

# "Country to the table: do you know what do you eat?" An educational workshop by Salento botanic garden for the knowledge of local agricultural biodiversity

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## RIASSUNTO

This paper present the results of an educational activity carried out by the Botanic Garden of the Salento University out of the structure, to support school programs already underway. Purpose of this educational workshop was to detect the degree of knowledge and directing the use of the sense in the choice of vegetables. Meetings were held with students from Tricase (LE) in Comprehensive Institute (secondary schools), during which they were recorded information about their knowledge of vegetables. Among qualitative techniques investigation has been selected the "focus group".

Key words:

Botanic Garden, crops consumption, focus group, local cultivars.

## ABSTRACT

*"Dalla campagna alla tavola: conosci quello che mangi?" Un laboratorio didattico svolto dall'Orto Botanico del Salento per la conoscenza della biodiversità agraria locale.*

*Nel presente lavoro vengono esposti i risultati di un'attività didattica svolta dall'Orto Botanico dell'Università del Salento fuori dalla struttura, a supporto di programmi scolastici già avviati. Scopo di questo laboratorio è stato quello di rilevare il grado di conoscenze e indirizzare all'utilizzo dei "sensi" nella scelta degli ortaggi. Sono stati organizzati incontri con studenti di Tricase (LE) negli Istituti Comprensivi (scuole secondarie), durante i quali sono state rilevate informazioni riguardo le loro conoscenze degli ortaggi. Tra le tecniche di indagine qualitativa è stata selezionata il "focus group".*

Parole chiave:

Orto Botanico, consumo di ortaggi, focus group, cultivars locali.

## INTRODUCTION

The Botanic Garden of the Department of Biological and Environmental Sciences and Technologies (Di.S.Te.B.A.), in Salento University, is proposed to the public and to the scientific world with purpose to focus on conservation of plant biodiversity in salento territory, whether of wild species that species and varieties of agricultural interest. Numerous actions have been taken for the dissemination of scientific knowledge and the promotion of strategies for the conservation of biodiversity, an involvement that affects all parts of society and also students of all levels.

The main living collections maintained in the Botanic Garden are developed along a ostensive itinerary, marked by nameplates and explanatory panels on the following topics:

- structuring species of the Mediterranean maquis and garrigue;
- rare and endemic species included in the Red List Regional and National;
- spontaneous species or pharmacological interest;
- species wild progenitor of those of agronomic interest;
- hydrophytes;
- species used in craftsmanship;

- aromatic plants or plants used in industrial gastronomic;
- local cultivars of fruit trees and vegetable species.

In semi-natural areas, reproduced with the species of the Mediterranean in the Botanic Garden of Salento, are developed knowledge related to systematic botany, vegetation and the flora.

Herbaceous species spontaneously spread and produce a dense sward and rich biodiversity, thus helping to address topics such as adaptation, dissemination, reproduction, preservation of useful species to human activities.

There are areas where the species are concentrated of medicinal, craft and aromatic interest, also use in food, and then get to the area where they are collected at extinction risk species and included in the Italian Red List Plants and Regional Plants Lists Red in Italy (Accogli & Marchiori, 2006a).

Two small artificial ponds are home to hydrophytes and offer valuable suggestions for further details on the plants anatomy and local artisan uses; aquatic attraction is very strong, in fact students discover small amphibians and insects live together with plants.

The course proceeds to a rock garden with succulent, especially Agavaceae, Cactaceae and Crassulaceae. Visit also the cold tunnel where there is the propagation of plant species: this activity is very important because, guarantees new plants to be planted, it allows to carry out reintroduction programs of extinction risk species, in their origin sites for the strengthening or restoring populations destroyed by human activities (Accogli et al., 2006a).

A stones wall delimits a small orchard, where they are collected fruit local varieties (mulberries, figs, pears, apples, plums, pomegranates) now at extinction risk.

A "garden in the Garden" is the name given to an area where agricultural fields catalog are made for the horticultural varieties cultivation which the local peasant art handed down from father to son; centuries of farming these varieties are adapted to the conditions in the Salento camps, so unique, but now almost completely replaced by varieties from other agricultural areas (from Brazil, California, Australia, ...) (Accogli & Marchiori, 2007).

Educational activities are carried out in the Botanic Garden, with guided tours that are calibrated according to the demands of the school program and the students; these are also fulfilled requests for support to teachers, for collections of plants in the gardens of their own institutes, for thematic analysis front (in classroom), for excursions in the territory (Accogli & Marchiori, 2006b).

