A Plan to Investigate the effect of light wavelength on the rate of photosynthesis.

Plan

Method

Take a 250cm^3 beaker and fill it with distilled water. Use distilled water so there are no impurities to disrupt photosynthesis. Then take x cm's of elodia and put it in the beaker. Cover the elodia with the large end of a funnel and the tip of the funnel cover with a test tube. Then direct a light onto this experiment. Measure the amount of bubbles that come from the elodia for x minutes.

A prediction for this experiment would be that as different wavelengths are tested the rate of photosynthesis will either increase or decrease. Photosynthesis will also speed up when the light is lighter (yellow) than when it is darker (brown).

The equipment used, the same as above, will be a 250cm^3 beaker, a funnel, one test tube, distilled water, elodia and a light. To give off different colours of light, see through coloured paper, as used in theatres to cover lights, will be used. A counter could be used to count the number of bubbles coming from the elodia. A new piece of elodia needs to be used every time a new coloured light is used and it must be the same length every time.

Many aspects must be taken into account during this experiment to make it fair. The temperature must be kept constant. To do this no natural light must get in and an average of temperatures must be taken at different times in case it changes. The size of the plant used must always be the same so it is a fair test. The intensity of the light must always be the same so the power level must be the same and a new bulb could be used each test so the filament in the bulb is always at the same level at the start of each test. Carbon dioxide levels must try and be kept level. This would be very hard to do with the range of equipment given so we can only guess and hope it is at the same level. The only aspect that can be changed is the wavelength.
To get a good and accurate results table I will take a range of results. First of I will do the same experiment 2-3 times. This is so I can take an average of the results. This is a good idea because I can see if my experiment is working properly (about the same results each time) and so I'm not just going on something I've seen once but a few times. The same idea of experiment will be done for each different colour of light. Different colours will be used going from light to dark. Hopefully they will be: white, yellow, orange, green, red, blue and black. This experiment will probably take quite a bit of time but a number of clear and high-quality results will be produced.

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