Thrips and Iris Yellow Spot Virus…

or a little story about managing them on your farm not just in your onions

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Onion Thrips

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Thrips Damage

- Feeding and IYSV – Plant stress
- Reduce Photosynthesis
- Reduce Bulb Size and Yield


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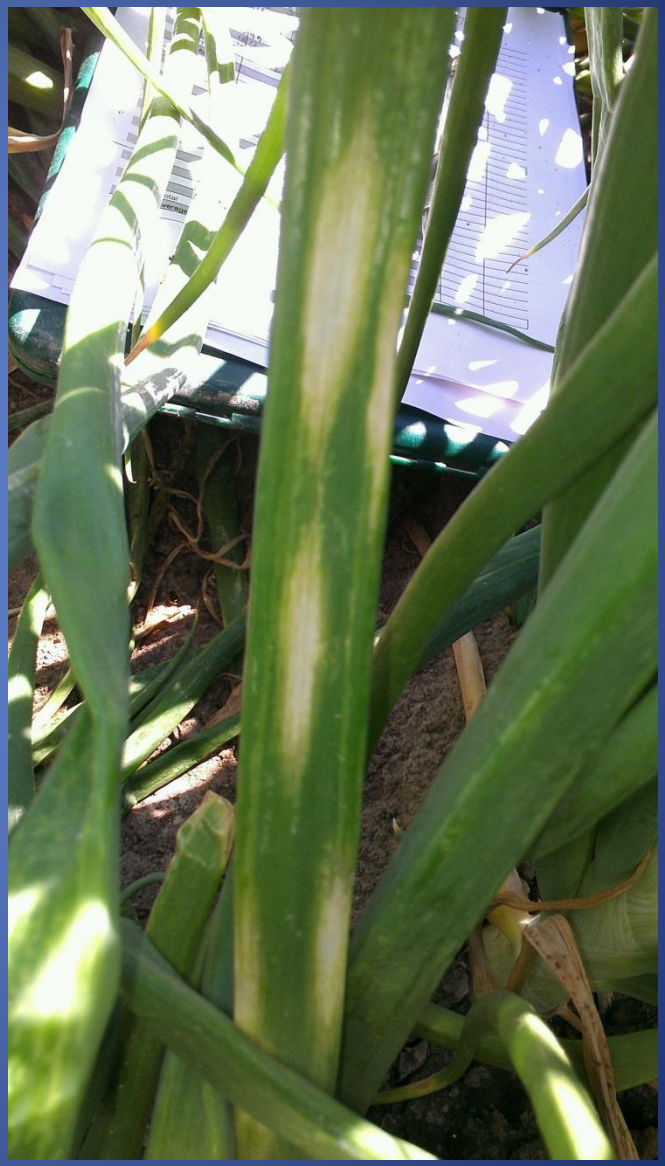
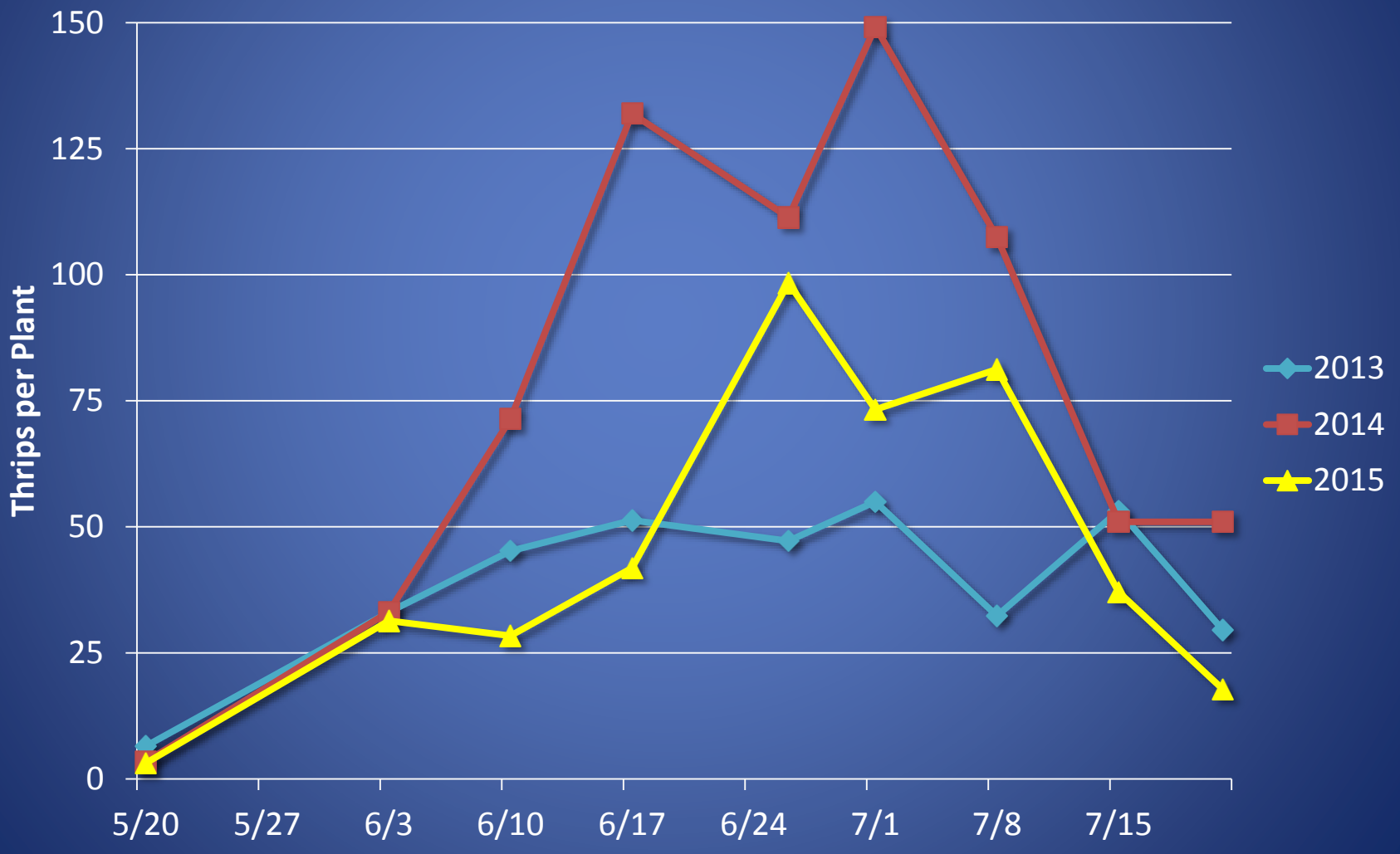
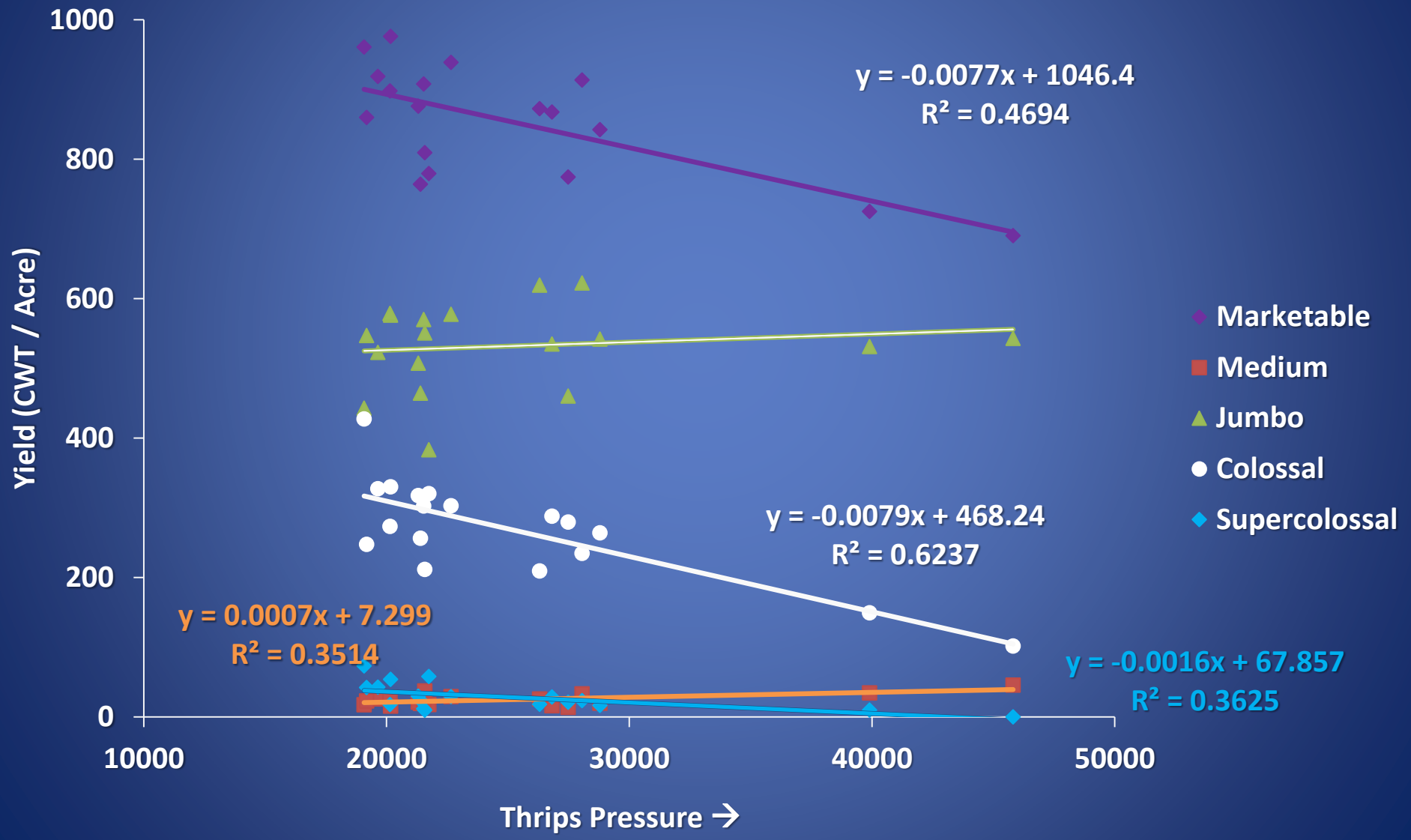
Iris Yellow Spot Virus on Onion



