

Functional Foods or Food Medicines? On the Consumption of Wild Plants Among Albanians and Southern Italians in Lucania

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INTRODUCTION

In the past decade, the food-medicine continuum has come to the forefront of ethnobiological and ethnopharmacological research (Johns, 1990; Etkin, 1994, 1996; Prendergast et al., 1998). Plants may be used both as medicine and food, and it can often be difficult to draw a line between the two groups: food may be used as medicine and vice versa.

Many studies in the past twenty years have stressed the ethnobiological and food aspects of gathering activities worldwide and the consumption of noncultivated botanicals in Africa (Etkin and Ross, 1982; Ogle and Grivetti, 1985a, b, c, d; Johns and Kokwaro, 1991; Humphry et al., 1993; Bukenya-Ziraba, 1996; Johns, Mhoro, and San-aya, 1996; Johns, Mhoro, and Usio, 1996; Hillocks, 1998; Schackleton et al., 1998; Lockett and Grivetti, 2000; Vainio-Mattila, 2000; Asfaw and Tadesse, 2001; Marshall, 2001; Mertz et al., 2001; Ogoye-Ndegwa and Aagaard-Hansen, 2003), in America (Bye, 1981; Lepofski et al., 1985; Kuhnlein, 1992; Turner, 1995, 1997; Ladio and Lozada, 2000,

Special thanks are due to all of the people of the Vulture and Dolomiti Lucane area for their marvelous hospitality during the past four years. We want to dedicate this chapter to all of them and to the young: present and future Lucanian generations.

2001, 2003; Ladio, 2001; Vierya-Odilon and Vibrans, 2001; Turner, 2003), and Asia (Moreno-Black et al., 1996; Pemberton and Lee, 1996; Price, 1997; Khasbagan and Stuart, 1999; Tukan et al., 1998; Khasbagan and Pei, 2000; Johnson and Grivetti, 2002a; Ogle et al., 2003).

Correlations between diet and community health status have been of particular interest in the Mediterranean (Matalas et al., 1999; Kafatos et al., 2000; Holdsworth et al., 2000). This interest has certainly been reinforced by the discovery of links between the dietary tradition of these populations and lower rates of coronary heart diseases, cancer, diabetes, and increased population longevity (Trichopoulos et al., 2000).

Relatively few studies, however, have taken an ethnobotanical approach in trying to analyze the anthropological and ethnopharmacological aspects of the consumption of noncultivated food plants in the Mediterranean (Forbes, 1976; Paoletti et al., 1995; Bisio and Minuto, 1999; Pieroni, 1999, 2000, 2003; Ertug, 2000; Pieroni, Nebel, et al., 2002; Bonet and Vallès, 2002; Guarrera, 2003), even though the consumption of olive oil and vegetables has been epidemiologically correlated with many of the previously described health benefits, as, for example, in the discussion about the "Albanian paradox" (Gjonça and Bobak, 1997).

However, most ethnobotanical and ethnopharmacological studies in Europe have primarily addressed popular pharmaceutical remedies and have often ignored noncultivated food plants. From an ethnopharmacological perspective, the dietary contribution of wild vegetables and their potential health benefits is now regarded as an important area of research for human dietary health (Guil et al., 1997; Chapman et al., 1997; Sena et al., 1998; Johns et al., 1999; Sundriyal and Sundriyal, 2001; Grivetti and Ogle, 2000; Lockett et al., 2000; Ogle, Hung, and Tuyet, 2001; Ogle, Johansson, et al., 2001; Ogle, Dao, et al., 2001; Corlett et al., 2002; Johnson and Grivetti, 2002b; Owen and Johns, 2002).

While weeds have been found to represent a central component of indigenous pharmacopoeias (Stepp and Moerman, 2001), very little attention has been paid to the medicinal character associated with the consumption of wild greens under an emic perspective, concentrating on the diverse degrees of perception of foods/medicines among cultures.

The aim of this chapter is to investigate the cross-cultural use of noncultivated plants (especially weedy greens) in the traditional diet of ethnic Albanian (Arbëreshë) and autochthonous southern Italians in southern Italy, as well as their indigenous perception and the cultural practices associated with their use, including the gathering, processing, cooking, and consuming of plants as part of the daily diet. In addition, we address some of the potential health benefits associated with the consumption of a few of these plants in an attempt to assess their potential value in preventing age-related diseases (ARDs).

As a premise, a clarification is needed here concerning the terms "traditional" and "traditionally," which are frequently abused in the terminology of many ethnobotanists. We will use these terms here for defining something that has been an *integrated part of a culture for more than one generation* (similar to that written recently by Ogoye-Ndegwa and Aagaard-Hansen, 2003).

ETHNOGRAPHIC BACKGROUND

In the present study, we compared two territories located in the Basilicata region (also historically named Lucania, which is how the local population refers to their territory) of southern Italy (see Figure 4.1). The Italian National Statistical Institute (ISTAT, 2000) reports that Basilicata represents the Italian region having the lowest percentage of urban population (17 percent, calculated for the period 1997-1999) and the highest male life expectancy (75.7 years, calculated for the period 1991-1995).

We decided to compare two areas in Lucania that have similar socio-economic and demographic characteristics but different ethnic origins: the Vulture area in northern Lucania, inhabited by Arbëreshë (ethnic Albanians), and the Dolomiti Lucane area, in the central part of Lucania, inhabited by autochthonous South Italians (see Figure 4.1).

The Arbëreshë in Lucania

The Arbëreshë are descendants of Albanians who migrated to southern Italy in several migration flows to various central and southern inland regions of Italy in the fifteenth to eighteenth centuries

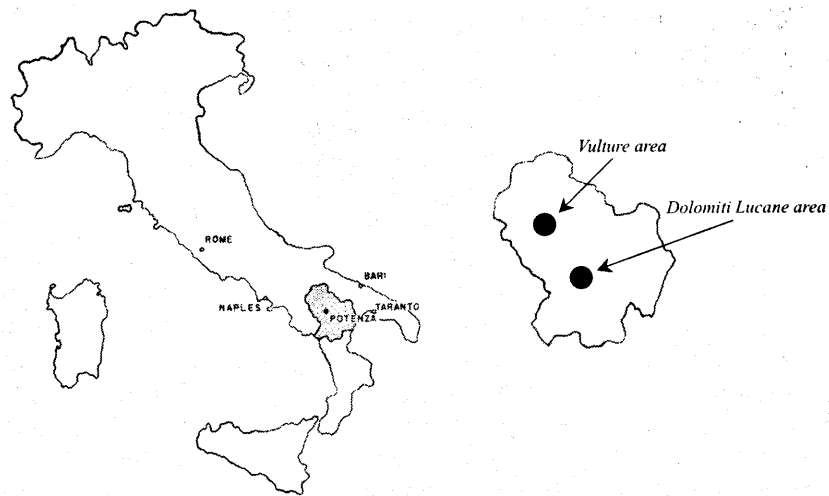


FIGURE 4.1. The location of the studied areas.

(Dessart, 1982). It is estimated that less than 80,000 people in Italy today are bilingual in Arbëreshë and Italian. The Arbëresh Albanian language belongs to the Albanian language group, which in turn represents the only surviving language ensemble from the Paleo-Balkan group (Illyrian, Messapic, and Thracian) of the Indo-European family (Grimes, 2000). Arbëresh Albanian presents features of archaic Albanian, Greek, and Southern Italian, and has been classified as an endangered language in the UNESCO *Redbook of Endangered Languages* (Salminen, 1999). The Italian Arbëreshë obtained official recognition as a historical ethnic minority by the Italian Parliament in 1999.

Our study took place in the Arbëresh communities of the Vulture area, which were founded after fifteenth-century migration flows to that area. These communities are unique in the fact that they have remained isolated from other Arbëresh communities concentrated in Calabria and Sicily, as well as a few other ethnic isles in southern Lucania, Apulia, Campania, Molise, and Abruzzo. Steps to maintain ethnic tradition in the village are also evident, as local events celebrating their ethnic food and culture are held annually, attracting many tourists in the vacation month of August.

