



We deliver reliable biological solutions to control pests, prevent disease and improve plant health. For organic and conventional production, our products help you improve yield and grow the highest quality cacti and succulents.



**BioWorks**  
DIVISION OF BIOFIRST GROUP

# CROP GUIDE CACTI AND SUCCULENTS

	PEST/DEFICIENCY	CROP STAGE				
		PREPLANT	TRANSPLANTING	VEGETATIVE	FLOWERING	
DISEASES	Soilborne Diseases	RootShield® PLUS <sup>+</sup> Granules	RootShield® PLUS <sup>+</sup> WP			
	Powdery Mildew			CEASE®, MilStop® SP, PERpose Plus*, SuffOil-X®		
	Botrytis Gray Mold			BotryStop® WP, CEASE, MilStop SP, PERpose Plus		
	Bacterial & Fungal Leaf Spots	CEASE, BotryStop WP, PERpose Plus				
INSECTS/ MITES	Aphids & Whiteflies	EpiShield®, PRINCIPLE™ WP		Molt-X®, SuffOil-X, EpiShield, PRINCIPLE WP		
	Spider/Eriophyid Mites	EpiShield		SuffOil-X, EpiShield		
	Fungus gnats & Shore Flies			NemaShield®, Molt-X		
	Mealybugs & Scales	EpiShield	Molt-X, SuffOil-X, EpiShield			
	Thrips	EpiShield, PRINCIPLE WP			Molt-X, SuffOil-X, NemaShield, EpiShield, PRINCIPLE WP	
	Weevils			Molt-X, NemaShield HB		
	Caterpillars			Molt-X, PRINCIPLE WP		
	NUTRITION	Root and foliar development, efficient nutrient use, stress reduction and improved shelf-life	ON-Gard®			



ABOVE AND BEYOND IS WHERE WE BEGIN

\*PERpose Plus is registered for use in the USA in all states except CA as of May 2021.

	PRODUCT	REI, PHI	OMRI	PEST/DEFICIENCY	RECOMMENDED RATE	TYPE OF APPLICATION
DISEASES	RootShield PLUS <sup>+</sup> Granules	4-hour 0-day	Yes	<i>Phytophthora</i> , <i>Fusarium</i> , <i>Pythium</i> , <i>Rhizoctonia</i> and other soilborne pathogens	1.5 – 3.0 lbs/ cubic yard	Mix with soil prior to transplanting. Ensure inoculated substrate is used within two weeks for best results.
	RootShield PLUS <sup>+</sup> WP	4-hour 0-day	Yes		Dip: 6 oz/20 gal; Drip: 8 oz/100 gal (1-2 lb/A)	Drip irrigation application: 4 weeks after transplant, and at 8-12 weeks, depending on disease pressure.
	MilStop SP	1-hour 0-day	Yes	Powdery Mildew, <i>Botrytis</i> Gray Mold,	1.25-2 lbs/100 gal	Spray at 1-2 week intervals until conditions are no longer favorable for disease. Do not lower pH (8.0 is needed).
	CEASE	4-hour 0-day	Yes	Fungal and bacterial pathogens	4-6 qt/100 gal	Foliar application every 3-7 days
	BotryStop WP	4-hour 0-day	Yes	<i>Botrytis</i> Gray Mold, Bacterial Pathogens	2-4 lbs/100 gal	Begin application at or before flowering. Repeat on 7-10 day intervals or as needed up until harvest.
	PERpose Plus*	0-1-hour 0-day	Yes	Sanitation, Fungal and Bacterial Pathogens	Foliar application: 1/3-1 fl oz/gal	Foliar preventative application: 1/3 fl oz/gal weekly; Foliar curative rate: 1 fl oz/gal for 1-3 consecutive days.
INSECTS / MITES	PRINCIPLE WP	4-hour 0-day	Yes	Whiteflies, Aphids, Thrips, Caterpillars	0.5-2 lb/100 gal Dip rate: 0.25-0.5 oz/gal	Foliar application every 5-10 days. For thrips use 1-2 lb/100 gal.
	NemaShield	N/A	N/A	Fungus gnats, Shore flies, Thrips	100 million/1100-3400 ft <sup>2</sup>	Apply as a drench with irrigation water.
	NemaShield HB	N/A	N/A	Weevils	100 million/1100-3400 ft <sup>2</sup>	Apply as a drench around the stem of the plant with irrigation water.
	Molt-X	4-hour 0-day	Yes	Aphids, Whiteflies, Mealybugs, Fungus gnats, Thrips	8-10 fl oz/acre	For foliar application. Tank mix contact insecticides for added efficacy. In tank mix, use ½ rate.
	SuffOil-X	4-hour 0-day	Yes	Spider/Eriophyid Mites, Aphids, Whiteflies, Thrips	1-2 gal/100 gal	Foliar application as needed. DO NOT use in combination with or immediately before or after spraying with any product containing sulfur.
	EpiShield	N/A	No	Mites, Aphids, Thrips, Whiteflies, Mealybugs	9-12 fl oz/100 gal	Foliar spray to glisten on 5-7-day interval or as needed. Dip unrooted cuttings for 10-30 seconds and let dry.
NUTRITION	ON-Gard 5-0-0	N/A	Yes	Nutrition supplement and stress tolerance	Dip: 1% v/v; 16-64 fl oz/acre	Foliar application or fertigation. Apply every 7-14 days on succulents and every 14-21 days along with irrigation cycles.

Please refer to product labels for complete application instructions. Always read and follow label directions.

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