

- **Determination of sulphur and nitrogen compounds during the processing of dry fermented sausages and their relation to amino acid generation**

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Abstract:

The identification of odor-active sulfur and nitrogen compounds formed during the processing of dry fermented sausages was the objective of this study. In order to elucidate their possible origin, free amino acids (FAAs) were also determined. The volatile compounds present in the dry sausages were extracted using solvent assisted flavor evaporation (SAFE) and monitored by one and two-dimensional gas chromatography with different detectors: mass spectrometry (MS), nitrogen phosphorous (NPD), flame photometric (FPD) detectors, as well as gas chromatography–olfactometry. A total of seventeen sulfur and nitrogen compounds were identified and quantified. Among them, 2-acetyl-1-pyrroline was the most potent odor active compound, followed by methional, ethylpyrazine and 2,3-dihydrothiophene characterized by toasted, cooked potato, and nutty notes. The degradation of FAAs, generated during processing, was related to the production of aroma compounds, such as methionine forming methional and benzothiazole while ornithine was the precursor compound for 2-acetyl-1-pyrroline and glycine for ethylpyrazine.

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