

GENERAL CERTIFICATE OF SECONDARY EDUCATION

TWENTY FIRST CENTURY SCIENCE

ADDITIONAL SCIENCE A

Unit A154: Controlled assessment

A154

BIOLOGY A

Unit A164: Controlled assessment

A164

Factors that affect the rate of fermentation

Information for Candidates (1)

To be issued to candidates at the start of the task.

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Information for candidates

You are going to carry out an investigation on a factor that affects the rate of fermentation in yeast.

Background

The world production of ethanol is around 70 billion litres per year. Alcohol is important as a fuel, as a foodstuff and as a feedstock for the chemical industry. By far the biggest use of alcohol is as a fuel.

Only around 5% of the ethanol produced is produced synthetically. The rest is produced by a biological process – fermentation. The main organism used to produce ethanol is a species of yeast called *Saccharomyces cerevisiae*. In the absence of oxygen, yeast respire anaerobically. It ferments various sugars to produce ethanol and carbon dioxide.

It is important that commercial companies that produce alcohol by fermentation do this quickly and efficiently.

You will choose a factor and investigate this factor's effect on the rate of fermentation of yeast.

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