

Full Length Research Paper

Recognition and consumption uses and medicinal properties of sour orange (*Citrus aurantium*) by rural people in East part of Gilan Province (North Iran)

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Medicinal plants have been used in ancient centuries to this time and people have completed them in different centuries and different time that we can complete knowledge of medicinal plant properties with surveying them in rural people of different countries and different areas in a country. In this research medicinal properties of sour orange (*Citrus aurantium*) have been studied by rural people in East part of Gilan Province (North Iran). We interview, ask and study uses of this plant from 20 women and men elder than 50 years old with two researchers (man and woman separately). This plant and products of its have been used as range fruit peel, orange juice, Aurantium (orange blossom), sour orange fruits, sour orange leaves and used as herbal medicine for avoid stuffy with CO gas that produce with coal by burning it on charcoal, beneficial for stomach, digestion, disinfectants, aromatic, elimination of headaches, elimination of nausea and vomiting, elimination of vomiting, enhance memory, fortified heart and stomach, laxative, on broiler or heaters in room for aromatization, produced jam, preparing pickle, removing digestive system parasites, treatment of gastric irritation

Key words: Gilan province, *Citrus aurantium*, sour orange, medicinal properties.

INTRODUCTION

As medicinal plants are suitable alternatives for synthetic and chemical drugs they are also considered to be full of secondary metabolites as essential oils, antibacterial, antifungal and other products (Joudi and Habibi, 2010). Today according to the World Health Organization reports, as many as 80% of the world's people depend on traditional medicine for their primary health care needs. There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal spices for the treatment of various diseases (Azaizeh et al., 2003). Then, after the scientific revolution which leads to development of the pharmaceutical industry, the synthetic drugs dominated (Gilani and Attar-Rahman, 2005). Herbal drugs are prescribed widely because of their effectiveness, fewer side effects and are

relatively low in cost (Odhav et al., 2010). The traditional culture worldwide is more or less endangered as a result of improving legislative and moral supports accorded to orthodox practice over native medicine (Idu and Osemwegie, 2007).

Rural ethnobotanical investigation have been studied in national and international areas (El-Ghazali et al., 2010; Joudi and Habibi, 2010). Aim of this study was to survey and identify of medicinal properties of sour orange (*Citrus aurantium*) by rural people in East part of Gilan Province (North Iran).

MATERIALS AND METHODS

Research area is located at Bibalan, Chaykonesar, Gilmelk, Selakjan, and Arbosara villages in NE Roudsar District in Gilan Province, N Iran (Figure 1). This area is south of Caspian sea with rainy and humid climate with about 1100 mm precipitation and -10 to 200 m elevation.

