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Czech J. Food Sci.

**Totušek J., Tříška J.,
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**Contents of
sulforaphane and total
isothiocyanates,
antimutagenic activity,
and inhibition of
clastogenicity in pulp**

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The consumption of *Cruciferous* vegetables is important for the prevention of cancerous diseases, particularly colorectal cancer. The effects of technological treatments (freezing, pasteurisation, high-pressure treatment) on the content of isothiocyanates, considered to be the active substance, were observed in single-species vegetable juices prepared from

cruciferous vegetables (broccoli, cauliflower, Brussels sprouts, white and red cabbage). The contents of sulforaphane and total isothiocyanates were studied relative to the temperature, action period, and time delay after juice pressing. Sulforaphane and total isothiocyanates were determined by HPLC. Sulforaphane content in various parts of fresh broccoli was also assessed. Antimutagenic activity of the juices (frozen, pasteurised, and high-pressure treated) was evaluated using the Ames test and the following mutagens: AFTB1 (aflatoxin B1), IQ (2-amino-3-methyl-3H-imidazo-[4,5-f]quinoline), and MNU (2-nitroso-2-methylurea). Clastogenicity inhibition of the mutagens, in response to broccoli juice, as well as of pure sulforaphane, was observed using an *in vivo* experiment (the micronucleus test). It was shown that in terms of sulforaphane content, it is best to let broccoli juice stand for 60 min after pressing and pH adjustment. Sulforaphane content does