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Effect of ozone on sterilization of Penicillium digitatum using non-equilibrium atmospheric pressure plasma TAKAYUKI OHTA, SACHIKO ISEKI, MASAFUMI ITO, Wakayama University, HIROYUKI KANO, NU EcoEngineering Co., Ltd., YASUHIRO HIGASHIJIMA, NU System Co., Ltd., MASARU HORI, Nagoya University — Methyl bromide has been sprayed to the crops for protecting from insects and virus, but has high ozone depletion potential. Thus, the development of substitute-technology has been strongly required. We have investigated a plasma sterilization for spores of Penicillium digitatum, which causes green mold disease of the crops, using non-equilibrium atmospheric pressure plasma. The sterilization was caused by UV light, ozone, O and OH radicals. In this study, ozone density was measured and the effect to sterilization was discussed. The plasma was generated at an alternative current of 6kV and Ar gas flow rate of 3L/min. In order to investigate the sterilization mechanism of ozone, the absolute density of ozone was measured using ultraviolet absorption spectroscopy and was from 2 to 8 ppm. The sterilization by this plasma was larger than that by the ozonizer (0_3:600ppm). It is confirmed that the effect of ozone to the sterilization of Penicillium digitatum would be small.

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