

Analysis Study of Turkish Sage (Salvia Triloba)

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ABSTRACT

The essential oil in Salvia triloba is 2-3.5%. According to the European pharmacopoeia, it is required that the whole drug contains at least 1.8% and the chopped drug at least 1.2%. It contains 1,8 cineoles. Apart from this, it contains less than 1% thujone, 1,5-2,4% camphor, monoterpenes, sesquiterpenes. Hydroxycinnamonic acid derivatives are at the rate of 5%. It is also known as Lamiacea tannin compounds. Rosmarinic acid is predominant. Diterpene bitter substances: its main components are carnosol (picrosalvin) and rosmanol. Flavonoids are 2%. It consists predominantly of flavones. Salvigenin, which is specific to droga, can be given as an example. Samples from July organic farm Bezm-i Alem Vakif University Phytotherapy Education application and research center analyzed in September 2021. Gas chromatography was used for component determination, and gas chromatography flame ionization detector was used for percent determination by mass spectrophotometry. The highest content was found to be 63,604 and 1.8 cineol. The analysis result was found to be compatible with salvia triloba.

Keywords: Analysis; Phytotherapy Gas Chromatography-Mass Spectrometry; Oil Volatile

Introduction

The leaf drop of Salvia officinalis is registered in the European pharmacopoeia. At the same time, there is a positive monograph of the German E commission. It contains cytotoxic thujone. Salvia triloba leaf drug is similar to the leaves of medicinal sage in terms of chemical structure and treatment. Since medicinal sage does not grow naturally in Turkey, salvia triloba is used instead [1-3]. This species, which contains traces of thujone, is also used in Europe. The drug of both medicinal plants is accepted as medicinal sage in the scientific platform.

Content and Features

The essential oil of Salvia officinalis contains 30-50% of thujone and isotujone as a mixture. This mixture is cytotoxic. The essential oil is at the rate of 1-2.5%. It is desired to contain 10% essential oil. The essential oil consists mainly of monoterpenes. It contains 30-50% thujone in its structure [4-7]. 25-30% camphor and 5-15% 1.8% cineol (eucalyptol), as well as borneol and bornyl acetate, % Contains 6-15 sesquiterpenes. Hydroxycinnamonic acid derivatives: 2-6% and are named as Lamiacea tannin compounds. Rosmarinic acid comes first. Diterpene bitter substances: the main component is carnosilicic acid (salvin). as well as rosmanol and isorosmanol.

- Flavonoids: They are at the rate of 1-3%.
- Phenol glycosides: Caffeoyl-fructosyl glycoside, caffeoyl-apiosyl glycoside and others.
- Triterpenes: the main component is ursolic acid. There are also polysaccharides.

The essential oil in Salvia triloba is 2-3.5%. According to the European pharmacopoeia, it is required that the whole drug contains at least 1.8% and the chopped drug at least 1.2%. It contains 1,8 cineoles. Apart from this, it contains less than 1% thujone, 1,5-2,4% camphor, monoterpenes, sesquiterpenes. Hydroxycinnamic acid derivatives are at the rate of 5%. Also known as Lamiacea tannin compounds. Rosmarinic acid is predominantly.

Diterpene bitters: its main components are carnosol (picrosalvin) and rosmanol. Flavonoids are 2%. It consists predominantly of flavones [8-11]. Salvigenin, which is specific to these flavones, can be given as an example. This study was conducted to analyze the salvia triloba plant and to investigate its compatibility with real salvia triloba.

Method

In September 2021, salvia triloba plant drugs collected by the phytotherapist in the July organic farm were dried and sent to the

BITEM laboratory. Here, a 5% solution of essential oil in hexane was prepared. Gas chromatography was used for component determination [11-13], and gas chromatography flame ionization detector was used for percent determination by mass spectrophotometry Figure 1.

