

# ONION THRIPS MANAGEMENT UPDATE

**Zsafia Szendrei** - vegetable entomologist

**Adam Byrne** – research technician

Department of Entomology

**MICHIGAN STATE**  

---

**U N I V E R S I T Y**

# New product registrations



syngenta®

## Product now registered on onions in the U.S.:

- Agri-Mek SC (abamectin)

## Products in the pipeline:

- Movento** (spirotetramat) – has federal label on many vegetable crops, but still not on onion (May 2013)
- Benevia** (cyantraniliprole) – not labeled yet (target 2<sup>nd</sup> quarter 2013)
- Tolfenpyrad** 15EC (tolfenpyrad) – labeled on greenhouse crops, but not on onion (target 2014)



*The miracles of science™*



## Section 18 for 2013:

- Movento

## Insecticide trial conducted on farm

### Goals in 2012:

- compare thresholds to weekly sprays
- determine Radiant rate
- test experimental products in programs

### Methods:

- All treatments included non-ionic surfactant (Dyne-Amic, 0.5% v/v)
- 50 gallons per acre, 40 psi, single nozzle boom
- counted thrips weekly on 10 randomly selected plants per plot
- visual rating of thrips damage on two dates
- first insecticide application was on Jun 20, 2012
- three-row beds, 15 ft long plots



## Which products were included in the 2012 MSU onion thrips insecticide study?

Chemical Class	Products used in onion thrips insecticide trial	
pyrethroid	-	Group 3A
organophosphate	-	Group 1B
neonicotinoid	-	Group 4A
<b>carbamate</b>	<b>Lannate</b>	<b>Group 1A</b>
<b>spinosyn</b>	<b>Radiant</b>	<b>Group 5</b>
<b>abamectin</b>	<b>Agri-Mek</b>	<b>Group 6</b>
pyrazol	Tolfenpyrad <sup>1</sup>	Group 21A
spirotetramat	Movento <sup>2</sup>	Group 23
cyantraniliprole	Benevia <sup>1</sup>	Group 28