This territory of the Arbëreshë was originally sustained by pastoralism and agriculture. Nowadays the cultivation of olive trees (*Olea europaea*), a local variety of grape vine that gives its name to the local wine (*Vitis vinifera* var. Aglianico), durum wheat (*Triticum durum*), and, for about ten years, labor in a nearby car factory represent the main economic sources of the local inhabitants.

Nowadays, the majority of the middle-aged (35 to 55 years) population can recall some words and basic customs of their Arbëresh history but do not incorporate these facets of traditional life into their present daily life. This group, for the most part, has abandoned the traditional agropastoralist way of life as a principal source of income and is sustained instead primarily by labor in factories.

Autochthonous Italians of the Dolomiti Lucane

The autochthonous South Italians of the Dolomiti Lucane live in small communities bordering the Basento River Valley and are isolated by the mountainous geography of the region. The economy is still primarily based on small-scale agriculture, including the management of sheep and the *Podolica* breed of cattle for making cheese. The region is best known for its old ties to “magic,” brought into the spotlight by the works of the Italian anthropologist De Martino (1959), and even by an old television documentary broadcast of the famous witch/healer Mago Ferramosca (Giuseppe Calvello from Pietrapertosa, who died in 1968). The area is also well-known for the annual ritual feast of “il Maggio,” traditionally organized in two villages (Accettura and Pietrapertosa), in which the old ritual “marriage” of two trees is celebrated. The history of the area has been characterized by Norman (starting from the eleventh century AD), Swabian (starting from the thirteenth century AD), and Spanish Bourbon (ca. the fifteenth century AD) domination.

Small-scale agricultural and animal-breeding activities have played a key role in this area for centuries. Durum wheat cultivation and *Podolica* cow¹ breeding particularly represent distinctive characters of the local economy and have been very important in building cultural identity. Today, most of the young people of Castelmezzano travel for work every day to the main Lucanian center of Potenza (mainly as service employees), while small agricultural and pastoral activities are mainly carried out by the older generations.

FIELD METHODS

Over a series of field studies from 2000 to 2003, we have collected data on the traditional use and consumption of wild food and medicinal plants in Lucania. These studies were conducted in three Arbëresh communities (Pieroni, Nebel, et al., 2002) and two autochthonous Italian communities of the Dolomiti Lucane area (Pieroni et al., 2004, 2005). Each of the selected communities were of a relatively small population size (ranging from ca. 700 to 3,000 inhabitants), and the majority of community members had until very recently a strong tie to the environment through agropastoral activities (durum wheat, olive trees, wine grapes; sheep and goat breeding) and small-scale home gardening.

Traditional knowledge regarding plants was assessed using standard ethnobiological and cognitive anthropological analyses for a better understanding of the folk-taxonomical hierarchies and systems, and for studying the most frequently quoted plants by free-listing, triad tests and pile sorts, and constructing a consensus index (Berlin et al., 1966; Rommey, 1989; Berlin, 1992; D'Andrade, 1995; Atran, 1999). This information was gathered through consented interviews with 247 randomly selected members of the studied communities.

In the first phase of the study, participants were asked to freely recall all medicinal food plants used both on a regular basis and used in the past. During the interviews, several fresh and dried plant specimens stocked in a transportable field herbarium were presented to the participants. Participants were asked to identify the local name, preparation, and use of the plant samples. Participation-observation techniques were also utilized to better understand the cultural implications of plant gathering, preparation and cooking of foods, and distribution of shared foods in the community. Round-table focus groups (Price, 1997) with local gatherers and women took place in the second phase of the study in order to discuss and elaborate details concerning the information collected.

Voucher specimens of all the nondomesticated and most uncommon cultivated ethnobotanicals were collected and identified following the standard botanical work for Italian flora (Pignatti, 1982). Voucher specimens and more than 150 hours of video and sound recordings of interviews are stored at the first author's address.

WILD FOOD AND MEDICINAL PLANTS IN LUCANIA

Wild Food Plants and the Lucanian Cuisine: An Anthropological Perspective

Today, communities of the Dolomiti Lucane mountain range can be reached from the Arbëresh communities of Mount Vulture by roughly an hour-and-a-half drive on the highway. This distance and lack of convenient transportation between the two regions in the past has allowed for a distinct separation of contact between these two cultures and presented us with the opportunity to observe and compare the similarities (and differences) in the traditional use of plants in these two unique cultural groups.

Unfortunately, in both cultural subsets, it is apparent that traditional knowledge concerning the collection and preparation of wild vegetables for consumption is quickly disappearing as new trends in culture overcome both ethnic Albanian and traditional Italian practices. The community- and family-based roles of men and women in these areas are changing with the economy. Whereas in the past the economic role of young men was based in local agriculture, they are now expected to find and maintain a job in the larger cities outside of the village. Most go to work in automobile factories, where rotating work shifts assign men to work throughout the day some weeks and throughout the night on others. Little time is left for home gardening and gathering of wild vegetables—this has especially affected the consumption of such vegetables as tassel hyacinth (*Leopoldia comosa*), Spanish salsify (*Scolymus hispanicus*) and wild oregano (*Origanum heracleoticum*), which are located far from the central village and, along with mushrooms, are traditionally collected only by men.

These shifts in the socioeconomic status of the region have not only affected the men but also women and, thus, the family structure. Previously, the primary role of women in the family was as the caregiver in the home: raising the children, caring for older or disabled family members, home gardening, collecting local wild vegetables, and preparing food. Today, however, women also often join the workforce through factory labor and rely on older women in their family (mothers, aunts, grandmothers) to care for their children while at work and on Eastern European women that are hired to come to live with and care for the older disabled family members. These young

women also have little time or, in many cases, desire to carry on the traditional ways of gathering, growing, or preparing wild and cultivated vegetables, instead buying nearly all foodstuffs for the family from supermarkets and local vegetable vendors and relying on gifts of traditionally prepared dishes from older relatives and friends in the community.

For both sexes of the younger generation, trends toward leaving the "old" ways of living behind in the search for other lifestyles (reliant on electronic goods and premade meals) have played a detrimental role in the transmission and perpetuation of traditional knowledge regarding the inclusion of wild edible botanicals in the diet. The ability to identify a plant decreases dramatically among both men and women under age 50, though the women seem to be much more affected. Younger men, it seems, are more exposed to other people in the community (especially older men that gather in the local piazza), and as a result of this they have a slightly higher level of knowledge regarding plant identification than their female counterparts.

Thus, today, only the oldest women and men (who are physically able) continue in the collection of wild weedy greens and the care of home gardens. They often collect more than is needed for themselves and give many of the vegetables to younger family members and friends in either the raw form or, more commonly, as a prepared dish.

Food and/or Medicine? Diverse Degrees of Interrelations

Among both ethnic Albanians and southern Italians we recorded diverse ways of perceiving the degree of correlation between food and medicinal value of botanicals. We tried to schematize these findings in Figure 4.2:

1. Diverse plants are used in a multifunctional way, both for food and medicines, but without any kind of relationship between these two fields of uses (see Table 4.1).
2. A great number of plants (generally weedy species) are consumed and thought to be "healthy," but without any unique specification for their assumed health-benefiting action. They are generally defined "depurative"; "good for blood turnover"; are consumed especially in spring (and, less frequently, in autumn); and fit completely in a kind of "folk functional foods" (see Table 4.2). Although there is no universally accepted definition, func-

