disease (ALD). Further studies are needed to provide the appropriate efficient information and a usefull treatment (Kim et al., 2016: 8-23).

Liver is responsible for cleaning the blood in the circulatory system. In this case, thistle effects the liver as supportive, protective and cleansing herb (ÇelikandKan., 2013: 24-31). In other study, effects on cirrhosis have been observed. In this study, Multiple in vitro and animal studies demonstrated antioxidative, anti-inflammatory, and antifibrotic effects of silymarin (Cai et Al., 2015: 357-372).

Silymarin found in thistle is used in the treatment of diseases such as liver diseases, fatty liver, cirrhosis, hepatitis C, jaundice caused by various reasons. Refreshes the fatty liver. Because Silimarin also cleans the liver. The liver may become inflamed for many reasons (antibiotic use, alcohol consumption). It helps to eliminate this inflammation in the liver. It also improves and increases healing period of hepatitis C and cirrhosis cases (Alaca et al. 2017: 476-484).

Diabetes Mellitus (DM) and Thistle

Diabetes mellitus (DM) is a chronic disease which is seen in more than 400 million people around the world (Çalık and Kapucu,

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

2017: 79-84). It is come up with high blood sugar level (Buyuk et al., 2015: 199-207). It has many acute and chronic complications. The treatment of DM includes both medical and nutritional treatment. The aim of the treatment is more than stable blood sugar. It aims to improve the quality of life, permanent habit change (both eating and life style). In addition to this treatment, complementary therapies are applied for the sustainability of the treatment (Çalık and Kapucu, 2017: 79-84).

Herbal treatments are one of the most preferred complementary treatments for diabetes patients. In these herbal treatments applied by patients, it has been shown to slow down diabetes (Çalık and Kapucu, 2017: 79-84). Thistle, which is one of the important plants used by these patients, is of great importance for diabetes. Because it is an antioxidant and prevents oxidative stress (Voroneanu et al., 2016: 1-10). Active ingredients are also important in the treatment of diabetes. Silymarin has been shown to significantly lower blood sugar (Huseini et Al., 2006: 1036-1039).

DM is an important metabolic disorder. in a study for this metabolic disorder, improved the antioxidant capacity of silymarin. Even, decreased hs-CRP (high sensitive c reactive protein) level in patients with type 2 DM (Kadıyoran., 2010). Although positive results were seen in studies, in another similar type of study on type 2 DM, Although the oil status and glycemic index (GI) affect positively, further studies should be done for its adaptation (Ebrahımpour et al., 2018: 39-44). In a case study, silymarin treatment was given for type 2 DM patients for 4 months. There are beneficial improvements in blood sugar. Thistle has an antioxidant effect, and an important healing improvement on diabetes mellitus. It has even been shown to reduce oxidative stress in other patients compared to placebo (Huseini et al., 2006: 1036-1039).

In another study, thistle was also observed to decrease blood sugar. It has been found that thistle can help to regulate blood sugar levels, control diabetes and prevent kidney damage caused by diabetes. It has found that it can help control diabetes by preventing the progression of diabetes-related kidney damage (Voroneanu et al., 2016: 1-10). Studies have shown mostly the effect of silymarin in thistle. Although silymarin has a positive effect on the studies, more studies are needed in order to supplement the individuals (Ebrahımpour et al., 2018: 39-44; Ebrahımpour et al., 2015: 290-6).

Cancer and Thistle

Cancer is a chronic disease which is frequently seen around the world. Treatment of cancer includes chemotherapy, radiotherapy and surgical interventions. In these treatment meth-

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

ods, people are affected by harmfull effects. For this reason, herbal treatment methods are also used. Herbal treatment methods cause it to be preferred both naturally and economically. Nowadays, herbal nutrition is very important. In people who are fed vegetarian; the risk of getting cancer appears to be quite low. Because the lignan substance is also protective in the plant (Bayram, 2017: 1-7).

