

## EVALUATION OF THE CULTURAL SIGNIFICANCE OF WILD FOOD BOTANICALS TRADITIONALLY CONSUMED IN NORTHWESTERN TUSCANY, ITALY

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**ABSTRACT.**—A quantitative method to calculate the cultural significance of wild food plants used in traditional contexts was developed and applied to an ethnobotanical survey carried out in Northwestern Tuscany, Italy. Ninety-five informants were interviewed concerning the cultural significance of gathered wild edibles. Interview data was evaluated through the development of a special index: the Cultural Food Significance Index (CFSI). This index takes into account a wide variety of factors in the evaluation of a specific plant including: quotation frequency, availability, typology of the used parts, frequency of use, kind and number of the food uses, taste appreciation, and perceived role as a food-medicine. Very high CFSI values were identified for several wild “greens,” whereas wild fruits seemed to play a subordinate role. The use of this index allows for the quantitative comparison of ethnobotanical data in an intercultural ethnobiological analysis.

**Key words:** ethnobotany, anthropology, food plants, Tuscany, Italy.

**RESUMEN.**—En el contexto de un estudio etnobotánico llevado a cabo en nordeste de La Toscana (Italia), se ha desarrollado y aplicado un método cuantitativo para calcular el significado cultural de las plantas silvestres tradicionalmente utilizadas en alimentación. Noventa y cinco informantes han sido entrevistados en relación al posible significado cultural de las plantas comestibles recolectadas. La evaluación de los datos obtenidos se realizó mediante la aplicación un índice especial: el índice de significado cultural alimentario (CFSI), que toma en consideración una amplia variedad de factores como: frecuencia de citación de la especie, disponibilidad o facilidad para conseguirla, tipología de las partes de la planta utilizadas, frecuencia de uso, tipos de empleo alimentario, apreciación del sabor y, por último, papel que se le asigna como alimento medicinal. Valores elevados de CFSI se obtuvieron para varias “hortalizas” silvestres, mientras que los frutos silvestres parecen jugar un papel subordinado. En definitiva, el uso de este índice permite una comparación cuantitativa de datos etnobotánicos en un análisis etnobiológico intercultural.

**RÉSUMÉ.**—Une méthode quantitative pour calculer la signification culturelle des plantes sauvages comestibles utilisées dans des contextes traditionnels a été mis au point et appliquée à une étude réalisée dans le nord-ouest de la Toscane en Italie. Quarante-vingt-quinze personnes ont été interrogées sur la signification culturelle que revêt la récolte des végétaux sauvages dans un but alimentaire. Les données recueillies ont été évaluées au moyen d'un index spécial, l'Index de Signification Alimentaire Culturelle (CFSI). Cet index prend en considération un grand nombre de facteurs en vue de l'évaluation d'une plante spécifique: fréquence

avec laquelle elle est mentionnée, disponibilité, typologie des parties utilisées, fréquence des utilisations, types et nombre d'usages alimentaires, appréciation du goût et perception du rôle médicinal en même temps qu'alimentaire. De très hautes valeurs de CFSI ont été mises en évidence pour plusieurs légumes sauvages, tandis que les fruits sauvages semblent jouer un rôle secondaire. L'emploi de cet index permet de faire des comparaisons quantitatives entre les données ethnobotaniques dans le cadre d'une analyse ethnobiologique interculturelle.

## INTRODUCTION

Several ethnobotanical surveys in Southern Europe have focused over the last few decades on the use of botanicals in folk medical practices. Nevertheless, in the whole Mediterranean area, only a few field studies have focused exhaustively on gathered wild plant edibles (Corsi and Pagni 1979; Corsi, Gaspari, and Pagni 1981; Guarrera 1994; Paoletti, Dreon, and Lorenzoni 1995; Pieroni 1999; Ertu\_, 2000). Furthermore, only two pharmaco-botanical field studies *quantitatively* evaluated the use consensus within a specific area (Friedman et al. 1986; Bruni, Ballero, and Poli 1997).