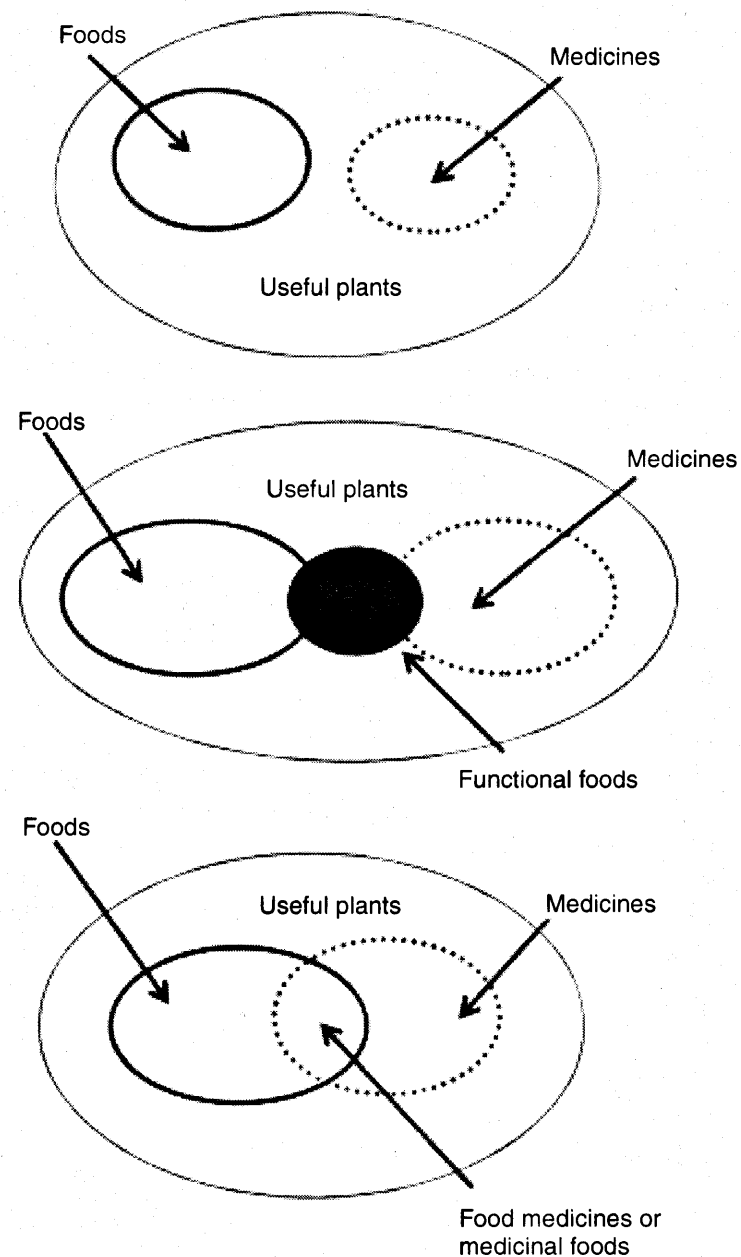


FIGURE 4.2. Scheme of three models of perception of the relation between plant foods and medicines in southern Italy.

tional foods can be described as foods that “have besides their main nutritional or delight purposes still other effects on body function” (Preuss, 1999) and occupy a third space between food and medicine.

3. A few species are consumed (ingested in a “food context”), in order to obtain a specific medicinal action (see Table 4.3); for them we will use the terms *medicinal foods* or *food medicines*.

A few botanical taxa are perceived and categorized in more than one field, and the whole picture can actually be extremely complex.

Differences in the Perception of Wild Plant Foods and Medicines Between Arbëreshë and Autochthonous Italian Communities

Culture strongly influences the preference and consumption of food/medicinal species. Between Arbëreshë and autochthonous Italian communities in Lucania, it is possible to point out a stronger role of weedy folk functional foods among ethnic Albanians. Moreover, a few food weedy species are not common in the two cuisines, and further analysis among Albanian communities in contemporary Albania and Kosovo could eventually relate these differences to specific cultural peculiarities.

The major role of functional folk foods among ethnic Albanians (see Figure 4.3) could be due to a slightly different geographical location, meaning a few differences in the ecology/availability of certain botanical species (although officially the flora of the two areas are considered identical), but also to more general differences in cultural aspects. The folk pharmacopoeia of the Arbëreshë is much more restricted than that of the southern Italians (Pieroni and Quave, 2005), which is also indicated by a minor number of food medicines (Table 4.1) and wild medicinal plants having food uses (Table 4.3). This could be compensated by a more complex system of preventive medicine (functional foods), which is exactly where the weedy greens fit in. Cultural adaptation phenomena could, for example, have played a role in these dynamics during the past four centuries.

Cultural Changes and Adaptation

Both in the Vulture and Dolomiti Lucane areas, emigration (mainly of the male subpopulation of the communities) to northern Italy or

TABLE 4.1. Wild botanical species utilized in the studied areas as food and as medicines, without any correlation between these two uses.

Botanical taxon and family	English name	Uses in the local medicine	Use in the local cuisine	Albanians	Italians
<i>Clematis vitalba</i> (Ranunculaceae)	Traveller's joy	Decoction, in gargles, to heal mouth inflammations ^{tr}	Boiled and then fried with eggs ^{sh}	-	+
<i>Cynara cardunculus</i> (Asteraceae)	Wild artichoke	Decoction (together with cinquefoil [<i>Potentilla reptans</i>] and figwort [<i>Scrophularia canina</i>]), then in compress as antirheumatic ^{ap}	Eaten cooked ^{rec,st,ro}	-	+
<i>Diplotaxis tenuifolia</i> (Brassicaceae)	Wild rocket	Oleolite, in topical application to heal muscular pains ^{le}	Eaten raw in salads ^{le}	-	+
<i>Ficus carica</i> (Moraceae)	Fig	Dried, then in decoction with other herbs (generally including aerial parts of mallow [<i>Malva sylvestris</i>] and barley [<i>Hordeum vulgare</i>] seeds), to heal sore throats ^{pt} ; topical application, to heal insect bites and against warts ^{sa}	Eaten raw or dried ^{pt}	+	+
<i>Laurus nobilis</i> (Lauraceae)	Bay tree	Decoction, with other herbs, to heal sore throats and as digestive ^{le}	Aromatizing diverse dishes ^{le}	+	+
<i>Morus alba</i> and <i>M. nigra</i> (Moraceae)	Mulberry tree	Decoction, to heal sore throats ^{le}	Eaten raw ^{pt}	-	+
<i>Origanum heracleoticum</i> (Lamiaceae)	Wild oregano	Fumigation on hot coke, to cure cough or toothache ^t	Aromatizing a few dishes ^t	+	+
<i>Papaver rhoeas</i> . (Papaveraceae)	Corn poppy	Decoction, as mild sedative for children ^{fl}	As wild vegetables, (cooked) ^{fl}	+	-

TABLE 4.1. (continued)

Botanical taxon and family	English name	Uses in the local medicine	Use in the local cuisine	Albanians	Italians
<i>Prunus dulcis</i> (Rosaceae)	Almond tree	Cold macerate, to heal intestinal pains (children) ^{se} ; in mixture with other herbs, to heal sore throats ^{ep}	Eaten raw, fresh or dried ^{uf,se}	+	+
<i>Prunus spinosa</i> (Rosaceae)	Sloe	Decoction, as a "hepato-protector" ^{fr}	Eaten raw after the first frost, as snack ^{fr}	-	+
<i>Rosa canina</i> (Rosaceae)	Dog rose	Ground and topically applied, to heal insect bites ^{le} ; stuffing for a little bag attached to clothing as an amulet against the evil eye ^{pf}	Eaten raw as snack ^{pf}	-	+
<i>Rubus ulmifolius</i> (Rosaceae)	Blackberry	Decoction (together or without rhizomes of couchgrass), as diuretic ^{le} ; heated and then topically applied, to cure purulent skin abscesses ^{le}	Eaten raw; jam ^{pf}	+	+
<i>Sonchus asper</i> and <i>S. oleraceus</i> (Asteraceae)	Sow thistle	Cold macerate applied externally in the mouth, to cure afta ^{ap}	Eaten raw or cooked, as wild vegetables ^{ap}	+	-
<i>Sorbus domestica</i> (Rosaceae)	Service tree	Decoction, to heal diarrhea ^{fr}	Eaten raw after natural fermentation ^{fr}	-	+
<i>Veronica beccabunga</i> (Scrophulariaceae)	Broomkline	Decoction, as diuretic ^{ap}	Eaten raw in mixed salads ^{ap}	-	+
<i>Ziziphus jujuba</i> (Rhamnaceae)	Jujube	Decoction, mixed with other herbs, to heal sore throats and cough ^{fr}	Eaten raw as snack ^{fr}	-	+

Part(s) used: ap: aerial part; fl: flowers; fr: fruits; ft: flowering tops; le: leaves; pf: pseudo-fruits; re: flower receptacles; ro: root/tuber; se: seeds; sh: shoots; st: stems; uf: unripe fruits.