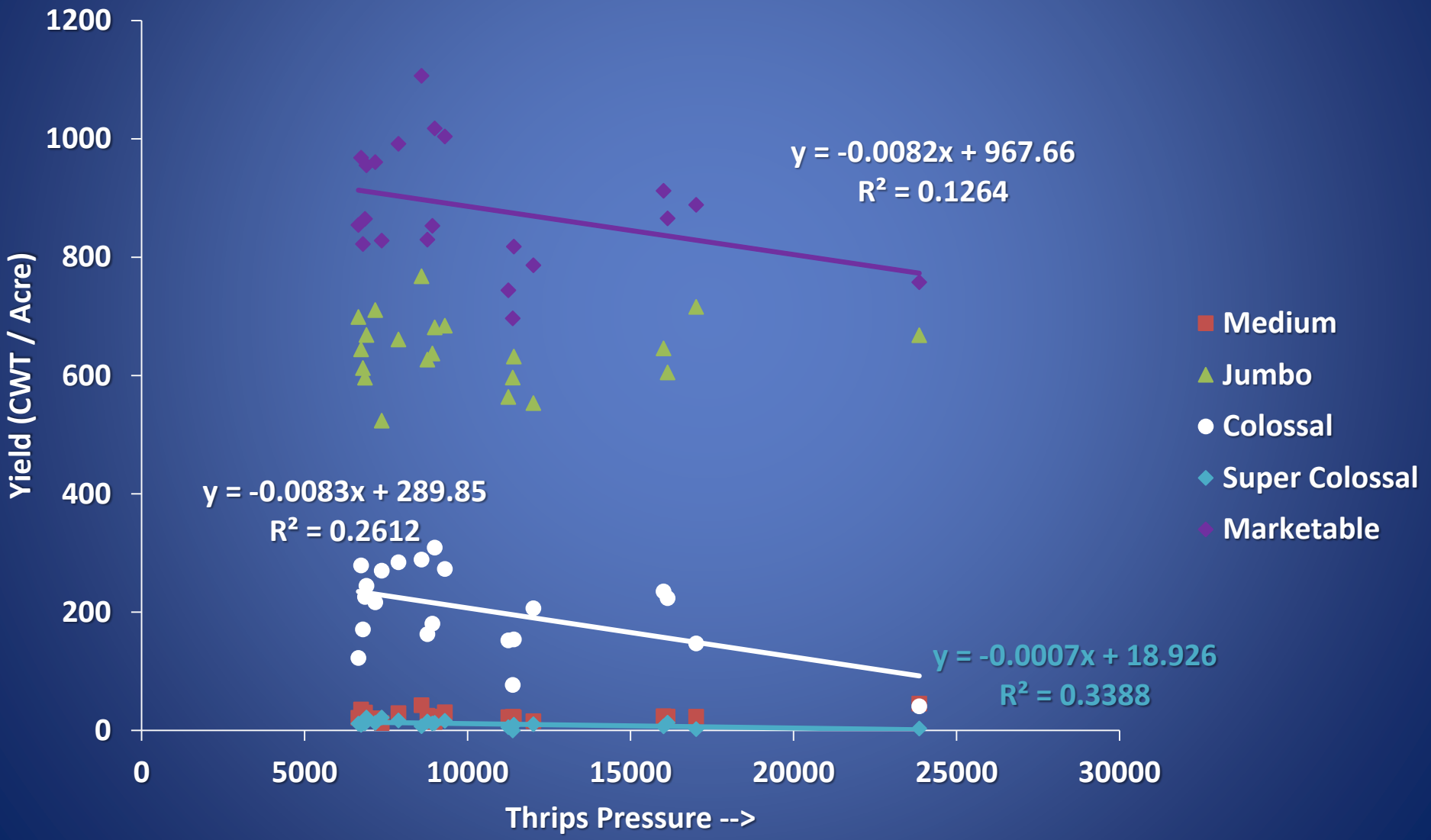
Treasure Valley



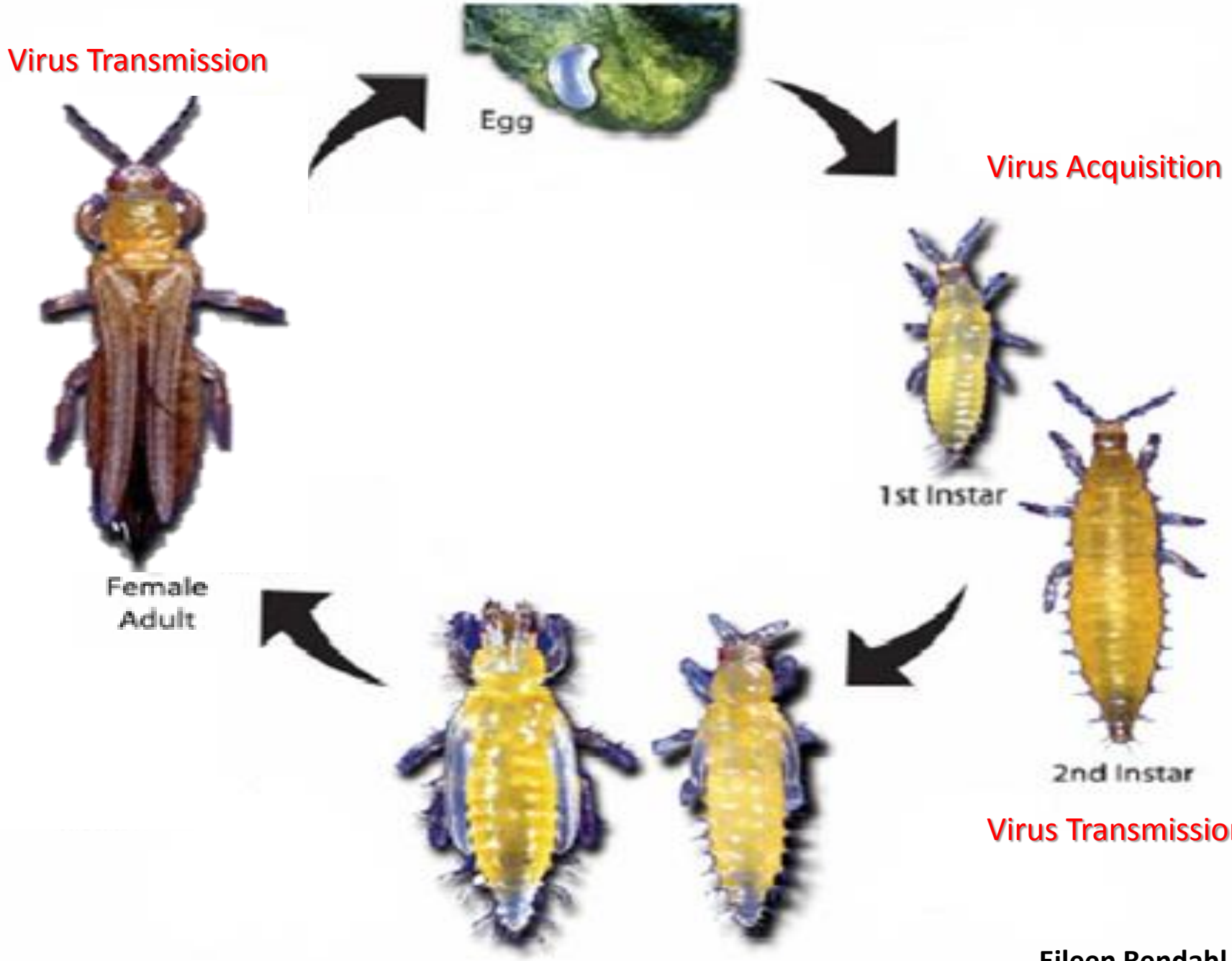
Thrips Effect on Yield - 2014



Thrips Effect on Yield - 2015




Adult
Larva



Eileen Rendahl


Onion Bulb Field
Onion Seed Field
M. Trent


