The undesirable flavor of yeast extracts

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Outline

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   - n-Octanal, Acetic acid, Butyric acid, Guaiacol, etc.
3. Bitter taste substances
   - Amino acids: Tyrosine, Lysine, Leucine
   - Peptides
4. Changes after heat treatment of yeast extracts
5. Conclusion

Abstract

Yeast extracts (YEs) has been widely used in the food seasoning due to their tastes and rich aroma substances. However, bitter taste in YEs has influenced its acceptance. The objective of the research was to study the key yeasty odor compounds of YEs and changes in bitter taste substances during thermal treatment to provide useful informations for quality control. YEs with different strains, enzymes, enzymatic hydrolysis processes and heat treatment were analyzed by sensory analysis, gas chromatography-olfactometry-mass spectrometry (GC-O-MS) and aroma extract dilution analysis (AEDA). After that, the treatment of LA00 at thermal treatments (25, 100, 110, 120, 130, 140 ℃) were measured of peptides and amino acids by reversed-phase high-performance liquid chromatography (RP-HPLC) and taste dilution analysis (TDA). The results showed yeasty odor was combination of burnt, sour, astringent, rancid, sweat, gasoline and fatty notes. The key compounds were acetic acid, propionic acid, butyric acid, isovaleric acid, *n*-octanal, guaiacol, styrene and sterol. Producing LA00 the strongest bitterness at 130 - 140 °C, and bad taste substances were Arg-Leu, Phe-Thr, Phe-Gln, Pro-Leu, Tyr, Lys and Leu. Because YEs produced from FX-2 strain and consist of cell wall developed strong off-flavor. Paste YEs, reducing heat and enhancing enzymatic hydrolysis process were chosen to prevent yeasty odor for use in seasoning. Heating of YEs developed undesirable bitter peptides and amino acids at 130 - 140 ℃, and at 120 ℃ for 1 h is a suitable condition to develop good flavor.

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