TABLE 4.2. Wild botanical species utilized in the studied areas as folk functional foods.

Botanical taxon and family	English name	Part(s) used	Culinary uses	Albanians	Italians
<i>Allium ampeloprasum</i> (Liliaceae)	Wild leek	bu	Cooked and condiment	+	+
<i>Amaranthus retroflexus</i> (Amaranthaceae)	Pigweed	le	Cooked	+	+
<i>Apium nodiflorum</i> (Apiaceae)	Fool's watercress	ap	Raw and cooked	+	-
<i>Asparagus acutifolius</i> (Liliaceae s.l.)	Wild asparagus	sh	Cooked	+	+
<i>Bellavalia romana</i> (Liliaceae s.l.)	Bellavalia	bu	Cooked	-	+
<i>Beta vulgaris</i> ssp. <i>maritima</i> (Chenopodiaceae)	Sea beat	ap	Cooked	+	+
<i>Borrigo officinalis</i> (Boraginaceae)	Borage	le	Cooked	+	+
<i>Capsella bursa-pastoris</i> (Brassicaceae)	Shepherd's purse	wh	Cooked	+	-
<i>Carlina acaulis</i> (Asteraceae)	Stemless carline thistle	re	Cooked	-	+
<i>Centaurea calcitrapa</i> (Asteraceae)	Star thistle	wh	Cooked	+	-
<i>Chenopodium album</i> (Chenopodiaceae)	Fat hen	le	Cooked	+	+
<i>Chondrilla juncea</i> (Asteraceae)	Naked weed	wh, sh	Raw and cooked	+	-
<i>Cichorium intybus</i> (Asteraceae)	Wild chicory	wh	Raw and cooked	+	+
<i>Clematis vitalba</i> (Ranunculaceae)	Traveller's joy	sh	Cooked	+	+

TABLE 4.2. (continued)

Botanical taxon and family	English name	Part(s) used	Culinary uses	Albanians	Italians
<i>Crepis vesicaria</i> (Asteraceae)	Beaked hawksbeard	wh	Cooked	+	+
<i>Cynara cardunculus</i> ssp. <i>cardunculus</i> (Asteraceae)	Wild artichoke	st, re	Cooked	-	+
<i>Diplotaxis tenuifolia</i> (Brassicaceae)	Wild rocket	le	Raw	+	-
<i>Foeniculum vulgare</i> ssp. <i>piperitum</i> (Apiaceae)	Wild fennel	ap, fr	Raw, cooked, and condiment	+	+
<i>Humulus lupulus</i> (Cannabaceae)	Wild hops	sh	Cooked	+	-
<i>Lactuca serriola</i> spp. (Asteraceae)	Wild lettuce	ap	Raw and cooked	+	-
<i>Leontodon</i> (Asteraceae)	Hawkbit	wh	Raw and cooked	-	+
<i>Leopoldia comosa</i> (syn. <i>Muscari comosum</i> , Liliaceae s.l.)	Tassel hyacinth	bu	Cooked	+	+
<i>Lycium europaeum</i> (Solanaceae)	Boxthorn	sh	Cooked	+	-
<i>Muscari atlanticum</i> and <i>M. botryoides</i> (Liliaceae s.l.)	Grape hyacinth	bu	Cooked	+	+
<i>Nasturtium officinale</i> (Brassicaceae)	Watercress	le	Raw and cooked	+	-
<i>Onopordum illyricum</i> (Asteraceae)	Cotton thistle	ro, st	Cooked	-	+
<i>Origanum heracleoticum</i> (Lamiaceae)	Wild oregano	ft	Condiment	+	+
<i>Papaver rhoeas</i> (Papaveraceae)	Poppy corn	wh, le	Cooked	+	+
<i>Picris echioides</i> (Asteraceae)	Bristly ox-tongue	wh	Cooked	+	+
<i>Portulaca oleracea</i> (Portulacaceae)	Green purslane	ap	Raw	+	+
<i>Reichardia picroides</i> (Asteraceae)	French scorzonera	wh	Raw and cooked	+	+

<i>Ruscus aculeatus</i> (Liliaceae s.l.)	Butcher's broom	sh	Cooked	-	+
<i>Scolymus hispanicus</i> (Asteraceae)	Spanish salsify	ls	Cooked	+	-
<i>Silybum marianum</i> (Asteraceae)	Milk thistle	st, ro	Cooked	-	+
<i>Sinapis arvensis</i> (Brassicaceae)	Wild mustard	ap	Cooked	+	+
<i>Sisymbrium officinale</i> (Asteraceae)	Hedge mustard	wh	Cooked	+	-
<i>Sonchus asper</i> and <i>S. oleraceus</i> (Asteraceae)	Sow thistle	wh	Raw and cooked	+	+
<i>Stellaria media</i> (Caryophyllaceae)	Chickweed	ap	Raw and cooked	+	-
<i>Tamus communis</i> (Dioscoreaceae)	Black bryony	sh	Cooked	+	-
<i>Taraxacum officinale</i> (Asteraceae)	Dandelion	wh	Cooked	+	+
<i>Tordylium apulum</i> (Apiaceae)	Roman pimpinell	wh	Cooked, condiment	+	-
<i>Urtica dioica</i> (Urticaceae)	Nettle	le	Cooked	+	-
<i>Valerianaella carinata</i> (Valerianaceae)	Keeled-fruited cornsalad	wh	Raw	+	-
<i>Veronica beccabunga</i> (Scrophulariaceae)	Brooklime	ap	Raw	-	+

Part(s) used: ap: aerial part; fl: flowers; fr: fruits; ft: flowering tops; le: leaves; ls: leaf stalks; pf: pseudo-fruits; re: flower receptacles; ro: root/tuber; se: seeds; sh: shoots; st: stems; uf: unripe fruits; wh: whorls.

TABLE 4.3. Wild botanical species utilized in the studied areas as foods consumed as proper medicines (medicinal foods or food medicines).

Botanical taxa and family	English name	Part(s) used	Culinary preparation	Medicinal use	Albanians	Italians
<i>Asparagus acutifolius</i> (Liliaceae s.l.)	Wild asparagus	sh	Boiled and consumed alone or with scrambled eggs and fresh cheese	Diuretic	-	+
<i>Borago officinalis</i> (Boraginaceae)	Borage	le	Soup	Postpartum reconstituent and galactagogue	+	-
<i>Cichorium intybus</i> (Asteraceae)	Wild chicory	le	Soups with onions, dried sweet pepper, served on bread	Galactagogue	-	+
<i>Leopoldia comosa</i> (Liliaceae s.l.)	Tassel hyacinth	bu	Soup	Laxative	-	+
<i>Malva sylvestris</i> (Malvaceae)	Mallow	le	Cut, macerated in water, then fried	Antifever	+	-
<i>Ruscus aculeatus</i> (Liliaceae s.l.)	Butcher's broom	sh	Soup	To enhance uterine contractions during birth; galactagogue	+	-
<i>Sonchus oleraceus</i> (Asteraceae)	Sow thistle	wh	Boiled and traditionally consumed with bread and sour cream from <i>Podolica</i> cow milk	Hepatodepurative	-	+
<i>Sorbus domestica</i> (Rosaceae)	Service tree	fr	Raw in salad	Antigastritis	-	+
<i>Veronica beccabunga</i> (Scrophulariaceae)	Brooklime	ap	Eaten dried or boiled	Antidiarrhea	-	+
			Eaten raw in salads	Diuretic	-	+

Part(s) used: ap: aerial parts; bu: bulbs; fr: fruits; le: leaves; sh: shoots; wh: whorls.