The object is that carried out at some schools in the town of Tricase (LE) which it had in place a surveillance program for food (ASL-Local sanitary health LE/2), for to higher consumption of fruits and

vegetables tempt. The Botanic Garden support was to raise awareness of the main vegetables produced in Salento, to highlight nutritional values the agricultural biodiversity of the area. In fact, Salento University Botanic Garden was one of the first institutions to enable their territory recovery programs and conservation of agricultural biodiversity, according to a methodology that aims not only to the identification of the local variety, but also to the knowledge of the social context that has preserved from extinction. It came to light customs and cultural practices related to religious traditions (Accogli et al., 2006b; Negro et al., 2010), knowledge never transcribed, handed down from father to son, and the sensations evoked by taste or smell, the dishes of the past, which bound the peasant art and culinary art (Accogli & Marchiori, 2009).

The investigations led to territorial seeds acquisition (often small quantities, donated by the farmers interviewed), which have been appropriately cataloged and giving an accession number. The seeds obtained are purified from impurities selected and weighed, stored in Bank Seeds, for collections "death" to show visitors, one part of them is exposed in portable seedcases (fig. 1), another part it is sown in field-catalog (fig. 2). The visitor can see already in the seedcases an intraspecific diversity regarding the shape and color of seeds produced from local varieties, and then observe the morphological characters on the plants that are growing in the field. For example, of *Brassica rapa* L., were collected seed varieties (*rapa quarantina*, *rapa sessantina*, *rapa de Santu Martinu*, *rapa natalina*, *rapa de febraio*, *rapa marzalura*), systematically cultivated in rows in the field demonstration agricultural included in the Botanic Garden (Marchiori & Accogli, 2011)

For educational activities performed out in schools of Tricase (Lecce), the collections have been brought out the Botanic Garden, as seeds and vegetables grown and collected in fields-catalog, but also panels, scientific posters and informational materials.

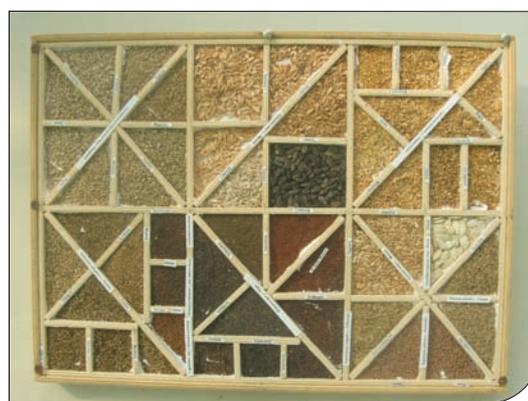


Fig. 1. Seed case.



Fig. 2. Crops in Botanic Garden field.

An educational laboratory was organized with Tricase's younger consumers, in particular students in comprehensive schools, in order to identify eating habits, compared with those of the local diet, for centuries consolidated and dictated by available products or grown exclusively in the Salento. The genuineness is a prerogative of a few people, as well as consumption of local agricultural products and the new generations have no way to know and appreciate (or reject) flavors, aromas and fragrances. The route aims to bring the consumer to discover the rural areas where agricultural ecosystems and different types, of cropland each with its own natural balance that only traditional farming practices can preserve.

The rural context, as a natural matrix fragmented and diffuse, is the only tool that can serve as glue for the relict natural areas, elements of rural haven of refuge to preserved.

For years now, the food choices you drag in the total indifference, but Tricase farmers, in the cultivation of fruits and vegetables specialized, they set out to entice consumers to buy local products. The personal taste dictated the cultivation of certain varieties and not others, and also a distinction element often preferred by housewives in the commission of supplies. Today, food standards are a problem, partly because of modern eating habits

that often impose rules and behaviors not always compatible with our well being. On global market there are perfect products: form, taste, perfume are very perfect; the genuine products don't are perfect but they have important nutritional values. Furthermore, the object is educate the senses as tools of choice, to defense of the pleasure, so that food choice is not forced, but personal and conscious. First, a food choice is made with eyes, choosing the colors and shape that most impress us, then the perfume and fragrance, then the texture and tactile evocations; finally, there taste and the nutrition contribution that is not taken into account almost never! And just restoring food knowledge and ability to evaluate aroma, freshness, shape and origin, we organized meetings with students in comprehensive schools and subjected to brief encounters, during which were collected interesting information.

