



MASTER'S DEGREE IN BIOMEDICAL RESEARCH

Research Project Proposal

Academic year 2023-2024

Project Nº 22

Title: Enzymatic and hormonal mechanisms involved in controlling nitrate levels in leafy vegetables.

Department/ Laboratory Facultad Biología, Departamento Biología Ambiental, Grupo BACH

Director 1 MARIA MOVILA MOVILA MOVILA

Contact: mmovila@unav.es

Codirector: Jose M^a Garcia-Mina

Contact: jgmina@unav.es

Summary

The nitrates high content in plants leaves used directly in human food, such as lettuce, chard, spinach etc., potentially harmful for human health, especially in newborn children by blocking the fixation and transport of oxygen in the blood. In adults has been linked to the development of some diseases.

In the BACH group of the Environmental Biology department we have developed a new product formulation and mode of application that allows a very significant reduction of the nitrate content in the leaves of this type of vegetables due to the conversion of nitrate into organic nitrogen.

The main goal of this study will be to determine the mechanism of action, at both levels of enzymatic activity (nitrate reductase, glutamine synthetase, ATPase) and hormonal concentration (AIA, ABA, SA, Ja, M and cytokinins).

The studies will be carried out on leaves of different plant species (spinach and chard), treated and untreated with different doses of the formulation.

yes	
no	x

Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?