

THE ROLE OF MYCORRHIZA IN BIOREMEDIATION OF POLLUTED SITES

S u m m a r y

Industry, ineffective mining technologies, overuse of chemicals in agriculture result among others in increasing pollution of soil, air and water. In consequence many bare areas are created, exposed to wind erosion and contaminating ground waters. The introduction of plants on such sites is of utmost importance for stabilization of the soil. Plants can be used not only in phytostabilisation, but also in phytodegradation (degradation of soil pollutants by plants) and phytoextraction (extraction of e.g. soil metals by plants). The degraded sites often highly polluted, are usually devoid of beneficial soil microorganisms the plants naturally rely on. Most plants are symbiotic with soil fungi, forming ecto- and endomycorrhizal associations. Those natural allies could be used to enhance

plant survival on difficult sites. Mycorrhizal fungi not only provide the plants with water and mineral compounds and help to improve the structure of soil, but were also shown to act as filters, blocking toxic compounds within their mycelium. Moreover, they influence the physiology of their host plants making them less vulnerable to pathogens, soil pollution, salinity, drought and a number of other environmental stress factors. By using specific fungal strains isolated from polluted sites, showing improved tolerance to toxic compounds, the success of new techniques, such as phytostabilisation, phytodegradation and phytoextraction, could be optimised.