

EVALUATION OF SEEDLING PRODUCTION AND PROTECTION FROM FUSARIUM CULMORUM OF DIFFERENT ITALIAN DURUM WHEAT VARIETIES AS RESPONSE TO SEED COATING WITH TRICHODERMA HARZIANUM T-22

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The presence of pathogens on/in the seed causes significant losses in quality and yield without neglecting the costs to be incurred for the crop protection. Pesticide use is a key component of efficient crop production but it has a negative effect on the health of both environment and consumers. Moreover, few pesticides are allowed for in organic farming and therefore interest is increasingly turned to alternative methods, such as beneficial antagonistic microorganisms and natural substances, which go in the direction of environmental eco-sustainability and food safety.

In the South of Italy, where the durum wheat cultivation has a long-time tradition of growing and breeding, *Fusarium culmorum* is a pathogen representing one of the main threats, causing serious economic losses. In this context, *Trichoderma harzianum* T-22, a well known biocontrol agent of this pathogen, can be used.

In the current study we reported the first results of one of the activities within the project "CERESO - Optimization of inputs for the sustainability of Lucanian cereal culture" of the Basilicata Region PSR (Rural Development Program) 2014-2020: evaluation of the potential of *Trichoderma harzianum* T-22 seed coating on seed germination, seedling growth and plant defense response in presence of *Fusarium culmorum* in four Italian durum wheat varieties (Simeto, Creso, Ciclope and Saragolla Lucana).

The results showed that *Trichoderma harzianum* T22 seed coating is a promising tool for the organic crop production and an eco-friendly seed protection in the early vegetative phases from biotic stress.

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