

## Wild and Cultivated Plants Used as Food and Medicine by the Mòcheni Ethnic Minority in the Alps

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### Abstract

The Mòcheni ethnic minority is concentrated in a single valley on the southern border of the Dolomites in the heart of Europe (Italy). The Mòcheni arrived in this area in the 13<sup>th</sup> century AD, and its population was estimated to be 2,000 in the year 2000: 400 in Fierozzo, 1,000 in Palú, 460 in Frassilongo, three localities of the Valle del Fersina (Comunità Alta Valsugana e Bersntol/Trentino). They speak three different dialects of the Upper German, Bavarian-Austrian group: Fierozzo (Florutz), Palú (Palai), Frassilongo (Gereut), and can partially understand Bavarian, Cimbrian, or standard German, and they also speak Italian. The objectives were to determine the fungi and vascular plant species named and used by the Mòcheni, particularly as food and medicine, and to analyse the results in the Alpine cultures and traditions context. Methods included a literature review, especially local papers and books; interviews with members of Mòcheni societies and communities in Italy (Comunità Alta Valsugana e Bersntol/Trentino) and the collection of voucher specimens and photographs of plants, home gardens and landscapes in the different areas. A total of 1,275 records of plant uses and names were collected for 311 species of the vascular plants and fungi used by the Mòcheni. Seventy and 84 taxa were recorded for medicinal and food uses, respectively, while 11 taxa were used as both food and medicine. The nature of the medicinal species included was: 53 wild, 6 wild and cultivated, and 11 exclusively cultivated. There were no imported species reported for medicinal use in the valley.

### INTRODUCTION

This study is part of the research into the patterns governing the repertoire of wild species that are consumed by human populations on a worldwide scale (Rivera et al., 2005, 2006, 2007). The Alpine region has been selected given its extraordinary diversity (ethnic, cultural and biological). We focused on studying some of the apparently well-defined ethnic minorities residing in the Alpine Arc: Mochens, Cimbrian, Walser, Ladins, Raeto-Rumansch, and Franco-Provençals.

The Mòcheni, or Bersntoler, are a modest sized ethnic group, and 1,900 people spoke the Móqueno language in 1992 (Lewis, 2009). They have settled along the eastern slopes of the Fersina valley, or “Valle de i Mòcheni”, in the province of Trento (northern Italy) (Fig. 1). The term derives from a variant pronunciation of “machen”, the German verb “to do”, with Mòcheni meaning a people of workers, and more specifically from the phrase “Ich mache” (“I do”), which becomes Mòcheni in this dialect. There is a cultural centre in Palu di Fersina (“Palae Bernstol”), Bersntoler Kulturinstitut or Istituto Mòcheno, and this Institute’s mission is to recover this Alpine ethnic minority’s culture and traditions.

This work aims at determining the fungi and vascular plant species named and used by the Mòcheni, particularly as food and medicine, and to analyse the results in the Alpine cultures and traditions context.

## MATERIALS AND METHODS

The research program included interviews with members of the different Mòcheni communities in Italy (Trentino), collection of voucher specimens and photographs of plants and fungi, and systematic photographic records of fields, meadows, forests, home gardens and landscapes in the different areas (cf. Rivera et al., 2005, 2007). Also a literature review, especially local papers and books. The bibliography can be organised into four main categories: dictionaries (Hofer, 2004; Rowley, 1982), food (Moltrer et al., 2007), medicine (Capelletti et al., 1981, 1982; Pruner, 2007), ethnobotany (Wachtler, 2006).

## RESULTS AND DISCUSSION

The 1,275 records of plant uses or names for vascular plant and fungi species used by the Mòcheni comprise 178 records for medicinal uses and 301 for food uses. A total of 311 species of vascular plants, mosses, mushrooms and lichens is named and locally used. Seventy taxa are recorded as medicinal uses and 84 taxa as food uses. The nature of the medicinal species is: 53 wild, 6 wild and cultivated, and 11 exclusively cultivated; that of the food plant species is: 37 cultivated, 29 wild, 8 wild and cultivated, and 10 imported. No imported species are reported for medicinal use in the valley. Regarding the plant parts used, leaves are frequently used in medicine, while fruits and the whole plant are employed as food.

### Names of Plants

The names of the plants used by Mòcheni populations are partly Germanic and partially belong to different dialects deriving from Latin. The Valsugana is an area where several variants of the Romance group of languages converge, such as Ladino, the dialect of Trentino, and the eastern Valsuganotto dialect (Cortelazzo, 1983). Studies into plant names (Hofer, 2004) show the influence of the Trentino dialects.

