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Submission date: 10-Dec-2020 01:20PM (UTC-0500)

Submission ID: 1471174907

File name: The_Effects_of_Increasing_Carbon_Dioxide.docx (17.25K)

Word count: 761

Character count: 4116

The Effects of Increasing Carbon Dioxide

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The Effects of Increasing Carbon Dioxide

Carbon dioxide is a gas that sucks up and discharges heat and one of the popular greenhouse gases. The concentration of carbon dioxide in the atmosphere has been on the rise since the mid-1900s (Bashir et al., 2018). This rise in the atmospheric concentration of carbon dioxide is expected to continue if nothing is done. Mostly, the rise of carbon dioxide affects plants, however, it also affects climate change. The world's average carbon dioxide concentration in the atmosphere was 409.8 parts per million as of the year 2019 (Hoegh-Guldberg et al., 2018). Today's concentration levels are way much higher compared to any other time before. Carbon dioxide concentration rise is attributed to fossil fuels such as oil carrying carbon and coal which people burn to produce energy.

Carbon dioxide is a very significant gas when it comes to plants' metabolism. Plants consume carbon dioxide from the atmosphere thus, reducing the carbon chemically. This not only gives carbon skeletons for molecules that are organic which create a plant's structure but also constitutes an accession of stored chemical energy for the crop. Therefore, photosynthesis is the main process for a plant's nutritional metabolism, thus, an increase in carbon dioxide will have extreme effects on the process of plant growth together with the various aspects of physiology in plants (Ainsworth et al., 2020).

The most compatible effects of increasing carbon dioxide on plants is the escalation of photosynthetic carbon fixation by plant leaves. Photosynthetic rates are increased by an average of 40%. The exchange of gases in plants takes place in the stomata. Thus, regulation of the degree of opening of the stomata is done by plants as a trade-off between the aim of keeping low rates of water loss and photosynthetic high rates. The measure of a high degree of stomatal opening is known as stomatal conductance. Low stomatal conductance is achieved when there is

an increase in carbon dioxide concentration in the atmosphere resulting in plants maintaining higher photosynthetic rates.

Increased carbon dioxide has numerous effects on the climate, however, the most popular effect being global warming. Global warming may be responsible for the most severe climatical outcomes and risks globally. If a small amount of increase in carbon dioxide is capable of bringing severe effects globally, imagine what could happen if its concentration would double (Bashir et al., 2018). Hence, controlling the gas's emission is necessary to limit its effects when it comes to global warming. Currently, according to scientists, carbon dioxide levels have risen than at any time in history. Thus, there has been an increase in the earth's surface temperature.

Carbon dioxide forms a blanket in the atmosphere which absorbs radiated heat thus keeping the earth's surface warmer than usual. For that reason, increasing carbon dioxide in the atmosphere will result in a higher earth's surface temperature (Hoegh-Guldberg et al., 2018). The average weather pattern would change as a result of this. It is necessary to engineer various ways to limit the amount of carbon dioxide increased in the atmosphere. Such ways include reduced use of coal and oil containing carbon. Most countries are venturing into renewable energy which reduces carbon dioxide amount released into atmosphere. This is one of the major measures that have a positive outcome with regards to increasing carbon dioxide concentration (Bashir et al., 2018).

These effects related to the increase in carbon dioxide concentration in the atmosphere could become severe over the years if not controlled. Thus, significant measures should be taken to reduce the ever-increasing levels of this greenhouse gas. Global warming is one of the common climatic changes that come as a result of high carbon dioxide concentration in the atmosphere and it can seriously affect human beings, plants and the environment at large.

Countries working together globally will have positive effects in mitigating the effects of high atmospheric concentration of carbon dioxide compared to working individually.

References

- Ainsworth, E. A., Lemonnier, P., & Wedow, J. M. (2020). *The Influence of Rising Tropospheric Carbon Dioxide and Ozone on Plant Productivity*. *Plant Biology*, 22, 5-11.
- Bashir, M. R., Atiq, M., & Mohsan, M. (2018). *The Increasing Carbon Dioxide (CO₂) Due to Global Climate Change Strengthens the Plants and Inhibits Pathogenic Infection*. *Environmental Science and Pollution Research*, 25(27), 26850-26851.
- Hoegh-Guldberg, O., Jacob, D., Bindi, M., Brown, S., Camilloni, I., Diedhiou, A., ... & Hijioka, Y. (2018). *Impacts Of 1.5 C Global Warming on Natural and Human Systems*. *Global Warming Of 1.5° C*. An IPCC Special Report.

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