



**BioWorks®**  
DIVISION OF BIOFIRST GROUP



ABOVE AND BEYOND IS WHERE WE BEGIN

# CANNABIS PLANT HEALTH & FOLIAR DISEASE MANAGEMENT

## BOTRYSTOP WP, MILSTOP SP, CEASE, PERPOSE PLUS, SUFFOIL-X, ON-GARD

### MOTHER PLANTS, CLONES, VEGETATIVE, FLOWER GROWTH

**MilStop® SP:** Preventative & curative management of powdery mildew, *Botrytis*, rust, *Septoria*, and other fungal and bacterial leaf spots:

- + Foliar spray to glisten at 1.25-2.5 pounds / 100 gallons, apply every 7-14 days.
- + Suspend applications 3 weeks prior to harvest.
- + Tank mix MilStop SP at 1.25 pounds with BotryStop WP or CEASE.
  - + When disease pressure is severe, increase MilStop SP to 2.5 pounds / 100 gallons.

**CEASE®:** Preventative management of powdery mildew, *Botrytis*, *Septoria*, and other fungal and bacterial leaf spots:

- + Weekly foliar spray to glisten at 4-6 quarts / 100 gallons.
- + Suspend applications 3 weeks prior to harvest.

**BotryStop® WP:** Preventative management of *Botrytis* and *Sclerotinia*:

- + Onset of flower: Foliar spray at 3 pounds / 100 gallons every 7-10 days; repeated applications may be necessary.
- + Suspend applications 4 weeks prior to harvest.
- + Maintain sanitation practices to reduce disease pressure during conducive conditions.

**SuffOil-X®:** Preventative and curative broad-spectrum insect / disease management:

- + Foliar spray to glisten at 1 gallon / 100 gallons (1% v/v.) every 7-10 days.
- + Avoid use under extreme high heat and humidity. Plants must dry 1-2 hours after application to mitigate crop tolerance risk.
- + Suspend applications 3 weeks prior to harvest.

**PERpose Plus®:** Sanitation and management of algae, fungal, and bacterial diseases:

- + Foliar spray:
  - + Preventative: 1:300 (0.425 fl oz / gallon).
  - + Curative 1:100 (1.25 fl oz / gallon).
    - + Algae control in propagation and early veg.
    - + Clean up foliar spray – apply a minimum of 2 times prior to harvest.
- + Under constant feed, microbes in the soil such as ***Trichoderma* may 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.

**ON- Gard®:** Plant health activation and stress prevention / management:

ON-Gard can result in improved nutrient acquisition. When incorporating ON-Gard, it's recommended to periodically evaluate substrate EC and conduct a soil and tissue analysis. This information can aid in optimizing your fertilizer program and avoid deficiencies and / or toxicities.

- + Using ON-Gard on mother plants prior to taking clones; help mother plants through clone removal stress; may allow more clones to be removed from mother plants over time; and stimulates production and sequestration of carbohydrates in mother plants and clones which provides energy for plant recovery, and faster root generation.
  - + Drench at 1 quart / 100 gallons (10 mL / gallon) 5-10 days prior to clone harvest.
  - + Foliar spray at 1 quart / 100 gallons 1 day prior to clone harvest.
  - + Dip clones at 1.28 fl oz / 1 gallon for purchased clones or clones taken without application of the drench or foliar spray mentioned above.
- + Re-hydration of clones: dip at 1.6 fl oz / 5 gallons.



# CANNABIS PLANT HEALTH & FOLIAR DISEASE MANAGEMENT

## MOTHER PLANTS, CLONES, VEGETATIVE, FLOWER GROWTH (CONTINUED)

- + Transplants: Apply 1 quart / 100 gallons (either) as a pre-transplant drench (best) or after transplanting in the first irrigation event.
- + Vegetative 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. Suspend application at nutrient flushing.
- + Abiotic stress events: Apply 1 quart / 100 gallons as a drench or foliar spray 24 to 48 hours before (ideal) or after a stress event like heat or drought, etc.

**ON-Gard + Calcium chloride (CaCl<sub>2</sub>)**: Management of diseases and disorders like *Botrytis*, blossom end rot, and leaf tip burn:

- + Tank mix 250 mL of ON-Gard / 100 gallons with a food-grade or pharmaceutical-grade source of calcium chloride to achieve 200 to 400 ppm calcium from calcium chloride. Test tank mix on a small scale before applying to entire crop.
- + Apply as a fine foliar spray or fog at flower initiation, repeat every 2 weeks until finishing/ nutrient flushing/ trichome formation.

**OR**

- + Use BenVireo Calcium as labeled. Visit the CDMS label database for more information.

## FOLIAR DISEASE PROGRAM FOR POWDERY MILDEW AND *BOTRYTIS*

- + Begin regular applications of CEASE, MilStop SP, SuffOil-X, and/or PERpose Plus early in vegetative growth and continue preventative applications through week 3-5 of flowering:
  - + Rates and frequency of applications depend on disease incidence and severity.
  - + Higher rates and/or shorter application intervals are needed when fighting active plant pathogens.
  - + Spray applications: use handheld commercial grade equipment with a fine nozzle and high pressure to achieve full plant coverage. Spray to glisten, avoid runoff.
  - + CEASE, MilStop SP, BotryStop, and PERpose Plus can be used in low volume application equipment.
- + In the final week(s) of vegetative growth or at the onset of flower, begin making preventative applications of BotryStop WP at 7-10 day intervals:
  - + For severe *Botrytis* infestations, tank mix BotryStop WP and MilStop SP.
- + Apply ON-Gard as a foliar spray or drench at 2-to 3-week intervals from vegetative growth through flower. Suspend applications at nutrient flushing.
- + Suspend applications 3-4 weeks prior to harvest and begin weekly clean up sprays with PERpose Plus.
  - + Do not tank mix PERpose Plus with other plant protection products, especially microbials.

### Product Compatibility:

- + Always test new products and tank mixes on a small scale before applying large scale.
- + Tank mix combinations of MilStop SP, CEASE, Suffoil-X, BotryStop WP, and ON-Gard are encouraged, however, CEASE and BotryStop WP are incompatible tank mix partners.
- + Visit [www.bioworksinc.com](http://www.bioworksinc.com) and click on resources for a searchable compatibility tool.

For more information on use of BioWorks products in cannabis and hemp, visit [www.bioworksinc.com](http://www.bioworksinc.com) and click on Resources.



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## 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 48 hours. So you can get back to the business of successful growing.

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