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yeast-extract peptone glucose

/ ()

(/)% /

(/)% /

Production and Optimization of Bio-Ethanol By *Saccharomyces Cerevisiae* Yeast in Small Scale (Microfermentation)

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Abstract

Bio-ethanol at laboratory level was produced via new, fast and small-scale method by means of different species of *Saccharomyces cerevisiae*. In this method, the yeast cells were grown in broth yeast-extract peptone glucose medium. Then, distinct volume of yeast suspension was transferred to specific fermentation medium that contained glucose, urea and peptone in 1.5 ml capped microfuge tubes. All microfuge tubes that contained fermentation medium and yeast cells were placed in specific rack and were incubated at 30°C with 120 rpm for 5 days. After this period, production content of bio-ethanol was assayed by modified distillation-colorimetric method. The basis of this method is oxidation of ethanol by sulfuric acid- potassium dichromate mixture. In micro-fermentation method, yeast cells were capable to produce maximum 5.1% (W/V) bio-ethanol. The above content reached 6.2% (W/V) after optimization by statistical Taguchi method.

Keywords: Bio-ethanol, Micro-fermentation, *Saccharomyces cerevisiae*, Taguchi method.

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(Baker yeast)

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(Recombinant proteins)

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μL μL
(% / % %)

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rpm °C Mobini,)
(et al. 2007
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.()

Lesaffre S.I.

y.4-5 y.4-1 y.3-5 y.3-1

°C

yeast-extract chloramphenicol agar

μL

μL

%) yeast-extract peptone glucose (YPG)

(% %

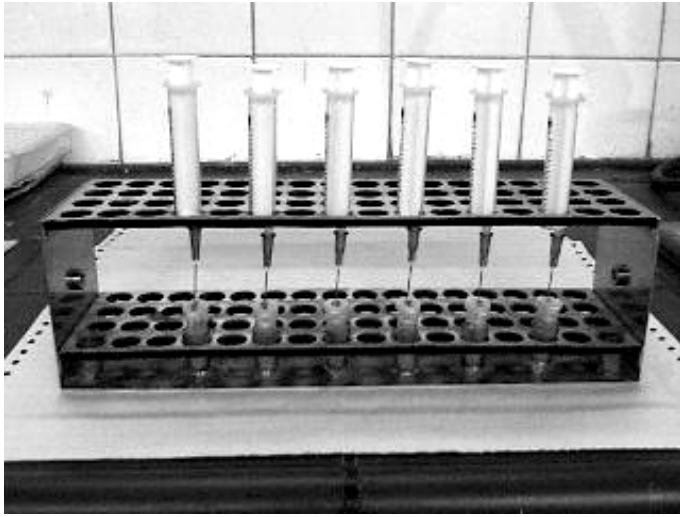
°C

(rpm)

μL

YPG

.()



()

($P < 0.05$) %

t-test

y.3-4 y.3-3

(Taguchi)

% / (/)
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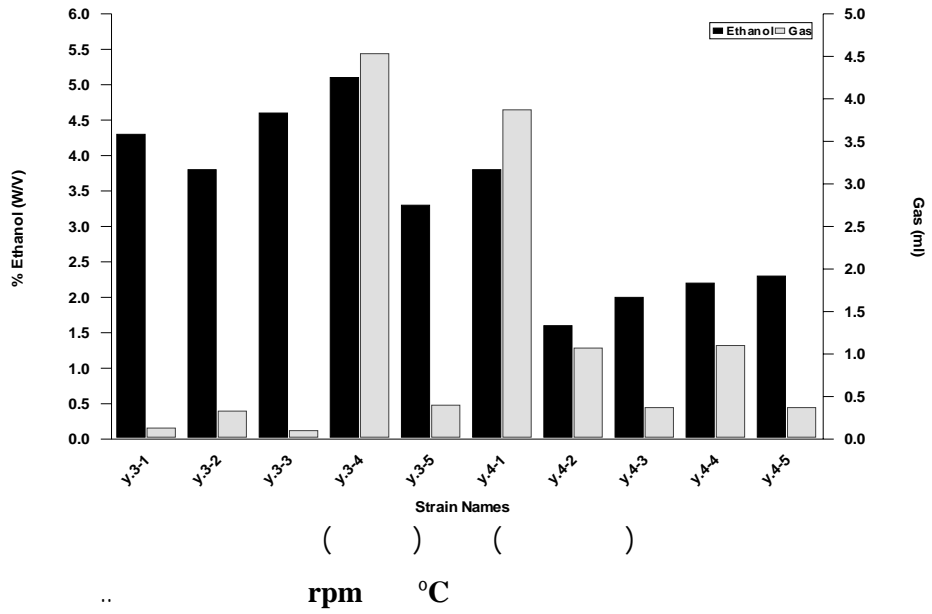
y.3-4

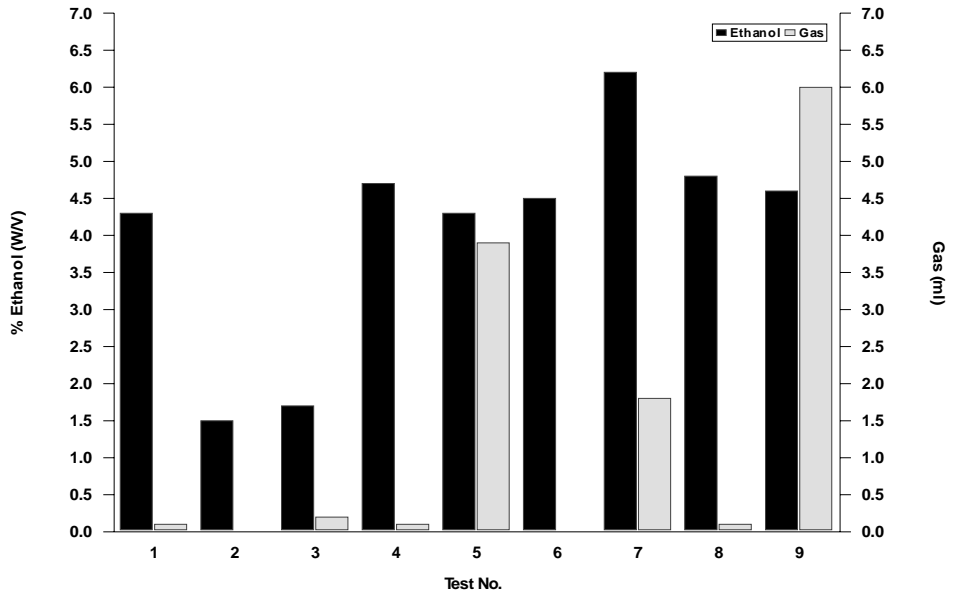
y.3-4

L9

+	+	+	+
+	+	+	+

L9





() L9
rpm °C y.3-4

(% W/V)	(% W/V)	
/	/	y.3-4

(P<0.05) %
/ (P<0.01) %
/ / (/)% /
% /
% ()
YPG (P<0.01)

.()

.()

Cruz

.()

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