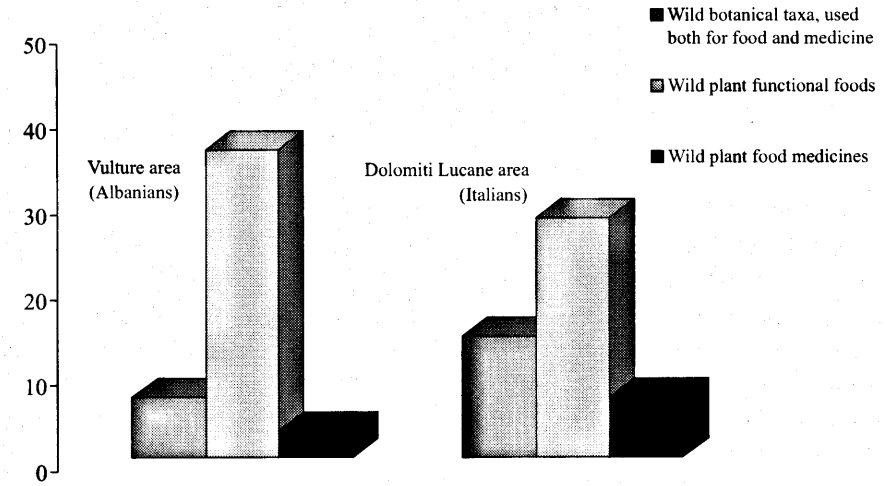


FIGURE 4.3. Wild plants perceived to be related with the three models of food medicines among Albanians and Italians.

Central Europe had its major peaks at the end of the 1960s and the beginning of the 1970s. This phenomenon certainly contributed greatly to the cultural change in both territories. The men who returned back home after a few years of well-paid labor in factories or in building trades began to work in similar sectors rather than in agriculture. They have played a certain role—especially among Albanians—in the positive internalization of the acculturation process and in the adoption of the mainstream Italian/European cultural models. These are the same people who generally began to reject Arbëresh cultural practices; in contrast to this group of men, elderly women try to actively maintain most of the original expression of their unique culture through continued involvement in gathering weedy greens and preparing traditional meals.

Another factor that has certainly played a role in this matter is represented by the emigrated families of the middle generation (those who left southern Italy during the 1980s to move to northern Italy), who normally come back to visit their parents or relatives in the summer. Among these people, perhaps because of the negative images portrayed by the media concerning the recent immigrant flows from Albania, the rejection of traditional culture is very strong. A man

from this group of migrants tried to convince his interviewer that traditional Albanian culture is something that has been hidden, because "Albanians, after all, are like gypsies" (gypsy has a strongly negative connotation among ethnic Italians), which strongly denies his roots.

There has surely been an exchange over time of Arbëresh and southern Italian women's knowledge of the culinary use of wild vegetables. A strong acculturation process took place in the Arbëresh centers from the 1960s onward, when streets were improved and exchanges with nearby southern Italian communities became very intense. Italian-speaking officers and civil servants arrived in the villages as local elementary schools and postoffices were established and when electricity and a sewage system was installed. This process began to slowly affect local cuisine. Today's daily Arbëresh diet doesn't differ substantially from that of neighboring Italian communities. When comparing traditional Arbëresh women's cuisine in the Vulture area with that of southern Italian women living in the Dolomiti Lucane area, only minor differences are evident (see Figure 4.4).

"Liakra" and "Foglie": Wild Functional Foods Among Albanians and Italians

Traditions related to gathering and cooking wild food greens are very popular in the Vulture area and, a little bit less, in the Dolomiti Lucane. The Arbëreshë clearly distinguish between *liakra* (edible weedy vegetables) and *bara* (nonedible grasses and herbs). *Liakra*, used by the Arbëreshë as a synonym for "weedy greens," has an Albanian origin (*lakër* means "cabbage" in modern Albanian), even though the term no longer exists in the modern Tosk Albanian language. In the South-Italian dialects *foglie* ("leaves") is the term used to indicate the Albanian *liakra*.

"Food touches everything. It is a central pawn in political strategies of states and households. Food marks social differences, boundaries, bonds, and contradictions" (Counihan and Van Esterik, 1999). Social changes and modernization also affect food processing, storage, cooking, food habits, and social relations. Food, then, is not only nourishment; in the Vulture area, wild food botanicals represent central elements of the most important religious procession of the Catholic Holy Friday, the *processione della zingara in Barile* (procession



FIGURE 4.4. Zia Giovannina (from Ginestra) has collected figs (*Ficus carica*) on a thin piece of giant reed (*Arundo donax*). Oftentimes, an almond (fruit of *Prunus dulcis*) is also inserted into the fig before drying. These fruits are used to make a decoction with diverse herbs for the prevention and treatment of sore throat during the winter months. Photo reprinted with permission

of the gypsy of Barile/Barilli). In this traditional procession, which is witnessed by all Arbëreshë (and southern Italians) in the Vulture area, a few typical Arbëresh characters are present alongside the classical representations of the Christian tradition. Among them, the most important is the "gypsy lady" (*la zingara*), who is dressed in traditional costume, covered by all the (real!) gold jewels previously collected from each family in the village. She symbolizes the temptations of Christ and, in the procession, everyone throws dried and roasted chickpeas (*Cicer arietinum*) at her. In Arbëresh symbolism, the chickpea is considered to be "negative" because it is believed that the sounds of its pods shaking led to the discovery of Jesus Christ during his flight to Egypt. The crown that adorns Christ's head in the proces-

sion is made with dried stems of boxthorn (*Lycium europaeum*), whose young shoots are consumed cooked and fried with other wild vegetables in the spring by the Albanians (a similar use has never been reported in the ethnobotanical studies in Europe) (Pieroni, Nebel, et al., 2002).

In the past, however, both *liakra* among Albanians and *foglie* among southern Italians were often eaten as snacks during fieldwork. More often, they were brought home, washed at the village fountain, and then boiled in the traditional terra-cotta pot. In the poorest families they were eaten raw with bread, without oil and salt. Nowadays, only very few wild greens are eaten raw. Commonly, both among Albanians and southern Italians, they are lightly boiled and then fried in olive oil together with garlic and, sometimes, a few hot chili peppers. The cooked greens are then added to boiled pasta as a kind of green vegetable sauce. In some cases, these weedy greens are boiled together with the pasta, and the entire preparation is fried in olive oil with garlic. Pasta with greens is often considered to be a main dish. In some other cases, the wild species are cooked and consumed with bean soup. This is the case with the traditional Albanian preparations *luljëkuq e fazuljë* (corn poppy leaves [*Papaver rhoeas*], and beans), or *bathë e çikour* (mashed fava beans [*Vicia faba*] and wild chicory [*Cichorium intybus*]), or they are eaten in a kind of soup prepared with mixtures of more than ten wild herbs (a similar recipe is also found among southern Italians). *Liakra* are only rarely used among Albanians to prepare special meals for feast days. On Christmas Eve, anchovies or dried fish are traditionally served with boiled and fried shoots of broccoli raab that are semicultivated in the area (*çim de rrapë*, *Brassica rapa* ssp. *rapa* [DC.] Metzg. [Group Ruvo Bailey], syn.: *Brassica rapa* L. Broccoletto Group), or of wild mustard (*sënap*, *Sinapis* spp.). During Easter, a kind of pie (*verdhët*) is prepared with eggs, lamb, ricotta, sheep cheese, and (previously boiled) leaf stalks of *Scolymus hispanicus* while, in the village of Maschito/Masqiti, the young aerial parts of wild fennel (*Foeniculum vulgare* spp. *piperitum*) are used instead.

Among southern Italians, the *foglie* are traditionally eaten with a bean-based soup and pig lard, while wild fennel aerial parts are preferred on mashed green broad beans (*Vicia faba*). Among this group, we could not record any traditions of consuming special feast dishes with wild greens.

If southern Italian cuisine has had a strong influence on the Arbëresh diet, very few traces of the inverse trend (Italians living in the Vulture area adopting Arbëresh dishes) can be found: the use of the already mentioned *verdhët* (*verdhët* from the Albanian *verdhë*, in English “yellow,” perhaps due to the large amount of eggs used in this festival dish) is, for example, also popular in the nearby Italian villages (Rionero, Ripacandida, Venosa). A *mutual* exchange of experiences and culinary knowledge between Arbëresh and Italian women has been hindered due to the dominance of mainstream Italian culture.

