

BIOFUNGICIDES AND PLANT ACTIVATORS REGISTERED IN OREGON

Common or Trade Name	Material	Target	Crops	Action	Application	Manufacturer or Distributor
Actino-Iron	<i>Streptomyces lydicus</i> WYEC 108 plus iron	Soilborne fungal species of <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Phytophthora</i> , <i>Verticillium</i> , and <i>Fusarium</i> spp.	Indoor/outdoor ornamentals and vegetable crops	F, P	Efficacy unknown in PNW production. 4-hr reentry.	Natural Industries, Inc. 6223 Theall Road Houston, TX 77066 888-261-4731 www.naturalindustries.com
Actinovate AG Actinovate Lawn and Garden	<i>Streptomyces lydicus</i> WYEC 108 plus iron	Soilborne fungal species of <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Phytophthora</i> , <i>Verticillium</i> , and <i>Fusarium</i> spp.	Turf, Ornamental and vegetable crops (for greenhouse use only)	F, P	Variable activity on diseases. OK for mummy berry. 1-hr reentry for agricultural use, no reentry listed for lawn and garden use. ☐	Natural Industries, Inc. 6223 Theall Road Houston, TX 77066 888-261-4731 www.actinovate.com
Amplitude	<i>Bacillus amyloliquefaciens</i> strain F727	Broad-spectrum biofungicide/bactericide	bulb vegetables, legumes, root, and row crops	F, P,	Efficacy unknown in PNW production. 4-hr reentry. ☐	Marrone Bio Innovations 1540 Drew Ave Davis, CA 95618 1-877-664-4476 info@marronebio.com
Asperello	<i>Trichoderma asperellum</i> strain T34	Root diseases caused by <i>Fusarium</i> , <i>Pythium</i> , and <i>Phytophthora</i>	ornamentals in greenhouses	A, F, P	Efficacy unknown in PNW production. 4-hr reentry.	BIOBEST USA Inc. 28529 Goddard Road Suite 100, Romulus, MI 48174
Auxigro WP	GABA: gamma aminobutyric acid	Plant metabolic primer that increases size and yield	Fruit, field, and vegetable crops	A	Efficacy unknown in PNW production. Do not use if rain or overhead irrigation is expected within 4 hr of application. 4-hr reentry.	Emerald BioAgriculture 3125 Sovereign Drive, Ste. B Lansing, MI 48911-4240 888-828-9346 www.emeraldbio.com
Ballad Plus	<i>Bacillus pumilus</i> strain QST 2808	Broad spectrum	For vegetable and field crops	Bact, F, P	Little is known about efficacy. ☐	AgraQuest, Inc. 1530 Drew Ave. Davis, CA 95616 530-750-0150 www.agraquest.com
Bayer Advanced Natria Disease Control RTU	<i>Bacillus subtilis</i> strain QST 713	Broad spectrum	For home landscape	Bact, F, P	Little is known about efficacy. ☐	Bayer Advanced P.O. Box 3900 Peoria, IL 61615 877-229-3724 http://www.bayeradvanced.com
Bio-Save 10 LP Bio-Save 11 LP Bio-Save 1000	<i>Pseudomonas syringae</i> strain ESC-10	Postharvest decay: blue mold, gray mold, mucor rot, and potato dry rot and silver scurf	Citrus, cherries, potatoes, and pome fruit	P	For both seed and storage potatoes. On pome, apply prior to waxing. Do not add to chlorinated water. Apply fungicide after applying Bio-save.	Jet Harvest Solutions P.O. Box 915139 Longwood, FL 32791 877-866-5773 Fax 407-298-2377
