



A Traditional Nutraceutical from Ardakan (Fars): *Sohan Halva*

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Abstract

Halva, one of the most common nutraceuticals in Traditional Iranian Medicine, is prepared with grains flour, nuts, fruits, spices, oils, and sweeteners. According to *Qarabadin Salehi*, *Sohan Halva* is a 17-ingredient confectionary which is suitable for cold temperament, backache, impotency, and nervous system disorders. Also, a product with nearly similar features is prepared in Ardakan city in Fars province, Iran. This study is going to compare and analyze similarities and differences between both products. Ingredients, preparation methods, side effects, and contraindications of *Sohan Halva* were extracted from *Qarabadin Salehi* and also were obtained from local producers. Clinical studies of each materia medica of Halva were collected. In spite of similar cooking methods of *Sohan Halva*, there are some differences in spices used in two products. Generally, only four of them including cinnamon, ginger, pepper, and cardamom are similar. *Sohan Halva* is considered a tonic nutraceutical according to *Qarabadin Salehi* and local Ardakani producers. Numerous recent studies confirm the effects of this local food. Traditional recipes are valuable heritage of cultures and nations; therefore, reporting such data helps maintaining ancient knowledge not to be forgotten.

Keywords: *Sohan Halva*, Ardakan (Fars), *Qarabadin Salehi*, Ethnic food, Nutraceutical

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Introduction

Halva, a common sweet dessert, is a local food, which is cooked variously based on regional cultures and accessible raw materials. Containing fruits, vegetables, grains, nuts, cereals, oils, and sweeteners, different types of halva are categorized as important nutraceuticals of Middle-Eastern countries [1].

In numerous Traditional Iranian Pharmacy manuscripts, one chapter is allocated to halvas, and pertaining information like processing steps, nutraceutical effects, ingredients, side effects, and contraindications. For instance, *Qarabadin Salehi* (a pharmaceutical encyclopedia written by *Saleh ibn Mohammad Ghaeni Herawi* in 1766) introduced 37 halva formulations in detail [2]. *Sohan Halva*, one of these formulations, is produced and marketed vastly in Ardakan (Fars) under the same name or black halva or ghare halva.

While research of traditional and ethnic knowledge is of importance for all nations, this study was carried out to compare and analyze similarities and differences between *Sohan Halvas* based on *Qarabadin Salehi* and local Ardakani producers. Relevant pharmacological and clinical findings about herbal ingredients of *Sohan Halva* were collected.

Methods

Two data sources were used to collect information. First, a pilot-scale producer of *Sohan Halva* in Ardakan was interviewed about ingredients, preparation method, usages, and contraindication. The second source was *Qarabadin Salehi*, from which the same topics about *Sohan Halva*

were collected. Temperaments and effects of herbal ingredients were extracted from *Makhzan-al-adwieh* (1772) [3]. Scientific names of the plants were authenticated using indices of *Kitab-al Saydana fi Tibb* (10th century), *Al-Mojiz* (13th century), and *Useful Plants of Iran and Iraq* (1937) in addition to being checked in www.theplantlist.org [4-6]. Relevant pharmacological and clinical findings were collected from Scopus, Google Scholar, and Pubmed.

Results

The ingredients of *Sohan Halva*, according to local producers in Ardakan, are wheat germ flour, wheat flour, concentrated grape juice, and twelve spices, including ajwain, black pepper, chili pepper, cinnamon, cumin, dill (seed), fennel, galangal, ginger, green cardamom, saffron, turmeric. walnut and sesame are used for decorating the product. In order to produce wheat germ flour, wheat is washed and soaked in water for days. Two or Three days later, the soaked wheats are drained, and they are put on large trays, covered with wet clean cotton cloth, letting roots and sprouts grow. When they reach about 5mm, they are separated and put in direct sunlight to get dried completely. Wheat sprouts, which are milled to produce wheat germ flour or spring wheat flour, are ready to be used for halva production (Figure.1). Table 1 has presented a comparison between ingredients, their proportions, preparation methods, effects, and contraindications of two *Sohan Halvas* in Ardakan and *Qarabadin Salehi*. Wheat germ flour, wheat flour, butter, sugar, syrup, coconut, pistachio, walnut, and spices