<sup>1</sup> experimental product

<sup>2</sup> can only be used under Section 18 Exemption



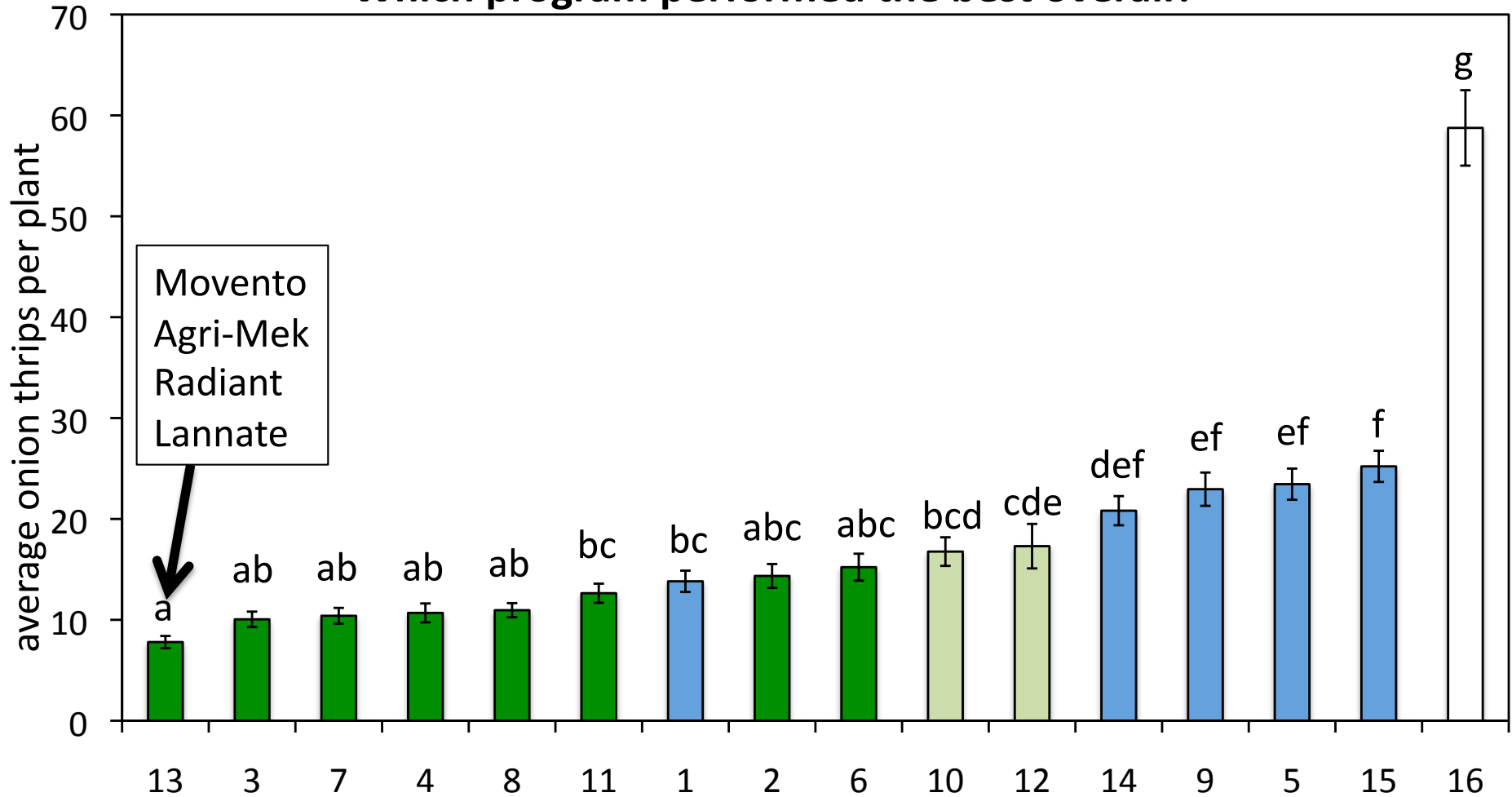
systemic



translaminar



## Which program performed the best overall?

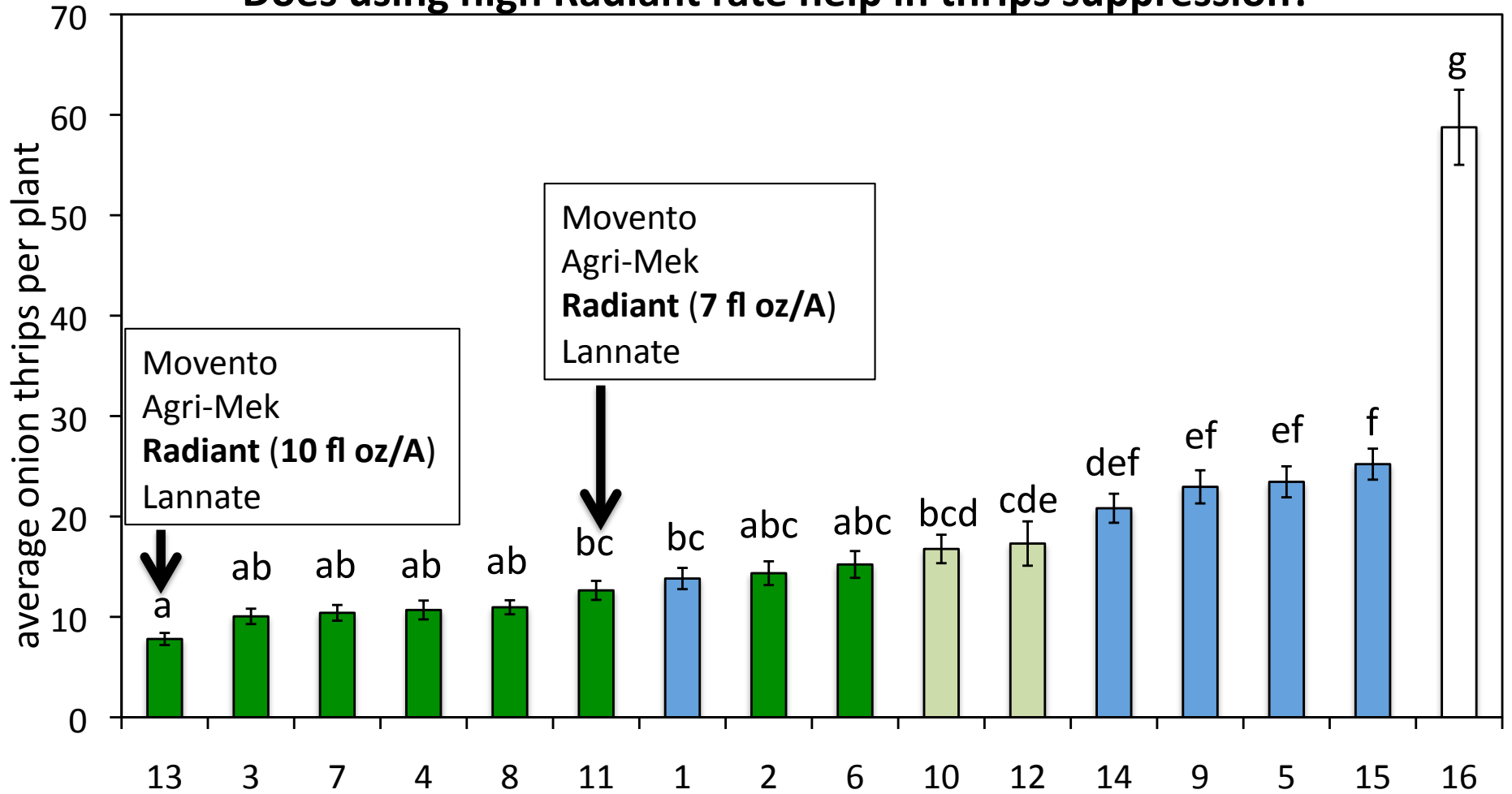


