

BIOLOGICAL GROWING at Pioneer Gardens, Inc.



ROGER MCGAUGHEY

ROGER MCGAUGHEY

HEAD GROWER

PIONEER GARDENS, INC.

Pioneer Gardens, Inc. June 21, 2016

AT PIONEER GARDENS WE GROW AND PROVIDE OUR CUSTOMER BASE WITH A NATURAL, HABITAT-FRIENDLY PLANT PRODUCT. THIS GIVES OUR CUSTOMERS A JUMP-START FOR THEIR OWN BIOLOGICAL GROWING PROGRAM, WHICH WE ARE ATTEMPTING TO PROMOTE.

WE HAVE BEEN GROWING YOUNG PLANTS BIOLOGICALLY FOR OUR CUSTOMERS FOR ALMOST 4 YEARS.

ROOTSHIELD PLUS APPLICATION

RootShield Plus applications provide our cuttings with an enhanced rooting environment, producing white healthy root systems.

The aim of this is to avoid the use of any chemical root protectant fungicides later in the production process.

RootShield Plus is applied to all plants grown at Pioneer Gardens.

The following slide shows the method of application of Root-Shield Plus.

PIONEER GARDENS, INC. JUNE 21, 2016

ROOTSHIELD PLUS APPLICATION



Pioneer Gardens, Inc. June 21, 2016

ATHETA & HYPOASPIS

These Biological control agents (BCA'S) are introduced on a weekly basis in propagation.

They are also applied to newly transplanted material with the object of achieving fungus gnat and thrips control.

These are self-perpetuating BCA's reproducing on site, and can be found in finished product as it leaves the nursery, which is a biological benefit for the receiving finishing grower.

We also apply a mixture of Citation, Pageant and Uptake weekly in propagation.

ATHETA / HYPOASPIS



Pioneer Gardens, Inc. June 21, 2016

POTATO WEDGES

This is a simple way of checking for fungus gnat larvae populations. We consider this our control card for fungus gnat scouting.

Potato wedges also help us see if we have confirmation of a Hypoaspis population.

POTATO WEDGES



Pioneer Gardens, Inc. June 21, 2016

YELLOW CARDS: (NOT SOCCER :-)



HUNTER FLIES



Pioneer Gardens, Inc. June 21, 2016

WEEKLY SCOUTING

133	Average	0.3333333333	20	0.3333333333	0	9.333333333	0	0	0
134	Up/Down								
135	Comments								
136									
137									
138	Bay 16	Thrip	Fungus gnats	White fly	Hunter fly	Shore	Aphid	PW	Leaf Hop.
139	Card 1	0	17	0	0	9	0	0	0
140	Card 2	0	20	0	0	3	0	0	0
141	Card 3	0	20	1	0	6	0	0	0
142	Average	0	19	0.3333333333	0	6	0	0	0
143	Up/Down								
144	Comments								
145									
146									
147	Bay 17	Thrip	Fungus gnats	White fly	Hunter fly	Shore	Aphid	PW	Leaf Hop.
148	Card 1	0	13	0	0	0	0	0	0
149	Card 2	0	10	0	1	5	0	0	0
150	Card 3	0	14	0	0	4	0	0	0
151	Average	0	12.33333333	0	0.3333333333	3	0	0	0
152	Up/Down								
153	Comments								
154									
155									
156	Bay 18	Thrip	Fungus gnats	White fly	Hunter fly	Shore	Aphid	PW	Leaf Hop.
157	Card 1	0	2	0	0	1	0	0	0
158	Card 2	0	7	0	0	2	0	0	0
159	Card 3	0	7	0	0	1	0	0	0
160	Average	0	5.333333333	0	0	1.333333333	0	0	0
161	Up/Down								
162	Comments								
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NEMATODES

Weekly spray applications of beneficial nematodes will guarantee a successful reduction of damaging thrips populations to better than a manageable level.

Nematodes also help reduce any fungus gnat population that may be present.

Nematodes have a zero REI (Re-Entry Interval) requirement, which means employees can immediately enter the working area. Most conventional chemicals have more than a 4-hour REI, causing compliance issues such as PPE (Personal Protective Equipment). With BCA's we have ZERO workplace interruption.

There are milder chemicals (Neonic-free) that can be used in conjunction with BCA's and invariably these can be applied along with nematodes.

NEMATODES



SPRAYING NEMATODES



NEMATODE APPLICATION



PIONEER GARDENS, INC. JUNE 21, 2016

COMPATIBLE CHEMICALS



Pioneer Gardens, Inc. June 21, 2016

APHID BANKER PLANTS



APHID MUMMIES



PEPPER BANKERS AND APHID CONTROL



APHIDIUS



SPIDER MITES

There are a range of BCA's which can help control spider mite infestations.

This also means that REI requiring chemicals can be avoided.

Bean plants can be used within the crops as damaging insect indicators.

SPIDER BCA'S



Pioneer Gardens, Inc. June 21, 2016

BEAN BANKER PLANTS



BEAN BANKER PLANTS



NATURAL THRIPS CONTROL

Pepper banker plants can be used as a natural reproductive habitat for Orius which is a naturally occurring outdoor thrips predator.

With the cultivation of peppers and other pollen producing plant material, we are inviting the natural predator Orius to come into the production houses and take care of thrips control.

We also introduce Orius to start the in-house process of thrips control.

PEPPER BANKER PLANTS



Pioneer Gardens, Inc. June 21, 2016

PEPPER BANKER PLANTS (ORIUS)



ORIOUS



GENERAL COLLECTION OF BANKER PLANTS

A collection of different banker plants provides a natural habitat for most of the BCA's required for biological control of damaging insects in the production process.

When properly implementing a BCA program, applications of harsh chemicals, especially 'Neonics', are not needed.

Selling plants in retail stores that have a possible BCA supply can only be good for the consumers home garden environment.

OTHER BANKER PLANTS



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OTHER BANKER PLANTS



LARGE BANKER PLANTS



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FIELD BANKER BEDS



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MORE FIELD BANKERS



Pioneer Gardens, Inc. June 21, 2016

MORE FIELD BANKERS



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FINAL COMMENTS

Biological control does work when done properly.

The initial investment may be more expensive than conventional chemical control methods, but considering pest resistance and new compliance standards for worker protection, in the long term a BCA program is definitely more environmentally friendly and cost-effective.

At Pioneer Gardens we have implemented and maintained a full 100% biological control program since September of 2012.

Thank you for your interest in Pioneer's



BIOLOGICAL PERENNIAL PRODUCTION

roger@pioneergardens.com

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