including cannabis, cinnamon, clove, ginger, green cardamom, nigella, nutmeg, and pepper are ingredients of *Sohan Halva* in *Qarabadin Salehi*. Musk and ambergris were suggested for taste improvement. Table 2 illustrates the spices used in both *Sohan Halvas*, their temperaments,

and traditional effects related to gastrointestinal tract, central nervous system, potency and pain. These four effects were mainly focused by local producers. Pharmacological effect and clinical findings of spices used in both *Sohan Halvas* are briefly shown in table 3.



Figure 1. Six main steps of preparing *Sohan Halva* in Ardakan (Fars)

Table 1. A comparison between *Sohan Halvas* in Ardakan and *Qarabadin Salehi*: Ingredients, their proportions, preparation method, effects, and contraindications

Reference	Ethnic knowledge of Ardakan	Qarabadin Salehi
Ingredients & their Proportions	<ul style="list-style-type: none"> ➤ Wheat germ flour (= Spring flour): 1 unit ➤ Wheat flour: 2 units ➤ Concentrated grape juice: 1 unit ➤ Spices: 1% including ajwain, black pepper, chili pepper, cinnamon, cumin, dill (seed), fennel, galangal, ginger, green cardamom, saffron, turmeric ➤ Sesame, walnut 	<ul style="list-style-type: none"> ➤ Wheat germ flour (= Samanu flour or Tijaki): 1 unit ➤ Wheat flour: 1 unit ➤ Butter or sesame oil: a slight amount ➤ Concentrated sugar syrup: optional ➤ Spices: cannabis, cinnamon, clove, ginger, green cardamom, nigella, nutmeg, pepper (amount should be used based on temperament) ➤ Coconut, pistachio, walnut, musk, ambergris
Preparation Method	<ul style="list-style-type: none"> ➤ Mixture of both types of flour are added to lukewarm water and stirred continuously. When viscosity decreases after one hour, the concentrated grape juice is added. The mixture having been stirred and mixed for 4-5 hours, spices are added. Finally, warm paste is thrown in large trays, which have been lubricated in advance. After cooling, <i>Sohan Halva</i> is kneaded and formed into balls that are decorated with walnut and sesame. 	<ul style="list-style-type: none"> ➤ The mixture of two types of flour is added to boiling water gradually until it cooks and turns to a dense paste. By adding butter or oil and stirring well, the oil will be absorbed. Concentrated grape juice or concentrated sugar syrup is poured and stirring is continued until the oil will desorb. Followed by adding spices according to the preferred taste.
Effects	<ul style="list-style-type: none"> ➤ body wetness remover ➤ suitable for cold temperament ➤ blood builder ➤ backache and joint pain reliever ➤ tonic and stomachic ➤ nerve relaxer 	<ul style="list-style-type: none"> ➤ highly nutritious ➤ suitable for cold temperament ➤ blood thickener ➤ backache reliever ➤ aphrodisiac ➤ nerve tonic
Contraindications	<ul style="list-style-type: none"> ➤ hot temperament, pregnancy, high blood pressure 	<ul style="list-style-type: none"> ➤ hot temperament

Table 2. Spices used in *Sohan Halva* based on *Qarabadin Salehi* (Q) and Ardakani producers (A), their temperaments (temp.), and traditional effects related to gastrointestinal tract, central nervous system, potency and pain [3].H= hot, D=dry, numbers in superscript show temperament degrees. (e.g. H² means hot in second degree.)