dark green bars – sequence started with Movento

light green bars – sequence started with Movento, used thresholds

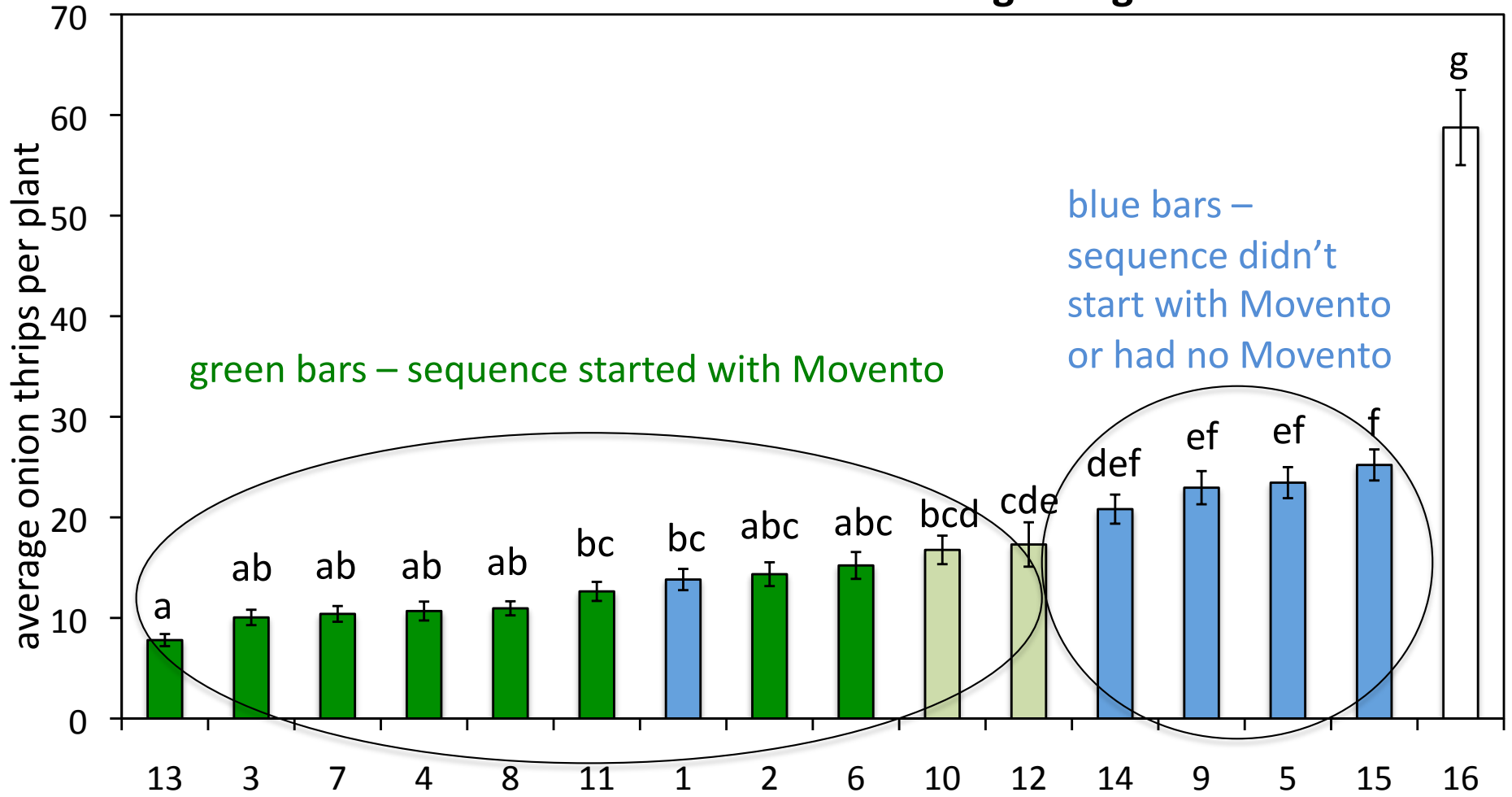
blue bars – sequence didn't start with Movento or had no Movento