Bio-Tam	<i>Trichoderma asperellum</i> (ICC 012) and <i>Trichoderma asperellum</i> (ICC 080)	Diseases caused by <i>Armillaria</i> spp., <i>Fusarium</i> spp., <i>Phytophthora</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Rosellinia</i> spp., <i>Sclerotinia</i> spp., <i>Sclerotium rolfsii</i> , <i>Thielaviopsis</i> , and <i>Verticillium</i> spp.	For use on fruit, herb, vegetable, nut, and field crops.	F, P	Can be banded or applied as a broadcast or in-furrow application, transplant or cutting dip, and soil spray or drench. 1-hr reentry. ☐	AgraQuest, Inc. 1530 Drew Ave. Davis, CA 95616 530-750-0150 www.agraquest.com
Blossom Protect	<i>Aureobasidium pullulans</i> strains DSM 14940 and 14941	Fire blight prevention	Pome fruit	F, P	For fire blight management.	Westbridge Ag Products 12160 Avenida Chelsea Vista, CA 92081 800-876-2767
Botector	<i>Aureobasidium pullulans</i> DSM 14940 and 14941	Fairly broad spectrum	Pome, grape, berries and stone fruit	F, P	For fruit rot. Variable efficacy as of 2013.	Westbridge Ag Products 12160 Avenida Chelsea Vista, CA 92081 800-876-2767

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BIOFUNGICIDES AND PLANT ACTIVATORS REGISTERED IN OREGON—CONTINUED

Common or Trade Name	Material	Target	Crops	Action	Application	Manufacturer or Distributor
BotryStop	<i>Urocladium oudemansii</i> strain U3	Suppression of <i>Botrytis</i> , <i>Sclerotinia</i> , and other pathogens	Field, fruit, nut, ornamental, and vegetable crops	F, P	Efficacy unknown in PNW production. 4-hr reentry.	BioWorks, Inc. 100 Rawson Rd., Suite 205 Victor, NY 14654 Toll Free: 800-877-9443 www.bioworksbiocontrol.com
Cease	<i>Bacillus subtilis</i> strain QST 713	Broad spectrum	Ornamentals, vegetables, fruit, greenhouse and nursery crops	Bact, F, P	Efficacy is little known in PNW production. Applications to production greenhouse tomatoes showed efficacy in Oregon. 4-hr reentry. ☐	BioWorks, Inc. 100 Rawson Rd, Suite 205, Victor, NY 14564 800-877-9443 www.bioworksinc.com
Companion	<i>Bacillus subtilis</i> strain GB03	<i>Rhizoctonia</i> , <i>Pythium</i> , <i>Fusarium</i> , and <i>Phytophthora</i>	Greenhouse and nursery crops	A, F, P	Efficacy unknown in PNW production. Can be used in conjunction with seed treatment chemicals. 4-hr reentry. ☐	Growth Products P.O. Box 1259 Westmoreland Ave. White Plains, NY 10602 800-648-7626 www.growthproducts.com
Contans WG	<i>Coniothyrium minitans</i> strain con/m/91-08	<i>Sclerotinia sclerotiorum</i> and <i>Sclerotinia minor</i>	Vegetables, ornamentals, and row crops in soil	F	Efficacy is fair in PNW production. Spores of <i>C. minitans</i> germinate and attack resting structures (sclerotia). 4-hr reentry. ☐	Advan, LLC Columbia, MD 800-250-5024 www.advanllc.com
DiTera DF	<i>Myrothecium verrucaria</i> strain AARC-0255	For nematode control	Registered for many crops.	N	Little is known about efficacy. ☐	Valent BioSciences Corporation 870 Technology Way Libertyville, IL 60048
DoubleNickel 55	<i>Bacillus amyloliquefaciens</i> strain D747	Broad spectrum	Registered for many diseases in many crops.	F, P	Variable efficacy. 4-hr reentry. ☐	Certis USA, L.L.C. 9145 Guilford Road Suite 175 Columbia, MD 21046
EcoSwing	Extract of <i>Swinglea glutinosa</i>	Botrytis, powdery mildew, etc	many crop	F, P	Efficacy unknown in PNW production. 4-hr reentry.	Gowan 370 South Main St. Yuma, AZ 85364 info@gowanco.com www.gowanco.com/
Galltrol-A	<i>Agrobacterium radiobacter</i> strain 84	<i>Agrobacterium tumefaciens</i>	Fruit, nut, and ornamental nursery stock	Bact, P	Root or cutting dip. Not for grape.	AgBioChem, Inc. Orinda, CA 510-254-0789 www.agbiochem.com