A special processing method is used for tassel hyacinth bulbs (*Leopoldia comosa*, syn.: *Muscari comosum*). The consumption of these bitter bulbs is a common factor in the Lucanian diet and, among the communities in our study, it is most predominantly used in the Arbëresh villages. The wild bulbs are usually gathered by men and are cleaned and prepared by women. In the cleaning process, women remove the outermost layer of “skin” with a knife and carve a small “x” onto the top of the bulb before placing it into a bowl of cool water to soak overnight, in order to decrease their bitterness. The next day, the bulbs are placed into a small terra-cotta pot with some water and are left to slowly roast throughout the day on the embers of a fire. When the bulbs are softened, they may be fried with some olive oil and sweet pepper (*Capsicum annuum*) or are stored in a jar of olive oil for future consumption as an appetizer. Bulbs of *Leopoldia* are also consumed in other areas of southern Italy (Casoria et al., 1999).

PHARMACOLOGY OF WILD FUNCTIONAL FOODS CONSUMED IN SOUTHERN ITALY

The consumption of wild plant functional foods plays a central role in the diet of Albanians and Italians in southern Italy, but very few phytopharmacological studies have dealt exhaustively with potential health benefits of such dietary supplements (Uiso and Johns, 1995; Chapman et al., 1997; Johns et al., 1999; Trichopoulou et al., 2000). Surveys on aromatic species of the traditional Mediterranean cuisine have recently demonstrated their significant health benefits (Lionis et al., 1998; Cervato et al., 2000; Martinez-Tome et al., 2001). Since reactive oxygen species (ROS) production and oxidative stress have been shown to be linked to aging-related diseases (ARDs,

Finkel and Holbrook, 2000) and a large number of other illnesses, the number of studies on antioxidant properties of plant foods and their phenolic constituents has become very impressive. For example, antioxidant activity was recently studied in relation to CNS disorders (Perry et al., 2001; Bastianetto and Quirion, 2002).

Our research group recently studied weedy food plants traditionally consumed among the Albanians of the Vulture area (Pieroni, Janiak, et al., 2002). The aim of the study was to evaluate the antioxidant activity of the most commonly consumed noncultivated vegetables of the traditional Arbëresh diet. In order to correlate the antioxidant activity of the plant extracts with their potential effects on ARDs, CNS-disorders, hyperuricaemia, and gout, selected extracts were evaluated for antioxidant activity using DPPH (1,1-diphenyl-2-picrylhydrazil radical) as well as the in vitro inhibition of bovine brain lipid peroxidation and of xanthine oxidase (XO).

Many noncultivated food species gathered in Lucania have shown remarkable antioxidant activity (Pieroni, Janiak, et al., 2002). Although the antioxidant properties of *Origanum* spp. (aerial parts) have been studied relatively well over the past years (Dapkevicius et al., 1998; Milos et al., 2000; Cervato et al., 2000), nothing was known of the relevant antioxidant properties of *Leopoldia*, *Centaurea*, and *Tordylium* spp. before our bioevaluation tests. The antioxidant activity of bulbs of *Leopoldia comosa* (syn.: *Muscari comosum*) and of young whorls of *Centaurea calcitrapa*, both in the prescreening DPPH and in the lipid peroxidation inhibition assays, are very interesting, and both species should be investigated phytochemically and biochemically focusing on these properties. The local processing and cooking procedures should also be taken into consideration.

The young whorls of *Centaurea calcitrapa* are boiled and fried in mixtures with other weedy noncultivated "greens." Aerial parts of *Centaurea calcitrapa* and *Tordylium apulum* are still poorly investigated phytochemically.

Moreover, the strong XO-inhibiting activity shown by extracts of aerial parts of *Cichorium intybus*, *Chondrilla juncea*, and *Stellaria media* in our recent studies could merit further investigation, focusing on natural products with potential effects on hyperuricaemia and gout. Very little has been reported about bioactive compounds from *Chondrilla juncea* and *Stellaria media*.

Mediterranean noncultivated weedy vegetables, which we have called in this chapter wild "folk functional foods," represent then a neglected group of plants that offer an exciting challenge to modern phytotherapeutical researchers bridging the gap between pharmaceuticals and nutraceuticals.

CONCLUSION

We have presented here a variety of wild plants that have been commonly used in the recent past as a central portion of the daily diet in two cultures of southern Italy. They are still used sometimes in southern Italy as food or medicine, as functional food, or as medicinal foods (food medicines).

Research on the medicinal or nutraceutical value of many of these plants has demonstrated high antioxidant activity and potential as therapeutic agents for the management and prevention of chronic disease such as diabetes, stroke, and coronary heart disease. The presence of high levels of antioxidants in the human diet may be especially important in the prevention and management of ARDs.

Thus, recording and conserving traditional knowledge regarding the use of plants is of utmost importance, not only for the biocultural conservation of the communities/environments studied but also for future medical advancements in the prevention and management of chronic, diet-related diseases. An anthropological analysis of the socioeconomic shifts and their effects on cultural integrity, however, specifically concerning the transmission of these knowledge systems, has demonstrated that they likely will not survive forthcoming generations if efforts to restore their prominence in communities are not undertaken soon.

NOTE

1. This cow race is a descendant of the *Bos primigenius podolicus*, the very large, long-horned cattle thought to have been domesticated in the Middle East during the fourth century BC. It is bred in Lucania in a semidomesticated way, letting the animal roam free in the forest for most of the year and milking it only during April and May.

REFERENCES

- Asfaw, Z. and M. Tadesse (2001). Prospect for sustainable use and development of wild food plants in Ethiopia. *Economic Botany* 55: 47-62.
- Atran, S. (1999). Itzaj Maya folk biological taxonomy: Cognitive universals and cultural particulars. In Medin, D.L. and S. Atran (Eds.), *Folkbiology*. Cambridge, MA: The MIT Press.
- Bastianetto, S. and R. Quirion (2002). Natural extracts as possible protective agents of brain aging. *Neurobiology of Aging* 23(5): 891-897.
- Berlin, B. (1992). *Ethnobiological classification*. Princeton: Princeton University Press.
- Berlin, B., D.E. Breedlove, and P.H. Raven (1966). Folk taxonomies and biological classification. *Science* 154: 273-275.
- Bisio, A. and L. Minuto (1999). The Prebuggiun. In Pieroni, A. (Ed.), *Erbi Boni, Erbi degli Stregghi—Good weeds, witches' weeds*. Cologne: Experiences Verlag.
- Bonet, M.A. and J. Vallés (2002). Use of non-crop vascular plants in Montseny biosphere reserve (Catalonia, Iberian Peninsula). *International Journal of Food Sciences and Nutrition* 53: 225-248.
- Bukenya-Ziraba, R. (1996). *The non-cultivated edible plants of Uganda*. Addis Ababa, Ethiopia: NAPRECA.
- Bye, R.A. (1981). Quelites—Ethnoecology of edible greens—Past, present, and future. *Journal of Ethnobiology* 1: 109-123.
- Casoria, P., B. Menale, and R. Muoio (1999). *Muscari comosum*, Liliaceae, in the food habits of south Italy. *Economic Botany* 53: 113-117.
- Cervato, G., M. Carabelli, S. Gervasio, A. Cittera, R. Cazzola, and B. Cestaio (2000). Anti-oxidant properties of oregano (*Origanum vulgare*) leaf extracts. *Journal of Food Biochemistry* 24: 453-456.
- Chapman, L., T. Johns, and R.L.A. Mahunnah (1997). Saponin-like in vitro characteristics of extracts from selected non-nutrient wild plant food additives used by Maasai in meat and milk based soups. *Ecology of Food and Nutrition* 36: 1-22.
- Corlett, J.L., M.S. Clegg, C.L. Keen, and L.E. Grivetti (2002). Mineral content of culinary and medicinal plants cultivated by Hmong refugees living in Sacramento, California. *International Journal of Food Sciences and Nutrition* 53: 117-128.
- Counihan, C. and P. Van Esterik (Eds.) (1999). *Food and culture: A reader*. New York: Routledge.
- D'Andrade, R. (1995). *The development of cognitive anthropology*. Cambridge, UK: Cambridge University Press.
- Dapkevicius, A., R. Venskutonis, T.A. van Beek, and J.P.H. Linssen (1998). Anti-oxidant activity of extracts obtained by different isolation procedures from some aromatic herbs grown in Lithuania. *Journal of the Science of Food and Agriculture* 77(1): 140-146.
- De Martino, F. (1959). *Sud e Magia*. Milan: Feltrinelli.

