

Abstract Submitted  
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**Influence of Atmospheric Pressure Torch Plasma Irradiation on Plant Growth** YUSUKE AKIYOSHI, NOBUYA HAYASHI, Saga University, SATOSHI KITAZAKI, KAZUNORI KOGA, MASAHARU SHIRATANI, Kyushu University — Growth stimulation characteristics of plants seeds are investigated by an atmospheric discharge irradiation into plasma seeds. Atmospheric pressure plasma torch is consisted of alumina ceramics tube and the steel mesh electrodes wind inside and outside of the tube. When AC high voltage (8 kHz) is applied to the electrode gap, the barrier discharge plasma is produced inside the alumina ceramics tube. The barrier discharge plasma is blown outside with the gas flow in ceramics tube. Radish sprouts seeds locate at 1 cm from the torch edge. The growth stimulation was observed in the length of a stem and a root after the plasma irradiation. The stem length increases approximately 2.8 times at the cultivation time of 24 h. And the growth stimulation effect is found to be maintained for 40 h, after sowing seeds. The mechanism of the growth stimulation would be the redox reaction inside plant cells induced by oxygen radicals.

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