

Results of Scientific Field Testing of Gro-King Sprayers by Dr. Elaine Ingham of Soil-Food-Web

When equipped with the standard stainless steel core & disc as a nozzle tip, Gro-King spray guns (long or short) will safely deliver live microbes and fungi strands to foliage. Throughout the summer of 2016, Dr. Elaine Ingham (Soil-Food-Web) field tested the Gro-King sprayer at her demonstration farm in northern California. She sprayed her proprietary compost tea solution on several types of foliage and then examined that foliage under a microscope. She reported seeing virtually no damage to the living microbes in her solution.

There are three primary ways that living organisms get damaged during spraying. 1. An impeller pump literally chops up the organisms as it draws solution from a tank and pushes it into a hose and nozzle; 2) The opening of the spray nozzle is so tiny that it shears off the organisms appendages; 3) The speed at which the organism is traveling when it hits foliage is so high that the organism is either instantly killed or fatally injured by the force of the impact. This “splat factor” can be prevented by maintaining an appropriate distance between the end of your spray gun and the leaf surface.

Dr. Ingham also states that a large droplet size (as close to 1,000 microns as possible) is desirable when spraying live solutions. When a droplet that contains living microbes lands gently on a leaf, each droplet will roll across the leaf’s surface (foliage is never level) and the microbes will “hop off” all along the droplet’s path, creating immediate dispersion of healthy active organisms.

These spray guns produce 12-15 feet of horizontal throw in a full-cone pattern. The droplets on the outer edges of the pattern are larger than those on the inside of the cone and create the “drift-prevention” that this equipment was originally designed for.

When Gro-King spray guns are equipped with the mint green polymer tip they produce a much finer droplet (72 microns) and a noticeably shorter throw (4-5 feet). This tip is intended to apply solutions that do not contain living organisms in outdoor settings. It is ideal for use with high-nitrogen solutions or products such as Met 52, where best results are achieved by merely “dusting” foliage.

When Gro-King spray guns are equipped with the white polymer tip they produce the finest spray pattern available in agricultural equipment (68 microns). This tip is intended to apply solutions that do not contain living organisms in indoor settings. It is ideal for use with high-nitrogen solutions or products such as Met 52, where best results are achieved by merely “dusting” foliage. It is also highly recommended for a variety of foliar applications on young, tender plants.