

(別紙様式 14)

2015 年 8 月 3 日

## 論文の内容の要約

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学位の種類	博士 (農学)
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指導を受けた大学	東京農工大学
学位論文名	Experimental study on the effects of ozone and salinity, singly and in combination, on growth, yield and leaf gas exchange rates of two Bangladeshi wheat cultivars

## 【論文の内容の要約】

To clarify the effects of O<sub>3</sub> and/or soil salinity on Bangladeshi wheat cultivars, BAW1059 and Shatabdi were exposed to charcoal-filtered air or O<sub>3</sub> at 1.0 and 1.5 times the ambient concentration and three levels of soil salinity at 0, 4, and 8 dS m<sup>-1</sup> in gas exposure chambers. No significant interactions among O<sub>3</sub>, salinity and cultivar were detected in the whole-plant dry mass, yield, leaf gas exchange rates and photosynthetic components. In both cultivars, the whole-plant dry mass, grain yield, leaf gas exchange rates and photosynthetic components were significantly reduced by the exposure to O<sub>3</sub>. Increased soil salinity caused significant reductions in the whole-plant dry mass, yield and leaf gas exchange rates in Shatabdi, but the reductions were negligible in BAW1059. Salinity significantly increased photosynthetic components in BAW1059, but decreased in Shatabdi. The sensitivity to O<sub>3</sub> varied between vegetative and anthesis growth stages. In both growth stages, BAW1059 showed better detoxifying capacity against salinity-induced reactive oxygen species in the leaves than Shatabdi. No significant interaction among O<sub>3</sub>, salinity and cultivar was detected in leaf gas exchange rates, activities of radical scavenging enzymes and concentrations of antioxidants except for glutathione.