- Dessart, F. (1982). The Albanian ethnic groups in the world: A historical and cultural essay on the Albanian colonies in Italy. *East European Quarterly* 4: 469-484.
- Ertug, F. (2000). An ethnobotanical study in central Anatolia (Turkey). *Economic Botany* 54: 155-182.
- Etkin, N.L. (Ed.) (1994). *Eating on the wild side*. Tucson: The University of Arizona Press.
- Etkin, N.L. (1996). Medicinal cuisines: Diet and ethnopharmacology. *International Journal of Pharmacognosy* 34: 313-326.
- Etkin, N.L. and P.J. Ross (1982). Food as medicine and medicine as food: An adaptive framework for the interpretation of plant utilisation among the Hausa of northern Nigeria. *Social Science and Medicine* 16: 1559-1573.
- Finkel, T. and N.J. Holbrook (2000). Oxidants, oxidative stress and the biology of ageing. *Nature* 408: 239-247.
- Forbes, M.H.C. (1976). Gathering in the Argolid: A subsistence subsystem in a Greek agricultural community. *Annals of the New York Academy of Science* 268: 251-264.
- Gjonca, A. and M. Bobak (1997). Albanian paradox, another example of protective effect of Mediterranean lifestyle? *The Lancet* 350: 1815-1817.
- Grimes, B.F. (Ed.) (2000). *Ethnologue* [CD-ROM]. Dallas: Summer Institute of Linguistics.
- Grivetti, L.E. and B.M. Ogle (2000). Value of traditional foods in meeting macro- and micronutrients needs: The wild plant connection. *Nutrition Research Review* 13: 31-46.
- Guarerra, P.M. (2003). Food medicine and minor nourishment in the folk traditions of Central Italy (Marche, Abruzzo and Latium). *Fitoterapia* 74: 515-544.
- Guil, J.L., I. Rodríguez-García, and E. Torija (1997). Nutritional and toxic factors in selected wild edible plants. *Plant Foods for Human Nutrition* 51: 99-107.
- Hillocks, R.J. (1998). The potential benefits of weeds with reference to small holder agriculture in Africa. *Integrated Pest Management Reviews* 3: 155-167.
- Holdsworth, M., M. Gerber, C. Haslam, J. Scali, A. Beradsworth, M.H. Avallone, and E. Sherrat (2000). A comparison of dietary behavior in central England and a French Mediterranean region. *European Journal of Clinical Nutrition* 54: 530-539.
- Humphrey, C.M., M.S. Clegg, C.L. Keen, and L.E. Grivetti (1993). Food diversity and drought survival. The Hausa example. *International Journal of Food Science and Nutrition* 44: 1-16.
- ISTAT (2000). *Servizio Popolazione e Cultura*. Rome: ISTAT.
- Johns, T. (1990). *With bitter herbs they shall eat it*. Tucson: The University of Arizona Press.
- Johns, T. and J.O. Kokwaro (1991). Food plants of the Luo of Siaya District, Kenya. *Economic Botany* 45: 103-113.

- Johns, T., R.L.A. Mahunnah, P. Sanaya, L. Chapman, and T. Ticktin (1999). Saponins and phenolic content in plant dietary additives of a traditional subsistence community, the Bateni of Ngorongoro District, Tanzania. *Journal of Ethnopharmacology* 66: 1-10.
- Johns, T., E.B. Mhoro, and P. Sanaya (1996). Food plants and masticants of the Batemi of Ngorongoro District, Tanzania. *Economic Botany* 50: 115-121.
- Johns, T., E.B. Mhoro, and F.C. Usio (1996). Edible plants of Mara Region, Tanzania. *Ecology of Food and Nutrition* 35: 71-80.
- Johnson, N. and L.E. Grivetti (2002a). Environmental change in Northern Thailand: Impact on wild edible plant availability. *Ecology of Food and Nutrition* 41: 373-399.
- Johnson, N. and L.E. Grivetti (2002b). Gathering practices of Karen women: Questionable contribution to beta-carotene intake. *International Journal of Food Sciences and Nutrition* 53: 489-501.
- Kafatos, A., H. Verhagen, J. Moschandreas, I. Apostolaki, and J.J.M. van Westerop (2000). Mediterranean diet of Crete: Foods and nutrient content. *Journal of the American Diabetic Association* 100: 1487-1493.
- Khasbagan, H.-Y.H. and S.J. Pei (2000). Wild plants in the diet of Arhorchin Mongol herdsman in inner Mongolia. *Economic Botany* 54: 528-536.
- Khasbagan, Narisu and K. Stuart (1999). Ethnobotanical overview of *gogd* (*Allium ramosum* L.): A traditional edible wild plant used by Inner Mongolians. *Journal of Ethnobiology* 19: 221-225.
- Kuhnlein, H.V. (1992). Change in the use of traditional foods by the Nuxalk native people of British Columbia. *Ecology of Food and Nutrition* 27: 259-282.
- Ladio, A.H. (2001). The maintenance of wild edible plant gathering in a Mapuche community of Patagonia. *Economic Botany* 55: 243-254.
- Ladio, A.H. and M. Lozada (2000). Edible wild plant use in a Mapuche community on northwestern Patagonia. *Human Ecology* 28: 53-71.
- Ladio, A.H. and M. Lozada (2001). Nontimber forest product use in two human populations from northwestern Patagonia: A quantitative approach. *Human Ecology* 29: 367-380.
- Ladio, A.H. and M. Lozada (2003). Comparison of wild edible plant diversity and foraging strategies in two aboriginal communities of northwestern Patagonia. *Biodiversity and Conservation* 12: 937-951.
- Lepofski, D., N.J. Turner, and H.V. Kuhnlein (1985). Determining the availability of traditional wild food plants: An example of Nuxalk foods, Bella Coola, British Columbia. *Ecology of Food and Nutrition* 16: 223-241.
- Lionis, C., Å. Faresjö, M. Skoula, M. Kapsokefalou, T. Faresjö (1998). Anti-oxidant effects of herbs in Crete. *Lancet* 352: 1987-1988.
- Lockett, C.T., C.C. Calvert, and L.E. Grivetti (2000). Energy and micronutrient composition of dietary and medicinal wild plants consumed during drought. Study of rural Fulani, Northeastern Nigeria. *International Journal of Food Sciences and Nutrition* 51: 195-208.

- Lockett, C.T. and L.E. Grivetti (2000). Food-related behaviors during drought: A study of rural Fulani, northeastern Nigeria. *International Journal of Food Sciences and Nutrition* 51: 91-107.
- Marshall, F. (2001). Agriculture and use of wild and weedy greens by the Piik ap Oom Okiek of Kenya. *Economic Botany* 55: 32-46.
- Martinez-Tome, M., A.M. Jimenez, S. Ruggieri, N. Frega, R. Strabbioli, and M.A. Murcia (2001). Antioxidant properties of Mediterranean spices compared with common food additives. *Journal of Food Protection* 64: 1412-1419.
- Matalas, A.L., C.E. Franti, and L.E. Grivetti (1999). Comparative studies of diet and disease prevalence in Greek Chians—Part I. Rural and urban residents of Chios. *Ecology of Food and Nutrition* 38: 351-380.
- Mertz, O., A.M. Lykke, and A. Reenberg (2001). Importance and seasonality of vegetable consumption and marketing in Burkina Faso. *Economic Botany* 55: 276-289.
- Milos, M., J. Mastelic, and I. Jerkovic (2000). Chemical composition and antioxidant effect of glycosidically bound volatile compounds from oregano (*Origanum vulgare* L. ssp. *hirtum*). *Food Chemistry* 71: 79-83.
- Moreno-Black, G., W. Akanan, P. Somnasang, S. Thamathawan, and P. Bozvoski (1996). Non-domesticated food resources in the marketplace and marketing system of northeastern Thailand. *Journal of Ethnobiology* 16: 99-117.
- Ogle, B.M., H.T.A. Dao, G. Mulokozi, and L. Hambraeus (2001). Micronutrient composition and nutritional importance of gathered vegetables in Vietnam. *International Journal of Food Sciences and Nutrition* 52: 485-499.
- Ogle, B.M. and L.E. Grivetti (1985a). Legacy of the chameleon: Edible wild plants in the kingdom of Swaziland, southern Africa. A cultural, ecological, nutritional study. Part I—Introduction, objectives, methods, Swazi culture, landscape and diet. *Ecology of Food and Nutrition* 16: 193-208.
- Ogle, B.M. and L.E. Grivetti (1985b). Legacy of the chameleon: Edible wild plants in the kingdom of Swaziland, southern Africa. A cultural, ecological, nutritional study. Part II—Demographics, species, availability and dietary use, analysis by ecological zone. *Ecology of Food and Nutrition* 17: 1-30.
- Ogle, B.M. and L.E. Grivetti (1985c). Legacy of the chameleon: Edible wild plants in the kingdom of Swaziland, southern Africa. A cultural, ecological, nutritional study. Part III—Cultural and ecological analysis. *Ecology of Food and Nutrition* 17: 31-40.
- Ogle, B.M. and L.E. Grivetti (1985d). Legacy of the chameleon: Edible wild plants in the kingdom of Swaziland, southern Africa. A cultural, ecological, nutritional study. Part IV—Nutritional values and conclusions. *Ecology of Food and Nutrition* 17: 41-64.
- Ogle, B.M., P.H. Hung, and T.T. Tuyet (2001). Significance of wild vegetables in micronutrient intakes of women in Vietnam: An analysis of food variety. *Asian Pacific Journal of Clinical Nutrition* 10: 21-30.