# Does using high Radiant rate help in thrips suppression?

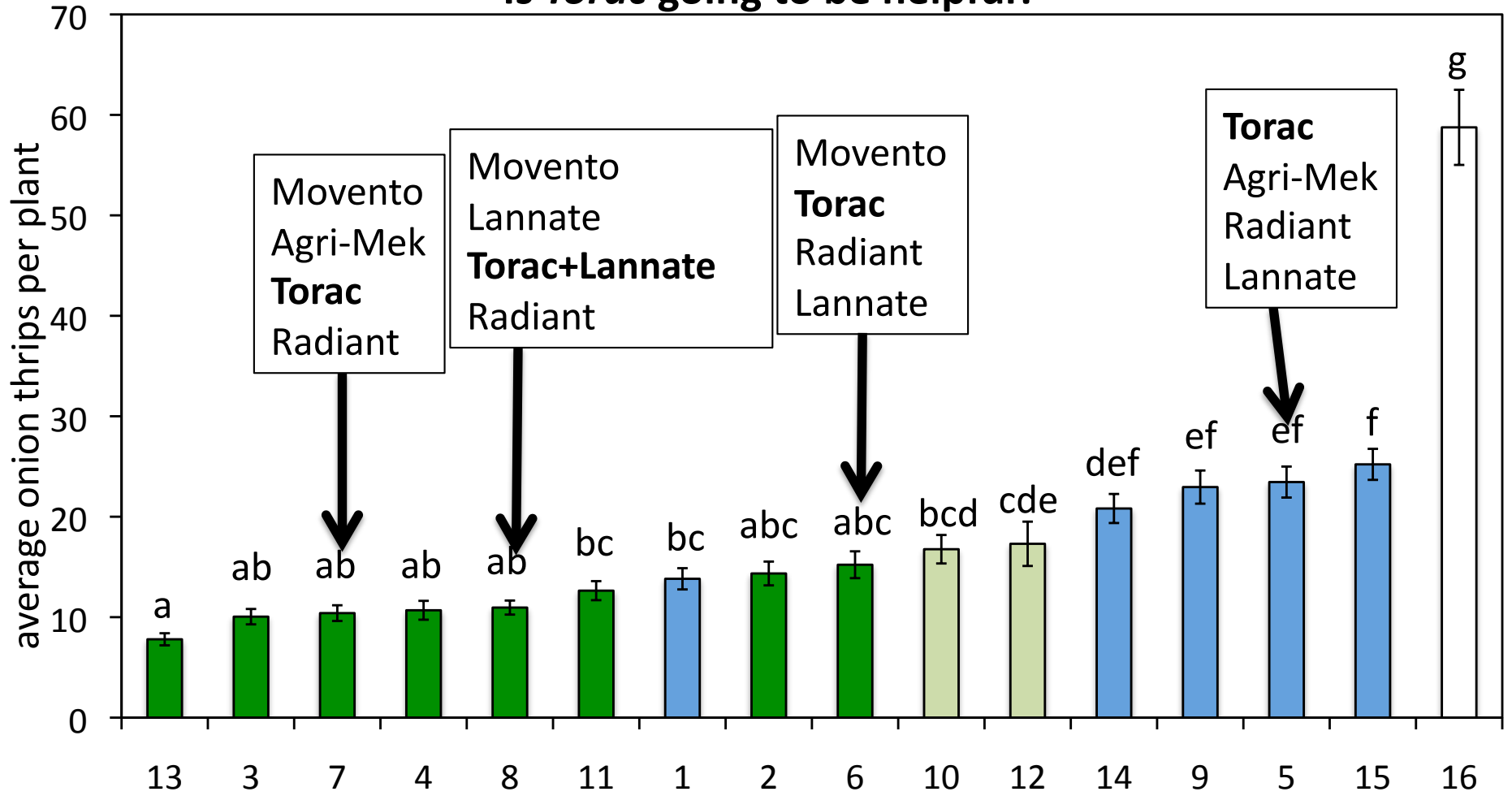


Radiant - max. 30 fl oz per season

# Does it matter if *Movento* is used at the beginning of the season?