UGA1334126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Wheat

Thrips hosts, but not virus hosts

Alfalfa

Alfalfa Cutting

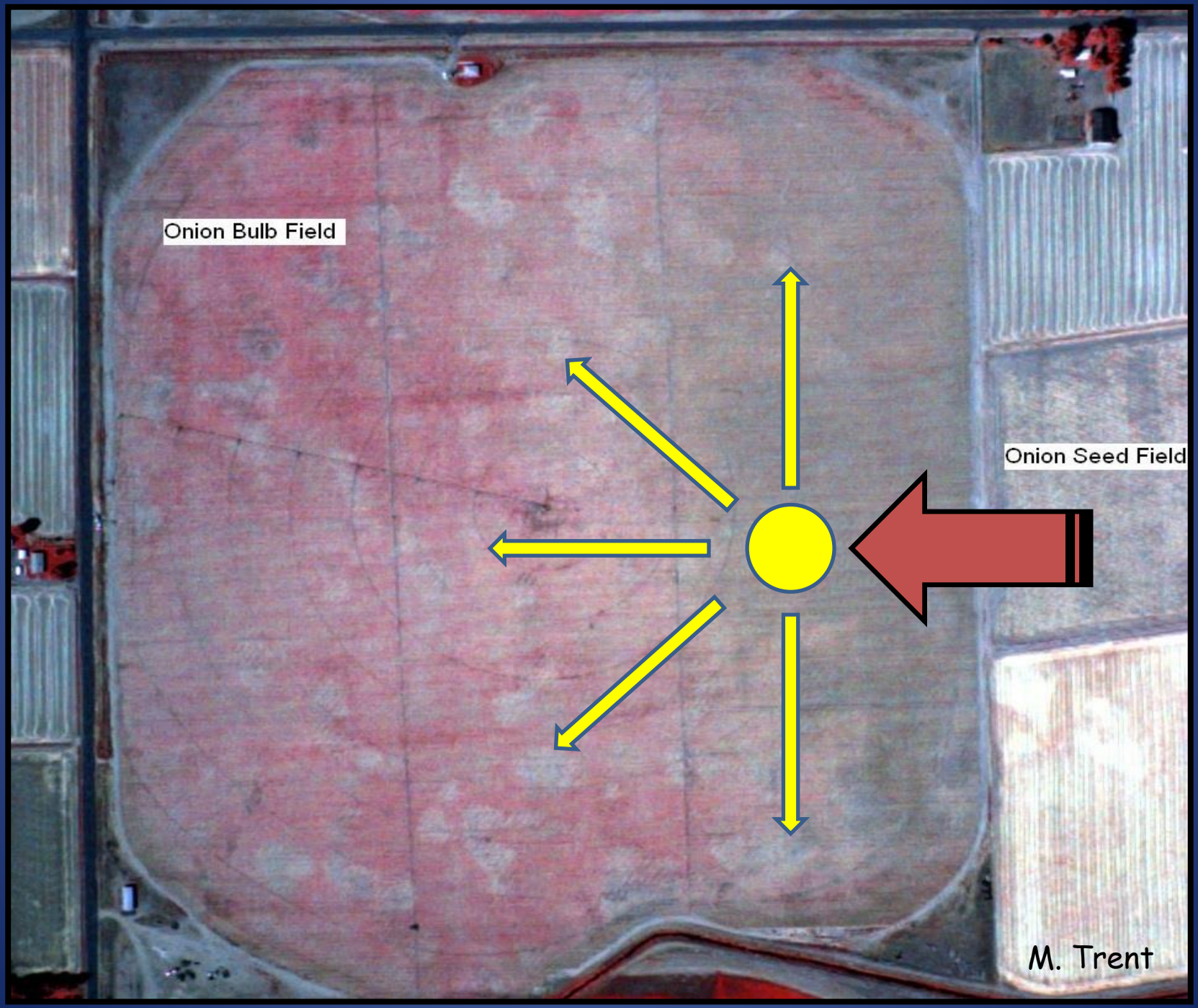
- Proximity of alfalfa to onions?
- Thrips populations in alfalfa?
  - Onion thrips
  - Western flower thrips