In cancer - thistle studies have shown that thistle has positive effects on various types of cancer such as stomach, bladder, prostate, skin, leukemia, lung and colon cancer (Bayram., 2017: 1-7; Post White et al., 2007: 104-9). It means thistle have an anti-carcinogenic effect (Bayram, 2017: 1-7). Many pharmacological researches have been done on silymarin in the thistle. In these studies, it can be seen that the patient can use thistle as a medicine in their diets (Csupor et al. 2016: 301-317). It has been observed that thistle may prevent various types of cancer with appropriate amounts of it. Excessive amount of thsitle may cause gastrointetinal problems and severe diarrhea is possible in the patient. Thistle should be consumed in the right amount (Post White et al., 2007: 104-9). In a study, because of silymarin's protection effect from toxic matters, it is found to be beneficial in acute lymphoblastic leukemia (Post White et al., 2007: 104-9).

High Cholesterol and Thistle

Silymarin has the ability to lower cholesterol. In hypercholesterolemia caused by high levels of hepatic cytochrome stopping, an increase in HDL cholesterol has been observed with the effect of silymarin. In addition, there is a good decrease in total cholesterol (Ebrahımpour et Al., 2018: 39-44). Silybum marianum seed extract (silymarin), which is known to have antioxidant properties on the glycemic profile in diabetic patients. A 4 month randomized double blind clinical trial was conducted in 51 type 2 DM patients. Half of them used thistle and the other group was placebo. Monthly glycosylated hemoglobin (HbA1c), fasting blood glucose (FBS), insulin, total cholesterol, LDL and HDL, triglyceride, SGOT and SGPT levels were measured during the study. The results showed a significant decrease in HbA1c, FBS, total cholesterol, LDL, triglyceride levels in thistle treated patients. In conclusion, silymarin treatment has a beneficial effect on improving cholesterol levels (Huseini et al., 2006: 1036-1039).

As it is known, thistles contain protective, cleansing and repairing compounds. In a study done for this reason, the cholesterol of the treatment provides protection for the absence of an increase in phospholipid and sphingomyelin phosphatidylcholine ratios (Atasever et al., 2017: 240-248).

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

The Gallbladder Diseases and Thistle

From past to present, the thistle, which is used on various diseases and used for gallbladder diseases. It works with organs such as liver, kidney, pancreas, gallbladder intestine. Looking at the gallbladder anatomically, on the visceral face of the liver and it is an ovoid organ located at the caudal end of the interlober fissure between the right and left lobes (Kozan, 2006).

Kidney stones and gallstones occurs with the combination of cholesterol and gallbladder in the waste ((Kozan, 2006). Because the active compounds in effect antioxidant activity, toxin blockage at the membrane level, increase in protein synthesis, antifibriotic activity and possible anti-inflammatory. As a result of researches, it has been observed that it protects against toxins that can form in the liver. It has even been shown to prevent damage due to medication and alcohol. For this reason, this anti-inflammatory, antioxidant and immune system structure is very important for the gallbladder (Gök et al, 2019).

Milk thistle increases bile flow. The thistle, known to have a significant effect on the liver, helps in the gallbladder. Thus, it prevents the formation of gallstones. Because these gallstones can grow and settle in gallbladder (Mulrow et al., 2000: 1998-2005).

Utilization of Thistle

It is important to maintain a quality life, change eating habits and conduct a good treatment process for sick people. In addition to this treatment, complementary therapies are applied for the sustainability of the treatment. Today, there are patients using complementary and alternative treatment. These patients, They prefer complementary treatment due to affordable and no harmfull effects while avoiding over-the-counter medication (Çalık and Kapucu, 2017: 79-84).

The importance of thistle has been demonstrated by studies for human health. In these study, The diseases is great impact of healing. The reasons such as the environment in which the plant is grown and the nutritional value of the soil change the rate of silymarin. For this reason, the silymarin contained in the thistle varies according to the region (Çelik and Kan, 2013: 24-31).