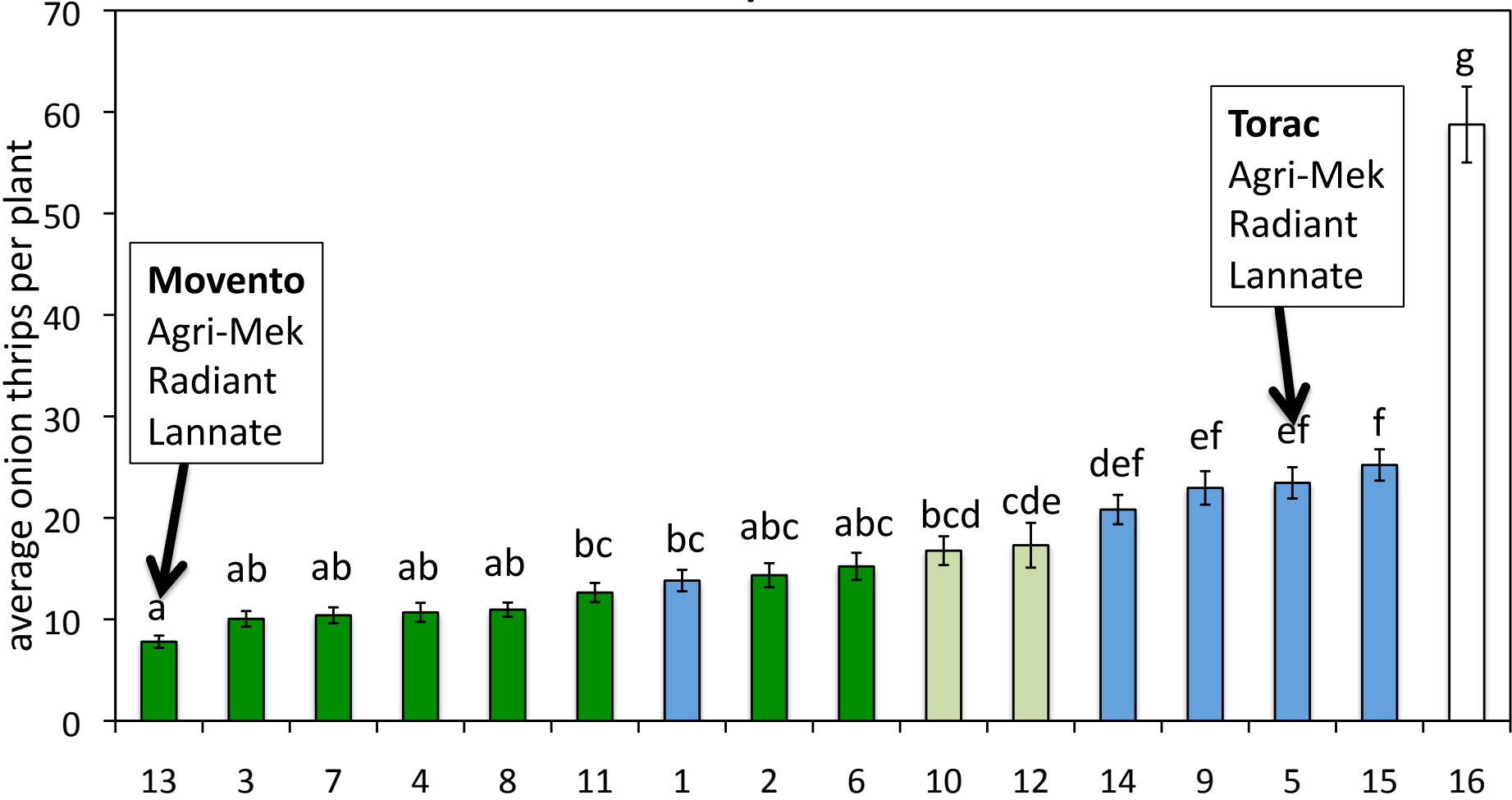


# Is *Torac* going to be helpful?

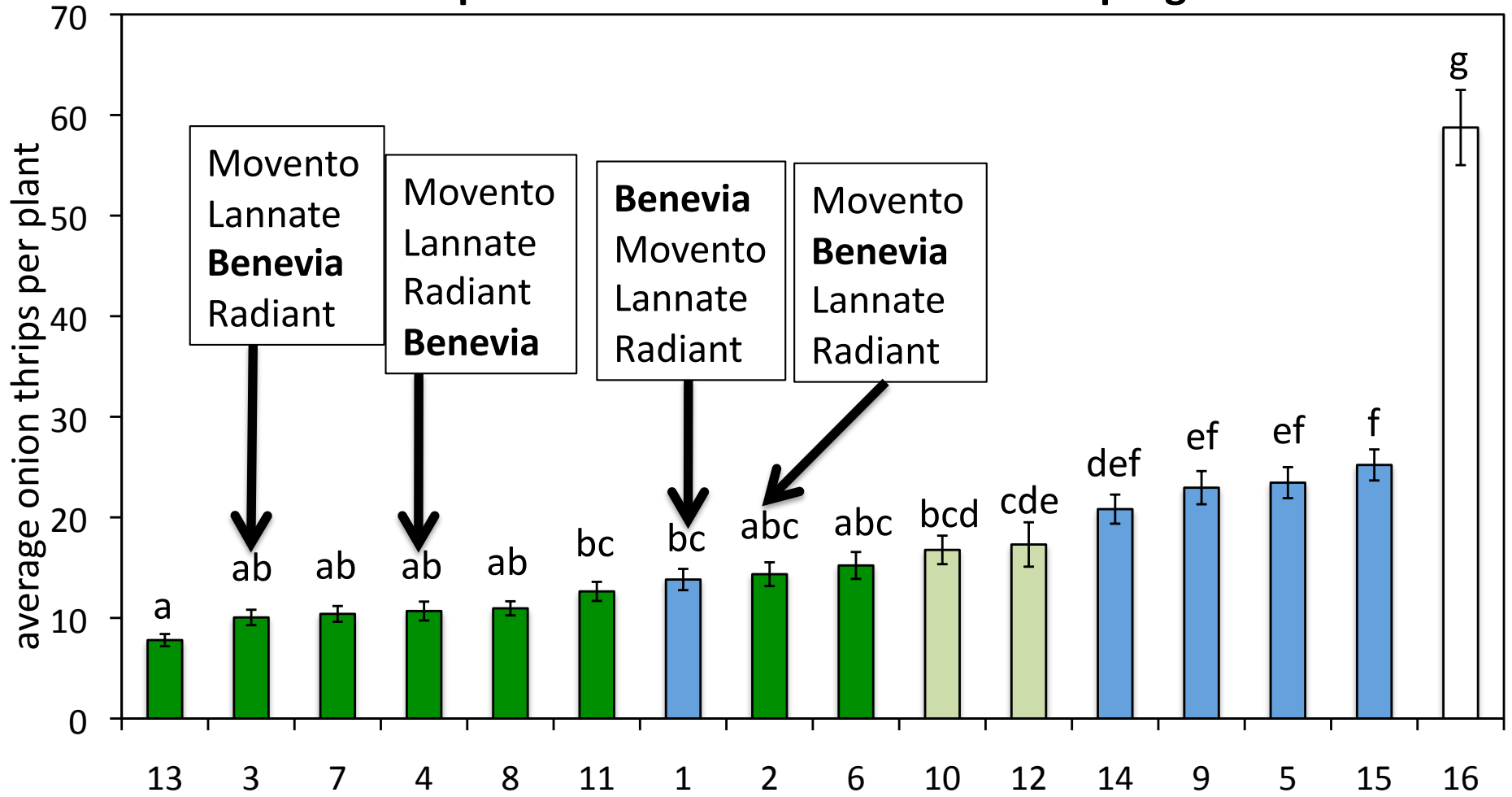




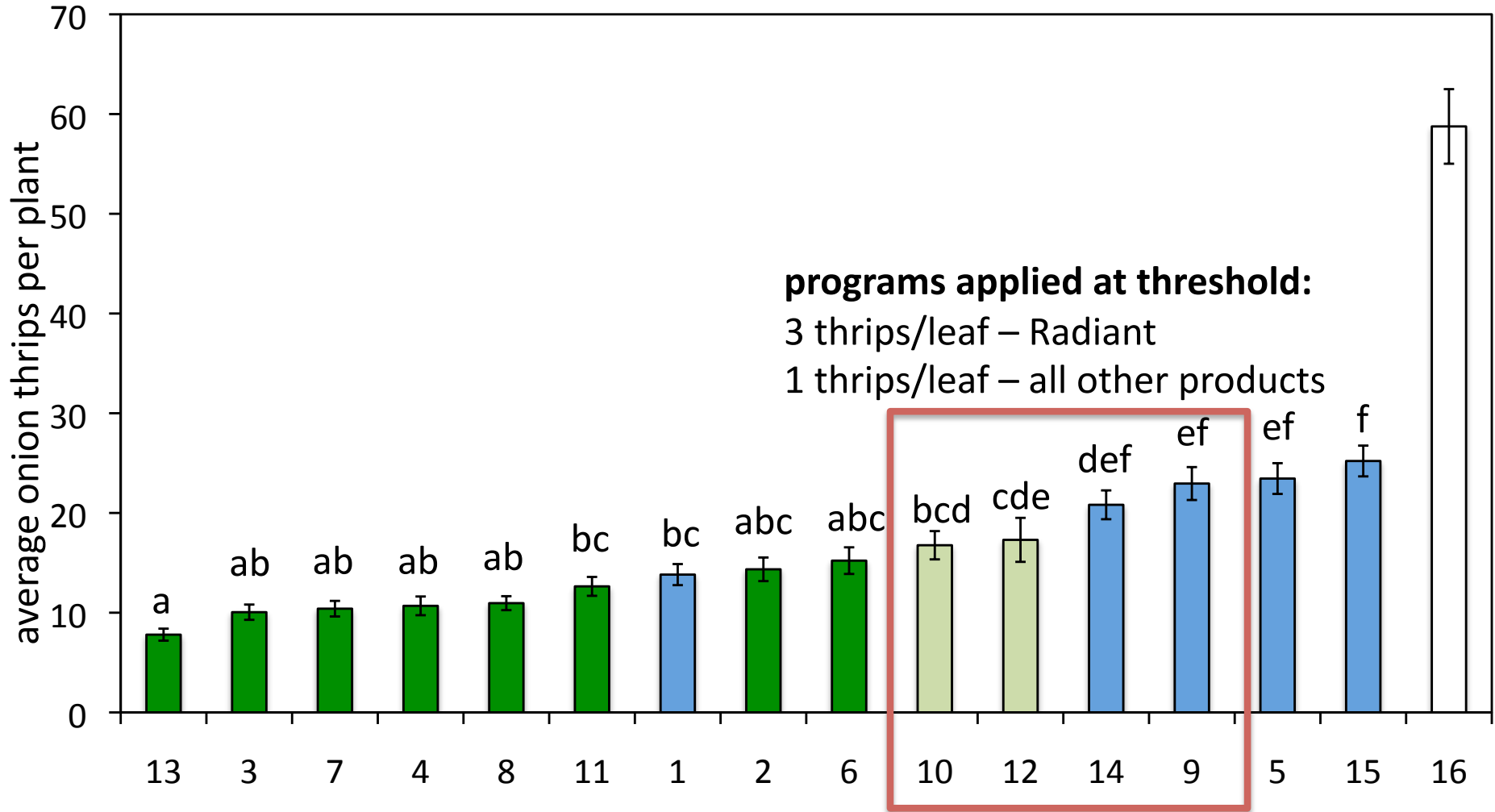
# Can *Torac* replace *Movento*?



