

Effects of organic and conventional cultivation methods on composition of eggplant fruits.

[Raigón MD](#), [Rodríguez-Burruezo A](#), [Prohens J](#).

Source

Departamento de Química, Universidad Politécnica de Valencia, Camino de Vera 14, CP 46022 Valencia, Spain.

Abstract

Organic food is associated by the general public with improved nutritional properties, and this has led to increasing demand for organic vegetables. The effects of organic and conventional cultivation methods on dry matter, protein, minerals, and total phenolic content has been studied for two successive years in two landraces and one commercial hybrid of eggplant. In the first year, organically produced eggplants had higher mean contents (expressed on a fresh weight basis) of K (196 vs 171 mg 100 g(-1)), Ca (11.1 vs 8.7 mg 100 g(-1)), Mg (6.0 vs 4.6 mg 100 g(-1)), and total phenolics (49.8 vs 38.2 mg 100 g(-1)) than conventionally grown eggplants. In the second year, in which matched plots having a history of organic management were cultivated following organic or conventional fertilization practices, organically produced eggplants still had higher contents of K (272 vs 249 mg 100 g(-1)) and Mg (8.8 vs 7.6), as well as of Cu (0.079 vs 0.065 mg 100 g(-1)), than conventionally fertilized eggplants. Conventionally cultivated eggplants had a higher polyphenol oxidase activity than organically cultivated ones (3.19 vs 2.17 enzyme activity units), although no differences in browning were observed. Important differences in mineral concentrations between years were detected, which resulted in many correlations among mineral contents being significant. The first component of the principal component analysis separates the eggplants according to year, whereas the second component separates them according to the cultivation method (organic or conventional). Overall, the results show that organic management and fertilization have a positive effect on the accumulation of certain beneficial minerals and phenolic compounds in eggplant and that organically and conventionally produced eggplants might be distinguished according to their composition profiles.

PMID:

20443597

[PubMed - indexed for MEDLINE]