Protecting plants during propagation can be a challenge. Unrooted cuttings and young seedlings generally require warm temperatures along with frequent misting or high humidity so they can root into the planting media. This warm, humid environment also provides optimal conditions for spores of pathogenic agents to germinate, invading wounds and tender plant tissue. Plants in propagation can be at risk of developing various diseases including foliar blights caused by *Botrytis cinerea*, leaf spots caused by *Alternaria*, *Colletotrichum* and *Myrothecium* spp. as well as lower stem rots. Young seedlings are also at risk of damping-off from *Pythium*, *Phytophthora* and *Rhizoctonia* spp. when the growing media is wet for a prolonged period of time.

**PREVENTING COMMON PROPAGATION DISEASES**

Mural® fungicide is a broad-spectrum option for greenhouse and nursery growers to combat these destructive diseases during propagation. It is labeled to control more than 50 ornamental diseases, including *Botrytis*, leaf spots, rusts, powdery mildew, as well as many soil-borne diseases. Mural offers growers the flexibility to apply it as a spray or a drench, providing effective disease protection in propagation and after transplant.

Mural contains two active ingredients, both of which have unique characteristics and benefits that can protect young plants. One of the two active ingredients in Mural, *azoxystrobin*, is in the Strobilurin class of chemistry, which also provides some plant health benefits. *Azoxystrobin* is systemic and offers xylem mobile movement, meaning it is absorbed by the plant and translocated upward to protect new growth. Mural also contains Solatenol®, an advanced generation SDHI (succinate dehydrogenase inhibitor), which binds to the waxy layer of plants and slowly penetrates into the tissue, creating a barrier of protection. Mural inhibits spore germination and mycelial growth, providing protection for the plant both inside and out.

By Nancy Rechcil, technical services manager for ornamentals, Syngenta
PLANT HEALTH BENEFITS OF A STROBILURIN FUNGICIDE

In addition to fungicide activity, azoxystrobin affects physiological processes within plants that result in plant health benefits. Strobilurin fungicides have been shown to:

+ Lower rates of transpiration, maximizing the efficiency of water use
+ Reduce ethylene production, which helps delay senescence so leaves stay greener longer resulting in more efficient photosynthesis. This results in increased production of carbohydrates within the plant, which improves growth and plant vigor
+ Increase nitrate reductase levels in plants, which allows nitrates to be more readily available for the production of proteins essential to plant growth

ENHANCED ROOT GROWTH + DISEASE CONTROL

The following photos show the enhanced root growth that Mural and Heritage® fungicides provide. Treatments were applied as a spray to poinsettia cuttings four days after sticking. Plant height and root development were evaluated 23 days later.

Comparison of Control vs. Mural 4 oz.

Comparison of Control vs. Heritage 2 oz.

PREVENT DISEASE FROM PROPAGATION TO FINISH

With its broad-spectrum disease control and root health benefits, including increased root density, Mural is an ideal fungicide for use in propagation as a spray or as a drench after transplanting. Its many use sites make it a versatile option for any grower.

Comparison of Geranium Root Mass

Improved root development is also observed when Mural is applied as a drench for the protection of root and stem diseases.

Learn more at GreenCastOnline.com/Propagation.

Growers often ask me about our experience with Mural. It’s simple—what we don’t see—is trouble. Our liner crops start clean and finish clean. Whether you are a propagator or a finish grower, Mural should be in your pest management program.

Tom Gunther
Young Plant Lead Grower
Lucas Greenhouses