



CANNABIS PLANT HEALTH & SOILBORNE DISEASE MANAGEMENT

ROOTSHIELD PLUS+, ON-GARD, & PERPOSE PLUS

MOTHER PLANTS & CLONES

ON-Gard[®] use on mother plants prior to taking clones:

- + Helps mother plants through clone removal stress.
- + May allow more clones to be removed from mother plants over time.
- + Stimulates production and sequestration of carbohydrates in mother plants and clones which provides energy for plant recovery, and faster generation of roots.

Procedure (choose one of the following):

- + Drench ON-Gard at 1 quart / 100 gallons (10 mL / gallon) of water 5 to 10 days prior to clone harvest.
- + Spray ON-Gard at 1 quart / 100 gallons as a foliar spray 1 day prior to clone harvest.
- + Dip clones in On-Gard at 1.28 fl oz / 1 gallon of water for purchased clones or clones taken without application of the drench or spray mentioned above

PERpose[®] **Plus** for use in sterilization of rooting cubes/wedges prior to sticking:

- + Dip or drench rooting media to saturation at 1 fl oz / gallon the day before sticking clones. Hydrogen peroxide will break down overnight.

RootShield[®] **Plus WP** after PERpose Plus sterilization (choose one of the following):

- + Drench rooting media at 6 oz / 100 gallons of water (1.6 grams / gallon) prior to sticking, or wait 2- to 3- days until callous has formed and then drench.
- + Dip plugs, liners, or plants in growing media at 0.08 oz / gallon of water.

TRANSPLANTS

ON-Gard: Apply 1 quart / 100 gallons (either) as a pre-transplant drench (best) or after transplanting in the first irrigation event.

RootShield Plus (choose one of the following):

- + **Wettable powder:**
 - + Dip plugs, liners, or plants in growing media at 0.08 oz / gallon prior to transplant.
 - + Drench rooting media after transplant at 6 oz / 100 gallons of water.
- + **Granules:** Apply 1.5 pounds / 1 cubic yard of mix. Ensure soil blender distributes granules evenly into media.

GENERAL PRODUCTION

ON-Gard:

- + Vegetable growth: Apply 1 quart / 100 gallons every 2 weeks up to flowering.
- + Flowering: Apply 1 quart / 100 gallons as a foliar spray or drench at 2- to 3- week intervals. Suspended applications at nutrient flushing.
- + Abiotic stress events: Apply 1 quart / 100 gallons as a drench or foliar spray within 24- to 48- hours before or after a stress event like heat or drought, etc.

RootShield Plus WP:

- + Drench rooting media at 6 oz / 100 gallons of water 6- to 8- weeks after transplant



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GENERAL PRODUCTION (CONTINUED)

PERpose Plus for management of algae and soilborne pathogens:

- + Drenching frequently and / or at high rates can impact establishment of microbes in RootShield Plus; high rates can also damage root hairs, increasing risk of root infection. Best practice is to avoid application of PERpose Plus for 5 - 7 days after a RootShield application. Once established on roots, *Trichoderma* is difficult to kill.
- + Under constant feed, *Trichoderma* can be harmed at hydrogen peroxide rates > 30 ppm. The recommended rate is 10 ppm hydrogen peroxide at the dripper.
- + Visit the PERpose Plus Application Guide for more information on rates and applications:
https://bioworksinc.com/wp-content/uploads/AppProd_PERposePlus.pdf

ADDITIONAL INFORMATION

Compatibility:

- + RootShield and ON-Gard can be tank mixed and applied at the same time.
- + Do not tank mix PERpose Plus with RootShield or other plant protection products.
- + Visit our compatibility tool for information on all BioWorks product tank mixes.
<http://bioworksinc.com/ask-us/product-compatibility>

Additional BioWorks products are available for management of foliar diseases and arthropod pests (see below). Please visit the BioWorks Cannabis Guide for more information:

https://bioworksinc.com/wp-content/uploads/CropGuide_Cannabis-5.1.25.pdf

Foliar Diseases:

MilStop SP
Cease
PERpose Plus
BotryStop WP

Arthropods:

PRINCIPLE WP
Molt-X
Suffoil-X
EpiShield
NemaShield

Additional tools and application information:

- + Dipping guide: https://bioworksinc.com/wp-content/uploads/Dips_CleanupUp_US.pdf
- + Application Rate Calculator: <https://bioworksinc.com/ask-us/rate-calculator/>

GOING ABOVE AND BEYOND

At BioWorks, we not only help eradicate harmful diseases and pests that threaten your crops, but we design and support integrated plant health management programs. And because we know how quickly some diseases can work, we respond to any questions you might have in just four hours. So you can get back to the business of successful growing.



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