



Knowledge of farmers in Tyrol about traditional crops and their local varieties: A potential support to rescue local crop genetic diversity



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Introduction

The protection and maintenance of biological diversity and of natural and associated cultural resources is part of several international conservation concerns. One integral part of biological diversity is agro-biodiversity. A threatened global agro-biodiversity resource is the reservoir of genetic diversity found in cultivated crops. Already in the year 1998 the FAO estimates that about 75% of the genetic diversity of crops has been lost in the last century. As a consequence many locally grown cultivated plant species that have been very well known for centuries, their varieties and the related local knowledge are in danger of disappearing or have already disappeared. As a means to support the conservation of regionally typical genetic resources of grain, vegetable and fruit species an INTERREG IIIA-project (Gene-Save) was realized between 2003 and 2007 in collaboration between the province of Tyrol (Austria) and Alto Adige (Italy). In Tyrol the collection of germplasm and its agronomic description was complemented by a project of memory banking, to be described here.

Results

Subsistence farming in Tyrol was based on mountain grain-grazing until about the 1960ies. The grain growing almost all disappeared in mountainous regions and only a few local varieties are still grown and propagated (*Hordeum vulgare*, 1 accession; *Secale cereale*, 12 accessions; *Triticum* sp., 3 accessions). Local varieties of the broad bean (*Vicia faba*, with 54 accessions), the potato (*Solanum tuberosum*, with 42 accessions) and the turnip (*Brassica rapa* ssp. *rapa*, with 34 accessions) are most widely distributed. The broad bean and the turnip have been very important in the alpine regions of Tyrol as e.g. staple food for centuries and almost every farmer not only grew these species but propagated the seeds. Although the potato was introduced to Tyrol only around the 18th century it also played an important role as staple food since then. The pea (*Pisum sativum*, 11 accessions) and poppy (*Papaver somniferum*, 13 accessions) were very well known to prepare special dishes for festivities like for Christmas. Overall the survival of the local varieties is closely related to local people's high appreciation of the specific taste for some dishes. The various uses and different stories belonging to the cultural context are in danger of disappearing and are only recognized by elderly farmers.



Figures: Some local varieties of broad bean (*Vicia faba*), traditional tool for sowing beans and green bean for cooking traditional food

Methods

In the years 2005 and 2006 structured and semi-structured interviews were carried out in Tyrol with 93 persons, who still save local varieties of grain and vegetables (furthermore called crops). Sampling was done as snowball sampling based on local people recommended by the respondents. The interviews covered agronomy, processing and trade, as well as the cultural context of these crops. In addition to this sample, public and private agencies distributed survey cards to encourage people to inform the project team if they still propagate local varieties. Structured interviews were carried out with 30 persons out of 208 persons who delivered these survey cards. Accessions of 164 local varieties (from 20 species) were sampled, deposited and consistently duplicated at the department of *Landw. Versuchswesen, Boden- und Pflanzenschutz* of the Government of the province of Tyrol to complement the collection for Tyrolean local varieties.

Activities

Results were disseminated through local media, technical regional journals, presentations and courses. These activities aimed to increase the education and awareness of local people about the topic of crop genetic diversity, linked to their traditional and preferred use of local species and their varieties. Technical support and in some cases seed supply was organized to reintroduce the appreciated varieties. Addressing not only the scientific community with publications, but also the taste, memory and local food preferences of local people through local dissemination activities can support the rescue of local endangered varieties of crops.

Seed production of local turnip variety