

3836475 SCBT/M : MAJOR : BIOTECHNOLOGY; M.Sc.(BIOTECHNOLOGY)

KEY WORD : YEAST EXTRACT / YEAST AUTOLYSIS / FLAVOR
CHARACTERISTIC / YEAST STRAIN / FERMENTATION
CONDITION

AKARAT SUKSOMCHEEP : EFFECTS OF YEAST STRAIN AND
FERMENTATION CONDITIONS ON FLAVOR CHARACTERISTICS OF
AUTOLYZED YEAST EXTRACTS. THESIS ADVISOR : MANOP
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CHAUVAATCHARIN, Ph.D. 169 p. ISBN 974-661-471-1

There is an increasing demand for yeast extract in the food industry. Yeast extracts are nutritional, safe, have good flavor characteristics may act as flavor enhancer. They can be used to (partially) replace MSG. There are a large number of factors which effect the flavor characteristics of yeast extract. Yeast strain and fermentation condition (medium composition) are factors studied in this report.

Three strains of Generally Recognized As Safe (GRAS) status yeasts, i.e. *Saccharomyces cerevisiae* (or baker's yeast), *Kluyveromyces marxianus* and *Candida utilis* were used in this work. These yeasts were individually grown in a bioreactor by fed-batch cultivation with 2 different culture media, i.e. minimal or molasses media, respectively. Yeast biomass was autolyzed under optimal conditions of 15% solids, pH 5.0, 50 °C, agitation speed of 200 rpm for 24 hours. Yeast extracts were concentrated with a vacuum evaporator to 30% solids. Volatile compositions of a concentrated yeast extract (about 50 gram dry weight) were extracted by a steam distillation-solvent extraction method and analyzed by gas chromatography. Yeast extract samples were also evaluated by sensory evaluation, i.e. triangle test and scoring intensity test. GC analysis and triangle test show that flavor characteristics of yeast extracts, produced from the different yeast strains or even the same strain but grown on different culture medium, are significantly different from each other. Scoring intensity test data show that the extract of yeasts, grown on minimal medium have the highest score for yeast extract flavor.