## METHODOLOGICAL NOTE

For knowledge detection, consumption and taste of young consumers was carried out social research, using qualitative methodology (Boudon, 2000) and the technique of focus group interview also known as target groups (Bailey, 1995).

The focus groups choice, over other possible methods of qualitative research, was determined by

the intention to detect, through discussion, social actors involved (characterized by young age), knowledge of food daily in order to rediscover their taste and their size, with the combined use of sensory faculties in full awareness.

Group discussion was involved by marginal conductor that allows respondents to mature, in comparison, a witness and a description of different situation other than that could be provided if he is an alone single statement, and inevitably, is "his point of view" conduction (Corrao, 2000). Focus groups were performed, a discursive dynamic technique for detecting food habits and knowledge. All sessions were recorded and were conducted in comprehensive schools, Pole 1, 2, 3, and 4 of the Tricase. Each group comprised 15 students. The focus has been about two-three hours, depended on the interest degree of each group. The conductor asked participants to place their stations in a semicircle in order to make communication more efficient. For introducing the topic of discussion was prepared and brought with them products that would have been the subject of study group. More precisely, a large fresh "vegetables basket" and a "seedcase".

The conductor is introduced to the group with a fresh vegetables basket, and a collection panel (particularly all legums seeds) for "striking" the senses and to provoke the discussion; for each vegetable was required the knowledge degree has been on name, seasonality, nutritional ownership, their consumption, traditional recipes. News and impressions aroused in the boys were recorded. Through the testimonies, the family habits are been reconstructed, especially, the supplying sources: own production, buying (supermarket, greengrocer). Sensation smell has remembered in the boys different pleasures (coolness, earth and grass scent) or repulsion (rotten eggs, bitter, prickly). All participants received with much enthusiasm and curiosity inputs presented by conductor; particularly, the basket presentation, colorful and representative of various species, has also aroused so much admiration and created expectations. The class groups have proved to be homogeneous,

cohesive and with great capacity to work together; have all participated with great interest and curiosity, many students have expressed their knowledge of the products presented and their properties. In a small group class, knowledge has been minimal.

## RESULTS

### Assessment of knowledge and household consumption

In Pole 1 school, 65% of students know the vegetables name, in Pole 2 and in Pole 3 the result rises to 80%, in Pole 4 is 85%.

The students don't know category of products, in fact, in Pole 1, only 10% is able to distinguish the vegetables or the legumes, in the Polo 2 and Polo 3 and Polo4, 20% know categories of products membership. The results reaches a higher percentage in the case of the seasonality knowledge of the products concerned, in fact, in Pole 1 is from 70%, in Polo 3 and Polo 4 is 65%, while the percentage drops considerably reaching in the Pole 2 only 20%.

Was evaluated by the ability to identify and express the qualities of vegetables, such as flavor, crunchiness, scent: most satisfactory results were recorded in Polo 2 and in Polo 4 (fig. 3).

85% students of Pole 1 declare that their family consumption is in hypermarkets, only 15% uses the household production. Different the situation presents itself in the Polo 2 where the percentages are distributed more evenly: in the 60% of cases the products are purchased and 40% of households make use of household production and, finally, in Poly 3 and 4 purchasing products are between 60% and 70% (fig. 4).

### Capacity evaluation of organoleptic qualities

Compared to the variability of the data measured above, rates shall conform when referring to quality: aroma, crispiness and produced taste. The scent is recognized in the Pole 1 and Pole 2 with a percentage from 70% to 80%; in the Pole 3 and Polo 4 reaches 90%. With regard to the crispness of the products, the students of the four poles give the appropriate evaluations with a constant rate between 60% and 70%. The flavor is recognized by 60% to 80% children who participated in focus groups. The conductor focus asked the participants to smell the products and tell the group what evokes their perfume: 30% of students had a feeling of "fresh", 20% evoked the land, the 12% of boys evoked the taste of 'sour', 10% thought the "campaign" and another 10% the plants (tab. 1).