The records of uses or names in Bersntol correspond mostly (over 90%) to vascular plants, (Table 1). The most relevant families of vascular plants in terms of recorded uses or names include *Rosaceae*, *Asteraceae*, *Pinaceae* and *Poaceae* (Table 2). The recorded plants used in Bersntol are mainly Phanerophytes (trees and shrubs) or Hemicryptophytes (grasses and other herbs), growing in forests and meadows, or in home gardens. Finally, there are records of subcosmopolite or Eurosiberian, with a relatively low proportion of Mediterranean species (Table 3).

### Food and Medicinal Plants

Strictly speaking, 84 species are food plants (wild, cultivated or imported), 70 other species are used exclusively for medicinal purposes, and 11 other species are used as both food and medicine. Thus, 14.5% of the medicinal species are also a food source, which is a much lower proportion to previous reports for mountains of central Spain (Rivera et al., 2005) or for the Cimbrians of Italy. The proportion of Medicinal Gathered Food Plants (MGFP) is ca. 14.0% of the wild plants used as medicine, and only ca. 20.0% of wild food plants. Thus the role of wild food plant species as medicines seems low, and may be due to the scarce information recorded on wild plant uses in this community.

Records of medicinal plants in Bersntol are mainly wild or naturalised species (ca. 75.0%), and a large proportion food plants is cultivated (in fields or home gardens). However, wild and naturalised plants account for ca. 33.0% of the records of food-related items (food, spices, condiments, etc.) (Tables 4 and 5). Leaves and flowers are the most frequently used plant parts for medicinal purposes. Fruits or leaf vegetables, of which the whole plant is consumed, are the most frequently recorded food item (Table 6).

The percentage of recorded uses for each main therapeutic group emphasises indigestion, gallstones, vomiting, diarrhoea (digestive disorders) and contusions, bruises, sprains, strains, arthritis, rheumatism, and lumbago (locomotor apparatus), (Table 7). The recorded number of wild edible species collected in their natural habitats (Table 8) is more or less similar to those for other Alpine ethnic minorities (Romansch Surselva and

Walser of Bosco Gurin), but slightly lower than those reported for the Cimbri.

## CONCLUSIONS

The Mòcheni have traditionally used a relatively wide range of species, a total of one hundred and sixty five for food and medicine. By combining an ethnobotanical methodology with the analysis of historical documents, recipe books, dictionaries and other sources of information has enabled us to accurately determine the plant species used as food and medicine by the Mòcheni, and to compare these findings with the results obtained from other communities in the Alps. The Mòcheni show a highly adaptive pattern in terms of selection of species for use, which is similar to those found in the other ethnic minorities studied, with main differences lying in the names of plants or due to biogeographical reasons. Finally, plant names reveal some remarkable coincidences with those in use among the Cimbrians of Luserna.

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## **Tables**

Table 1. Records of uses or names in Bersntol.

Groups	Records
Vascular plants	1193
Fungi	69
Lichens	8
Bryophytes	5
Algae	0
Totals	1275

Table 2. Relevant families of vascular plants in terms of recorded uses or names.

Families	Records
<i>Rosaceae</i>	163
<i>Asteraceae</i>	117
<i>Pinaceae</i>	106
<i>Poaceae</i>	70
<i>Salicaceae</i>	57
<i>Fabaceae</i>	41
<i>Liliaceae</i>	34
<i>Apiaceae</i>	33
<i>Brassicaceae</i>	32
<i>Lamiaceae</i>	25
<i>Polygonaceae</i>	25
<i>Solanaceae</i>	25
<i>Fagaceae</i>	24

Table 3. The lifeform, habitats and biogeography of the recorded plants used in Bersntol as a percentage.

Lifeforms	Percentage	Habitats	Percentage	Biogeography	Percentage
Phanerophyte	39.3	Forest	32.0	Widespread	24.6
Hemicryptophyte	24.6	Home gardens	18.2	Eurosiberian	18.0
Therophyte	15.5	Meadows	16.0	Western	16.5
Geophyte	9.0	Fields	8.3	Eurosiberian	
Chamaephyte	4.9	Rocky places	7.9	Mediterranean	11.3
Mycophyte	4.8	Hedges	7.1	Circumboreal	9.1
Parasite	0.6	Rivers and lakes	5.9	South European	8.9
Epiphyte	0.6	Wet meadows	2.7	Paleotemperate	5.5
Hydrophyte	0.5	Shrubland	1.7	Alpine	3.5
Helophyte	0.1			Tropical	1.7
				Eastern European	0.7

Table 4. Origin of the medicinal and food plants included among the records in Bersntol.

Main use	Cultivated	Wild	Wild and cultivated	Imported	Totals
Medicinal	39	135	4	0	178
Food	186	72	19	24	301
Total	225	207	23	24	479

Table 5. Origin of the medicinal and food plants included among the species in Bersntol.

