



# Edible Wild Vegetables Used in North West of Tunisia

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**ABSTRACT**

*This paper provides significant information on food plant uses built up from interviews with native people from the Nord West of Tunisia. The results allowed us to identify 25 wild vegetables used for the preparation of 26 typical Tunisian food recipes used in the traditional food and medicinal uses have been identified. The most important species belongs to Malvaceae, Asteraceae, Polygonaceae, Brassicaceae, Portulacaceae, Lamiaceae, Liliaceae, and Urticaceae.*

**Keywords : Wild, Vegetable, Survey, North West of Tunisia**

**Introduction**

Under a Mediterranean climate, Tunisia produces a wide range of plant from North to South with widely diversified resources (Ministère de l'Environnement et de Développement Durable, 2009). These plants are important for rural people and can constitute the only source of food and medicine. Local communities in Tunisia are endowed with a traditional knowledge which risks to be lost. Despite efforts in exploiting the natural plant resources, studies have been limited to medical and pharmaceutical aspects (Ben Sassi et al., 2007; Leporatti & Ghedira, 2009) and didn't address the food side.

In this context, we looked at Tunisian wild vegetable species to contribute to the empowerment of their nutritional value and industrial application. This is achieved using an ethnobotanical survey conducted on a population of the North West of Tunisia.

**Material and methods**

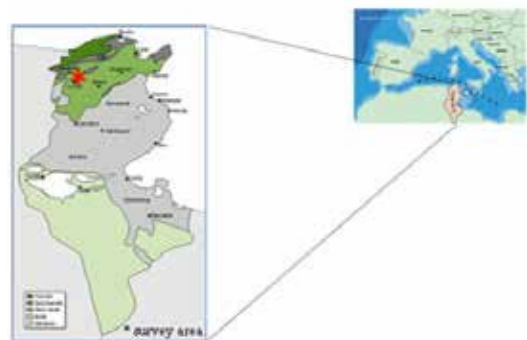
To carry out this study we have adapted basic methodology for anthropological and botanical research (Parada et al., 2009). To list Tunisian wild vegetables, we conducted an ethnobotanical survey in some areas mainly in North West of Tunisia (Figure 1) for their natural wealth in wild plants (regions of Siliana, Kairouan and Kef) (FAO, 2013). Plant materials of all the taxa reported were collected and identified with the help of specialists.

**Results and Discussion**  
**Ethnobotanical survey**

The ethnobotanical survey showed that 25 wild vegetables belonging to 10 families have been identified. The scientific names of the species, their botanical families, Arabic vernacular names, consumable parts and their food and medicinal uses are shown in Table 1.

**Table 1: Review of the wild vegetables gathered and consumed in North West Tunisia.**

Family / Scientific Name	Main Local Name	Consumable part	Exemples of Food uses	Exemples of Medical uses
<b>Malvaceae</b>				
<i>Malva sylvestris</i>	Khobbeza	Leaf, Stem	Steam cooking or use in diverse traditional dishes as «Tbikha».	Emollient
<b>Asteraceae</b>				
<i>Cynara cardunculus</i>	Khorchof, Cardoun	Leaf, Stem	Traditional dishes (Chekchouka, Couscous), stew and soups	
<i>Scorzonera undulata</i>	Guiz	Root	Eaten raw or cooked in water	Laxatif



**Figure 1. Survey area.**

Most interviewees were asked through the villages by systematic walk and chosen for their knowledge. Specimens are stored in Laboratory of food Technology at the Tunisia National Institute of Agronomy. As a whole, 100 interviewees are questioned with a mean age of 59 (minimum 24, maximum 80), 80% are women (with a majority of housewives) and 20% are men working as farmers. The popular common names of the plants these regions, as well as their pronunciation, information about medicinal and food properties (recipes and consumed part) were recorded.

