



Brian E. Whipker<sup>1</sup>



Patrick Veazie<sup>1</sup>

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# Hitting the IBA Sweet Spot to Improve Rooting

*The use of IBA improves rooting efficiency, but too much can be detrimental. This Alert helps to diagnose excessive rates.*

Rooting your own cuttings is a great way to ensure you have quality transplants and it reduces your production cost. The use of the rooting hormone indole-3-butyric acid (IBA) aids in producing more uniform cuttings in less time. IBA speeds up the rooting process and helps ensure the cuttings are uniformly rooted. It is an additive insurance policy to help safeguard your success.

At North Carolina State University, we conducted trials over the past 5 years to fine-tune and evaluate optimal rates

of IBA. The “sweet spot” range to use for any vegetative annual cutting trials is between 100 to 200 ppm, applied as a foliar spray within 24 hours of sticking of the cutting. Please keep in mind, a recommended rate can vary by both the species and even sometimes among cultivars. Therefore some trialing may be needed to optimize rates for the species and cultivars you are growing.

You can get too much of a good thing. If the rate is too high, cuttings will develop a twisted growth pattern (epinasty) within 72 hours of application (Fig. 1). We observed this on several species at 800 ppm IBA. In some cases, the cutting developed a



Figure 1. If the IBA foliar spray rate is too high, cuttings will develop a twisted growth pattern (epinasty) within 72 hours of application. These petunias were sprayed with 800 ppm IBA. (Photo: Brian Whipker)

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<sup>1</sup>NC State University, Dept. of Hort. Science  
[bwhipker@ncsu.edu](mailto:bwhipker@ncsu.edu)

downward leaf orientation which lifted the cutting out of the substrate and hindered rooting. These symptoms are easy to observe.

Less visually obvious until the end of the rooting period is that for some species, rates higher than 400 ppm can sometimes hinder rooting (Fig. 2). Excessive rates can also manifest as a mass of undifferentiated cells that are slow to further develop usable roots. This is especially the case with cannabis which is very sensitive to excessive IBA applications (Fig. 3). When diagnosing excessive cell development, please keep in mind that these symptoms can also develop when the substrate is kept too wet (Fig. 4) or when there is genetic variation that makes some cultivars slow to root (Fig. 5).

Finding the IBA “Sweet Spot” will assist in the rooting process, but you don’t want to overdo it.



Figure 5. Some cultivars are slow at developing a root system under propagation, as seen here with ipomoea. (Photo: Brian Whipker)

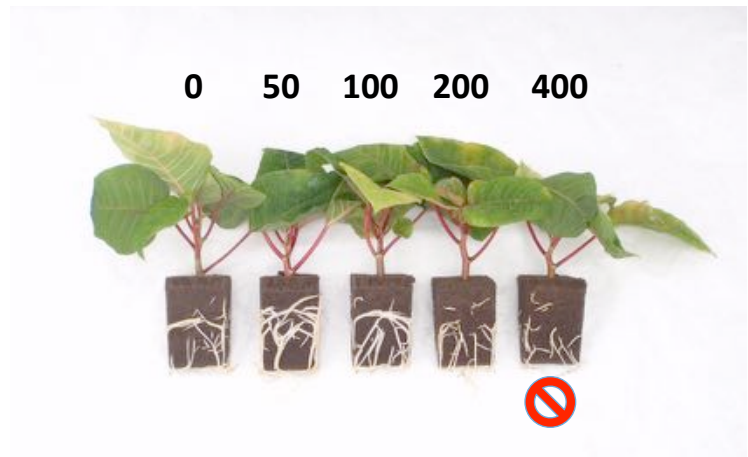


Figure 2. Higher rates than optimal can hinder rooting as seen with 400 ppm IBA applied to EuroGlory poinsettias (left to right: 0, 50, 100, 200, and 400 ppm IBA). (Photo: Brian Whipker)



Figure 3. Excessive rates can result in a mass of undifferentiated cells that are slow to further develop usable roots as seen here with cannabis. (Photo: Brian Whipker)



Figure 4. Excessively wet substrate can stall root development in cuttings and result in a mass of undifferentiated cells that are slow to further develop usable roots. (Photo: Brian Whipker)

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**CONTRIBUTORS**

Dr. Nora Catlin  
Floriculture Specialist  
Cornell Cooperative Extension  
Suffolk County  
[nora\\_catlin@cornell.edu](mailto:nora_catlin@cornell.edu)

Dr. Chris Currey  
Assistant Professor of Floriculture  
Iowa State University  
[ccurrey@iastate.edu](mailto:ccurrey@iastate.edu)

Dr. Ryan Dickson  
Greenhouse Horticulture and  
Controlled-Environment Agriculture  
University of Arkansas  
[ryand@uark.edu](mailto:ryand@uark.edu)

Thomas Ford  
Commercial Horticulture Educator  
Penn State Extension  
[tf7@psu.edu](mailto:tf7@psu.edu)

Dan Gilrein  
Entomology Specialist  
Cornell Cooperative Extension  
Suffolk County  
[dog1@cornell.edu](mailto:dog1@cornell.edu)

Dr. Chieri Kubota  
Controlled Environments Agriculture  
The Ohio State University  
[kubota\\_10@osu.edu](mailto:kubota_10@osu.edu)

Heidi Lindberg  
Floriculture Extension Educator  
Michigan State University  
[wolleage@anr.msu.edu](mailto:wolleage@anr.msu.edu)

Dr. Roberto Lopez  
Floriculture Extension & Research  
Michigan State University  
[rlopez@msu.edu](mailto:rlopez@msu.edu)

Dr. Neil Mattson  
Greenhouse Research & Extension  
Cornell University  
[neil.mattson@cornell.edu](mailto:neil.mattson@cornell.edu)

Dr. W. Garrett Owen  
Greenhouse Extension & Research  
University of Kentucky  
[wgowen@ukv.edu](mailto:wgowen@ukv.edu)

Dr. Rosa E. Raudales  
Greenhouse Extension Specialist  
University of Connecticut  
[rosa.raudales@uconn.edu](mailto:rosa.raudales@uconn.edu)

Dr. Alicia Rihn  
Agricultural & Resource Economics  
University of Tennessee-Knoxville  
[arihn@utk.edu](mailto:arihn@utk.edu)

Dr. Debalina Saha  
Horticulture Weed Science  
Michigan State University  
[sahadeb2@msu.edu](mailto:sahadeb2@msu.edu)

Dr. Beth Scheckelhoff  
Extension Educator - Greenhouse Systems  
The Ohio State University  
[scheckelhoff.11@osu.edu](mailto:scheckelhoff.11@osu.edu)

Dr. Ariana Torres-Bravo  
Horticulture/ Ag. Economics  
Purdue University  
[torres2@purdue.edu](mailto:torres2@purdue.edu)

Dr. Brian Whipker  
Floriculture Extension & Research  
NC State University  
[bwhipker@ncsu.edu](mailto:bwhipker@ncsu.edu)

Dr. Jean Williams-Woodward  
Ornamental Extension Plant Pathologist  
University of Georgia  
[jwoodwar@uga.edu](mailto:jwoodwar@uga.edu)

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