Nowadays, people have use thistle oil, thistle seeds and thistle milk. In this study, tasted on animals. Although it has more positive effects on the liver. It has shown positive responses in the treatment of diabetes, high cholesterol, skin, gallbladder problems and cancer. About consumption of thistles, it is important that the thistle should be in high extract (Faydaoğlu and Sürücü, 2011: 52-67).

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

Silymarin is a commonly used preservative against various liver diseases such as toxic substances, cirrhosis, hepatitis. Silymarin is given 100-300 mg / kg for 3 times a day in adults. Silymarinin was very well tolerated in acute toxicity studies (Kocaman and Dabak, 2015: 128-132). It will be more useful to consume it if we use it correctly and in moderation while applying our treatments for our diseases. Harmfull effects appear when consumed excessively (Abenavoli et al., 2010: 1423–1432.). It is mostly used as a medicine in liver problems. Milk thistle seed tea consumption is very suitable for stomach and intestinal diseases. 15 g daily is suitable for human health (Kim et Al., 2019: 2499 - 2507). It can also be used in liver problems caused by alcohol (Tao et al., 2019).

Milk thistle used widely consumption. Even today, thistle milk capsules are available. However, the amount of silymarin that can be taken daily for our body is limited. It should not exceed 420 mg (Tao et al., 2019). People used as antipyretic, nausea, low builder and diuretic among (Tütüncü and Etiler., 2017). In recent years, thistle seed oils are used in baby care products and in the cosmatic industry (Çelik and Kan, 2013: 24-31). The efficiency and quality of the raw material used in different pharmaceutical and cosmetic industries are important. Silymarin varies in the thistle plant (Çelik and Kan., 2013: 24-31). It is frequently used in drug making in Slovakia (Özinan et al., 2017: 88–94).

Harmfull Effects of Thistle

Thistle is a herbal which can be used for treatment. Thistle may be harmfull as well as its benefits. Unconscious use or overuse may causes this situation. In a study, with a non certain results, there may be some toxic effects like medication. For this reason, the use of thistles and other herbal treatments can be dangerous for public health if it is not under control (Tütüncü and Etiler, 2017). In another study, it is said that thistle seed has not fatal effect for adults. However, it may causes mild diarrhea. The active componenet Silymarin in the thistle has little harmful effect. However, these harmfull effects were found to be less in studies. These effects are seen as gastrointestinal disorders, allergy symptoms and skin rashes (Kocaman and Dabak, 2015: 128-132). Harmfull effects of thistle are more common in children. These effects seen in children are liver and kidney damage. In addition, the use of thistles for skin diseases appears to cause toxicity. The toxicity seen in patients is seen after hours. People may experience more severe or mild injuries. People who have mild symptoms generally have vomiting, abdominal pain and diarrhea. However, this situation progresses a little more in people who have had heavy. Thistle can cause kidney and liver

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

diseases. It may evet cause to death for children (Tütüncü and Etiler, 2017)

CONCLUSION

As a result, herbal treatment needs attention. Herbal treatments have been drawn attention to stop its progress or to protect against diseases. From past to present, the role of many plants against various diseases has been shown that they are important for life. There were studies in the effect of plants on our health. These effects are as antioxidants, anti-inflammatory, antioxidative, antifibrotic. Experts said that they should be consumed in the right amount and with the right methods. As a result of studies, thistle has been found to be beneficial for many diseases. Such as; Diabetes, liver, high cholesterol, gall bladder, and skin. Especially, Its effect on liver and gallbladder stones is most well known. In a study on animals due to its antioxidant content, good for kidney diseases. Because Silymarin has a protective effect on kidney's cell culture and drug relationship. However, studies are insufficient for effect on the kidney diseases. Generally, these studies have done on animals. However, positive result were obteined. People need more studies for certain results. With more studies, There may be a product that can be used for kidney treatment with thistle. Many studies have shown that thistle has a different effect on different diseases. They had advantages in order to stop their healing, protection and progression against diseases. So, herbal treatments are suitable for the public and medical world with dose control.

