

증가된 CO₂의 식물에 미치는 O₃ 피해 완화

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Elevated CO₂ Mitigates O₃ Impacts on Plants

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Plants are influenced by important environmental factors such as global climate change caused by human activities. Especially, climate change and air pollutant are seriously threatening agriculture plants. Many studies have focused on the response of plants under climate change, but the interactive effects of air pollution and climate change are poorly studied. According to Intergovernmental Panel on Climate Change (IPCC), the atmospheric CO₂ concentration is projected to increase between 580 and 700 ppm by the end of this century. Along with CO₂, tropospheric O₃ is predicted to increase 20% more by 2050. This review aimed to study response of agricultural plants under elevated carbon dioxide (CO₂) and ozone (O₃). Elevated CO₂ effects the plant growth by increasing in net photosynthesis rate and may affect the cell cycle by enhancing the carbohydrates of the plants. Elevated CO₂ may have positive effects on plants. However, O₃ enters leaves through the stomata and generate reactive oxygen species (ROS) which decrease net photosynthesis rate and chlorophyll contents. Interactive impacts of CO₂ and O₃ can occur in agriculture system. In combination, elevated CO₂ can prevent or delay negative effects of O₃ on agricultural plants by decreasing stomatal conductance.

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