Onopordum nervosum	Bok	Stem	Eaten raw	
Cichorium intybus	Sickouria	Leaf, Stem	Salad	Diuretic, laxatif
Scolymus hispanicus	Bouhalliba	Stem	Traditional dishes ( Couscous)	
Launaea resedifolia	Telma	Leaf, Stem	Salad	
Anacyclus clavatus	Kraa djeja	Stem	Salad	Stomach pains
Carduncellus pinnatus	Grain jday	Flower head	Boiled in salty water or fried	
Sonchus oleraceus	Tifef	Leaf	Salad	
Scolymus grandiflorus	Zarniz	Sheet	Eaten raw	
Rhaponiticum acaule	Elkaz	Flower head	Eaten as artichokes	
Polygonaceae				
Rumex vesicarius	Hommidha	Sheet	Sauce	
Rumex tingitanus	Korrisa	Stem	Eaten raw	
Emex spinosa	Bezzoult naaja	Root	Eaten raw	
Brassicaceae				
Dilipotaxis harra	Harra	Leaf, Stem	Boiled in salty water or eaten in sauce	
Diploaxis eruroides	Jerjir	Leaf, Stem	Eaten raw (salads) or cooked (soups)	
Boraginaceae				
Borago officinalis	Boukhrich	Leaf, Stem	Soupes	Emollient, diuretic and sudorific
Portulacaceae				
Portulaca oleracea	Bondlika, Bortleg	Leaf, Stem, Seed	Leaves and tems in sauce, seeds crushed and added to flours	Anaphrodisiac, antidiabetic, emollient, diuretic
Apiaceae				
Bunium incrassatum	Tellaghouda	Root	Roasted (on wood carbon, in an oven or ashes). Boiled in salt water and seasoned with oil and spices.	
Liliaceae				
Muscari comosum	Lazoul	Root	Can replace the onion in traditional cooking	Antirheumatic
Asphodelus fistulosus	Bouzlima	Sheet	Steamed, boiled, or fried	
Allium roseum	Yazoul, korrath	Bulb	Can replace the leek in traditional cooking	
Urticaceae				
Urtica pilulifera	Horriq	Sheet	Cooked avec le « Mhammes »	Aphrodisiac, emollient, diuretic
Labiatae				
Prasium majus	Oudhinit arnib	Leaf, Stem	Eaten raw	Painkiller power

It is important to note that the intersection of these results with those of Le Floc'h (1983), issued some species that are not included in our list of inventoried vegetables. This could be due to the fact that some species grow exclusively in the South and therefore are ignored by people from the North or Center.

The number of species per family is shown in Figure 2. The classification of families showed that Asteraceae family ranks first (11 species). In addition, it is ranked first in terms of number of species with at least one ethnobotanical use in North Africa (Le Floc'h, 1983). Indeed, based on the number of citations by respondent, we found that 8 species stand out from all the plants: *Cynara cardunculus*, *Malva sylvestris*, *Bunium incrassatum*, *Launaea resedifolia*, *Rhaponiticum acaule*, *Sonchus oleraceus*, *Scolymus hispanicus*. Whether, 6 species are moderately cited with quote percentages ranging from 40% (*Scorzonera undulata*) to 70% (*Cardunculus pinnatus*). Finally, 11 are the least mentioned species are with percentages ranging from 5% (*Prasium majus*) to 38% (*Rumex tingitanus*).

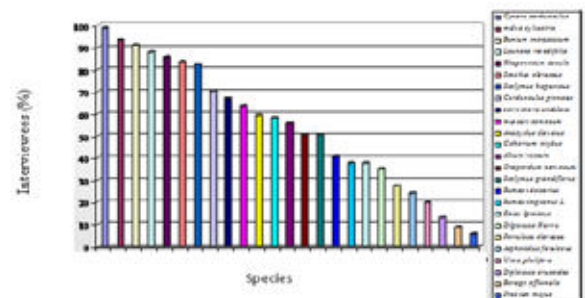


Figure 2: Percentage of quotation of the various listed vegetables.

