# EFFECT OF GLIDING ARC DISCHARGE ON REDUCING THE MICROBIAL LOAD OF BLACK TABLE OLIVES

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| **ABSTRACT (Times New Roman 12-Bold)**  In this study, it was aimed to investigate the potential of Gliding Arc Discharge (GAD) plasma, one of the non-thermal cold plasma types, for reducing the natural microbial load in Gemlik type black olives obtained from İzmir province. The GAD plasma conditions were optimized using the Box-Behnken experimental design with black olives, harvested in 2020 and then stored at +4 °C for natural microorganism growth. Olives were treated with the GAD plasma at optimum plasma condition of 0.7 mL/min gas flow rate, 0.5 cm distance between electrodes, 5 min time with dry air (99.9%). Changes in microbiological (mold-yeast and lactic acid bacteria count) of olives with and without plasma treatment were determined. After plasma treatment, 5.4% reduction in mold-yeast count and 10.7% reduction in lactic acid bacteria count were detected. The results showed that air-GAD plasma is a promising method for the pre-decontamination of fruits that are sensitive to heat and have high moisture content. |

# Keywords: Gliding arc discharge plasma, Black table olives, Mold-yeast, Lactic acid bacteria, Decontamination

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