

The fungus *Gliomastix murorum* increases the germination of *Vicia pannonica* seeds, used for green manure and revegetation

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Vicia species are legumes widely used as crops, as green manure and in revegetation projects. The seeds of Hungarian vetch, *Vicia pannonica* Crantz, exhibit prolonged physical dormancy due to the high lignin content in the seed coat, thereby slowing germination. Although this adaptation increases seed survival in hostile environments, it poses challenges for large-scale cultivation. The aim of this study was to investigate if soil filamentous fungi can stimulate the germination of *V. pannonica* seeds and promote seedling growth, as a sustainable alternative to traditional cultivation methods. Soil filamentous fungi isolated from a vineyard in the Oltrepò Pavese area were selected based on their production of laccases, cutinases, and siderophores. After a dual culture assay, treatments were set up using fungal consortia or suspensions of individual fungi with different enzymatic activities to evaluate their scarification ability of *V. pannonica* seeds. The most effective treatment was a suspension of a fungus identified as *Gliomastix murorum* (Corda) S. Hughes. This strain, which showed moderate production siderophores and high production of laccases and cutinases, was able to increase significantly the germination of *V. pannonica* seeds from 0% in the control to 30% in 21 days. The presence of *G. murorum* on seeds also increased the seedling growth in soil in the first 30 days. In conclusion, the application of *G. murorum* on *V. pannonica* seeds showed great potential in reducing their dormancy. Further studies are needed to determine its optimal application on a large scale.