

The objective of this study was to determine the efficacy of a self-designed low pressure cold plasma (LPCP) system using air gases or SF(6). For the inactivation and/or elimination of two pathogenic fungi, *Aspergillus* spp. and *Penicillium* spp. artificially contaminated on seed surface. The plasma decontamination process was performed by batch process in vacuum chamber, using gas injection followed by plasma discharge for the duration of 5-20 min. The plasma treatment reduced the fungal attachment to seeds below 1% of initial load depending on the initial contamination level, while preserving germination quality of the seed. A significant reduction of 3-log for both species was achieved within 15 min of SF(6) plasma treatment time. Air gases plasma and SF(6) plasma in particular provides an interesting surface decontamination alternative for seeds. (C) 2007 Elsevier Ltd. All rights reserved.