The Impact of Ozone Pollution on the Growth, Health, and Physiological Development of Food Crops

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The purpose of this experiment is to determine the effects of ozone pollution on the health and physiological development of food crops. Ozone pollution will have an effect on the health and physiological development of food crops. Six tomatoes, 8 eggplants, and 8 bell peppers were exposed to ozone for 7 hours a day for 5 consecutive days by placing them in a sealed plastic exposure chamber with a battery powered circulation fan while ozone was Generated into the container. The ozone concentration averaged 325 ppb for the exposure period. Each day after the 7 hours of exposure, the photosynthetic rate was measured with a SPAD meter. After 5 days of exposure, the eggplants showed immediate visual damage to the leaves. However, seven days after the last exposure the bell pepper and tomatoes also showed visual damage such as stunted growth and necrotic tissue on the surface of the leaves. The bell pepper and tomatoes showed no significant evidence of ozone affecting their photosynthetic after any of the 5 days of exposure. The eggplants, however, showed significant evidence of ozone affecting the photosynthetic rate after day 5. By understanding the effects of ozone on food crops, farmers can be aware of symptoms and the harmful effect of air pollution on our food supply.

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