	Scientific name/ Part used	Temp.	Q	A	GI	CNS	Potency	Pain
1	<i>Alpinia officinarum</i> Hance/ root	H ² D ²		✓	carminative, stomachic	-	-	phlegmatic pain backache reliever
2	<i>Anethum graveolens</i> L./ fruit	H ² D ²		✓	digestive, stomachic	-	-	kidney pain & backache reliever
3	<i>Cannabis sativa</i> L./ seed	H ³ D ³	✓		-	-	-	-
4	<i>Cinnamomum zeylanicum</i> Blume/ bark	H ² D ²	✓	✓	carminative, liver deob- structer	euphoric brain wetness desiccant	aphrodi- siac	-
5	<i>Crocus sativus</i> L./ stigma	H ² D ¹		✓	liver tonic	euphoric tonic	aphrodi- siac	-
6	<i>Cuminum cyminum</i> L./ fruit	H ² D ³		✓	appetizer, carminative, stomachic	-	-	-
7	<i>Curcuma longa</i> L./ rhizome	H ³ D ³		✓	liver deob- structer	-	-	-
8	<i>Elettaria cardamomum</i> L./ fruit	H ¹ D ²	✓	✓	digestive, stomachic	euphoric	-	-
9	<i>Foeniculum vulgare</i> Mill./ fruit	H ³ D ¹		✓	carminative, stomachic	-	-	cold pains reliever
10	<i>Myristica fragrans</i> Houtt./ fruit	H ² D ³	✓		digestive, stomachic, wetness re- mover	-	aphrodi- siac	
11	<i>Nigella sativa</i> L./ seed	H ³ D ³	✓		-	-	-	-
12	<i>Piper nigrum</i> L./ fruit	H ³ D ³	✓	✓	appetizer, carminative, stomachic	memory improver, tonic	aphrodi- siac	-
13	<i>Syzygium aromaticum</i> L./ flower bud	H ³ D ³	✓		anti-emetic, carminative, digestive, stomachic	brain deob- structer, headache reliever, tonic	aphrodi- siac	-
14	<i>Trachyspermum ammi</i> Sprague/ fruit	H ³ D ³		✓	carminative, deobstructer, digestive, wetness remover	-	-	-
15	<i>Zingiber officinale</i> Roscoe/ rhizome	H ³ D ²	✓	✓	carminative, digestive, liver deob- structer, wet- ness desiccant	brain wetness desiccant, memory improver	aphrodi- siac	-

Table 3. Pharmacological effects and clinical findings of spices used in *Sohan Halvas*

	Spices used in <i>Sohan Halvas</i>	Family	Pharmacological effect & clinical findings
1	<i>Alpinia officinarum</i> Hance	Zingiberaceae	anti-inflammatory, antioxidant, antiulcer, gastric anti-secretory [7], analgesic [8]
2	<i>Anethum graveolens</i> L	Apiaceae	analgesic, anti-inflammatory, antioxidant, anti-secretory, mucosal protective [9]
3	<i>Cannabis sativa</i> L.	Cannabaceae	relives chronic and neuropathic pain [10], relieves severity of constipation [11]
4	<i>Cinnamomum zeylanicum</i> Blume	Lauraceae	anti-inflammatory, anti-gastric ulcer, antioxidant, anti-secretagogue [12]
5	<i>Crocus sativus</i> L.	Iridaceae	anti-depressant [13], aphrodisiac [14]
6	<i>Cuminum cyminum</i> L.	Apiaceae	analgesic, anti-inflammatory, memory enhancer, sperm factors improver [15]
7	<i>Curcuma longa</i> L.	Zingiberaceae	anti-inflammatory, reduces mucosal injury and abdominal pain in IBS [16]
8	<i>Elettaria cardamomum</i> L.	Zingiberaceae	gastroprotective [17], inhibits gastric ulcer [18], analgesic, sedative [19]
9	<i>Foeniculum vulgare</i> Mill.	Apiaceae	analgesic, anti-inflammatory, carminative, hepatoprotective, spasmolytic [20]
10	<i>Myristica fragrans</i> Houtt.	Myristicaceae	anti-depressant, aphrodisiac, memory enhancer [21], anti-inflammatory [22]
11	<i>Nigella sativa</i> L.	Ranunculaceae	anti-inflammatory, gastroprotective, hepatoprotective, spasmolytic [23]
12	<i>Piper nigrum</i> L.	Piperaceae	anti-inflammatory, antispasmodic, anti-depressant, hepatoprotective [24]
13	<i>Syzygium aromaticum</i> L.	Myrtaceae	antioxidant, anti-spasmolytic, memory enhancer [25]
14	<i>Trachyspermum ammi</i> Sprague	Apiaceae	carminative, stomachic, relieves colic pain and indigestion [26]
15	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	analgesic, antiemetic, anti-inflammatory, antioxidant [27]

