Using Leaf Surfactants in Propagation
Comparative Studies

Many growers are using spray adjuvants or surfactants, such as Capsil or Suffusion, in propagation to improve the environmental conditions immediately around the unrooted cuttings. These products work by reducing the surface tension of applied water which causes large droplets of water to spread out into a thin layer of moisture across leaf surfaces. When this occurs, the humidity and moisture levels are more conducive to the requirements of the cuttings; therefore, the cuttings experience less stress and remain turgid between misting cycles. Cuttings treated with these products also tend to develop callus and roots more quickly than untreated cuttings.

Recently, I conducted comparative trials with the industry standards Capsil and Suffusion against UpTake™ - a new wetting agent from Pace 49 Inc. The plants in the trials were calibrachoa, poinsettia and zonal geranium.

In each of the trials, the unrooted cuttings were stuck into 3 to 4-inch containers filled with a peat based growing mix and placed under mist in a propagation facility. Within 30 to 120 minutes of sticking the cuttings, the treatments were applied using foliar sprays. Capsil and Suffusion were applied using 3 ounces per 100 gallons applying approximately two quarts of spray solution per 100 square feet and the UpTake was applied at 6 ounces per 100 gallons using a sprrench volume of approximately one gallon of spray solution per 100 square feet.

All of the products were effective at reducing the surface tension of the water. With many crops, it can be difficult to visually see differences between treated and untreated plants; however, the benefits can clearly be observed on plants with waxy leaf surfaces, such as poinsettia. The images clearly show the presence of water droplets on untreated plants, whereas the leaves of treated plants appear smooth and uniformly wet.

Poinsettia 'EckesPoint Advent Red'

Untreated Left - Numerous Water Droplets Present
UpTake 6 oz/100 gals Right - No Water Droplets Present - The leaves appear smooth and wet.
These trials effectively demonstrated that UpTake could be used during propagation to reduce leaf surface tension and help distribute moisture into a thin layer across the leaves. At 6 ounces per 100 gallons, UpTake performed similarly to the industry standards Capsil and Suffusion. By reducing plant stress and providing more optimum conditions (uniform moisture) around the cuttings, the use of leaf surfactants on unrooted cuttings in propagation will allow them to root faster and be less susceptible to plant diseases.

An added benefit of using UpTake in place of Capsil or Suffusion in propagation is the active ingredients in UpTake are identical to the those in the disinfectant/fungicide KleenGrow™ (also from Pace 49 Inc.) which are effective at controlling numerous diseases including Botrytis, Erwinia, and other diseases growers often experience in propagation. Therefore, UpTake provides benefits the industry standards do not offer.

Paul Pilon
Perennial Solutions Consulting
paul@perennialsolutions.com