

Respiratory quotient and respiration practicals

Define respiratory quotient (RQ).

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Typical RQ values for carbohydrate, protein and lipid?

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What might an RQ above 1.0 suggest?

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Why does a redox indicator such as methylene blue decolourise in yeast?

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In Core practical 15, what is measured as the dependent variable?

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What does potassium hydroxide do in a respirometer?

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How is the volume of oxygen consumed found from a respirometer capillary?

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Why is a control tube used in a respirometer?

Carbohydrate about 1.0, protein about 0.9,
lipid about 0.7.

The volume of carbon dioxide produced
divided by the volume of oxygen consumed
in a given time.

It accepts hydrogen from dehydrogenase
enzymes in place of NAD, so it is reduced
and loses its colour.

More CO₂ than O₂ is exchanged, so some
anaerobic respiration may be occurring.

It absorbs CO₂, so fluid movement shows
the volume of O₂ consumed.

The time taken for the redox indicator to
lose its colour.

To allow for temperature and pressure
changes in the apparatus that are not due to
respiration.

Volume = $\pi r^2 \times$ distance moved by the fluid.