

EFFECT OF MICROWAVES ON MOULDS ISOLATED FROM SURFACES

— short communication —

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Abstract: In this paper, the combined effect of microwaves (MW) on mould isolated from buildings surfaces was investigated. Three microbial species were selected for the tests: *Penicillium sp.*, *Alternaria sp.*, *Aureobasidium sp.* The influence of three variables on the spores inactivation rate was analysed: the exposure time to MW (x_1), MW power radiation (x_2) and the dilution of spores (x_3) by using a 2^3 full factorial design. Three models of the spores inactivation rate were obtained:

$$\text{IR } Penicillium = 61.723 + 5.973 x_1 + 33.938 x_2 + 5.241 x_3 - 7.674 x_1 x_2 - 5.877 x_2 x_3$$

$$\text{IR } Aureobasidium = 54.375 + 7.625 x_1 + 31.250 x_2 + 8.375 x_3 - 8.375 x_1 x_3$$

$$\text{IR } Alternaria = 54.12 + 7.96 x_1 + 29.28 x_2 + 12.94 x_3 - 8.95 x_2 x_3 - 7.33 x_1 x_2 x_3$$

The result showed that the viability of studied moulds differed depending on their strains, power of MW radiation, time of exposure, fungal spore concentration.

Keywords: microwaves, fungi, surface, full factorial design, model

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