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Traditional use of two *Achillea* and *Gundelia* plant genus in East Azerbaijan province (Tabriz District), Iran

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Abstract

Although in previous decades, synthetic drugs consumption caused decreased in use of medicinal herbal materials but due to the adverse effect and high prices of chemical drugs, usage of herbal medicines has bloomed again. Rural people of different countries use these herbal materials for various diseases and their consumption varies from country to country. Therefore, this study was conducted to evaluate consumption method and medicinal properties of two *Achillea* (*Achillea millefolium* L. and *Achillea biebersteinii* Afan.) and *Gundelia* (*Gundelia tournefortii* L.) plant genus of *Astraceae* family by rural people in Tabriz, Iran. We conducted interviews, asked questions and studied the uses of these plants from 16 women and men that are above the age of 35 and have been known locally for their information and knowledge about medicinal plant usage. Results indicated that rural people of Tabriz knew *Achillea millefolium* L. as a poisonous plant and not use it for disease elimination. They knew *Achillea biebersteinii* Afan. as a medicinal plant with therapeutic effects such as sedative, menstruation regulating, anti worm, anti inflammation, stomach rheumatism elimination, stomach acid elimination, ovarian cysts removing and uterine anticancer. Also they use *Gundelia tournefortii* L. for disease such as allergy, blood sugar and cholesterol. So *Achillea biebersteinii* Afan. and *Gundelia tournefortii* L. are considered medicinal plants with many therapeutic effects and people in other countries can use its medicinal properties for same disease.

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Introduction

Variety of Asteraceae family is extremely high and involves large number of medicinal genus and species (Joudi and Bibalani, 2010) that *Achillea* L and *Gundelia* L. genus are two important of them. *Achillea* L. genus has more than 100 species in the world wild (Rahimmalek *et al.*, 2009) that are native to Europe, Western Asia and North Africa (Chevallier, 1996). Iran is one of the Asian countries that demonstrates a germplasm source of variety medicinal plant species and *Achillea* genus is one of them (Zargari, 1997). In the Iran Flora, nineteen species of this genus are introduced which *A. millefolium* and *A. biebersteinii* Afan. are two of them (Mozaffarian, 1996). They are traditionally used as medicinal plants because of their diaphoretic, diuretic, carminative, tonic, anti-spasmodic, anti-inflammatory, antiseptic, infection preventing and wound healing properties. Also the plants are used as a cure for rheumatic, stomach-ache and abdominal pain (Magiatis *et al.*, 2002; Baris *et al.*, 2006; Esmaeili *et al.*, 2006; Toncer *et al.*, 2010; Mirahmadi *et al.*, 2012).

Achillea millefolium L. is one plant of this genus that its active substances are appetizing and make food digestion. The essential oil is anti-bacterial and anti-inflammatory (Benedek and Kopp, 2007; Vasinauskiene *et al.*, 2006; Pouyanfar *et al.*, 2014). *Achillea biebersteinii* Afan. is the other species and its methanol extracts from the aerial parts possess antioxidant and antimicrobial activity (Salar Bashi *et al.*, 2012). *Gundelia tournefortii* L. is a medicinal plant of *Gundelia* L. genus that is used for treatment of pain, inflammations, liver disorders (Oryan *et al.*, 2010), mumps, gastric pain, diarrhea, bronchitis, kidney stone and food. In treating mumps, spiny part and stem of fresh plant is pounded and the juice obtained is applied on swollen part on neck and kept one day (Sarper *et al.*, 2009). Its fresh leaves are diuretic and dried seeds are used for vitiligo treatment (Asgary *et al.*, 2009).

Earlier studies on traditional medicinal plants

showed that the economically backward local and tribal people prefer folk medicine due to low cost and sometimes it is a part of their social life and culture (Udayan *et al.*, 2005; Sandhya *et al.*, 2006). A vast knowledge of how to use the plants against different illnesses may be expected to have accumulated in areas where the use of plants is still of great importance (Diallo *et al.*, 1999; Joudi and Bibalani, 2010). So we can complete the knowledge of medicinal plant properties with surveying them in rural people of different countries and different areas in a country (Bibalani and Mosazadeh-Sayadmahaleh, 2011).

This study was conducted to survey and identify the medicinal properties of *Achillea millefolium* L., *Achillea biebersteinii* Afan. and *Gundelia tournefortii* L. by rural people in Tabriz, Iran.

Material and methods

Plants selection

Important medicinal and pasture plants of Tabriz (located in Northwest Iran with 1348 m altitude from sea level, annual average temperature of 6.9 - 18°C and average precipitation of 310 mm) were evaluated. According to the extensiveness of Asteraceae family, three plants from two genus were selected. Scientific name of each plant is stated in table 1.

Collecting medicinal information

We face to face interviewed, showed plants pictures and asked traditional use of these plants from 16 women and men elder than 45 years old (that have been known locally for their information and knowledge about medicinal plant usage).

Results

Achillea millefolium L. uses

Some of the interviewees' people did not know it and some of them said it is one of the poisonous plants.

Achillea biebersteinii Afan. uses

The plant called by various local names (Table 2).

Local people stated many therapeutic effects for it

(Table 3). In the research area, its fresh and dried flowers are used as brewed for diseases treatment. *Gundelia tournefortii* L. uses.

Local people know it with special name (Table 2) and use its stem as food source for preparing the stew. It is also one of well known medicinal plant for various diseases treatment (Table 4).

Table 1. The plants scientific name and classification report.

Species	Genus	Family
<i>Achillea millefolium</i> L.	<i>Achillea</i> L.	Asteracea
<i>Achillea biebersteinii</i> Afan.	<i>Achillea</i> L.	Asteracea
<i>Gundelia tournefortii</i> L.	<i>Gundelia</i> L.	Asteracea

Table 2. Scientific and local name of the plants in Tabriz, Iran.

Scientific name	Local name
<i>Achillea biebersteinii</i> Afan.	Bumadaran
	Oymadaran
	Choban Kibriti
	Choban Yastikhi
<i>Gundelia tournefortii</i> L.	Kangar

Discussion

According to the results, although *Achillea millefolium* L. is one medicinal plants (Benedek and Kopp, 2007; Vasinauskiene *et al.*, 2006; Pouyanfar *et al.*, 2014) but rural people in Tabriz know it as a poisons plant and not use it. They use flowers of *Achillea biebersteinii* Afan. for treating diseases such as uterine cancer, ovarian cysts, stomach rheumatism

and acid. *Gundelia tournefortii* L. is used as food and medicinal source by rural people. Traditional and therapeutic uses of these plants can be shared with other uses method in other regions of the world and Iran. By collecting various information about utilization method, the medicinal miracle of these plants can be used in the best way.

Table 3. Medicinal organs and utilization of *Achillea biebersteinii* Afan. in Tabriz, Iran.

Medicinal organs	Usage as	Medicinal uses
Fresh/dried flowers	Brewed/distillate	sedative
		Menstruation regulating
		Anti worm
		Anti inflammation
		Anti spasm
		Stomach rheumatism elimination
		Stomach acid elimination
		Ovarian cysts removing
		Uterine anticancer

Table 4. Medicinal organs and utilization of *Gundelia tournefortii* L. in Tabriz, Iran.

Medicinal organs	Usage as	Medicinal uses
stem	Poultice	Anti allergy Reducing blood sugar
stem	edible	Reducing blood cholesterol
		Blood purifiers

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