The conductor has asked students to enlarge the imagination and say what does vegetable "shape" evoke. The "spinach" reminds kids to: an umbrella, a

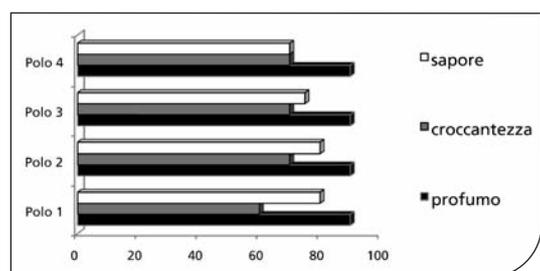


Fig. 3. Evaluation of the organoleptic properties: flavor, crunchiness, perfume.

flower, a tree, a palm, a volcanic eruption, flowers bouquet and a fountain. The Fennel view, instead, thought to chestnuts, the bagpipes, fireworks, a root, a fungus and somebody said if the Fennel is inverted it's a the shape of a head. The "cabbage" reminds to kids the sunflower, the snapdragon flower, a weed, a bud, a small bush and a bonsai. The "pepper" refers to tabled the shape of an egg, a soccer ball, a walnut and an elongated tomato. The "eggplant" for its shape is likened to a bottle, a cylinder, a bat baseball while someone else thinks of a watermelon. The chard evokes a fan, the leaf of a palm tree and the oars of a boat.

The "cicoria di galatina" recalls some guys stalactites in a cave for others it evokes the ridges. The "artichoke" is likened to a cone, a microphone and a bud. The shape of the core suggests an ice cream cone and a red pepper, while the cauliflower reminds students coconut, a bush, a flower, a boy did think, however, the human brain. The "rapa natalina" suggests a bouquet of flowers and a geranium, lemon evokes the onion, instead, the onion and the garlic (fig. 5).

The operator brought the attention of young participants in the focus on the colors of the basket presented in vegetables have been identified following colors: orange, red-purple, green, dark green, green yellow, bright green, moss green, emerald green, purple to black, red fire, purple, some vegetables have reddish reflections, others appear opaque.

Overall, the impact that the basket was raised in all groups of children was a feeling of "happiness". As already mentioned, the interest has focused on collective attitudes in order to detect more detailed information on evaluations, reviews and opinions about a subject developed. The surveyed, did not confine themselves to answering the questions asked by the tenant, but have contributed to the comparison, by redefining the problems under discussion.

The focus is a tool of analysis and reflection, it is important interaction between involved for that reason is configured somewhat like research and

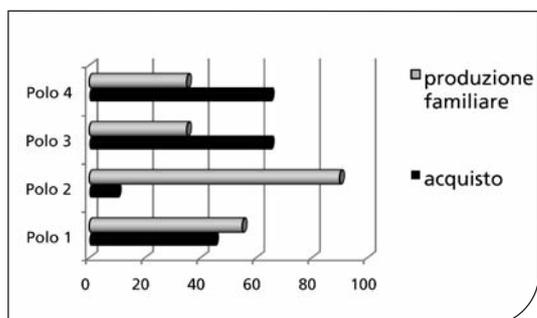


Fig. 4. Source of the products: family production, market.

Feelings	Value (%)
Fresh	30
Country perfume	10
Grass	10
Anise	5
Bitter	5
Land	20
Sour	12
Incense	1
Cheese	1
Rotten eggs	1
Pungent	2
Unripe	2
Sea	1

Tab. 1. Evocations of the perfumes of the vegetables.

intervention because it is constant reference to the operational activity and personal experience is that, in this way, the group offered the draw.

## CONCLUSION

With its collections, the Botanic Gardens of Salento testifies to the scientific value and economic value of the plant biodiversity and promotes development paths to be calibrated to the individual species and the individual territories. The Botanic Garden is also actively involved in the popular knowledge recovery (ethnobotany) that revolve around the individual plant species, which are more and more disappearance of territory, due to the transformations that are submitted habitats natural! Environment knowledge, from urban to natural and rural land, is a prerogative essential for understanding those development strategies not dictated by the individual but by a community (not always local) and experienced more passively because not arising from their needs. Territorial vocations, identification and resources is the first step towards the appropriation of the socio-economic sphere where everybody are co-stars of choices and will have a cultural weight. Recognising and retracing the productive sectors of local products now abandoned, defining origin product from producer to consumer, will mean trace history of the vegetable and behavior dictated by fashion; but also regain autoctone vegetable's values nutritional that represents the cultural background of each person. Restoring agricultural production to ensure to the tables Salento flavors and nutrients of your local, it improves quality of life, ensuring the health-food pairing.



Fig. 5. Objects evoked by the shape of vegetables.

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