

# Evaluation of functional food constituents in organic beetroot (*Beta vulgaris* subsp. *vulgaris* L.) cultivars

## Status

Completed

## Duration

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## Description

Beetroot (*Beta vulgaris* L. subsp. *vulgaris*) has been characterized as a functional food, drawing a lot of interest for its health-promoting and nutritional compounds (e.g. amino acids, vitamins, carotenoids, flavonoids). The beetroot pigments (betalains) and phenols have indicated high antioxidant activities. In addition, beetroot contains nitrate which has demonstrated to reduce blood pressure, prevent cardiovascular diseases and enhance exercise performance.

Therefore, the aim of this research study was to investigate if organic beetroot plants, originated from open-pollinated varieties, contained functional substances that can potentially represent a positive effect on human health. The objective was to assess and compare four organic beetroot cultivars and to identify the single plants with specific biologically active compounds. The beetroot samples were analyzed for their main group of betalains (betacyanin and betaxanthin), the total phenols and nitrate content.

Accordingly, all the tested red beetroot cultivars (NOBOL, BONA, BO-RU-1) contained high levels of betalains and phenols, reporting a positive correlation between the antioxidants. Furthermore, no correlation was identified between nitrate and antioxidants among all the tested beetroot cultivars. These results can be further used for the selection of single plants in the organic breeding programs for the development of new cultivars with high antioxidants and nitrate values as a functional food.

## Involved persons

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