PRACTICE ABSTRACT

How to apply mycorrhizal fungi in fruit growing

Problem

Organic fruit growing often faces challenges like lack of water or nutrient availability, which in turn can have significant adverse effects on the health of the fruit tree and harvest.

Solution

Application of mycorrhizal fungi products to the soil during fruit growing can enable plants to absorb water and nutrients from the soil better.

Applicability box

Theme

Application of mycorrhizal fungi in fruit growing

Keywords

Mycorrhiza, Fruit quality, Fruit growing, Planting

Context

Fruit production areas

Application time

Orchard establishment

Benefits

Trees whose roots thrive on networks of mycorrhizal fungi are healthier and more vigorous, while their resistance to pathogens or water shortage in droughts is also increased. Sufficient nutrients and improved water management also positively impact the fruit flavour.

Practical recommendations

- Choose the best product (Pictures 1 and 2) and apply mycorrhizal fungi into the soil to the roots of all fruit species when planting (Picture 3).
- Mycorrhizal fungi immediately form a dense network of filaments in the soil that connect the tree roots and soil life in symbiosis (Picture 2).

Picture 1: Examples of commercial mycorrhizal products for application in the soil to the roots. Photo: Gabriela Stryhalová, VŠÚO Holovousy.

Picture 2: Dried commercial mycorrhizal product. Photo: Gabriela Stryhalová, VŠÚO Holovousy.

Picture 3: Application during planting. Photo: Gabriela Stryhalová, VŠÚO Holovousy.

- Mycorrhizal fungi colonising tree roots facilitate plant development through better access to soil resources (better absorption of nutrients, water uptake) and may limit the effects of biotic and abiotic stresses.
- Optimally nourished trees supported by mycorrhiza produce a rich and regular crop of flowers and, subsequently, fruits.

- Apply mycorrhizal fungi to the roots of fruit trees once; they live in symbiosis with the roots continuously for decades over the lifetime of the trees.
- Apply granular products or powders directly to tree roots at planting. Alternatively, mix the products with water and dip the tree roots in suspended powder or liquid products before planting.
- Check the best product for your crop. Each commercial mycorrhizal fungi product is targeted to a specific plant group.

Further information

Further reading

1. Chen M., Arato M., Borghi L., Nouri, E., Reinhardt, D. (2018). Beneficial services of arbuscular mycorrhizal fungi – from ecology to application. Front. Plant Sci. 9: 1270
2. Garcin, A., Millan, M., Brachet, M., Jay, M., Loquet, B., Villenave, C., Masquelier, S. 2020. Organic apricot production: Towards an ecologically intensive orchard self-sufficent in inputs: Focus on use of AMF for cultivation of rootstocks. Ecofruit. 19th International Conference on Organic Fruit-Growing: Proceedings, Hohenheim, Germany, 2020, pp. 86-89.

Video

- Jozsef Racsko: The use of mycorrhizal fungi in horticulture

Weblinks

- Check the Organic Farm Knowledge platform for more practical recommendations
- How to apply mycorrhizal fungi in orchards, BIOFRUITNET video, (CZ, with EN subtitles)

About this practice abstract

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