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ABSTRACTS

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reaction (PCR) based specific and sensitive methods are still not available for reliable MVX detection.

The aim of our experiments was to introduce a sensitive, simple and reliable method, which will allow us to detect all dsRNAs present in a single step. The dsRNA-immunoblot method used in our experiments is based upon the application of monoclonal antibodies, which specifically recognise dsRNAs, independent of their sequence and nucleotide composition.

We demonstrated that by immunoblotting dsRNAs can be detected directly in unfractionated nucleic acid extracts of champignon, without chromatographic purification on CF11 cellulose. It was found, that even healthy, symptom-free mushroom hybrids collected from different sources may differ in their dsRNA-pattern. In addition, in MVX diseased reference samples as well as in some "suspicious" samples we were able to detect dsRNAs not present in any of the healthy mushrooms. The occurrence of dsRNA species in wild *Agaricus* species was also investigated. We found that dsRNAs, which might be of viral origin, are present in *A. romagnesii*, *A. squamuliferus* and in *A. vaporarius*.

APPLYING SYMBIOTIC FUNGI TO GERMINATE HUNGARIAN NATIVE ORCHIDS

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About 60 orchid species are native in Hungary, all of them are protected plant species, and several are under strict protection. The Hungarian terrestrial orchids have very specific demands with respect to the habitat, and live in symbiosis with fungi. A possible way to conserve the endangered species is the artificial propagation of the orchids, followed by replanting into their natural habitat to increase population density. Co-cultivation with symbiotic fungi during this period may enhance the survival rate after replanting in nature. The aim of our experiments was to establish the optimum conditions for seed germination in the presence of mycorrhizal fungi.

Seeds of 11 orchid species were collected to analyse symbiotic germination and to optimise culture conditions. In contrast to most experiments described in literature we only used mycorrhizal fungi, which have been taxonomically identified by molecular biological methods. The analysed orchid species represent 6 genera (*Anacamptis, Dactylorhiza, Epipactis, Gymnadenia, Ophrys, Orchis*). The seeds were sown on 3 different media, each inoculated with one of the five fungi, which have been isolated earlier from various orchids. The germination percentage was determined.

The presence of mycorrhizal fungi strongly stimulated the germination of *Dactylorhiza incarnata* and *Ophrys sphegodes*, while *Anacamptis pyramidalis* germinated better under asymbiotic conditions. Germination of *Ophrys scolopax* ssp. *scolopax* and *Orchis laxiflora* ssp. *palustris* seeds was dependent on the media. No effect of mycorrhizal fungi on germination was detectable in the case of *Orchis coriophora*. Most fungal lines coexisted with the seedlings, despite the relatively high sugar content of the medium, however, the *Thanatephorus* isolate 5DI1/6A parasitized and finally killed all seedlings except those of *Anacamptis pyramidalis*.

Our results show that the germination stimulating activity of mycorrhizal fungi isolated from orchids is species dependent. Ongoing studies should clarify whether the advantageous influence of the symbiont also prevails during further cultivation.