



# Stop Trouble in Its Tracks: Preventing Disease in Propagation

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Many growers start crops from unrooted cuttings. High humidity and warm temperatures in propagation promote rooting, but can also promote disease. Disease progression in propagation can be swift, so it's important to recognize and treat problems quickly, and consider preventative treatments.

Sanitation is the first step in preventing disease in propagation. Prior to sticking the first cutting, take time to clean and sanitize benches and irrigation systems. Remove all debris and use a chemical cleaner, such as **Strip-It™**. After cleaning, sanitize with **KleenGrow™**, **SaniDate® 5.0** or **ZeroTol®**.

Never stick cuttings in reused media. If trays are reused, be sure that they've been properly cleaned and sanitized. Contact GGSPRO for additional sanitation practices to limit the spread of disease.

Damaged tissue is more susceptible to disease, so stick cuttings as soon as possible and, when necessary, hold under appropriate conditions. Most importantly, keep cuttings cool until they are stuck. It's also wise to stick the most sensitive cuttings first. Geraniums are a special case: As they are sensitive to ethylene in shipping and can yellow easily, they should always be stuck first. Minimize the yellowing by spraying with **Fascination®** at sticking. Fewer yellow leaves mean less plant stress and less susceptibility to disease.

The most common diseases to initiate on the propagation bench include *Botrytis*, *Phytophthora*, *Rhizoctonia* and bacteria. **Pageant® Intrinsic®** is a nice option for a preventative spray for *Botrytis*. If *Botrytis* is present, **Affirm™**, **Daconil® Weather Stik®** and **Palladium®** can be added to a rotation program with **Pageant Intrinsic**. Of these products, **Affirm** is the only one labeled for use on edibles.



*Rhizoctonia/Botrytis on calibrachoa*

Stem cankers are often the result of a *Botrytis/Rhizoctonia* complex. Fortunately, **Affirm** is also effective against *Rhizoctonia*. Other options for controlling *Rhizoctonia* include **Cleary's 3336®** and **Medallion®**. While **Pageant Intrinsic** is a great choice for prevention of *Botrytis*, its sister product, **Empress™ Intrinsic™**, is better suited for prevention of *Rhizoctonia*. Both Intrinsic products promote overall plant health and will enhance root development in propagation. Other

benefits from the Intrinsic products include greater tolerance to transplant, cold, heat and drought stress.

*Phytophthora* is a fast-moving disease with hallmark symptoms including bleached or necrotic tissue moving up from the stem or petiole into the leaf. Petunias are particularly susceptible to *Phytophthora* and should be scouted regularly to support early detection. **Segway® O** and **Fosphite®** provide good control. **Fosphite** also encourages rooting.

Like *Phytophthora*, bacterial diseases can move very quickly in propagation. Tell-tale signs of a bacterial infection include slimy areas on stems and slimy leaf spots. An unpleasant odor may be observed. Poinsettia cuttings are particularly susceptible to *Erwinia* early in propagation. Bacterial leaf spots often display a yellow halo around dark colored centers. Bacterial infections in propagation are best treated with **KleenGrow**, **ZeroTol** or with a copper product, such as **Nordox™**.

*Pythium* isn't typically seen in early propagation, but may occur if excessively high rates of rooting hormones are used. **Empress Intrinsic** and **Segway O** are both good choices to treat *Pythium* in propagation.

Of course, growers must always read and follow all label directions. Not all products are registered for use in all states or for all crops; your Griffin Customer Service Representative can help determine whether these products are labeled in your state. Products other than those mentioned here may also be safe and effective.

## Featured Products

Product	Use	Size	Item No.
Affirm WDG	Fungicide	0.5 lb.	71-1129
Cleary's 3336 WP	Fungicide	2 lbs.	71-2565
Daconil Weather Stik	Fungicide	2.5 gal.	3117025
Empress Intrinsic	Fungicide	24 oz.	70-1510
Fascination	PGR	0.5 gal.	73-1910
Fosphite EC	Fungicide	1 gal.	71-1520
KleenGrow	Sanitation / Fungicide	1 gal.	74-21101
Medallion WDG	Fungicide	8 oz.	71-16502
Nordox 75 WG	Fungicide	12.5 lbs.	71-1700
Pageant Intrinsic WG	Fungicide	1 lb.	71-26801
Palladium WDG	Fungicide	2 lbs.	71-2685
SaniDate 5.0	Sanitation	2.5 gal.	71-35001
Segway O	Fungicide	16 oz.	71-31101
Strip-It	Cleaner	2.5 gal.	74-2124
ZeroTol 2.0	Sanitation / Fungicide	2.5 gal.	71-35501