

LANDSCAPE PLANNING

Practical Techniques for the Home Gardener

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ARTICLE

[Back to article index page](#)



Kelp meal and seaweed extract solutions are rich in growth-promoting hormones

Garden Science:

Growing Better With Plant Stimulants

What gardener can resist providing a little treat that will help plants grow vigorously in spring? At the end of winter, the swelling buds on woody stems are signs that natural growth stimulants are stirring within the plant. Longer days and rising temperatures trigger the manufacture of plant hormones, a sure indication that new growth will soon be underway.

If you're installing new plants, growth stimulants will help them to become established more quickly. Or you may want to enhance the performance of a plant already in the garden. Natural growth stimulants can increase the performance of your plants without jeopardizing their health with excessive amounts of fertilizer. That means stronger and healthier plants that are capable of increased fruit and flower production. Just what we want!

Appropriate timing is important to success with growth stimulants. Attempting to force a plant out of dormancy is a mistake that can result in stunted spring growth, just the opposite of what you want. Always wait for signs that the plant is ready to grow and has begun a growth cycle. Stimulants can safely be offered when buds have opened and the first flush of foliage is underway. New plants you purchase through the spring and early summer will benefit from growth stimulants, but don't provide any after the first week of August. Tender new growth produced late in the season might not have enough time to harden before deep frost arrives.

Plant growth stimulants are different from the fertilizers you would use to provide a supplemental meal for plants. Some stimulants may contain plant nutrients, but also can provide a key hormone or organic element that influences growth in a particular way. Fertilizers most often contain food nutrients in relative balance to each other; but only a few stimulants fall within the plant food category. Stimulants can be applied to any kind of plant and have no toxic properties. If you use them for spring planting, be sure to follow the instructions and amounts recommended on commercial packages or in the notes below.

Bone meal, super phosphate and triple phosphate are rich sources of phosphorus, and will stimulate root growth and bud set. Phosphorus is one of the three main plant nutrients in standard fertilizer formulas (nitrogen – phosphorus – potassium). Bone meal is extracted from steamed animal bones and has the lowest phosphorus content (expressed as 0-11-0) and won't burn roots. It can be mixed into a planting hole to provide slow-release rooting stimulation over several months. Super phosphate (0-22-0) and triple phosphate

(0-33-0) are extracted from rock and have sufficient phosphorus to burn roots if not carefully controlled.

Granular transplant solution is a commercial transplant fertilizer sold as dry granules that are soluble when mixed with water. The formula is very high in phosphorus (often with an analysis of 10-52-10) and will stimulate root growth and bud set.

Liquid concentrate transplant solution has a lower amount of phosphorus (10-15-10), but contains indole butyric acid (sometimes referred to as IBA), a rooting hormone plants manufacture naturally in spring. It's a powerful root stimulant and helps to overcome transplant shock, producing faster establishment of new plants.

Transplant solution with Vitamin B1 is a low analysis of plant nutrients (usually 0-2-1) with the addition of thiamin (Vitamin B1). Thiamin is naturally produced by plants and acts as a coenzyme influencing the metabolization of carbohydrate foods. Thiamin increases metabolism, affecting the rate at which plants consume essential nutrients to produce energy, and resulting in improved overall growth performance. Vitamin B1 is also sometimes combined with naphthalen acetic acid, a growth hormone, in commercial transplant solutions.

Alfalfa is a nutritious grass used for animal feed. It provides sufficiently mild amounts of nutrients (5-1-2) to be useful mixed into planting holes. More important, it contains triacontol, a fatty acid that is a potent stimulant of overall plant growth. Alfalfa can be purchased pellet form at garden centers, or through animal feed companies.

Epsom salts is magnesium sulphate, a combination of 9.8% magnesium and 6% sulfur, and it can be purchased in a drug store. Epsom salts will strengthen the crown of a plant and stimulate buds to sprout new wood from the base. This is particularly helpful in increasing the number of blossom-bearing canes on a rose plant or other flowering shrub. Approximately ½ to 1 cup of Epsom salts mixed in water or scratched dry into soil above plant roots can be given in mid-spring and again in mid-summer.

Kelp meal and seaweed extract solutions are rich in growth-promoting hormones called auxins, gibberellins and cytokinins. They increase blossoms and yields in fruit, vegetable and flowering plants, as well deepening petal colour and enhancing scent. Kelp and seaweed also improve seed germination, increase storage life of fruits and vegetables, strengthen frost resistance in hardy plants and build resistance to insects and fungus diseases. Kelp meal can be dug into soil around plant roots, or seaweed extract can be diluted in water and delivered as foliar feed by spraying it on leaves several times during the growing season.

Willow tea is a good source of auxins, gibberellins and cytokinins to encourage strong rooting. You can make the tea in spring by cutting 6-inch lengths of willow tips with swollen buds (the hormones are contained in the buds), crushing them slightly with a hammer and soaking them in boiling water until it has cooled. Then strain out the twigs and use the water to soak seeds and water plants into their new holes. Use the willow tea immediately, or it can be frozen for future use. Because this is a homemade material it's difficult to control or measure potency, but try working with a ratio of 1 thick handful of willow tips to 2 liters of boiling water.

ASA or acetylsalicylic acid (Aspirin) stimulates the natural defense system in plants, contributing to overall health and enhanced growth. Watering roots or applying a foliar drench to foliage with ASA will help protect plants from fungus, bacteria and viruses. A similar chemical compound, salicylic acid, is a plant hormone found in willow bark and naturally produced by all plants in response to microbial infection of tissues. (Plants recognise acetylsalicylic acid and salicylic acid as the same compound.) It overwhelms disease pathogens by travelling through all parts of the infected plant and activating the immune system. Use a ratio of 1 part ASA to 10 parts water, or 3 Aspirin tablets (975 mg) in 4 quarts of water, to water roots or drench foliage every 4 weeks during the growing season. Do not increase the amount of ASA or frequency of use. It is a potent plant hormone and possibly damaging at higher application.

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