The evaluation of different botanicals used inside a particular geographical and cultural context is important in order to facilitate an intercultural comparative analysis of quantitative ethnobotanical data. Such an evaluation is also necessary in order to discuss cultural components related to food acceptance and even to find insights for investigating phytochemical constituents that could influence popular appreciation of edibles.

Food botanicals have often been used in traditional systems multi-contextually and are commonly ingested as food-medicines. The physiological aspects of nutrition overlap with the bio-pharmacology of non-nutritional plant metabolites (Etkin and Ross 1982; Etkin 1993, 1994, 1996; Johns and Chapman 1995; Johns 1996; Moerman 1996; Ross, Etkin, and Muazzamu 1996; Chapman, Johns, and Mahunnah 1997; Pieroni 2000).

The aim of this study, focused on food plant edibles, is to develop a method for evaluating the cultural significance of biological taxa, defined as the importance of the role that a plant plays within a particular culture. Theoretically, such evaluation should be done by native people themselves living in that given traditional culture (Turner 1988). The problem concerning the evaluation of the cultural significance of biological taxa has been addressed by a few previous works (Berlin et al. 1973; Lee 1979; Hunn 1982). Berlin in particular used a scale of four values in order to classify the vegetable resources of the Tzeltal-Tzotzil society: "cultivated," "protected," "wild but useful," "culturally insignificant," while Lee later classified !Kung San plants in six classes: "primary," "major," "minor," "supplementary," "rare," and "problematic." These scales represented a first simple attempt to measure the cultural significance of plants. These scales, however, did not consider any special variables involved in the complex issue of the evaluation of cultural meanings of biological resources.

In the present study, we elaborated a specific Cultural Food Significance Index (CFSI) by modifying the methods developed by Turner (1988) for the Thompson and Lillooet Interior Salish people (British Columbia, Canada). Turner's index (In-

dex of Cultural Significance, ICS) considered three criteria: the quality of use (plants were placed on a five-point scale, according to their utilisation as primary or secondary food, as medicines, or as rituals), the intensity of use (how frequently the plant was used on a daily, seasonal or annual basis), and the exclusivity of use (how a particular plant has precedence over others in a given cultural role). Stoffle et al. (1990) modified the Turner's ICS in their quantitative analysis of the Paiute and Shoshone ethnobotany at Yucca Mountain (Nevada, USA) and developed an Ethnic Index of Cultural Importance (EICS), which eliminated the quality-of-use criteria and added a contemporary use variable category. Moreover, a Cumulative Index of Cultural Significance (CICS) was also formed by adding the plant's EICS scores for each ethnic group involved in that study.

Both indexes (ICS and EICS) have been developed to facilitate the evaluation of every plant used or known in a given ethnic context and not specifically as species used for food. These indexes fail, however, to take into account the factors of "taste appreciation" and the "perceived" food-medicinal multifunction of ingested botanicals, which represent important anthropological aspects in the phenomenon of ingestion of herbs and other plant dietary supplements (Johns 1990). Moreover, Turner's index assigned arbitrary values to the "quality-of-use" category (for example medicinal or ritual plants were considered much less "important" than staples), while both indexes don't consider the "perceived availability" of the species, but rather include an indirect "ecological availability" index in the "frequency-of-use" parameter.

## METHODS

*Field work.*— The study site is situated in Northwestern Tuscany, central Italy, and represents the upper part of the Serchio Valley, also called Garfagnana. Qualitative ethnobotanical surveys on the traditional medicinal and food species were carried out only recently in this territory (Uncini, Elisabetta, and Tomei 1999a, 1999b; Pieroni 1999, 2000). The traditional culture of this region has developed in an agricultural and partially pastoral context.

Cultivated species, which have played a central role in the local food economy are represented by *Castanea sativa* L., *Zea mays* L., *Triticum dicoccum* SCHÜBLER, *Panicum miliaceum* L. and *Secale cereale* L. together with *Solanum tuberosum* L., *Phaseolus lunatus* L. and *Phaseolus vulgaris* L. These species have long represented the principal vegetable food sources used by locals. In the winter season, chestnut flour based dishes (mostly *polenta*) make up the main meal, substituted in the summertime by corn meal *polenta*. The traditional food culture of the Serchio Valley includes a wide variety of botanicals collected from the wild.

