

Garden Myths Busted: Vitamin B-1, Soil under Conifers, Peonies & Ants

By Paul Rodman ([paulgrow](#)) April 16, 2013



Two horticultural professionals took some of the most popular garden myths into the university laboratory to prove or disprove the accuracy of these myths. Dr. Linda Chalker-Scott from Washington State University and Dr. Jeff Gilliam from the University of Minnesota tested these myths under controlled conditions to determine if they really work.

The Myth

Vitamin B-1 stimulates root growth and revitalizes roots after transplanting. B-1 also speeds up root development of root systems on bare root plants such as roses and shrubs.

The Facts

Vitamin B-1, aka thiamine, does not stimulate root growth. How did this myth get started? Some years ago plant growth regulators called auxins were discovered. Auxins were found to stimulate cell elongation in both root and shoot tissues. Commercial preparations were developed that contained auxins and vitamin B-1 among other ingredients.

Research in 1949 found improved root development in plants treated with one of these preparations which contains both auxin and thiamine, but noted the importance of auxins in this response. Further research throughout the last half of the 20th century investigating the application of auxins to root systems

suggested that auxins may stimulate root growth, but that vitamin B-1 on its own does not.



So what does work for stimulating root growth and reducing transplant shock? Most of these are sold as root hormones.

Indole butyric acid (IBA) is one of the most common auxin formulations especially in tissue culture. In cuttings, it has been found to increase the number of roots, to increase rooting percentage. IBA has had some success in root regeneration in transplanted trees; it may help redirect resources to the roots by suppressing crown growth.

Naphthylacetic acid (NAA) is also a commonly used auxin and often the active ingredient in commercial preparations. NAA tends to be toxic to seedling root development, as it inhibits primary root growth and enhances lateral root growth. Like IBA, NAA apparently suppresses crown growth, which also may redirect resources to the roots.

Vitamin B-1 does not reduce transplant shock or stimulate new root growth on plants outside the laboratory.



- A nitrogen fertilizer is adequate for transplanting landscape plants; avoid use of "transplant fertilizers" that contain phosphate
- Healthy plants will synthesize their own thiamine supply
- Healthy soils contain beneficial microbes that synthesize thiamine as well
- Difficult-to-transplant species may be aided by application of auxin-containing products in addition to nitrogen, but read the label and don't

add unnecessary and potentially harmful chemicals (this includes organics!)

- Adequate soil moisture is crucial for new root growth; be sure to irrigate new transplants frequently and use mulch to reduce evaporation

The Myth

The soil under conifers and oaks is acidic.



The Facts

The soil under conifers and oaks might be acidic but only the top few inches. But if the bedrock underneath is limestone then the soil above that rock will be on the alkaline side. Oak leaves, and conifer needles have to build up for centuries to make a significant amount that will have any impact on the

soil pH.

Personally I do recommend mulching acid loving plants such as hydrangeas, azaleas and rhododendrons with conifer needles and oak leaves.

The Myth

Ants are needed to make peony flowers open



The Facts

Folks have believed for years that ants are actually eating the waxy coating from the peony so that the flower can open. Some believe that the peony is secreting a sugary substance that attracts ants to feed. In any case, the ant is enjoying a symbiotic relationship with the peony and is not doing any harm by

being on the flower bud. Once the bloom starts to open the ants vanish. Peony flowers can open just fine without any ants.

In closing, I expect some of you might disagree with some of these findings. However remember that this research was done in reputable university labs under controlled conditions. Each of us will draw our own conclusions.

About Paul Rodman



Paul Rodman has been gardening for over 45 years. He is an Advanced Master Gardener, and American Rose Society Consulting Rosarian. He is President Emeritus of the Western Wayne County Master Gardener Association in Wayne County, Michigan. He currently serves as the greenhouse chairman of this group. Rodman has amassed over 5500 volunteer hours in the Master Gardener program. Rodman is the garden columnist for The News Herald newspaper, in Southgate, Michigan. He has also written for the Organic Gardening.com web site. He is a certified Master Canner and has taught classes on Home Food Preserving for 7 years. He has lectured on various gardening topics throughout southeastern Michigan. His favorite pastime is teaching children about gardening. For the past several years he has conducted classes for second grade students teaching them about subjects ranging from vermi-composting to propagation.