Heads Up	Extract of <i>Chenopodium quinoa</i> saponins	Stimulates pest suppression system	Field crops and tomato	A	Efficacy unknown in PNW production. 12-hr reentry. ☐	Heads Up Plant Protectants, Inc., 3002 Millar Avenue Saskatoon, Saskatchewan S7K 5X9 Toll Free: 1-866-368-9306
Kodiak Concentrate	<i>Bacillus subtilis</i> strain GB-03	<i>Rhizoctonia solani</i> , <i>Fusarium</i> spp., <i>Pythium</i> spp., and <i>Aspergillus flavus</i>	All agricultural seed	F, P	Efficacy is fair in PNW production. Not labeled for use in Oregon.	Chemtura Corp. 199 Benson Rd Middlebury, CT 06749 www.chemtura.com
LifeGard	<i>Bacillus mycoides</i> isolate J	Stimulates pest suppression system	Fruit, field, nut and vegetable crops	A, F	Efficacy unknown in PNW production. 4-hr reentry. ☐	Certis USA LLC 9145 Guilford Road, Suite 175, Columbia, MD 21046
Majestene	Dead <i>Burkholderia</i> strain A396	Suppresses nematodes and insects	Fruit, field, and vegetable crops	N	Efficacy unknown in PNW production. 4-hr reentry. ☐	Marrone Bio Innovations, Inc. 2121 Second St. Suite 107B, Davis, CA 95618 Toll Free: 877-664-4476 info@marronebio.com
MeloCon WG	<i>Paecilomyces lilacinus</i> strain 251	Parasitic nematodes	Vegetable, fruit, and nut crops	N, P	Efficacy unknown in PNW production. ☐	PROPHYTA Biologischer Pflanzenschutz GmbH InselstraBe 12, D-23999 Malchow/Poel, Germany
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Messenger formulations	Harpin protein	Stimulates pest suppression system	Fruit, field, ornamental, vegetable, and greenhouse crops	A	Not good on perennial crop diseases. Wettable dry granule for foliar spray; contact all new foliage. Do not use with chlorinated water. Water's pH must be above 5 and below 10. Use within 4 hr of mixing. 4-hr reentry.	EDEN Bioscience Corp. 11816 North Creek Parkway N. Bothell, WA 98011-8205 888-522-5976 www.edenbio.com
Monterey Complete Disease Control	<i>Bacillus amyloliquefaciens</i> strain D747	broad spectrum fungal and bacterial diseases	many crops	F, P	Efficacy unknown in PNW	Lawn and Garden Products P.O. Box 35000 Fresno, CA 93745 info@montereylawn-garden.com
Mycostop formulations	<i>Streptomyces griseoviridis</i> strain K61	<i>Fusarium</i> spp., <i>Alternaria brassi-ciola</i> , <i>Phomopsis</i> spp., <i>Botrytis</i> spp., <i>Pythium</i> spp., and <i>Phytophthora</i> spp.	Field, ornamental, and vegetable crops	F, P	Efficacy is fair in PNW production. Can be applied as seed treatment, transplant or cutting dip, and soil spray or drench. If used as a seed treatment to control <i>Fusarium</i> spp., seed must be free of pathogenic <i>Fusarium</i> spp. before applying Mycostop. ☉	AgBio Development, Inc. Westminster, CO 303-469-9221 Fax 303-469-9598 www.agbio-inc.com
Obtego	<i>Trichoderma asperellum</i> (ICC 012) and <i>T. gamsii</i> (ICC 080)	broad spectrum soilborne diseases	many crops	F, P	Efficacy unknown in PNW production. 4-hr reentry. ☉	SePRO Corp. 11550 N. Meridan St. Carmel, IN 46032 www.sepro.com
PreFence	<i>Streptomyces</i> sp. strain K61	<i>Alternaria</i> , <i>Fusarium</i> , and <i>Phomopsis</i>	Field, mushroom, turf ornamental, forest, and vegetable crops	F, P	Efficacy unknown in PNW production. 4-hr reentry. ☉	BioWorks, Inc. 100 Rawson Rd, Suite 205, Victor, NY 14564 800-877-9443 www.bioworksinc.com