ANALİZ SONUÇLARI / ANALYSIS RESULTS			
Firma / Company		TEMMUZ ORGANİK	
Örnek / Sample		Adaçayı Uçucu Yağı	
Lot No		Belirtilmemiş / Not specified	
Uçucu Yağ Verimi		1,6 ml uçucu yağ / 100 g bitki	
Essential Oil Yield		1,6 ml essential oil / 100 g plant	
NOT: Uçucu Yağ Verimi kullanılan materyalin kalitesine, toplanma zamanına, toplanan kısmın içerisindeki dal, yaprak, çiçek ve diğer kısımların oranına, bitkinin kurutulma şekline, depolama koşullarına ve süresine bağlı olarak değişmektedir. Uçucu Yağ Verim değerlerinde daha sonra çıkabilecek farklı sonuçlar için sorumluluk BITEM'e aittir.			
Uçucu Yağ Kompozisyonu / Composition of Essential Oil			
Bileşik / Compound	%	Bileşik / Compound	%
Alpha thujene	0,236	Borneol	0,628
Alpha pinene	4,196	4-terpineol	0,531
Camphene	2,635	Alpha terpineol	1,223
Beta pinene	5,234	Bornyl acetate	1,116
Myrcene	3,764	Caryophyllene	5,055
1,8-cineole	63,604	Alibaramadendrene	0,425
Gamma terpinene	0,584	Alpha humulene	0,598
Thujone	3,014	Veridiflorol	0,507
Camphor	6,652		
Analizi yapılan yağ <i>Salvia triloba</i> (Adaçayı) türü ile uyumlu görünmektedir. The analysed oil is similar with the <i>Salvia triloba</i> (Sage).			
*Tisserand, R. and Young, R. (2014). Essential Oil Safety: A guide for health care professionals.			

Figure 1: Analysis results of salvia trilobaefolium.

Findings

The highest rate was 1.8 cineol(63,604) camphor (6,652) beta pinene (5,204) respectively.

Discussion

In this study, we aimed to make a phytochemical analysis of Turkish sage. According to recent studies, it has been determined that the topical effect in inflammatory conditions of the mouth and throat is caused by ursolic acid. Its astringent effect has been proven [14]. This effect is due to the chlorogenic acid, ellagic acid epicatechin and epillocatechingallate it contains. It has antioxidant properties. In studies with cell lines, methanolic extracts of Dalmatian sage have been shown to inhibit the proliferation of lymphoma and leukemia cells depending on dose and time, and this occurs through the apoptosis-related pathway.

Uses of Dalmatian Sage Approved by the German E Commission

It can be used internally for dyspeptic diseases, feeling of

fullness, mild gastrointestinal cramps, antiperspirant, mouth and mucous mouthwash. ESKOP has prepared the *Salvia trilobaefolium* monograph and approved its use in cases of stomatitis, gingivitis, and pharyngitis in cases of hyperhidrosis. It has anti-hydrotic properties and reduces increased sweat secretion [15].

Dosage and Use

Internal use 4-6g drug/day 1 teaspoon of sage leaf is prepared as a medicinal tea infusion with 150ml hot water. It is brewed covered. It is infused for 10-15 minutes with the top covered. The reason for keeping the time long is to allow the bacteriostatic effective tannin compounds to pass into the water. The external liquid extract is recommended at a dose of 1.5-3g/day.

Side Effects

In long-term use of more than 15g as a daily dose, tachycardia due to thujone may cause hot flashes and dizziness.

Contraindications

Dalmatian sage is contraindicated in epileptic patients during

pregnancy and lactation because of the thujone it contains. It is used only as a mouthwash, twice a day, not exceeding 4 weeks, after the fourth month of pregnancy.

Effect and Use

Dalmatian sage and Turkish sage show the same characteristics in terms of usage. It is used in colds, tonsillitis, pharyngitis. Care should be taken that the infusion is not hot during use. If it is to be used as a mouthwash, it is recommended to be applied every 2 hours. The plant is considered to be relaxing and bactericidal at the same time. Aqueous lipophilic leaf extracts have a broad antimicrobial spectrum. The antibacterial effect of carnosilicic acid, which is one of the diterpene bitter substances, affects RNA synthesis in bacteria and prevents their proliferation and regeneration. Although this effect is also seen in Turkish sage, this study was made with Dalmatian sage and shows the antibiotic effect of the plant. Substances with this feature in water. They emerge as soluble substances as a result of infusing the plant for at least 10 minutes. Its antiviral property is also known especially against herpes viruses. This effect has been proven in vesicular stomatitis. 1,8 cineole found in both sage teas give expectorant properties.

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