REFERENCES

ABENAVOLİ, L., MİLİC, N., CAPASSO, F., (2010). "Milk Thistle in Liver Diseases: Past, Present, Future". Phytother. Res. 24, 1423–1432. https://doi.org/10.1002/ptr.3207

ACIBUCA, V., BOSTAN, D., (2018). "Dünya'da ve Türkiye'de Tıbbi ve Aromatik Bitkilerin Yeri ve Önemi". Çukurova Tarım Gıda Bil. Der. 33 (1), 37-44

ALACA, N., ÖZBEYLİ, D., USLU, S., ŞAHİN, H.H., YİĞİTTÜRK, G., KURTEL, H., ÖKTEM, G., ÇAĞLAYAN, YEĞEN, B., (2017). "Treatment with Milk Thistle Extract (Silybum Marianum), Ursodeoxycholic Acid, or Their Combınatıon Attenuates Cholestatıc Liver Injury in Rats: Role of the Hepatic Stem Cells". Turk J Gastroenterol, 28 (6), 476-484. https://doi.org/10.5152/tjg.2017.16742

ATASEVER, A., BARAN, O., EKEBAŞ, G., (2017). "Ratlardan Karbon Tekraklorur ile Oluşturulan Kronik Karaciğer Hasarı Üzerine Zerdeçal (Curcuma Longa) ve Meryemana Dikeninin (Sılybum Marıanum) Etkisi". Sağlık Bilimleri Dergisi, 26, 240-248

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

BAYRAM, D., (2017). "Silibinin'in Vitro Ortamda CCL-228-SW 480 Kolon Kanseri Hücre Hattı Üzerine Apoptotik Etkisinin Araştırılması". SDÜ Sağlık Bilimleri Enstitüsü Dergisi, 8 (2), 1-7.

BUYUK, B., PARLAK, S.N. , KELES, O.N., CAN, I., YETİM, Z., TOKTAY, E., SELLİ, J., UNAL, B., (2015). "Effects of Diabetes on Post-Menopausal Rat Submandibular Glands: A Histopathological and Stereological Examination". Eurasian J Med, 47 (3), 199-207. https://doi.org/10.5152/eurasianjmed.2015.80

CAI, C.X., CARLOS, S., SOLAİMANİ, P., TRİVEDİ, B.J., TRAN, C., CASTELİNO-PRABHU, S., (2019). "Nutrıtıonal and Dıetary Interventions for Nonalcoholıc Fatty Liver Disease". Dietary Interventions in Liver Disease. 357-372 https://doi.org/10.1016/B978-0-12-814466-4.00029-X

CSUPOR, D., CSORBA, A., HOHMANN, J., (2016). "Recent advances in the analysis of flavonolignans of Silybum marianum". Journal of Pharmaceutical and Biomedical Analysis, 130, 301-317. https://doi.org/10.1016/j.jpba.2016.05.034

ÇALIK, A., KAPUCU, S., (2017). "Complementary And Alternative Treatments Used in The Treatment". Adnan Menderes Üniversitesi Sağlık Bilimleri Fakültesi Dergisi, 1 (2), 79-84

ÇELİK, A.S., KAN, Y., (2013). "Konya Ekolojik Şartlarında Yetiştirilen Meryemana Dikeni Bitkisinin (Silybum marianum) Tohum Verimi, Silimarin ve Sabit Yağ Bileşenlerinin Belirlenmesi". Selçuk Tarım ve Gıda Bilimleri Dergisi, 27 (1), 24-31