- Ogle, B.M., M. Johansson, H.T. Tuyet, and L. Johannesson (2001). Evaluation of the significance of dietary folate from wild vegetables in Vietnam. *Asian Pacific Journal of Clinical Nutrition* 10: 216-221.
- Ogle, B.M., H.T. Tuyet, H.N. Duyet, and N.N.X. Dung (2003). Food, feed or medicine: The multiple functions of edible wild plants in Vietnam. *Economic Botany* 57: 103-117.
- Ogoye-Ndegwa, C. and J. Aagaard-Hansen (2003). Traditional gathering of wild vegetables among the Luo of western Kenya—A nutritional anthropology project. *Ecology of Food and Nutrition* 42: 69-89.
- Owen, P.L. and T. Johns (2002). Antioxidants in medicines and spices as cardio-protective agents in Tibetan highlanders. *Pharmaceutical Biology* 40: 346-357.
- Paoletti, M.G., A.L. Dreon, and G.G. Lorenzoni (1995). Pistic, traditional food from Western Friuli, N.E. Italy. *Economic Botany* 49: 26-30.
- Pemberton, R.W. and N.S. Lee (1996). Wild food plants in South Korea; market presence, new crops, and exports to the United States. *Economic Botany* 50: 57-70.
- Perry, N.S.L., P.J. Houghton, J. Sampson, A.E. Theobald, S. Hart, M. Lis-Balchin, J.R. Houlst, P. Evans, P. Jenner, S. Milligan, and E.K. Perry (2001). In-vitro activity of *S. lavandulaefolia* (Spanish sage) relevant to treatment of Alzheimer's disease. *Journal of Pharmacy and Pharmacology* 53: 1347-1356.
- Pieroni, A. (1999). Gathered wild food plants in the upper valley of the Serchio river (Garfagnana), central Italy. *Economic Botany* 53: 327-341.
- Pieroni, A. (2000). Medicinal plants and food medicines in the folk traditions of the upper Lucca Province, Italy. *Journal of Ethnopharmacology* 70: 235-273.
- Pieroni, A. (2003). Wild food plants and Arbëresh women in Lucania, southern Italy. In Howard, P.L. (Ed.), *Women & plants: Case studies on gender relations in biodiversity management and conservation*. New York: Zed Press.
- Pieroni, A., V. Janiak, C.M. Dürr, S. Lüdeke, E. Trachsel, and M. Heinrich (2002). In vitro antioxidant activity of non-cultivated vegetables of ethnic Albanians in southern Italy. *Phytotherapy Research* 16: 467-473.
- Pieroni, A., S. Nebel, C. Quave, H. Münz, and M. Heinrich (2002). Ethnopharmacology of *liakra*: Traditional weedy vegetables of the Arbëreshë of the Vulture area in southern Italy. *Journal of Ethnopharmacology* 81: 165-185.
- Pieroni, A., S. Nebel, R.F. Santoro, and M. Heinrich (2005). Food for two seasons: Culinary uses of non-cultivated local vegetables and mushrooms in a south Italian village. *International Journal of Food Sciences and Nutrition* 56: 245-272.
- Pieroni, A. and C.L. Quave (2005). Traditional pharmacopoeias and medicines among Albanians and Italians in southern Italy: A comparison. *Journal of Ethnopharmacology* 101: 258-270.
- Pieroni, A., C.L. Quave, and R.F. Santoro (2004). Folk pharmaceutical knowledge in the territory of the Dolomiti Lucane, inland southern Italy. *Journal of Ethnopharmacology* 95: 373-384.
- Pignatti, S. (1982). *Flora d'Italia*. Bologna: Edizioni Edagricole.

- Prendergast, H.D.V., N.L. Etkin, D.R. Harris, and P.J. Houghton (Eds.) (1998). *Plants for Food and Medicine*. Kew, UK: The Royal Botanical Gardens.
- Preuss, A. (1999). Characterisation of function food. *Deutsche Lebensmittel-Rundschau* 95: 468-472.
- Price, L. (1997). Wild plant food in agricultural environments: A study of occurrence, management, and gathering rights in Northeast Thailand. *Human Organization* 56: 209-221.
- Romney, A.K. (1989). Quantitative models, science, and cumulative knowledge. *Journal of Quantitative Research* 1: 153-223.
- Salminen, P. (1999). *UNESCO Red Book Report on Endangered Languages: Europe*. Available online at www.helsinki.u/~tasalmin/europe_report.html.
- Schackleton, S.E., C.M. Dzerefos, C.M. Shackleton, and R.F. Mathabela (1998). Use of trading of wild edible herbs in the central lowveld savanna region, South Africa. *Economic Botany* 52: 251-259.
- Sena, L.P., D.J. Vanderjagt, C. Rivera, A.T.C. Tsin, I. Muhamadu, O. Mahamadou, M. Millson, A. Pastaszyn, and R.H. Glew (1998). Analysis of nutritional components of eight famine foods of the Republic of Niger. *Plants for Human Nutrition* 52: 17-30.
- Stepp, J.R. and D.E. Moerman (2001). The importance of weeds in ethnopharmacology. *Journal of Ethnopharmacology* 75: 19-23.
- Sundriyal, M. and R.C. Sundriyal (2001). Wild edible plants of the Sikkim Himalaya: Nutritive values of selected species. *Economic Botany* 55: 377-390.
- Trichopoulou, A., P. Lagiou, H. Kuper, and D. Trichopoulos (2000). Cancer and Mediterranean dietary traditions. *Cancer Epidemiology Biomarkers and Prevention* 9: 869-873.
- Tukan, S.K., H.R. Takturi, and D.M. Al-Eisawi (1998). The use of wild edible plants in the Jordanian diet. *International Journal of Food Sciences and Nutrition* 51: 195-208.
- Turner, N.J. (1995). *Food plants of coastal first peoples*. Vancouver, Canada: Royal British Columbia Museum.
- Turner, N.J. (1997). *Food plants of interior first peoples*. Vancouver, Canada: Royal British Columbia Museum.
- Turner, N.J. (2003). The ethnobotany of edible seaweed (*Porphyra abbottae* and related species; Rhodophyta: Bangiales) and its use by first nations on the Pacific coast of Canada. *Canadian Journal of Botany* 81: 283-293.
- Uiso, F. and T. Johns (1995). Risk assessment of the consumption of a pyrrolizidine alkaloid containing indigenous vegetable *Crotalaria brevidens* (Mitoo). *Ecology of Food and Nutrition* 35: 111-119.
- Vainio-Mattila, K. (2000). Wild vegetables used by the Sambia in the Usambarä Mountains, NE Tanzania. *Annales Botanici Fennici* 37: 57-67.
- Vierya-Odilon, L. and H. Vibrans (2001). Weeds as crops: The value of maize field weeds in the Valley of Toluca, Mexico. *Economic Botany* 55: 426-443.

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