Discussion

Different types of halva, various in nutritional and therapeutical effects, are introduced in *Qarabadin Salehi*. *Ahmadkhani's* improves the nervous system and impotency disorders. *Rice Halva* causes weight gain, and *Tar-Halva* is advisable for cough and fever. If such products are prescribed for gaining weight, some points have to be performed in advance: 1. lubricating body with viola oil 2. bathing and mild mobility 3. wearing soft clothing 4. avoiding pickles and salty foods 5. eating barbecues and pottages 6.

avoiding mind distraction and stress [2].

Sohan Halva (Ghare Halva) which is a common confectionary of Ardakan, a cold region in Fars, has been introduced in *Qarabadin Salehi*. This product has various therapeutical applications besides its nutritional values, so it is categorized as a nutraceutical. Despite many similarities based on the two references, there are some differences, especially in ingredients. Cannabis, clove, nutmeg, and nigella are mentioned in *Qarabadin Salehi's* product; however, Ardakani producers use ajwain, cumin, dill seed, fennel,

galangal, saffron, and turmeric. Four spices, including cardamom, cinnamon, ginger, and pepper are common in both products. Although oil or butter are the main ingredients of Salehi's Halva, they are absent in the Ardakani product. Including flour and oil makes halvas obstructive and hard to digest, especially in people with hot temperaments. This is the reason why gastroparesis is an adverse effect in *Qarabadin Salehi*, but the Ardakani product does not result in this ailment. Concentrated sugar syrup in Salehi's halva may cause upper abdominal fullness, but this kind of sweetener is not used in the Ardakani product. All spices in *Sohan Halva* are hot and dry in temperament, so its prescription for cold-temperament people seems logical. Using dairy products vastly, Ardakani nomads try to balance coldness and wetness of such products by application of *Sohan Halva*, specifically in cold seasons. This product is considered a highly-nutritious food, eaten with bread by local people.

Both references support backache relieving effect of *Sohan Halva*. As Table 2 illustrates, this effect relates to dill, fennel, and galangal. Based on Ardakani producers, this confectionary acts as stomachic, and suits dyspepsia. Traditional knowledge confirmed that all spices except cannabis and nigella affect gastrointestinal tract positively. For instance, ajwain, cardamom, clove, cumin, dill, fennel, galangal, ginger, nutmeg, and pepper are stomachic. Also, ajwain, cinnamon, clove, cumin, fennel, galangal, ginger, and pepper were introduced as carminative. Some spices, including ajwain, ginger, and nutmeg remove extra wetness which may cause

various gastric problems [3]. Recent reports have shown protective effects of cardamom, cinnamon, curcuma, dill, galangal, ginger, and nigella on gastric ulcers (table 3). *Sohan Halva* has been mentioned as central nervous system tonic, based on both references. Table 2 shows that clove, pepper, and saffron have this qualification. Among all spices, cinnamon, clove, ginger, nutmeg, pepper, and saffron are aphrodisiac, confirming the usage of *Sohan Halva* for impotency according to *Qarabadin Salehi*. Moreover, recent studies have shown positive effects of clove, cumin, nutmeg, and saffron on potency.

The current comparative study has analyzed the similarities and differences between *Sohan Halva* s based on *Qarabadin Salehi* and local Ardakani producers, besides presenting relevant pharmacological and clinical findings about herbal ingredients of *Sohan Halva*. Traditional recipes are the valuable heritage of cultures and nations; therefore, reporting such data helps ancient knowledge not to be forgotten [28]. Hard effort is needed to publish these valuable data in scientific databases or to register ethnic and traditional knowledge in cultural heritage references.

Conflict of Interest

None

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