The physical geography of the study area is defined inside 16 small municipalities (Figure 1). This area is a mountainous territory, delimited by the Apuan Alps in the western part and the Apennines in the eastern, respectively facing the Tyrrhenian coast and the region Emilia-Romagna.

Ethnobotanical information was obtained through structured interviews with 95 persons (age range of 67 to 96 years) having extensive knowledge of the food culture and living in small villages (50-500 inhabitants). Informants were asked to

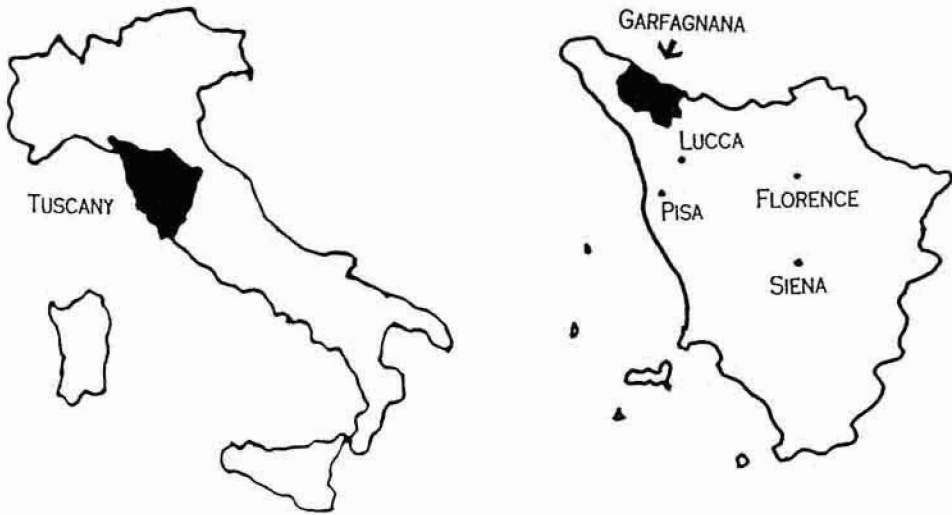


FIGURE 1.—Location of the studied area.

spontaneously quote the names of wild edibles that are gathered and consumed today and those that were gathered and consumed at least 30 years ago. Furthermore, the informants were asked to specify the following information for each quoted taxa including: which part of the plant was used, how the plant part was used, the perception of its availability, the frequency of use of the species at the present time and in the past (taking as reference about 30 years ago), the taste appreciation, and an eventual medicinal purpose attributed to its ingestion. Conversations were carried out in the local dialect, which is known by the author.

All of the quoted botanicals were identified during a previous project (Pieroni 1999), and the adopted nomenclature follows Pignatti (1997) for the vascular taxa, and Gerhardt (1997) for the mushroom species. In this study only wild botanicals native in the region were considered. Species with food value that were long naturalised or domesticated in the region, such as *Robinia pseudoacacia* (Fabaceae) or *Prunus laurocerasus* (Rosaceae) were excluded.

According to the principles of ethnobiological taxonomy (Berlin 1992), traditional cultures identify diverse botanicals in the same "generic" taxa. In the studied region, different botanical species were locally grouped within a unique classification unit by use their use (and according to the so-called "utilitarian factor" described by Hunn 1982). Plants were therefore listed and ordered within the study following these vernacular taxa and not the modern botanical taxa.

*Cultural food significance index (CFSI).*—The Cultural Food Significance Index, specifically elaborated to evaluate the cultural significance of wild edibles, was calculated as:

$$CFSI = QI \times AI \times FUI \times PUI \times MFFI \times TSAI \times FMRI \times 10^{-2}$$

The formula takes in account seven indexes which express the frequency of

