## Does the position of *Benevia* matter in the program?

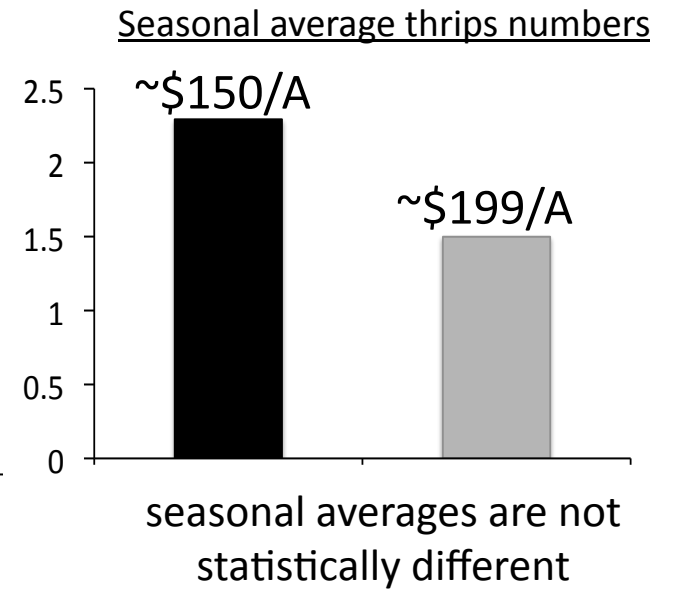
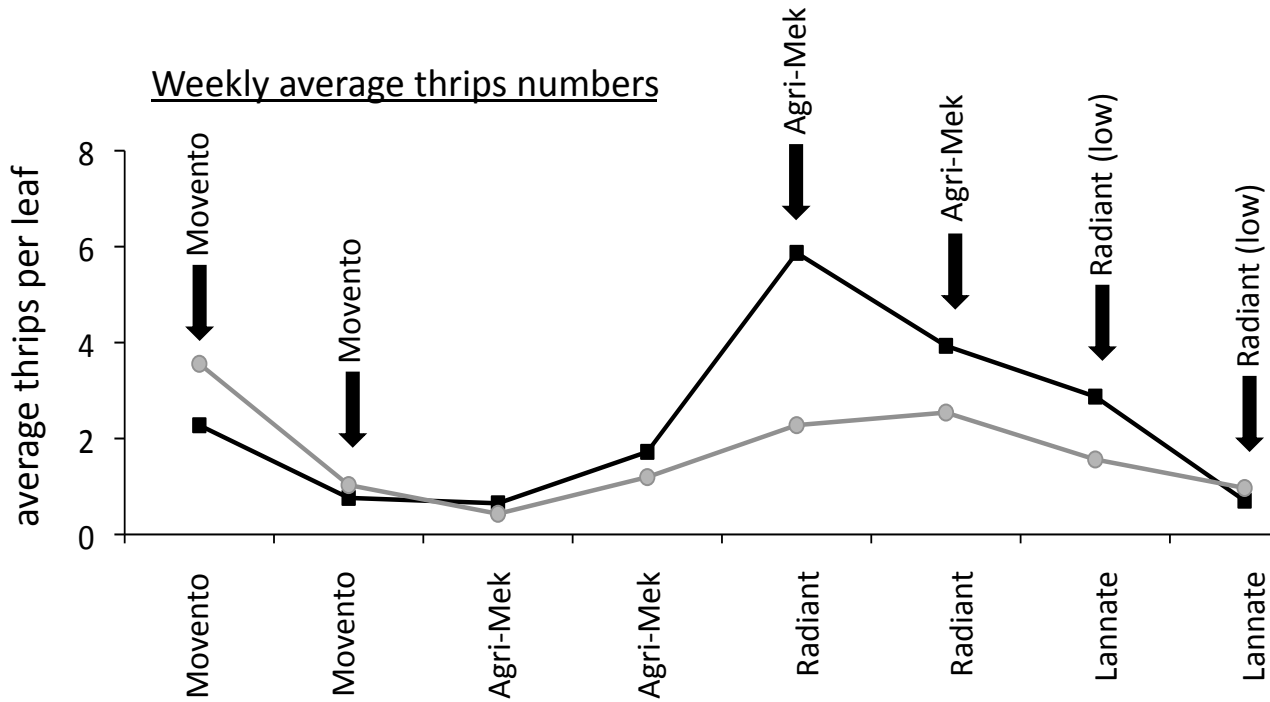


# Can using thresholds work as well as weekly sprays?



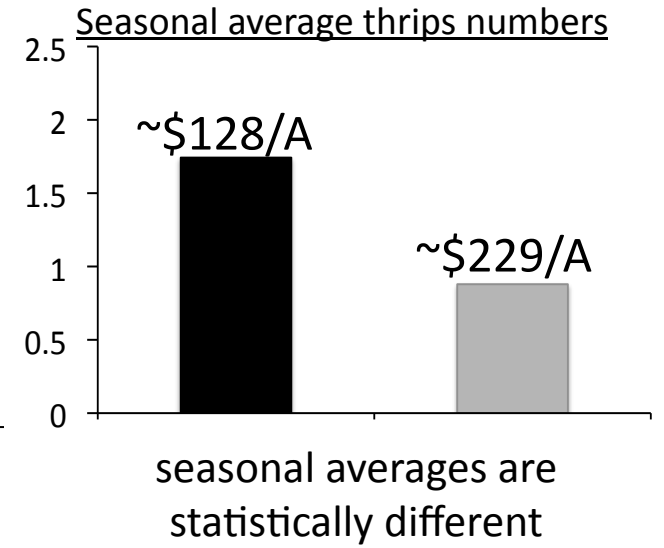
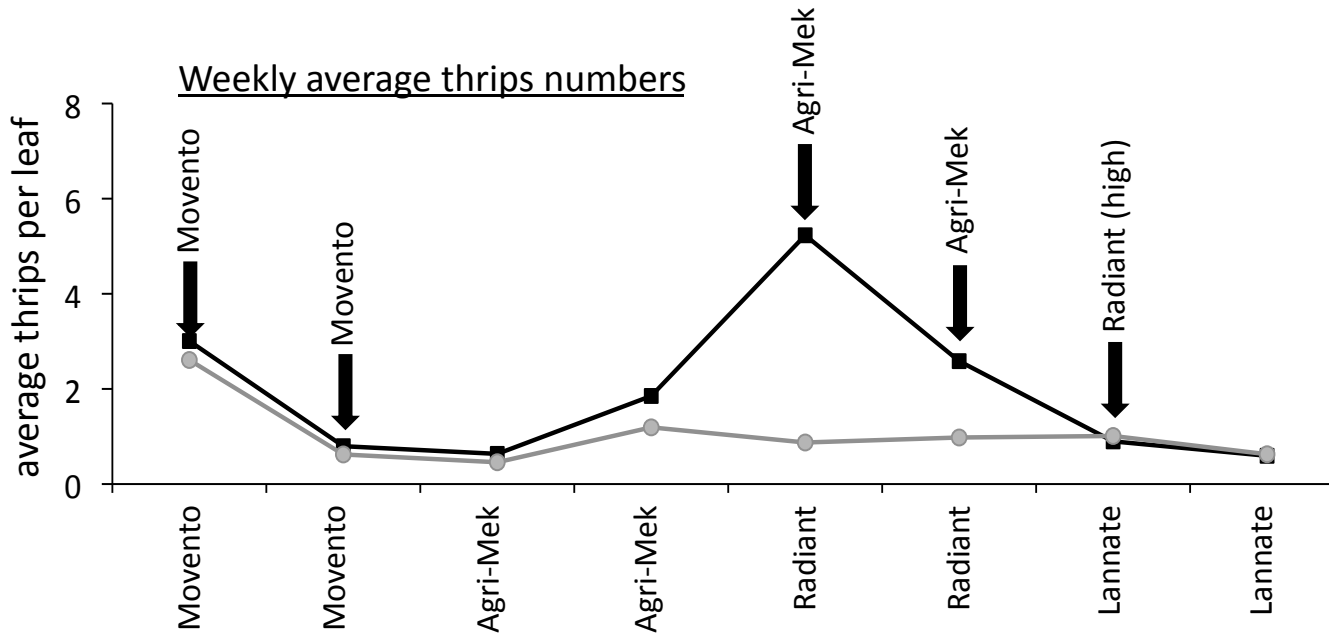
# 1: Treatments 10 vs. 11

threshold (Radiant – 3 thrips/leaf, all other products – 1 thrips/leaf)  
 no threshold, weekly applications



