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Arbuscular mycorrhizal fungi as bio-indicators in Swiss agricultural soils The majority of agricultural crops as well as wild plants form a symbiotic relationship with a special group of soil fungi, the arbuscular mycorrhizal fungi (AM fungi). AM fungi perform important functions in all ecological systems colonised by plants. They form a dense network of fungal hyphal mycelia in the soil and transmit vital nutrients from the soil to the plants and protect them against stress and drought. AM fungi have the ability to reduce nutrient loss from the soil and they can, through biological stabilisation of the soil structure, reduce erosion and thus contribute to ecosystem stability. AM fungi would appear to be particularly suitable as bioindicators because this group of fungi is small enough to be manageable and includes both common and rare species. To date more than 100 AM fungi have been identified in Switzerland. Many of these fungi respond specifically to land use intensity, cultivation practices and/or soil type (e.g. *Glomus sinuosum* and *Acaulospora paulinae*). These specialised AM fungi are therefore highly suitable as bioindicators. Other species occur in almost every kind of soil and may be described as generalists (e.g. *Gl. fasciculatum* and *Archaeospora trappei*). Our studies show that a large number of AM fungi are suitable as bioindicators in agricultural soils.

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