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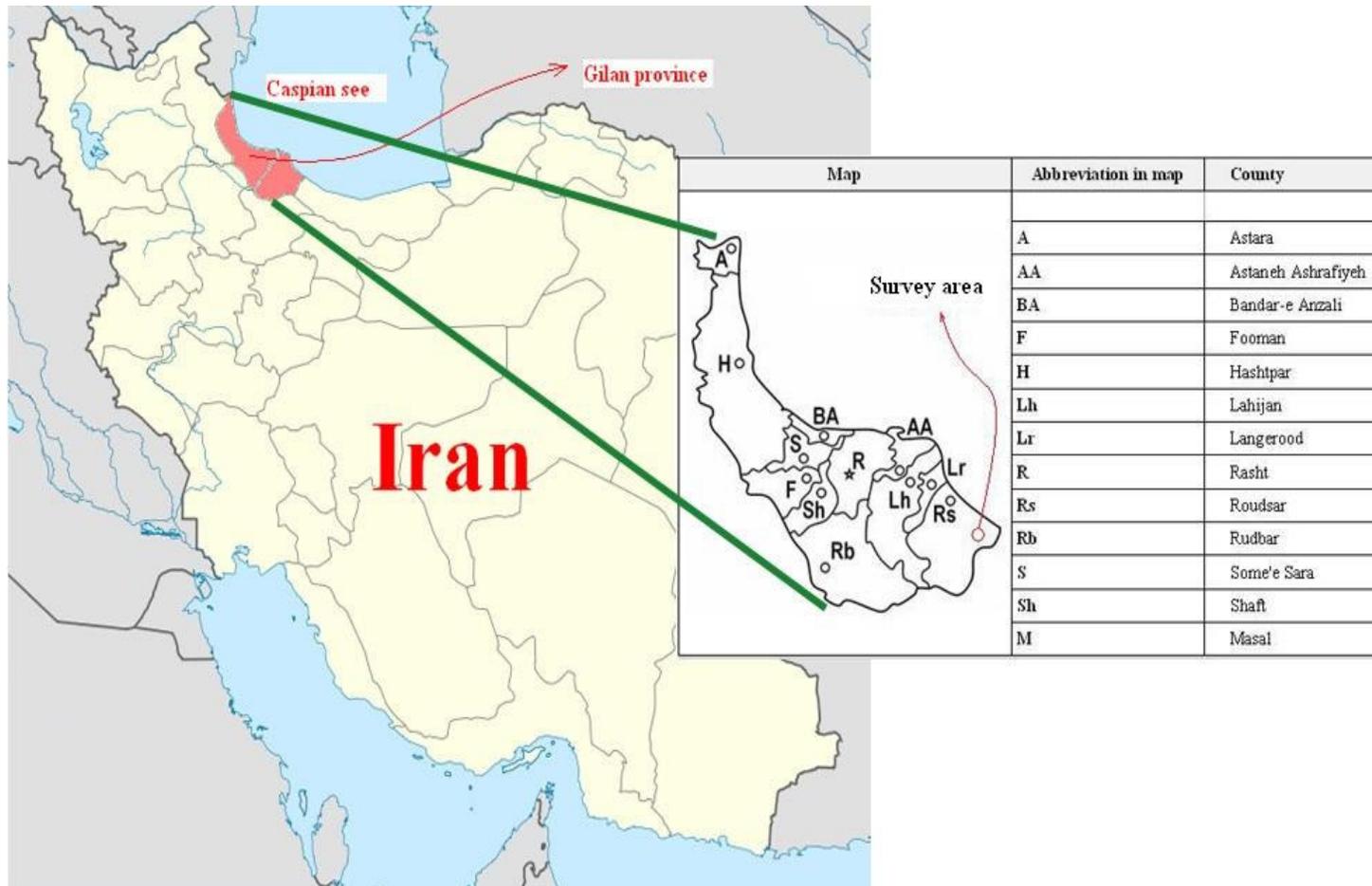


Figure 1. Survey area.

The name "bitter orange", also known as Seville orange, sour orange, bigarade orange, and marmalade orange, refers to a citrus tree (*Citrus aurantium*) and its fruit. Many varieties of bitter orange are utilized for their essential oil, which is used in perfume and as a flavoring. Bitter orange is also employed in herbal medicine as a stimulant and appetite suppressant. Slivers of the rind are used to give marmalade its characteristic bitter taste (Wikipedia, 2011).

After the U.S. Food and Drug Administration banned the herbal stimulant ephedra, manufacturers substituted bitter orange in many herbal weight-loss products (Duenwald, 2005), despite similar concerns about potential serious side effects and lack of effectiveness (Sharpe et al., 2006; NCCAM, 2011) (Table 1). We interview and ask the uses of this plant from 20 women and men elder than 50 years old (that have been known locally for their information and

knowledge about medicinal plant usage) with two researchers (man and woman), separately in East part of Gilan Province, North Iran.

RESULTS AND DISCUSSION

C. aurantium have been used as medicinal plants

Table 1. Scientific name for *C. aurantium* classification report (USDA, 2011).

Kingdom	Plantae – Plants
Subkingdom	Tracheobionta – Vascular plants
Superdivision	Spermatophyta – Seed plants
Division	Magnoliophyta – Flowering plants
Class	Magnoliopsida – Dicotyledons
Subclass	Rosidae
Order	Sapindales
Family	Rutaceae – Rue family
Genus	Citrus L. – citrus
Species	Citrus x aurantium L. (pro sp.) [maxima x reticulata] – sour orange

Table 2. Usage of sour orange fruit peel.

