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[home](#) [page](#) [about us](#) [contact](#)

[us](#)

Table of
Contents

IN PRESS

**HORTSCI
2015**

**HORTSCI
2014**

**HORTSCI
2013**

**HORTSCI
2012**

**HORTSCI
2011**

**HORTSCI
2010**

HORTSCI

2009

HORTSCI

2008

HORTSCI

2007

HORTSCI

2006

HORTSCI

2005

HORTSCI

2004

HORTSCI

2003

HORTSCI

2002

HORTSCI

Home

**Editorial
Board**

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for
Authors**

- **Copyright Statement**
- **Fees**
- **Submission**

For Reviewers

- **Guide for Reviewers**
- **Reviewers Login**

Subscription

Horticultural Science

Cultivation of *Cypripedium calceolus* L. *ex vitro* seedlings in outdoor conditions: Short communication

Obdržálek J.:

Hort. Sci. (Prague), 36 (2009): 162-170

[[fulltext](#)]

The paper presents first positive results of the experiment with three-year outdoor cultivation of *Cypripedium calceolus* L. *ex vitro* seedlings in the Czech Republic. They were propagated *in vitro* from mature seeds of Carpathian provenance in a Prague private laboratory. In April 2006 after three months cool refrigerating at 4°C the seedlings were prepared for

planting. The rhizomes with 4 to 12 roots and visible dormant buds were used. They were planted in two types of substrates: mixture AN on the basis of liadrain (burned clay pebbles) and mixture BN on the basis of granodiorite. Both mixtures were amended with perlite, pumice, sand, zeolite and dolomite lime powder. The mineral substrates proved to be stable and convenient for transfer and cultivation of *ex vitro* seedlings. Additional treatment with lignohumate in other two variants of the experiment did not improve the effect. The seedlings were grown outdoors on a shaded bed till the retracting leaves. They overwintered in a cold glasshouse with temperature close to zero from late November to March. The substrates did not visually influence the phase of sprouting, the phase of growth and retracting of the plants. At the end of the third growing season the yield of 4-year-old seedlings with two to four leaves ranged from 83% to 98% in four variants. In November 2008 seedlings were taken up from the mixes and were evaluated as bare root plants. The number of the living plants with visible new buds and the quality of root system were recorded and

evaluated. The average length of roots in mixture A on the basis of liadrain and B on the basis of granodiorite was 14.5 cm and 12.1 cm, respectively. The rhizomes were planted into new mixtures immediately. These seedlings will be able to grow up to the blooming size during two or three seasons. Seven year-old potted seedlings of *C. calceolus* will be planted into gene resource area of the Silva Tarouca Research Institute for Landscape and Ornamental Gardening at Průhonice.

Keywords:

Cypripedium calceolus; *ex vitro* seedlings; cultivation substrates; wintering; sprouting; buds; roots; yield

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