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Sterilization of soybean powder with plasma treatment in atmospheric humid air R. IWAMI, Y. KIKUCHI, N. FUKUMOTO, M. NAGATA, University of Hyogo, A. NAKAYAMA, K. NAKAGAWA, Ako Kasei Co. Ltd. — Sterilization of foods has been performed by conventional methods such as heat, steam and chemical solutions. However, these sterilization techniques could cause damages to the food material. It is considered that plasma sterilization at atmospheric pressure is one of the promising alternative methods because of the low temperature process. In our previous study, the inactivation of *Bacillus atrophaeus* spores by a dielectric barrier discharge (DBD) plasma produced in atmospheric humid air was investigated in order to develop low-temperature, low-cost and high-speed plasma sterilization technique. The results showed that the inactivation of *Bacillus atrophaeus* spores was found to be dependent strongly on the humidity. In the present study, the plasma treatment technique in humid air is applied to sterilization of soybean powder. Effects of plasma sterilization were successfully confirmed by a colony counting method. It was found that the sterilization efficiency was increased by using the humid air as the discharge gas. In the conference, an improvement of the plasma treatment system to enhance the sterilization efficiency will be shown.

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