

## Plasma treatment for agriculture applications

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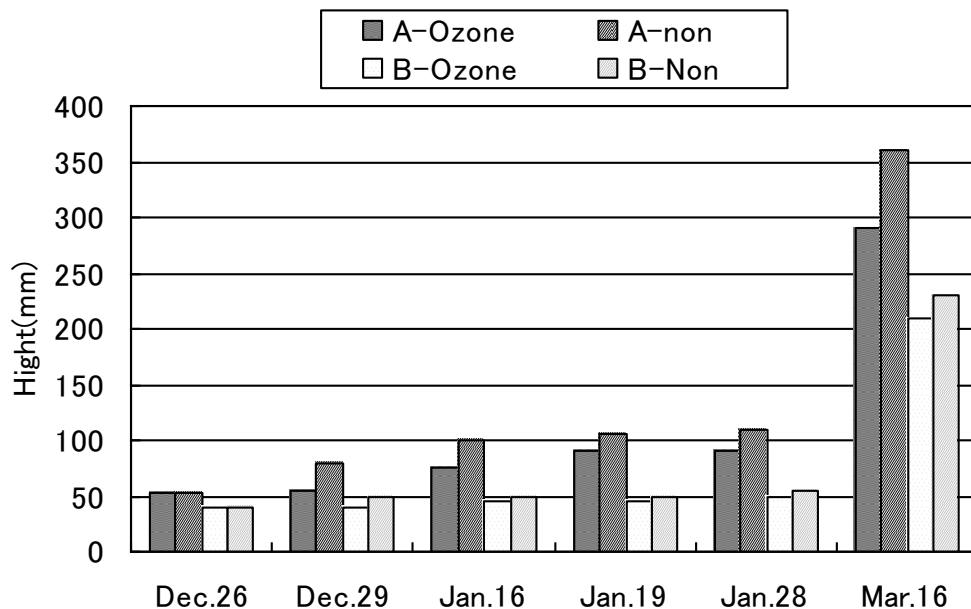
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Nonthermal plasmas are emerging and promising methods for sterilization. They have achieved great progress in recent years. It has been found that many kinds of plasmas can kill vegetative forms, spores and fungi, efficiently.

Influence of ozone in air and soil on seeds' and plants' development was broadly investigated by numerous researchers. Results highly depended on the kind of plant and were sometimes contradictory. Seedlings and seeds of chinese cabbage (*Brassica pekinensis*), Garland chrysanthemum (*Chrysanthemum coronarium*), muskmelon (*Cucumis melo*), tomato (*Solanum lycopersicum*) and spinach (*Spinacia oleracea*) were placed in separated containers with pre-ozonized soil and with non-ozonized soil, respectively. Soil ozonation influenced plants' growth in various ways. There was 24% of growth inhibition after 79 days in the case of cabbage due to decreasing pH of soil and parallel elimination of microorganisms useful for soil enrichment.

Results of young seedlings of chinese cabbage (A) and crown daisy (B) growth after the 20 minutes of soil decontamination with  $100\text{gO}_3/\text{m}^3$  are depicted in Figure 1.

Improvement of growth was observed in the case of melons, tomatoes and plants', for which environmental stress has a beneficial influence on growth and fruit formation.



**Figure 1.** Chinese cabbage (A) and crown daisy (B) growth experiment.

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