

# Maintenance of and research on wild crop relatives at Department of Botany, Palacký University in Olomouc, Czech Republic

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## Introduction

Scientific activities developed by the Department of Botany are aimed at comprehensive studies of crop wild relatives. Scientific results confirm a large variability within and among species, provide original information in botanic sciences, are essential for programs of plant protection and conservation, and should be explored in plant breeding. All collections are used for educational purposes. Overview of research activities and publications are available on the web site <http://botany.upol.cz>. Examples of publications are given in the text below.

## Cucurbitaceae

The collection of wild cucurbitaceous species includes 50 accessions of seven genera (*Benincasa*, *Citrullus*, *Cucumis*, *Cucurbita*, *Lagenaria*, *Luffa*, *Momordica*). Research is focused at study of their morphological variation (9,12), interspecific hybridization (15), embryo-rescue and protoplast cultures (22) and plant interactions with pathogens and pests (10,11,14,16).

## Lactuca spp.

The collection of wild *Lactuca* species includes about 700 accessions of 17 wild species. The research is aimed at a study of eco-geography (13), biodiversity in natural habitats (4), collecting, studies of taxonomy (5), morphology (1), anatomy, karyology, molecular variation (2,3) and interaction with lettuce downy and powdery mildews (17,18,19).

## Lycopersicon spp.

The collection of the genus *Lycopersicon* with about 120 accessions of nine species is studied for response to tomato powdery mildew on the level of intact plants, leaf discs, cell structures and enzyme activities (20,21).

## Allium spp.

The collection of the genus *Allium* includes about 500 populations representing various natural habitats of Europe. The research is aimed at a study of incidence, geography, ecology and reproductive biology of the polyploid complexes (6,7).

## Chive

A collection of 12 accessions of chive, *Allium schoenoprasum* L. subsp. *riparium* (Opiz) Čelak. was collected in natural habitat from near Praha-Zbraslav on Vltava riverbank. The collection is located in the Botanical Garden (Department of Botany, of Palacký University in Olomouc). Morphological and cytological studies proved the presence of plants with white-flowered and typical violet-flowered forms, and genotypes bearing B-chromosomes (8). The locality - together with the bordering protected natural area Krňák - was totally destroyed during catastrophic flooding in August 2002. The collection can be re-introduced to original habitats and selected genotypes can be used for breeding purposes.

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