

## Foliar Feeding

By Charlie Mosse, November 2022

I happened upon some information that came from a Robert Pavlis, a Canadian Master Gardener with extensive background with plants, soils and fertilizers. He learned a lot in his efforts to attain his MG certification, a 2 year program, and has also done a lot of experimenting and research on his own after his certification. The reason I bring this up is that he states only what he knows to make scientific sense; a strong proponent of blowing up gardening/horticultural myths. Ryan Neil and Michael Hagedorn and others are doing this through their own efforts and through the incredible advances that have been made in the plant and soil sciences. In his first life he was a chemist/biologist then got into software development. He combined these disciplines and wrote software for labs/testing. So he has a very detailed understanding of soil/plant science. He has been a Canadian Master Gardener for 45 years and manages 6 acre garden with over 3,000 species of plants. To obtain a MG certification takes 2 years of study and volunteer work, then a comprehensive test. Anyway, here is another good source for horticultural information, some of which does apply to container plants like bonsai, but most of it applies to gardening and landscaping. His ability to explain fertilizers is very good, so here is a video that you should find helpful.

<https://www.youtube.com/watch?v=I5JwTkleeDE>

Foliar feeding is complex but is simply applying dilute nutrients to the foliage. It does help but is only a temporary solution. The underlying problem still needs to be fixed, but it can effectively help some plants. Effectiveness varies by species and product. It is good for leafy species and marginal for conifers. Foliar feeding is also used to enhance leaf color or help a stressed or repotted plants.

Foliar feeding helps for only 1-2 days. Therefore, it is effective when used regularly to help supplement what nutrients the roots cannot absorb. It has been thought for decades that nutrients are taken up only through the stomata openings in the leaf surface that allow for transpiration (oxygen and CO<sub>2</sub> exchange, and water loss to cool the plant). It is now known that micro-pores in the cuticle are primarily responsible for absorption. Note that both types of openings absorb nutrients, but in different ways.

Mixable fertilizers like Miracle-Gro, liquid Dr. Earth, fish emulsion or mixable supplements are used. Foliar feeding is best done in the morning/late afternoon/early evening for best results, when it is cooler. Misting leaves a few times afterwards for up to 12 hours helps to absorb more nutrients.

<https://www.gardenmyths.com/foliar-feeding-gardeners/> Robert Pavlis