**Food use**

This study has allowed to show how many wild species of the Tunisian flora are eaten (Table 1). The data have allowed us to identify 26 food recipes. They are used to prepare various typically traditional Tunisian dishes: "couscous" (*Malva sylvestris*, *Cynara cardunculus*, *Portulaca oleracea*), soups

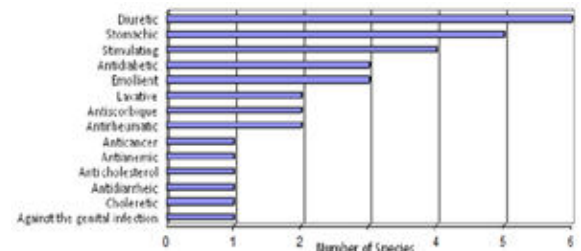
(e.g. "Mhammes"), rice (*Cynara cardunculus*), donuts (*Diplotaxis harra* and *Cynara cardunculus*), and sauces (*Portulaca oleracea*, *Borago officinalis*, *Rumex vesicarius*). On the other hand, 15 species can be consumed in the raw state (salad, seasoned with oil, vinegar or lemon). These species concern mainly: the *Asteraceae* (*Cichorium intybus*, *Sonchus oleraceus*, *Launaea resedifolia*...), the *Polygonaceae* (*Rumex tingitanus* become *R. roseus* according to Nabli (2010) and *Emex spinosus*), the *Brassicaceae* (*Diplotaxis eruroides*), the *Portulaca* (*Portulaca oleracea*) and the *Malva sylvestris*. These results highlight the richness of the traditional Tunisian culinary art through the use of a variety of wild vegetables. In fact, generally, the diet of a population adapts to the natural environment which provides the bulk of its resources.

We have also noted two other forms of recovery of these wild vegetables. In fact, some respondents have reported the use of latex secreted in rods of *Cynara cardunculus* and the use of *scolymus hispanicus* in making goat cheese. It is important to note that this use has been scientifically proven by several researches showing the coagulant effect of an enzyme present in the flowers of *Cynara cardunculus* (Roseiro *et al.*, 2003; Barbagallo *et al.*, 2009). It should also be noted that this tradition is practiced in most parts of the Mediterranean basin (Fernández-García *et al.*, 2008). On the other hand, other respondents informed us the use of the leaves of sorrel (*Rumex vesicarius*) in bread making. In fact, the stem leaves are washed and separated and then added to the dough to promote fermentation. It therefore appears that these sheets have a close relation with the meaning of the vernacular Arabic name given to it (*Khmirit jedaya*) which means the baker's yeast of my grandmother. A similar use has been recorded in many Mediterranean countries (North Africa, Cyprus, Spain, Turkey, Italy) as a seasoning or as a freshly boiled, green vegetable (Lentini & Venza, 2007).

#### Traditional medicinal use

Among the surveyed, 48% (12 species) vegetables are reported to have therapeutic properties and therefore used in traditional medicine (Table 1, Figure 3). Indeed *Malva sylvestris*, *Cynara cardunculus*, *Rumex vesicarius*, *Cichorium intybus*, *Portulaca oleracea* and *Urtica pilulifera* have diuretic properties. Some species have stomachic effects (*Cynara cardunculus*, *Cichorium intybus*, *Anacyclus clavatus*, *Rhaponticum stemless* and *Urtica pilulifera*), others have stimulating effects (*Diplotaxis eruroides*, *Allium roseum* and *Muscari comosum*).

To treat rheumatism population consumes two species namely the *Allium roseum* and *Muscari comosum*. The *Onopordum nervosum* is deemed beneficial against cancer. To fight against anemia *Malva sylvestris* is used. It was reported that the *Cynara cardunculus* lowers cholesterol levels. In general, in popular tradition, food is often indicated as medicine, that's why we noted that vegetables used for food recipes are also used for therapeutic purposes. In fact, as pointed Fleurentin (1993), there is no absolute boundary between food and medicine.



**Figure 3: Classification of the various medicinal uses according to the number of cited species.**

#### Conclusion

In this study we surveyed 25 wild vegetables belonging to 10 families whose edible parts are different (leaf, stem, root, bulb, etc.). Among these wild vegetables, 8 were the most cited: *Rumex vesicarius*, *Borago officinalis*, *Cynara cardunculus*, *Cichorium intybus*, *Scorzonera undulata*, *Allium roseum* and *Diplotaxis eruroides*. It's clear that some species were strongly related to the specific traditional food habits of these regions, while others are well known because of their availability in different regions of Tunisia.

The principal aim of this study was to contribute in recovering the ancient Tunisian culinary traditions and saving a legacy rich in information and intended to be lost if not written down. By the way, and as a different alternative to synthetic products used in food, it would be appropriate to look more closely at these plant species to identify their natural substances.

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