EBRAHIMPOUR-KOUJAN, S., GARGARİ, B.P., MOBASSERİ, M., VALİZADEH, H., ASGHARI-JAFARABADİ, M., (2018). "Lower Glycemic Indices and Lipid Profile Among Type 2 Diabetes Mellitus Patients Who Received Novel Dose of Silybum Marianum (L.) Gaertn. (Silymarin) Extract Supplement: A Triple-blinded Randomized Controlled Clinical Trial". Phytomedicine, (44), 39-44. https://doi.org/10.1016/j.phymed.2018.03.050

EBRAHIMPOUR-KOUJAN, S., GARGARİ, B.P., MOBASSERI, M., VALIZADEH, H., ASGHARI-JAFARABADI, M., (2015). "Effects of Silybum Marianum (L.) Gaertn. (Silymarin) Extract Supplementation on Antioxidant Status and hs-CRP in Patients With Type 2 Diabetes Mellitus: A Randomized, Triple-Blind, Placebo-Controlled Clinical Trial". Phytomedicine. 22 (2) , 290-6. https://doi.org/10.1016/j.phymed.2014.12.010

FAYDAOĞLU, E., SÜRÜCÜOĞLU, M.S., (2011). "Geçmişten Günümüze Tıbbi ve Aromatik Bitkilerin Kullanılması ve Eko-

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

nomik Önemi". Orman Fakültesi Dergisi, 11 (1), 52-67

GÖK, S., ERDOĞDU, Y., PEHLİVAN, E.C., (2019). "Nutrasötik Bir Bitki: Meryemana Dikeni (Silybum marianum)", Namık Kemal Üniversitesi, Tekirdağ

HAYDAROĞLU, S.M., (2009). "Devedikeni ve Yoncanın Anthelmentik Özelliği ve Ekonomik Etkinliği". Erciyes Üniv Vet Fak Derg, 6 (2), 85-88

HUSEINI, H.F., LARIJANI, B., HESHMAT, R., FAKHRZADEH, H., RADJABIPOUR, B., TOLİAT, T., RAZA, M., (2006). "The Efficacy of Silybum Marianum (L.) Gaertn. (silymarin) in the Treatment of Type II Diabetes: a Randomized, Double-blİnd, Placebo - Controlled Clinical Trial". Phytother Res, 20 (12), 1036-1039. https://doi.org/10.1002/ptr.1988

KADIYORAN, C., (2010). Gastrointestınal Maligniteli Hastalıklarda Karaciğer Metastazlarının Manyetik Rezonans ile Saptamasında Gatoksetik Asit ve Gadopentate Dimegluminin Etkinliğinin Karşılaştırması. Selçuk Üniversitesi, Radyoloji Anabilim Dalı Uzmanlık Tezi, Konya

KIM, J.Y., KIM, J.Y., JENIS, J., LI, Z.P., BAN, Y.J., BAISEITOVA, A., PARK, K.H., (2019). "Tyrosinase Inhibitory Study of Flavonolignans From The Seeds Of Silybum Marianum (Milk Thistle)". Bioorg Med Chem, 27 (12) , 2499 - 2507. https://doi.org/10.1016/j.bmc.2019.03.013

KIM, M.S., ONG, M., QU., X., (2016). ''Optimal Management for Alcoholic Liver Disease: Conventional Medications, Natural Therapy or Combination?''. World J Gastroenterol, 22 (1), 8-23. https://doi.org/10.3748/wjg.v22.i1.8

KOCAMAN, N., DABAK, D.Ö., (2015). "Hepatoprotektif bir ajan: Silymarin". Fırat Tıp Dergisi, 20 (3), 128-132

KOZAN, B.R., (2006) "Biliyer Sistemin Anatomik Varyasyonlarında Manyetik Rezonans Kolanjiyopankreatografi Bulguları" T.C. Sağlık Bakanlığı Fatih Sultan Mehmet Eğitim ve Araştırma Hastanesi Radyoloji Kliniği, uzmanlık tezi, İstanbul

