

United Nuclear

SCIENTIFIC EQUIPMENT & SUPPLIES



Gibberellic Acid

Gibberellic acid (pronounced "Jib - er - illic") is a very potent hormone whose natural occurrence in plants controls their development. It was first discovered in Japan in 1935 as a result of a study of "Foolish Seedlings Disease" which caused rice plants to grow much taller than normal.

With very small amounts, Gibberellic Acid (GA) can enhance normal growth and quickly produce much larger, greener plants. At moderate concentrations (sprayed on seeds) GA can have a surprising effect on their development and growth. Some will germinate at a highly increased rate, other varieties of seeds will begin to grow much differently than untreated seeds. Still other seed varieties will produce only slight changes in development.

As the amount of Gibberellic Acid is increased, the change in plants becomes quite remarkable. At higher concentrations, plant growth becomes almost uncontrolled, producing incredibly large 'mutated' looking plants that have little resemblance to the original plant. Some will grow so tall, so fast, that the stalk will not support the plant and some sort of wooden or metal support will have to be fashioned to prevent the plant from falling over and breaking.

In a well-known Department of Agriculture experiment, Walnut trees were treated with small concentrations of Gibberellic Acid. In one season, the growth rate for the control group (the untreated trees) was 1.5 feet. For the trees treated with Gibberellic Acid, growth averaged 8.5 feet.

We recommend using Gibberellic Acid in 3 different concentrations, depending on what you want to accomplish. Please note that the recommended concentrations should be used as a starting point. Each different variety of plant will respond differently, and you will have to adjust the amount of GA to higher or lower levels as needed.

The Gibberellic Acid supplied is at a concentration of approximately 1,000 ppm (1g/L).

Pouring the concentrate into the spray bottle up to the $\frac{1}{4}$ mark, and filling the remainder with water will give you a concentration of 250 ppm. Filling the spray bottle up to the $\frac{1}{2}$ mark and filling the remainder with water will yield a concentration of 500 ppm. You can of course mix it to any concentration desired, but we have seen little success at concentrations under 150 ppm, or concentrations over 500 ppm.

Depending on the particular type of plant, very high concentrations will begin to have a reverse effect and begin to interfere with plant growth. Only experimentation will reveal the ideal amount to use on your particular plant and in its particular stage of growth.

For seeds, we recommend spraying a paper towel until damp with a 250 ppm to 500 ppm solution, folding it over and placing your seeds in between. Keep the paper towel/seeds damp, and in the dark. When the seeds begin to sprout in several days, plant them in soil.

Plants in various stages of growth can be sprayed directly, or small amounts can be added to the soil. Spraying the plant directly seems to always yield the best results.

Gibberellic Acid is most effective in the early stages of plant growth, so the best results will be obtained using seeds, or very small seedlings.

Gibberellic Acid is ideal for a variety of science fair experiments/demos using a 'control' group of seeds that are grown normally and an identical group that are sprayed with Gibberellic Acid. Fascinating experiments can be performed using groups of plants treated with varying Gibberellic Acid concentrations.

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