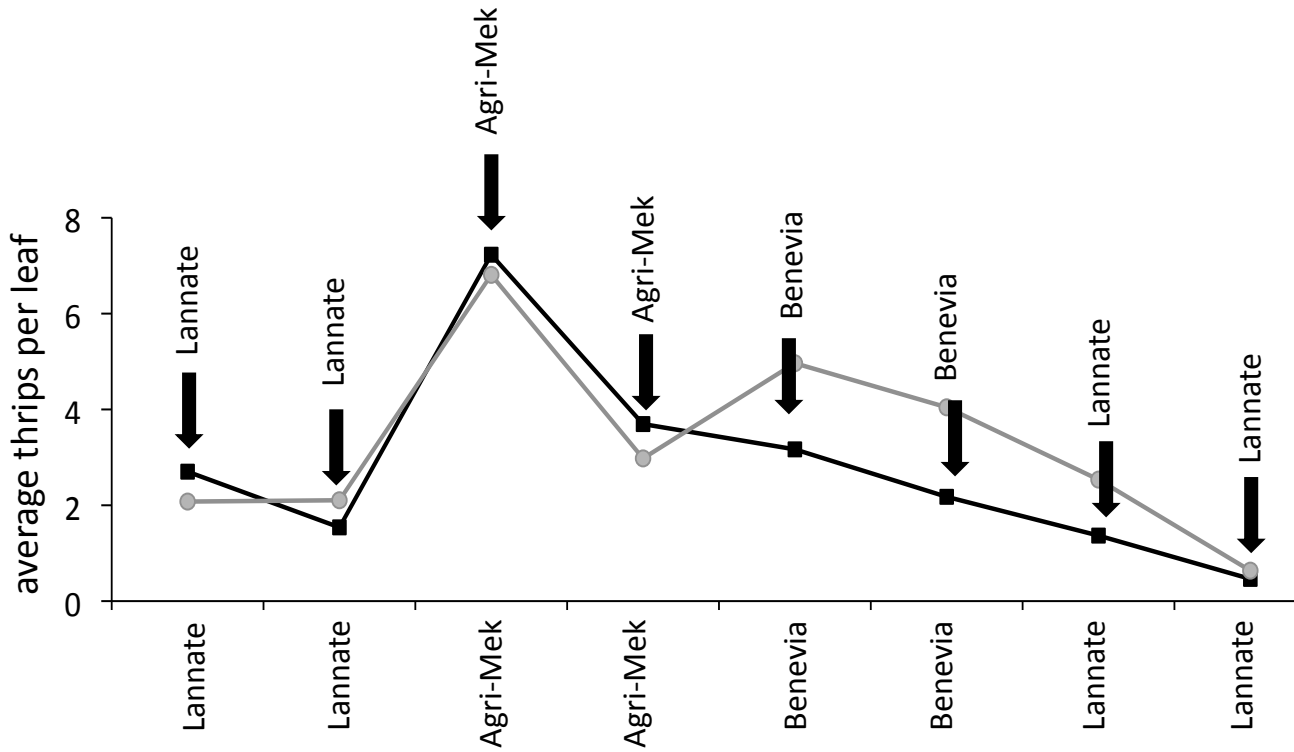
## 2: Treatments 12 vs. 13

- threshold (Radiant – 3 thrips/leaf, all other products – 1 thrips/leaf)
- no threshold, weekly applications



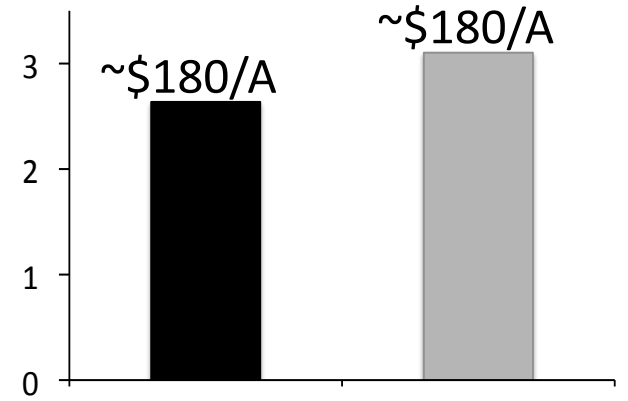
### 3: Treatments 14 vs. 15

- threshold (Radiant – 3 thrips/leaf, all other products – 1 thrips/leaf)
- no threshold, weekly applications



