Beneficial Fungi in Hydroponic Gardening

In common hydroponic culture, the growing media and the hydroponic nutrient solution are kept sterile in order to guarantee the absence of malicious plant pathogens. This however, changes the root environment dramatically and places plant roots in a media which is totally inert and different from the media in which they evolved, soil.
However, hydroponic gardening offers an important advantage in that adequate beneficial microorganisms can be cultured with our hydroponic plants, making the root environment change towards a much more soil-like beneficial media whith stimulated nutrient absorption, prevents pathogens and increases growth.
Amongst all the microorganisms that can be introduced into hydroponic media, none are as beneficial as the fungi commonly known as mycorrhiza. This term refers to fungi that create important symbiotic bonds with the plant's roots, activating the plant's internal defense mechanisms and boosting it's nutrient uptake capabilities by using the fungus's hyphae as nutrient uptake vehicles with a much higher surface are than common plant roots.

In practice, I have introduced Trichoderma species of fungi into my hydroponic solution every crop for the past 2 years with very good results. Trichoderma visibly stimulate the plant, making it vigorous and more productive than a traditional hydroponic plant. The fungi also increase the plant's ability to assimilate phosphorous, something which is a problem where I live due to low ambient temperatures (which hinder P uptake). In order to use Trichoderma efficently in your hydroponic solution you should lower the amount of phosphorous under 40 ppm because higher amounts of this element inhibit the fungi's development.

With this in mind I hope that all of you who have considered

biological help in your hydroponic garden will start using these incredible microorganisms which are very good at helping your plants develop and maintain an adequate level of productivity. (Below a picture that shows the difference between plants with and without beneficial Trichoderma *spp* fungi)

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