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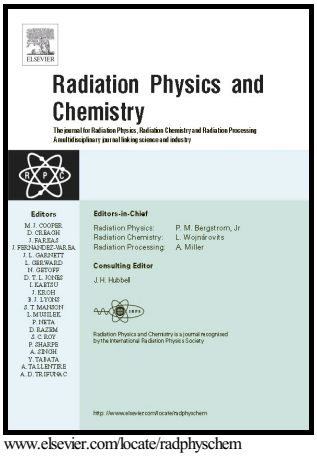

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ABSTRACT

This paper describes the use of gas chromatography/mass spectroscopy (GC/MS) using static headspace sampling for the determination of furan in irradiated fruit and vegetable juice. The data presented demonstrate that furan is generated in juice as a result of treatment with ionizing radiation, but at low part-per-billion concentrations. The amount of furan increases with increasing dose in a non-linear second order relationship. Furthermore, it was found that furan interacts with the ionizing radiation in such a way that the amount of furan can be reduced in the absence of precursor compounds commonly found in juice products. Several possible precursors have been identified, including glucose, fructose, and ascorbic acid. We conclude that the formation of furan is complex and proceeds through a multi step process.

Keywords: furan, food irradiation,