Prestop	<i>Gliocladium catenulatum</i> strain J1446	Damping-off, root rot, <i>Botrytis</i> , and <i>Didymella</i> . Can also suppress clubroot.	Various vegetables, herbs, spices, ornamentals, shrubs, trees, and turf	F, P	Efficacy not widely known in PNW. ☉	AgBio Development, Inc. Westminster, CO 303-469-9221 Fax 303-469-9598 www.agbio-inc.com
Prevont	<i>Bacillus subtilis</i> strain IAB/BS03	Stimulates pest suppression system	Fruit, field, nut, ornamentals, and vegetable crops	A	Efficacy unknown in PNW production. 4-hr reentry. ☉	SEIPASA, S.A. C/ Almudevar, 2 ES 22240 Tardienta (Huesca) Spain www.seipasa.com
ProAct	Harpin protein	Stimulates pest suppression system	Row crops	A	Efficacy unknown in PNW production. 4-hr reentry.	EDEN Bioscience Corp. 11816 North Creek Parkway N. Bothell, WA 98011-8205 888-522-5976 www.edenbio.com
Regalia	extract of giant knotweed (<i>Reynoutria sachalinensis</i>)	Stimulates pest suppression system	Ornamentals and food crops and vegetable crops	A	Some activity on mummy berry and powdery mildew. Use on 7-day intervals. Do not combine with other materials without testing compatibility. 4-hr reentry. ☉	Marrone Bio Innovations, Inc. 2121 Second St. Suite 107B Davis, CA 95618 530-750-2800 Toll Free: 877-664-4476 info@marronebio.com
Rhapsody AS	<i>Bacillus subtilis</i> strain QST 713	Certain foliar diseases including downy and powdery mildew, <i>Botrytis</i> , and bacterial problems	Various ornamentals and selected greenhouse crops	F, P	Efficacy not well studied in PNW production. Aqueous suspension used as a foliar spray. 4-hr reentry. ☉	AgraQuest, Inc. 1530 Drew Ave. Davis, CA 95616 530-750-0150 www.agraquest.com

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RootShield formulations	<i>Trichoderma harzianum</i> Rifai strain KRL-AG2	Root disease caused by <i>Rhizoctonia solani</i> , <i>Fusarium</i> spp., <i>Pythium</i> spp.	Selected ornamentals, vegetables, fruit, nut and greenhouse crops	F, P	For use in the US and Canada as soil applications (drench, in soil furrow, potting soil and broadcast) and seed treatments. See label for reentry restrictions. ☐	BioWorks, Inc. 100 Rawson Rd., Suite 205 Victor, NY 14654 800-877-9443 www.bioworksbiocontrol.com
RootShield Plus formulations	<i>Trichoderma harzianum</i> Rifai strain T-22 and <i>Trichoderma virens</i> strain G-41	Root diseases caused by <i>Rhizoctonia solani</i> , <i>Fusarium</i> spp., and <i>Pythium</i> spp.	For use on food crops, ornamentals, landscape plants, and ornamental trees, including tree seedlings.	F, P	For use in soil applications (drench, in soil furrow, potting soil and broadcast) and seed treatments. See label for reentry restrictions. ☐	BioWorks, Inc. 100 Rawson Rd., Suite 205 Victor, NY 14654 800-877-9443 www.bioworksbiocontrol.com
Serenade formulations	<i>Bacillus subtilis</i> strain QST 713	Gray mold, powdery mildews, and other foliar diseases	Fruit, vegetable, field, and selected greenhouse crops	F, P	Medium powdery mildew control but poor on mummy berry. Wettable powder as a foliar spray. 4-hr reentry. ☐	Bayer Crop Science LP PO Box 12014 Research Triangle Park, NC 27709
