

5. Journal of Ozone: Science & Engineering

Volume 26, 2004 - Issue 5, Pages 517-521

Original Articles

Research Note: Inactivation Efficiency of Ozonated Water for *Fusarium oxysporum* Conidia Under Hydroponic Greenhouse Conditions

研究ノート：水耕温室条件下での *Fusarium oxysporum* 分生子に対するオゾン化水の不活性化効率

Noriyuki Igura, Masatoshi Fujii, Mitsuya Shimoda & Isao Hayakawa

ABSTRACT

Ozonated water was used for inactivation of *Fusarium oxysporum* conidia in sterilized water and inorganic soil-less nutrient medium at different treatment temperatures. *F. oxysporum* conidia were effectively inactivated in both water and nutrient media and the inactivation curves were almost same at 15°C, 25°C and 30°C. Approximate 4-log orders of *F. oxysporum* conidia were killed when the ozonated water with initial ozone concentration of 1.0 ppm had been used. The surviving curves, however, were characterized by a tailing-off effect, and the effect was related to the residual ozone concentration in the ozone treated suspensions.

オゾン水を滅菌水および無機の無土壌栄養培地中で異なる処理温度で *Fusarium oxysporum* 分生子の不活性化に使用した。*F. oxysporum* 分生子は水と栄養培地の両方で効果的に不活性化され、不活性化曲線は 15°C、25°C および 30°C でほぼ同じであった。初期濃度 1.0 ppm のオゾン水が使用されたとき、おおよそ 4・ログオーダーの *F. oxysporum* の分生子が殺されました。しかしながら、残存曲線はテーリングオフ効果によって特徴付けられ、その効果はオゾン処理懸濁液中の残留オゾン濃度に関連していた。

Keywords: Ozone, *Fusarium oxysporum*, Greenhouse Conditions, Hydroponic Greenhouse, Agricultural Applications

キーワード：オゾン、*Fusarium oxysporum*、温室条件、水耕温室、農業への応用