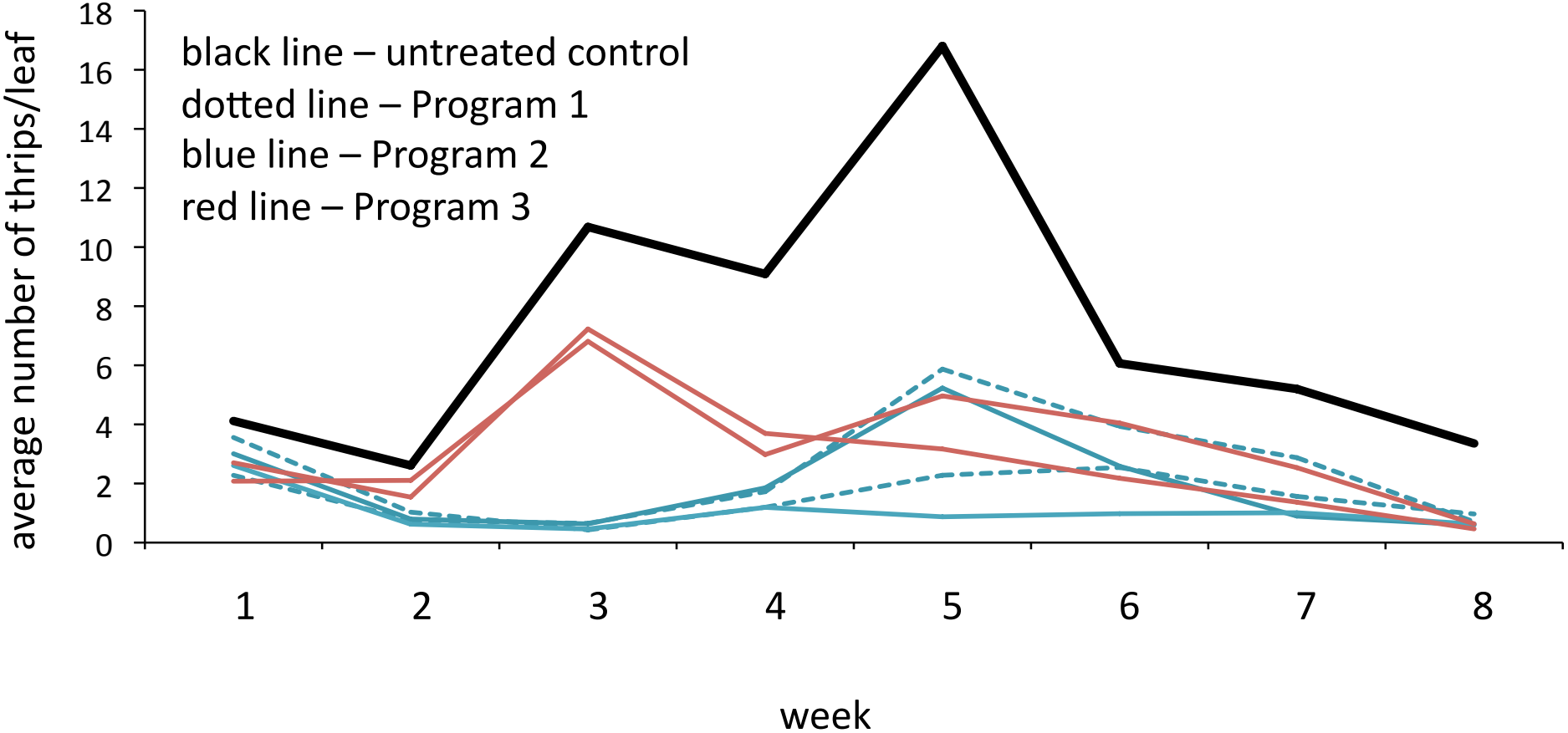
no Movento or Radiant

Seasonal average thrips numbers

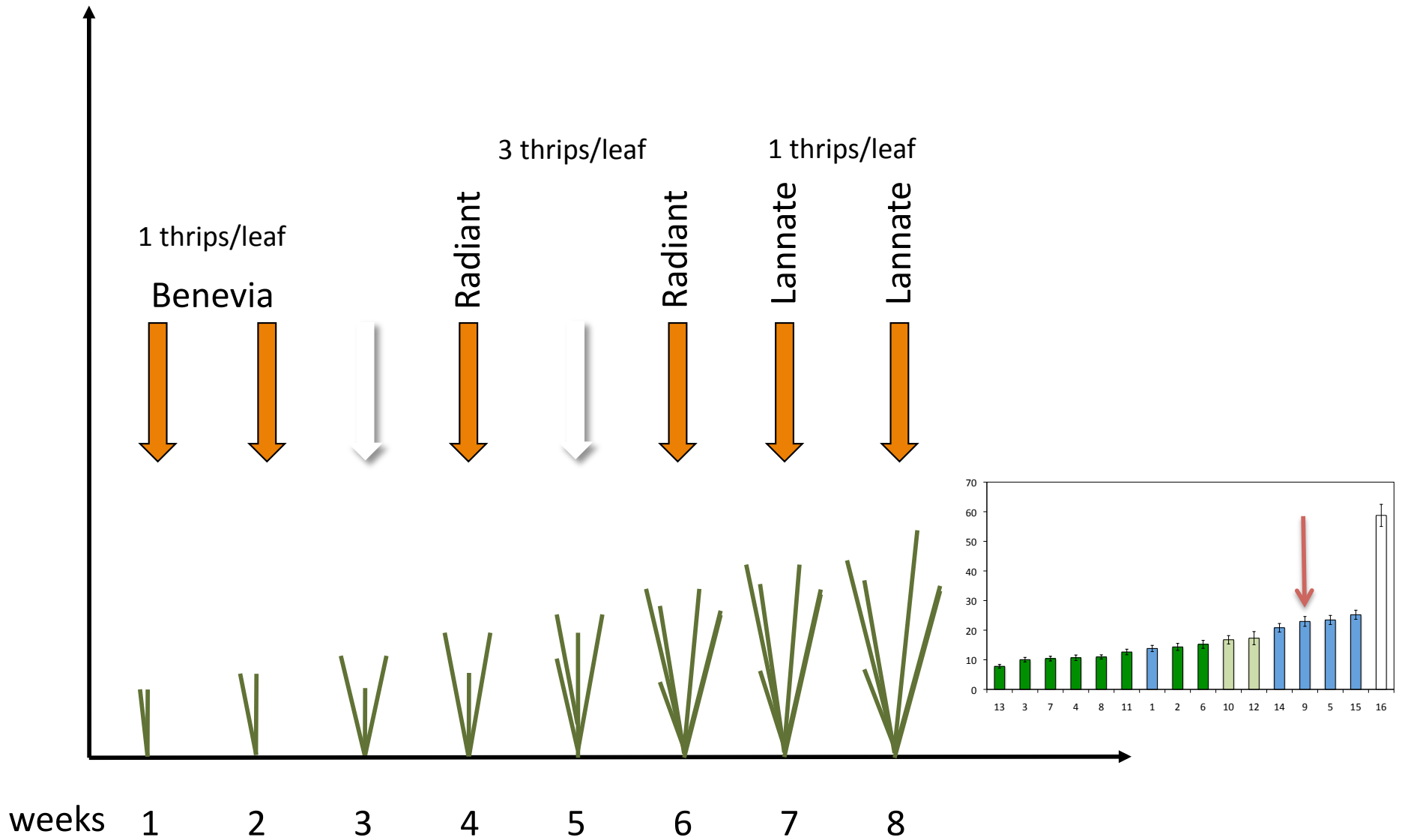


seasonal averages are not statistically different

Blue lines indicate treatments where Movento was applied at the beginning of the season



# Using thresholds and new products





# Yields

- average yield across treatments: 726.8 cwt/acre
- all insecticide programs yielded significantly more than the untreated control
- all insecticide programs (except 14) had more jumbos than untreated control
- jumbos weighed significantly more in all insecticide programs (except 14, 5) compared to control



# Research Plans for 2013

1. Demonstrate effective insecticide rotations that take into account the principles of insecticide resistance management.
2. Test experimental insecticide in program.
3. Continue to develop thresholds for registered and new insecticides.

# Acknowledgements

- Krummrey Farms
- The Michigan Onion Growers Association
- The undergraduate students who spent hours counting thrips in the field
- Bayer CropScience, DuPont, Nichino America, Dow AgroSciences, Syngenta Crop Protection