

Want to contribute to the domestication of a novel oilseed crop?

MASTERS PROJECT IN PLANT BREEDING

Meeting the growing demand for vegetable oils for industrial applications require the development of more efficient oilseed crops. Field cress (*Lepidium campestre*) has been targeted for domestication because it holds high agronomic promise as a biennial/perennial oilseed crop as it has many good characteristics of a high-yielding winter-hardy crop. Unlike any other oilseed crop, field cress can be highly productive in the northern parts of temperate regions where rapeseed fails to survive.

In order to improve targeted traits of field cress, close relatives are used in cross-breeding with field cress as a means of introduce genetic variants (alleles) of genes regulating domestication related traits. One of these important traits is oil content which needs to be improved to increase the chances of commercializing field cress as an oilseed crop in the future. *L. graminifolium* is a close relative of field cress with a reported high oil content which could be used to increase the oil in field cress breeding lines. In previous attempts to hybridize these two species, successful fertilization and initiation of embryo development was observed although the embryos were eventually prematurely aborted.

In this project you will use *in vitro* tissue culture approach in order to establish an embryo rescue protocol for field cress and *L. graminifolium*. You need to have an interest and background in plant biology or have some experience in tissue culture. The outcome of this study will have a major impact on the long term goal to Domesticate field cress as a novel crop for the Northern parts of Sweden and beyond.



Project start in September 2020, Department of Plant Breeding, SLU Alnarp. Please contact supervisors Cecilia Gustafsson (cecilia.gustafsson@slu.se) or Mariette Andersson (mariette.andersson@slu.se) for more information.

Learn more about the domestication of field cress (in Swedish): <https://www.ksla.se/aktivitet/faltkrassing/>

