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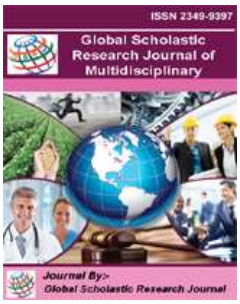

EFFECT OF LOW-PRESSURE COLD PLASMA ON SENSORY QUALITY AND POLYPHONOLS CONTENT OF SPICES

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Abstract

In this study, we evaluated the effect of cold plasma, generated under vacuum (Cold Plasma Vacuum – CPV), on the content of polyphenols and sensory properties of thyme, marjoram, basil, rosemary, cinnamon, ginger, ground black pepper, ground cayenne pepper, sweet pepper, and turmeric. The study demonstrated that during CPV the temperature of the spices did not increase, but their water content decreased significantly. The plasma process resulted in a decreased intensity of aroma of all spices, in changed color of cayenne and sweet pepper, as well as in changes of polyphenols content. In the case of basil, rosemary, turmeric, black pepper, cinnamon and marjoram, the content of polyphenols expressed per gallic acid equivalents was observed to increase, whereas in sweet and cayenne pepper, thyme and ginger – to decrease. It points to the complexity of phenomena that proceed in spices treated with cold plasma. The above results indicate that sterilization with the use of cold plasma, generated under vacuum, is not a useful technology mainly due to reduction of the characteristic aroma of spices.

Key words: plasma, spices, pressure, cayenne pepper

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