Main use	Cultivated	Wild	Wild and cultivated	Imported	Totals
Food	37	29	8	10	84
Medicine	11	53	6	0	70
Food and medicine	2	6	3	0	11
Other uses	7	133	4	2	146
Total	57	221	21	12	311

Table 6. Plant parts used as medicine and food according to records in Bersntol.

Main use	Carpophores	Roots	Whole plant	Leaves	Flowers	Fruits	Others
Medicinal	0	8	21	46	31	4	68
Food	24	9	60	13	4	130	61

Table 7. The relative frequency of the main therapeutic groups in terms of percentage of recorded uses among the Mòcheni, compared with the numbers in other Alpine ethnic minorities.

Therapeutic groups	Average	Cimbri	Mòcheni	Ladins	Walser
Respiratory	11.4	8.7	14.4	14.2	11.1
Skin	21.2	19.9	8.3	20.5	27.1
Digestive	20.4	17.0	23.5	22.8	20.1
Circulatory	7.7	5.4	9.8	8.6	8.4
Locomotor apparatus	13.6	24.3	19.7	14.2	4.3
Excretory apparatus	3.9	1.1	8.3	6.3	4.1
Male reproductive apparatus	0.3	0.3	1.5	0.0	0.0
Female reproduct. apparatus	0.7	1.1	0.0	0.0	1.1
Nervous system	12.8	14.5	9.8	6.3	14.6
Visual system	1.5	1.5	2.2	0.8	1.6
Teeth and mouth	2.9	4.0	0.0	3.1	3.2
Metabolic problems	0.6	0.0	0.7	0.8	0.8
Parasites	2.1	1.1	1.5	1.5	2.9
Ear	0.6	1.1	0.0	0.8	0.5

Table 8. The number of edible species collected in their natural habitats is relatively low if compared with the data for other Alpine ethnic minorities.

Communities and localities	Total of wild edible species recorded	Exclusive species	Bizone species	Widespread species
Walser of Bosco Gurin (Val Maghiazzone, Ticino, Switzerland)	44	0	5	19
Ladins of Gherdeina (Alto Adige, Italy)	55	1	1	27
Mòcheni of Palù del Fersina (Bernstol, Trentino, Italy)	37	0	0	10
Cimbri of Luserna, Giazza & Roana (Trento, Verona & Vicenza, Italy)	59	0	0	8
Romansch of Surselva (Graubunden, Switzerland)	40	0	1	14

## Figures

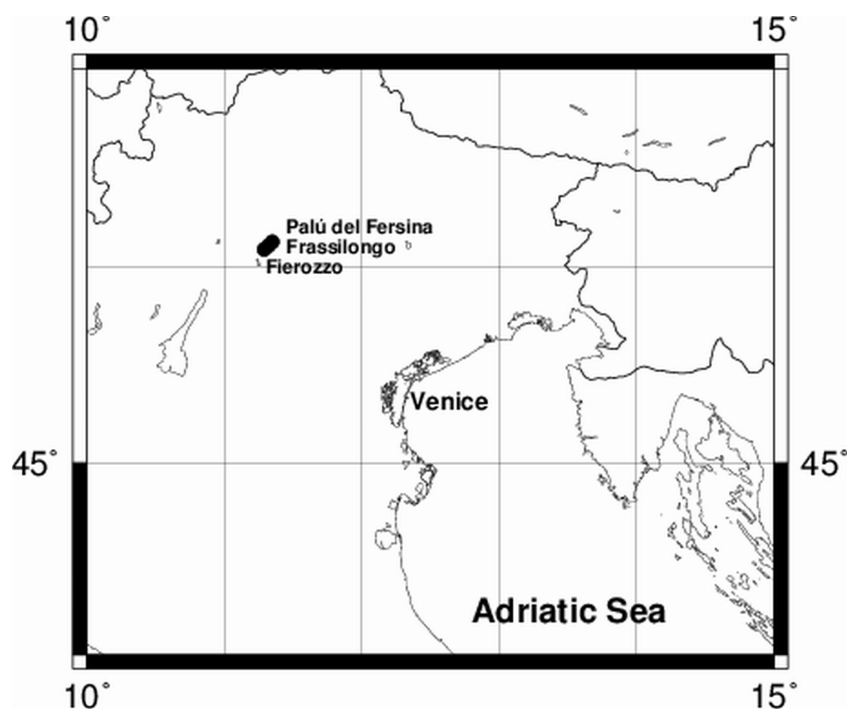


Fig. 1. Situation of the Mòcheni communities in the Bersntol/Fersina valley (Trentino, Italy), 11°20' E - 46°07' N, with altitudes of 750-1200 m, which is surrounded by mountains of around 2000 m altitude and oriented SW-NE.