Usage as	Medicinal benefits
Dried orange Fruit peel slice	Elimination of nausea and vomiting Removing digestive system parasites Produced jam Preparing Pickle Fortified heart and stomach Headache eliminate
Brewed	Laxative
Dried orange Fruit peel Grind	Laxative Beneficial for stomach Fortified stomach Elimination of vomiting Elimination of headaches Enhance memory
Fresh orange Fruit peel	On Broiler or heaters in room for aromatization Produced jam Preparing Pickle Avoid stuffy with CO gas that produce with coal by burning it on charcoal
Jam*	Treatment of gastric irritation Fortified stomach Digestion
Essence	Disinfectants Aromatic
Pickle	Fortified stomach

*Sour orange fruit peel has been used for making jam. Since the skin sour of orange has bitter taste before adding sugar to it, have been boiled several times (three to four times) in boiling water for ten minutes and after the final rinse, the sugar is added to it.

with using sour orange fruit peel, orange juice, aurantium (orange blossom), sour orange fruits, sour orange leaves. Orange fruit peels have been used for medicine as dried, brewed, fresh, jam, essence and pickle (Table 2). Sour

orange juice has been used for medicine as Boiled (sour orange paste) and Fresh Orange juice (Table 3 and Figure 2). Aurantium (orange blossom) have been used for medicine as smell, jam, brewed and extract (Table 4).

Table 3. usage of sour orange juice.

Usage as	Medicinal benefits
Boiled (orange paste)*	Ketchup
	Regurgitation of food, especially fish**
	Anti wound cure
	Anti-parasite
	Boost brittle nails
	Blood pressure decreasing
	Reduce food poisoning
	Diuretic
	Lose weight
	Fragrant food
Fresh orange juice	Taste food
	Skin emollient
	Soft hair
	Boost the skin
	To help digestion
	Skin freshness
	Chest to relieve pain
	Elimination of coughing

*Sour orange paste is made from juice of fruits. After the dewatering fruit, boiled it into pot and several times in order to avoid bitter white foam on it are collected.** The famous usage of Sour orange paste is used on barbecued fish. This food is named in this area as *MAHI-MALATEH* (Figure 2).



Sour orange paste

Figure 2. Barbecued fish (*MAHI-MALATEH*) and Sour orange paste on them.

Sour orange fruits have been used for medicine as pickle, mask and boiled (Table 5). Sour orange Leaves have been used for medicine as Brewed and Smell (Table 6).

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Table 4. Usage of Aurantium (orange blossom).

Usage as	Medicinal benefits
Smell	Relaxing
	The exhilarating smell
	The smell brain Booster
Jam	Cleans won the smell runny nose (catarrh)
	Fortified stomach
	Antiepileptic
	Exhilarating
	Mouth freshener
Brewed	Antiepileptic
	Elimination of hiccups
	Sleeping
	Appetizer
	Digestive
	Fortified stomach
	Elimination of coughing
	Strong appetizing
	Exhilarating
	Relieve chest discomfort
Insomnia Treatment	
Extract	Anodyne
	Boost appetite
	abdominal to relieve pain
	Suckle Abdominal to relieve pain

Aurantium (orange blossom) have been used for medicine as Smell, Jam, Brewed and Extract.

Table 5. Usage of sour orange fruits

Usage as	Medicinal benefits
Use as fruits	Relieve chest discomfort
	Elimination of coughing
	Removing digestive system
	Excretion of body toxins
	Decreased blood pressure
Pickle	Fortified stomach
Mask	Elimination of skin rashes
	Elimination of the acne on skin
	Skin emollient
	Soft Hair
	Hair fat removing
Boiled	Elimination of skin warts
	Elimination of coughing
	Elimination of chest pain
	Elimination of constipation

Sour orange Fruits have been used for medicine as Pickle, Mask and Boiled.

Table 6. Usage of sour orange leaves.

Usage as	Medicinal benefits
Brewed	Antiepileptic Food digestion Enhance memory
Smell	Enhance memory

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