MULROW, C., LAWRENCE, V., JACOBS, B., et al., (2000). "Milk Thistle: Effects on Liver Disease and Cirrhosis and Clinical Adverse Effects: Summary". AHRQ Evidence Report Summaries. Rockville (MD): Agency for Healthcare Research and Quality (US); 1998-2005. 21

ÖZİNAN, L., ALATÜRK, F., GÖKKUŞ, A., (2017). "Meryemana Dikeni [Silybum marianum (L.) Gaertner]'nin Silaj Ola-

SSTB
www.sstbdergisi.com
International Refereed Academic Journal of Sports, Health and Medical Sciences
October - November - December Issue: 37 Autumn Winter Term Year: 2020
Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi
Ekim – Kasım - Aralık Sayı: 37 Sonbahar Kış Dönemi Yıl: 2020
ID:502 K:504
ISSN Print: 2146-8508 Online 2147-1711
(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)
(TRADEMARK)
(2015/04315- 2015-GE-18972)

rak Kullanım Olanakları". Türk Tarım ve Doğa Bilimleri Dergisi, 4 (1), 88–94

POLACHI, N., BAI, H., LI, T., ZHU, Y., WANG, X., LI, S., GU, N., WU, J., ZHANG, Y., ZHOU, S., SUN, H., LIU, C., (2016). "Modulatory Effects of Silybın in Various Cell Signaling Pathways Against Liver Disorders and Cancer". European Journal of Medicinal Chemistry, 123, 577-595. https://doi.org/10.1016/j.ejmech.2016.07.070

POST WHITE, J., LADAS, E.J., KELLY, K.M., (2007). "Advances in the Use of Mılk Thıstle (Sılybum marıanum)". Integr Cancer Ther, 6 (2), 104-9. https://doi.org/10.1177/1534735407301632

RADY, M.R., SAKER, M.M., MATTER, M.A., (2018). "In vitro Culture, Transformaiıon and Genetic Fidelity of Milk Thistle". J Genet Eng Biotechnol, 16 (2), 563-572. https://doi.org/10.1016/j.jgeb.2018.02.007

SHARKEY, L., LORING, B., COWAN, M., RILEY, L., KRAKAUER, EL., (2018). "National Paliıative Care Capacities Around the World: Result From the World Health Organization noncommunicable Disease Country Capacity Survey". Palliative Medicine, 32 (1), 106-113. https://doi.org/10.1177/0269216317716060

TAO, L., QU, X., ZHANG, Y., SONG, Y., ZHANG, SX . (2019). "Prophiactic Therapy of Silymarin (Milk Thistle) on Antituberculosıs Drug-Induced Liver Injury: A Meta-Analysıs of Randomızed Controlled Trials". Can J Gastroenterol Hepatol, 2019 (3192351) https://doi.org/110.1155/2019/3192351

TÜTÜNCÜ, S., ETİLER, N . (2017). "Tıbbın Alternatifi Olmaz! Geleneksel Alternatif ve Tamamlayıcı Tıp Uygulamaları". Türk Tabipleri Birliği Yayınlar, Ankara

VAN DEEL, E., et al. (2007). "Extracellular Superoxide Dismutase Protects the Heart Against Oxidative Stress and Hypertrophy After Myocardial Infarction". Free Radical Biology and Medicine, 44 (7), 1305-1313. https://doi.org/10.1016/j.freeradbiomed.2007.12.007

VORONEANU, L., NISTOR, I., DUMEA, R., APETRII, M., COVIC, A.**, (2016).** "Silymarin in Type 2 Diabetes Mellitus: A Systematic Review and Meta-Analysis of Randomized Controlled Trials" Journal of Diabetes Research 3, 1-10. https://doi.org/10.1155/2016/5147468

YARDAN, T., EDEN, A.O., BAYDIN, A., ARSLAN, B., VURAL, K., (2008). "Mantar Zehirlenmeleri". O.M.Ü. Tıp De1rgisi, 25 (2), 75–83