SoilGard	<i>Gliocladium virens</i> strain GL-21	Damping-off or root rot caused by <i>Rhizoctonia</i> and <i>Pythium</i> spp.	For use on food crops and ornamentals in greenhouses, nurseries, interiorscapes, and outdoors.	F, P	For use in soil applications (drench, root dip, through irrigation, potting soil and broadcast). No reentry restrictions. ☐	Certis USA, L.L.C. 9145 Guilford Rd. Suite 175 Columbia, MD 21046
Sonata	<i>Bacillus pumilus</i> strain QST 2808	A wide range of foliar diseases	Fruit, nut, vegetable, field, and selected greenhouse crops	F, P	Liquid formulation used as a foliar spray. 4-hr reentry. ☐	Bayer Crop Science LP PO Box 12014 Research Triangle Park, NC 27709
Stargus	<i>Bacillus amyloliquefaciens</i> strain F727	Broad-spectrum biofungicide/bactericide	vegetable, small fruit, and ornamental crops	F, P	Efficacy unknown in PNW production. 4-hr reentry. ☐	Marrone Bio Innovations 1540 Drew Ave Davis, CA 95618 1-877-664-4476 info@marronebio.com
Subtilex NG	<i>Bacillus subtilis</i> strain MBI 600	Root disease caused by <i>Fusarium</i> , <i>Rhizoctonia</i> , and <i>Pythium</i> spp. as well as powdery mildews	Greenhouse flowers and selected greenhouse vegetables	F, P	Efficacy unknown in PNW production but found not effective in two trials out of Connecticut. 4-hr reentry. ☐	Becker Underwood, Inc. 801 Dayton Avenue PO Box 667 Ames, IA 50010 515-232-5907 800-232-5907 www.beckerunderwood.com
Taegro	<i>Bacillus subtilis</i> var. <i>amyloliquefaciens</i> strain FBZ24	For suppression of certain soilborne diseases caused by <i>Fusarium</i> and <i>Rhizoctonia</i>	Fruit, vegetable, field, ornamentals, and selected greenhouse crops	F, P	Efficacy not well studied in PNW production. Wettable powder as a foliar spray, dip, or drench. 24-hr reentry unless soil incorporated. ☐	Novozymes Biologicals Inc. 5400 Corporate Circle Salem, VA 24153 888-744-5662
Tenet WP	<i>Trichoderma asperellum</i> (ICC 012) and <i>Trichoderma gamsii</i> (ICC 080)	For protection against a number of soilborne pathogens.	Fruit, herb, vegetable, crops, nut, turf, and ornamentals	F, P	Can be banded or applied as a broadcast or in-furrow application, transplant or cutting dip, and soil spray or drench. 1-hr reentry. ☐	Gowan Co. LLC PO Box 5569 Yuma, AZ 85366-5569
T-22 HC	<i>Trichoderma harzianum</i> Rifai strain T-22					Discontinued.
Triathlon BA	<i>Bacillus amyloliquefaciens</i> strain D747	Broad spectrum	Agricultural crops, ornamental, and nursery plants, and turfgrass	F, P	Ground, aerial, or chemigation.	OHP, Inc. PO Box 51230 Mainland, PA 19451 (800) 356-4647

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WRC-AP-1	<i>Gliocladium virens</i> strain GL-21	Damping-off and root rot	Ornamentals and vegetables	F, P	Efficacy unknown in PNW production.	Certis USA, L.L.C. 9145 Guilford Road Suite 175 Columbia, MD 21046
Zen-O-Spore	<i>Urocladium oudemansii</i> strain U3	Suppression of <i>Botrytis</i> , <i>Sclerotinia</i> , and other pathogens	Fruit and nut crops	F, P	Efficacy unknown in PNW production 4-hr reentry.☉	Botry-Zen (2010) Limited 156 Frederick Street, P.O. Box 1777, Dunedin 9054, New Zealand www.botryzen.co.nz
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