- Time cutting so onions can be protected

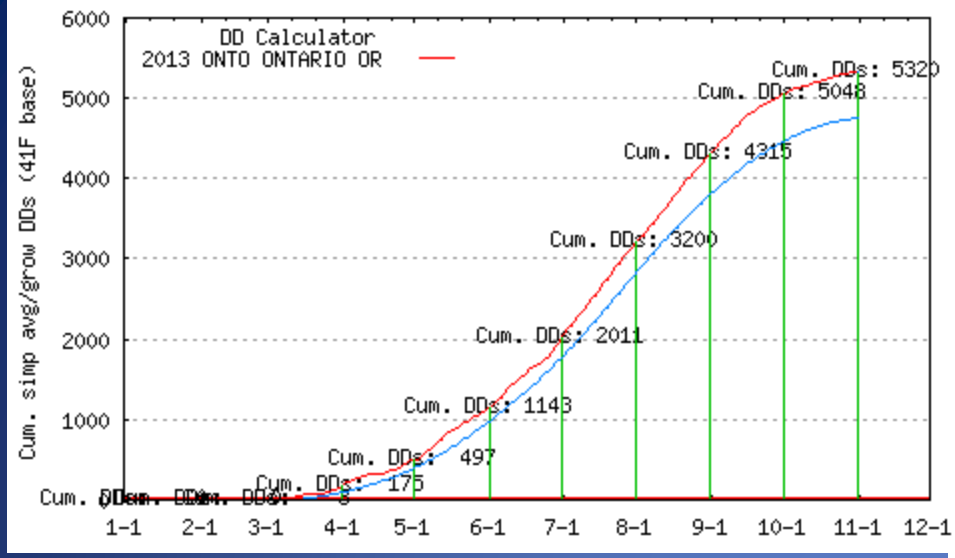
Thrips and IYSV Sources

- Weeds
  - Burdock
  - Dandelion
  - Curly Dock
  - Prickly Lettuce
  - Green Foxtail
  - Shepherd's purse
  - Kochia
  - Russian Thistle

