



International Agrophysics

publisher: Institute of Agrophysics  
Polish Academy of Sciences  
Lublin, Poland

ISSN: 0236-8722

vol. 22, nr. 3 (2008)

[previous paper](#) [back to paper's list](#) [next paper](#)

Germination capacity and the health status of red clover seeds following laser treatment\* \*

[\(get PDF\)](#) Wilczek M.<sup>1</sup>, Koper R.<sup>2</sup>, Ćwintal M.<sup>1</sup>, Kornilłowicz-Kowalska T.<sup>3</sup><sup>1</sup> Department of Specific Plant Breeding<sup>2</sup> Department of Physics,<sup>3</sup> Department of Agricultural Microbiology University of Agriculture, Akademicka 15,  
20-934 Lublin, Poland

vol. 18 (2004), nr. 3, pp. 289-293

abstract Laboratory experiments on the germination of tetraploid red clover seeds (var. Bona) were carried out completely randomly in four replications. The number of seeds germinating normally and abnormally, as well as the number of hard seeds and seeds infected with fungal disease was also determined in the experiment. Laser treatment significantly decreased the share of hard seeds and did not influence the percentage of seeds germinating normally. Seed dressings significantly decreased seed infection with disease when compared to the control and objects with laser treatment. Clover seeds were most abundantly infected by fungi of the *Alternaria* type (*Alternaria alternata*). Strains of the *Phoma* and *Penicillium* type were eliminated by laser beam with power of 3 mW cm<sup>-2</sup> x 1 and 3 mW cm<sup>-2</sup> x 3, and *Penicillium* by a dose of 6 mW cm<sup>-2</sup> x 1 i 6 mW cm<sup>-2</sup> x 3. Laser treatment should not be applied in the case of massive seed infection with fungi of the *Alternaria* type since a significant increase was noted after laser irradiation with power of 3 mW cm<sup>-2</sup> x 3; 3 mW cm<sup>-2</sup> x 5 and 6 mW cm<sup>-2</sup> x 5.

keywords laser treatment, red clover, germination