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Agricultural Use of Beneficial Microorganisms
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How to utilize mycorrhiza correctly in the plant production

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Agronomical Procedure. Practical Aspects

The great advantage of mycorrhiza is the possibility of using it for the cultivation and breeding of many plant species. Mycorrhiza can be used both in production aimed at economic benefits and in the hobby cultivation of vegetables and fruit, garden trees and shrubs, or ornamental potted flowers. Vaccines can be used for bedding plants, conifers and deciduous species, heather plants (heathers, hydrangeas, rhododendrons) and even for the lawn. Both young and mature plants can be vaccinated.





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The most popular vaccines are mycorrhizal preparations intended for the cultivation of conifers, orchids, roses, and bedding plants and heather plants. There are several possible ways to apply mycorrhiza:

- seed dressing,
- seedling root dressing,
- the application directly to the soil.

The mycorrhiza vaccine is one of the most effective means of supporting the natural nutrition of plants. It is important to use a vaccine appropriately selected for a given species, which will not only significantly strengthen the roots but also increase resistance to diseases and difficult weather conditions. The use of an appropriate vaccine is extremely important because a given preparation only contains fungi species that symbiotize with certain plants. In other words, using the wrong vaccine will make mycorrhiza impossible. The preparations usually contain spores or mycelium hyphae taken from plants where the phenomenon of mycorrhiza occurred. An additional advantage of mycorrhiza is the reduction of weed growth, which will facilitate the care of the plot and become a lighter and easier task.



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The mycorrhizal preparations available on the market come in various forms:

- gel
- suspension
- powdery form
- granules

During the application process, it is worth paying attention to the appropriate conditions conducive to the development of mycelium. It is best to apply the vaccine to a moist substrate - approx. **60 FC** (field water capacity), in warm weather (air temperature should be approx. **15-20 °C**). It is best to perform the treatment in spring or fall - **March/April** or **September/October**. However, when choosing the date of application, as in the case of any fertilization or treatment, the current weather conditions must be taken into account.

Application of mycorrhiza directly to the soil

Mycorrhiza is applied at a distance from the plant but within the roots. First of all, it is worth making a hole in the ground, e.g. by hammering a wooden peg to a depth of about 10 cm. Another possibility is to dig grooves or drill holes near the root ball. A specific amount of the preparation is injected into the hole. If we use a vaccine purchased, the appropriate amount of solution for a given plant species is determined by the manufacturer and written in the instructions attached to the packaging. After the application, the holes should be filled up.



Szczepienie mikoryzą przy użyciu aplikatora

The application directly to the roots, in the soil, it is easiest to do with the mycorrhiza applicator. It is a simple device that has a clear scale with a specific capacity and a tube that facilitates dispensing into the gaps between the roots. You can also use a regular silicone gun, available in DIY stores, for application.



After applying the vaccine, it is inadvisable to use mineral fertilizers for two months, and after this period the doses of fertilizers administered should be reduced even by half. Careful dosing of fertilizers results from the risk of overdosing, as mycorrhizal fungi convert nitrogen into ammonium and also provide plants with 70% more phosphorus.

For the first 3 weeks after application, the use of systemic fungicides should be avoided, as they may harm the proper formation of mycorrhiza.



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The second method of **vaccine application in the zone of young roots** of plants already growing in the ground is a treatment with the use of a standard knapsack sprayer without a filter in the handle with a valve. The sprayer is equipped with a special lance, which is driven into the soil just into the root zone and to the optimal depth, where we inject the vaccine.



Mycorrhiza application using a knapsack sprayer



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Another method of mycorrhiza application is to **use the preparation directly on the seeds**. The batch of seeds intended for sowing should be dressed by completely immersing the seeds in the prepared working liquid, the time of soaking the seeds in the working liquid should be at least 5 minutes. Another possibility is to use the sprayer to completely cover the seeds with the preparation. Dressed, still moist seeds are best sown immediately, then the preparation will be most effective. It is permissible to sow seeds 1-3 days after priming, however, the effectiveness of the treatment may be reduced in this case.