

Banks Grass Mite Banker Plant Research to Create Continuous Biocontrol in Greenhouses



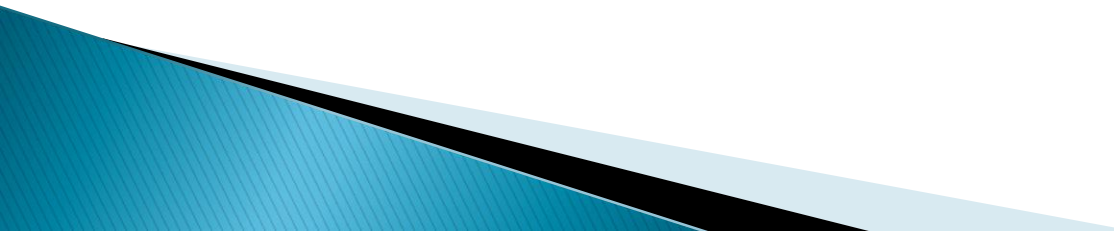
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2017 Winter Flower Growers Program

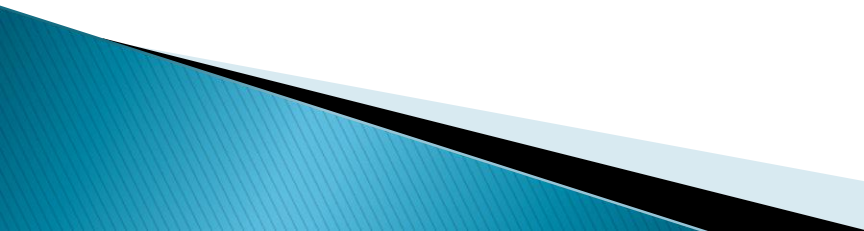
D&D Farms Inc. Stow MA February 8, 2017

- ▶ Spider mite banker plant research supported by 2017 NESARE grant.

Fundamentals of Successful Biocontrol

- ▶ Keep pest numbers low from the beginning. Biocontrol is preventative
 - ▶ Right BCA's for the pest identified
 - ▶ Be sure that the biocontrols are constantly exerting pressure on the pest
 - ▶ Compatible chemicals
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Banker Plants assure constant presence of beneficials by offering food and reproductive sites for the beneficials.

- ▶ **Banker plants allow us to support beneficials in the greenhouse before the pest is present.**
 - ▶ **Example: Aphid banker plants host an aphid that only attacks grasses, not broadleaved plants.**
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Aphid Banker Plant

Cereal aphid plus
Aphidius colemani or
Aphidoletes



Banks grass mite on corn to support spider mite predators

- ▶ 2016 SARE grant
- ▶ A method demonstrated by Dr. Lance Osborne in Apopka FL
- ▶ Attempted to address a need in tomatoes to have the predatory midge *Feltiella* establish early before spider mites start to do damage in the tomatoes.



Organic CSA near Burlington VT



Andy Jones and Jill Rotondo, BP experimenters beside nursery area



Assessing the Banks grass mite #'s



Tomato greenhouse



Searching for Feltiella on banker plants in tomato greenhouse



Spider mite predator beetles & immatures common on BP system





08/05/2016

Numerous Feltiella larvae on bean trap plants



Experimental outcome

- ▶ Feltiella colonized the corn briefly but appeared to prefer the beans and tomatoes
- ▶ Sandy Menasha alerted us that the Banks grass mite also attacked the beans (broad leaved plants)
- ▶ The best corn (at Nathan Ludlow's) had roots going into the ground under the pot. The corn tassled and fruited. All the over-crowded corn simply died.

Acknowledgements

- ▶ SARE Grant ONE16-259-29994 Using a Novel Banker Plant System To Prevent Spider Mite Outbreaks in Protected Culture
- ▶ Cooperators, Dr. Sandra Menasha, Eve Kaplan-Walbrecht , Nathan Ludlow, Dr. Nicolas Ellis, James Markey, Andy Jones and Jill Rotondo
- ▶ IPM Labs Staff: Julie McElfresh and Zaidee Powers

Thank you!

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