Algae Scrubbers

Our idea to help get rid of the growing problem of global warming is to use an easy to make, well working algae scrubber which will be able to be used in every home. If everyone was able to help out with at least a little bit of CO2 outputs, then the amount of yearly output of CO2 would be decreased incredibly. This might also help take some of the stress off the atmosphere's large amount of CO2.

The Algae scrubber has very few complex parts, and is very easy to understand. It is made from these parts: a 2 liter bottle, 4-6 in. tubing, and an aquarium bubbler. The bottle is used to hold the algae, and nutrients for the algae to live on. The tubing is used to get CO2 and oxygen to and from the bottle. The tubing is hooked into or onto the aquarium bubbler, forcing CO2 and oxygen through the tube, into the bottle, and feeding the algae CO2 to photosynthesize. The idea is fairly simple to understand, until it comes to the photosynthesis. We incorporated photosynthesis into our project because it is a natural way to rid the world of some CO2. We decided that this was a good idea because there is so much algae in the world, and nobody wants, or knows how to use it for anything other than food in some other countries. At first, we tried to have the CO2 pumped into the bottle through the bottom, and come out the top, to be caught by a balloon. We had to revise this idea because the only thing being caught was the CO2 just floating to the top and into the balloon. Our next plan was to force CO2 through the top. This was slightly problematic, because we had no real way to "catch" the newly made oxygen, plus, we needed a way to make sure that the gas being released was oxygen, and not just remnant CO2. We did this by using a match, barely on flame, and put it into the presence of the balloon's output gas. When it flared, we knew that it was oxygen coming from the balloon, because the main fuel for a fire is something to burn, which, in this case, was oxygen from the balloon which was connected to our output of the algae scrubber. The newest way we came up with to detect the oxygen and carbon dioxide differentiations is to use a chemical solution called Bromothymol Blue. This chemical changes colors depending on the amount of carbon dioxide in the presence of this substance. It starts out yellow, when little amounts of carbon dioxide are in the presence, but it

changes to blue as more and more CO2 enters the area of this chemical. So, we would put a small amount of bromothymol blue into the bottle with the algae.

The idea of using algae based carbon scrubbers has been tossed around for a very long time. Many scientists have been working with the idea of an algae scrubber, and have tried to use them in many different iterations, models, and using different techniques. Some scientists have had little, to no success at all, while some scientists have perfected their model, and use them now!

Using many different methods, and items will completely change the way the world is thinking right now. People will not have to worry as much if they help aid the reduction of global warming. The polar ice caps will cease melting more and more, the temperature will tend to go back to its normal state, and many issues related to exhaust fumes from factories will be the main focus. Instead of the hundreds of minor things we can do to help reduce global warming effects.

Keeping up with your algae scrubber is very easy. You know when your algae scrubber is "full", when it has outgrown its bottle. When your algae scrubber cannot go through photosynthesis anymore, you can bury it. Don't bury all of it, so that the algae can continue photosynthesizing. This is a completely CO2 free way of getting rid of the used algae.

With this simple and effective idea we can reduce the amounts of CO2 in the atmosphere. We can even turn this mundane idea and bring in to a larger scale, and have the whole world help us to reduce this major problem. We can also use other ideas to help reduce our problem of global warming.

Citations:

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