

# Antioxidant and Antimutagenic Activities of Organic Green Vegetables

## Background and methodology:

Foods not only supply us with nutritive components which are indispensable for maintaining a healthy daily life, but also contain many different types of biofunctional constituents, which help us keep our bodies in good physical and mental condition. Epidemiological studies have revealed that cancer incidences in populations eating lots of vegetables and fresh fruits on a daily basis were considerably lower than in those eating less vegetables and fruits. Pesticide free and organically grown vegetables have improved taste, much longer post-harvest shelf-life. Vegetables from organically and conventionally cultivated farms were analyzed to determine their antioxidative and antimutagenic activities and chemical content of polyphenols.

## Findings:

The antioxidative activity shown by organic vegetables was 120% time higher than that shown by conventional vegetables. In comparison with conventional vegetables, the antimutagenic activity shown by organic vegetables was higher. Among all green vegetables juices tested for flavonoid composition, quercitrin, caffeic acid and baicalein in organic vegetables were detected in concentrations 1.3-10.4 times higher than those found in conventional vegetables suggesting the influence of different cultivation practices.

## Reference:

Ren, H. Endo, H. & Hayashi, T. (2001). Antioxidant and antimutagenic activities and polyphenol content of pesticide-free and organically cultivated green vegetables using water soluble chitosan as soil modifier and leaf surface spray. *Journal of the Science of Food and Agriculture* 81:1426-1432.