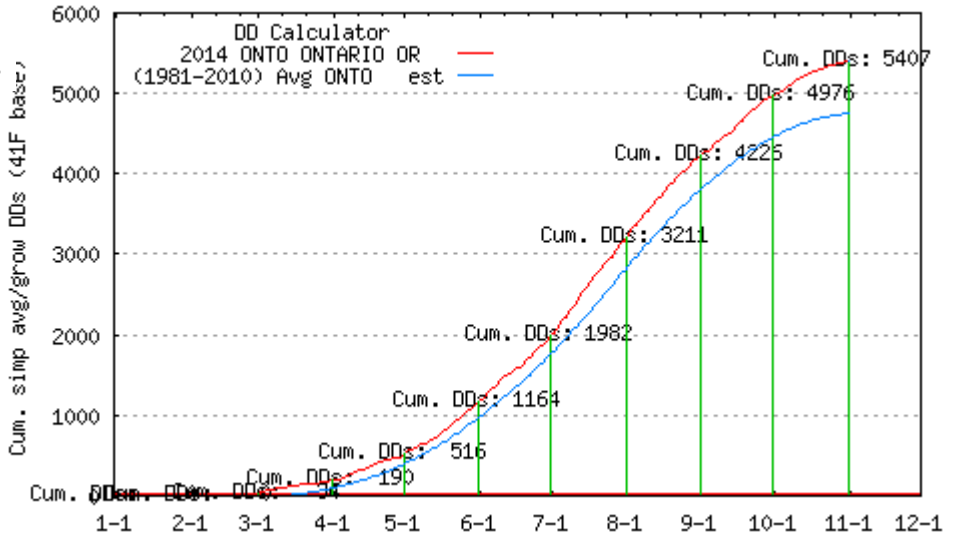
Volunteer Onions

- 2013 – many culls left in fields
- Spring 2014 Survey
  - 1000 – 1500 volunteers / acre
  - 80 – 100 thrips per volunteer
  - Volunteers – often infected with virus

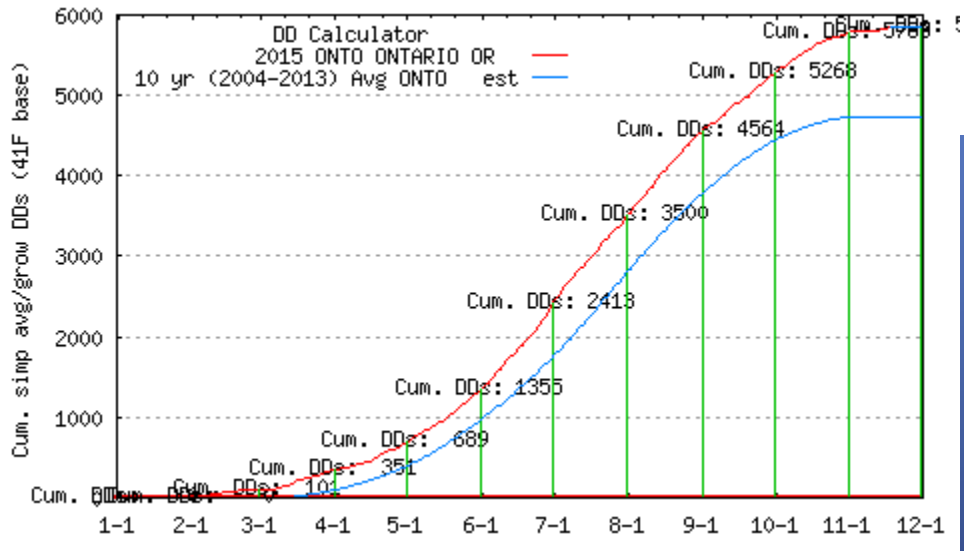

Onion Bulb Field
Onion Seed Field
M. Trent



2013



2014



2015

Onion Thrips Population Growth

	Number of Females		
Date	68^0 F		
July 1	1		
July 8			
July 15			
July 22			
July 29			
August 5			
August 12			
August 19	210		
August 26			
September 2			
Number generations	1		

