

Effects of planting dates on hypocotyl (root) development and the final yield of Maca (*Lepidium meyenii*)

Status

Completed

Duration

04.2018-03.2019



Description

The present study highlights the effect of different planting time (early, late) on maca hypocotyl development and yield in two growing season (spring & fall). The choice of an optimum planting date could be a good management strategy to enhance maca hypocotyl development under German climatic conditions. Spring season planting revealed no positive results so far regarding hypocotyl development and yield. Stress condition such as high temperature and lower precipitation during critical hypocotyl formation may be responsible for decrease in plant yield. On average, spring results suggests that sowing date 11th April, approximately 27 days before 8th May, could be optimum to avoid crop failure. However, fall growing season showed better results compared to spring season. The results revealed that the early planting is better than late planting to escape yield losses. There was 26.5 % reduction in yield for crop planted late (4th September) compared to early planting (10th August) in fall season. The results we obtained for maca production under German conditions suggest that the range of adaptation of maca is not as narrow as previously assumed, so that it can be successfully produced outside its natural environment. Supplementary irrigation is recommended for maca during early establishment stage. The use of climate smart agriculture principles is encouraged to prevent soil degradation due to erosion occurring during strong rainfall.

Involved persons

Student: Javed Iqbal

First examiner: Prof. Dr. agr. Simone Graeff-Hönninger

Second examiner: Dr. agr. Sabine Zikeli

Supervision: Prof. Dr. agr. Simone Graeff-Hönninger, Dr. agr. Olga Zaytseva, Dr. Meylin Terrel