Onion Thrips Population Growth

	Number of Females		
Date	68^0 F	77^0 F	
July 1	1	1	
July 8			
July 15			
July 22			
July 29		165	
August 5			
August 12			
August 19	210		
August 26			
September 2		27,225	
Number generations	1	2	

Onion Thrips Population Growth

	Number of Females		
Date	68^0 F	77^0 F	86^0 F
July 1	1	1	1
July 8			
July 15			63
July 22			
July 29		165	3,969
August 5			
August 12			250,047
August 19	210		
August 26			15,752,961
September 2		27,225	
Number generations	1	2	4

Factors Affecting Thrips Pressure

- Temperature
- Variety
  - Leaf color
    - Yellow-green, glossy – less attractive
    - Blue-green, waxy – more attractive
  - Plant structure
    - Open neck – less suitable
- Fertilization
- Plant vigor
- Nearby crops

Thrips and IYSV

- Thrips and virus stress the plant
- Damage accumulates over the season
- Thrips management – “race against time”

Insecticides

- Management – Not control
- Get the product to where the thrips are
- Resistance Management

Rotations

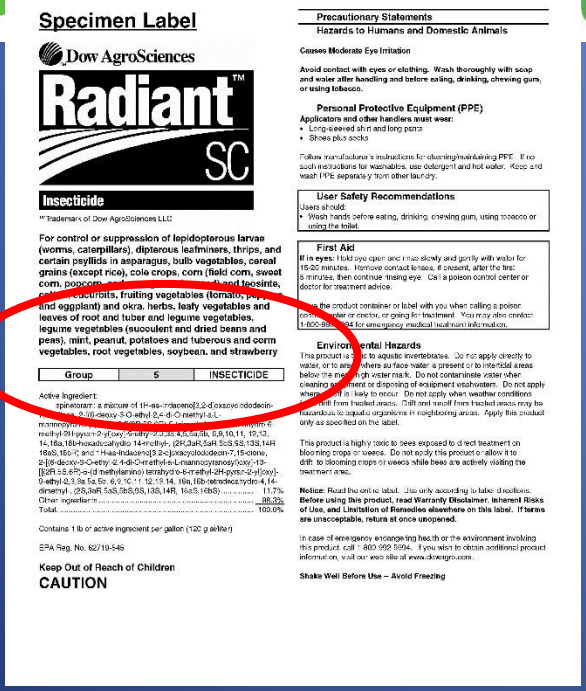
- Identify patterns of insecticides that would provide “best” thrips and IYSV management, thus producing “best” marketable yields

- Preserve long-term efficacy of insecticides

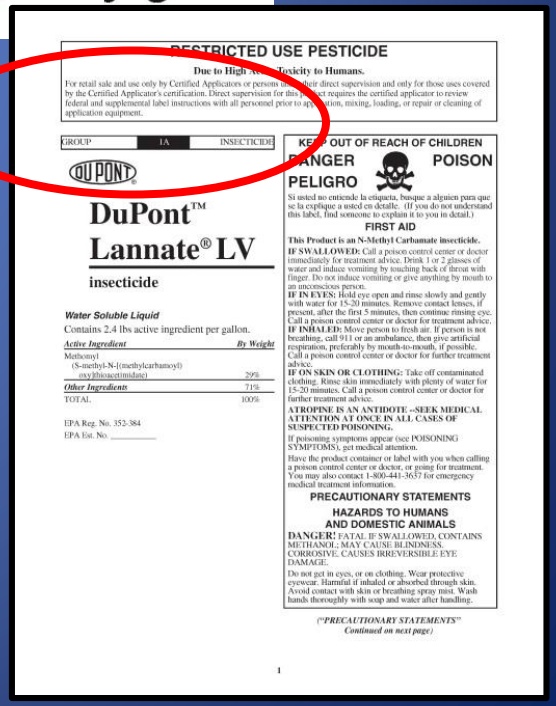
Group 23

Group 6

Specimen Label



Group 5

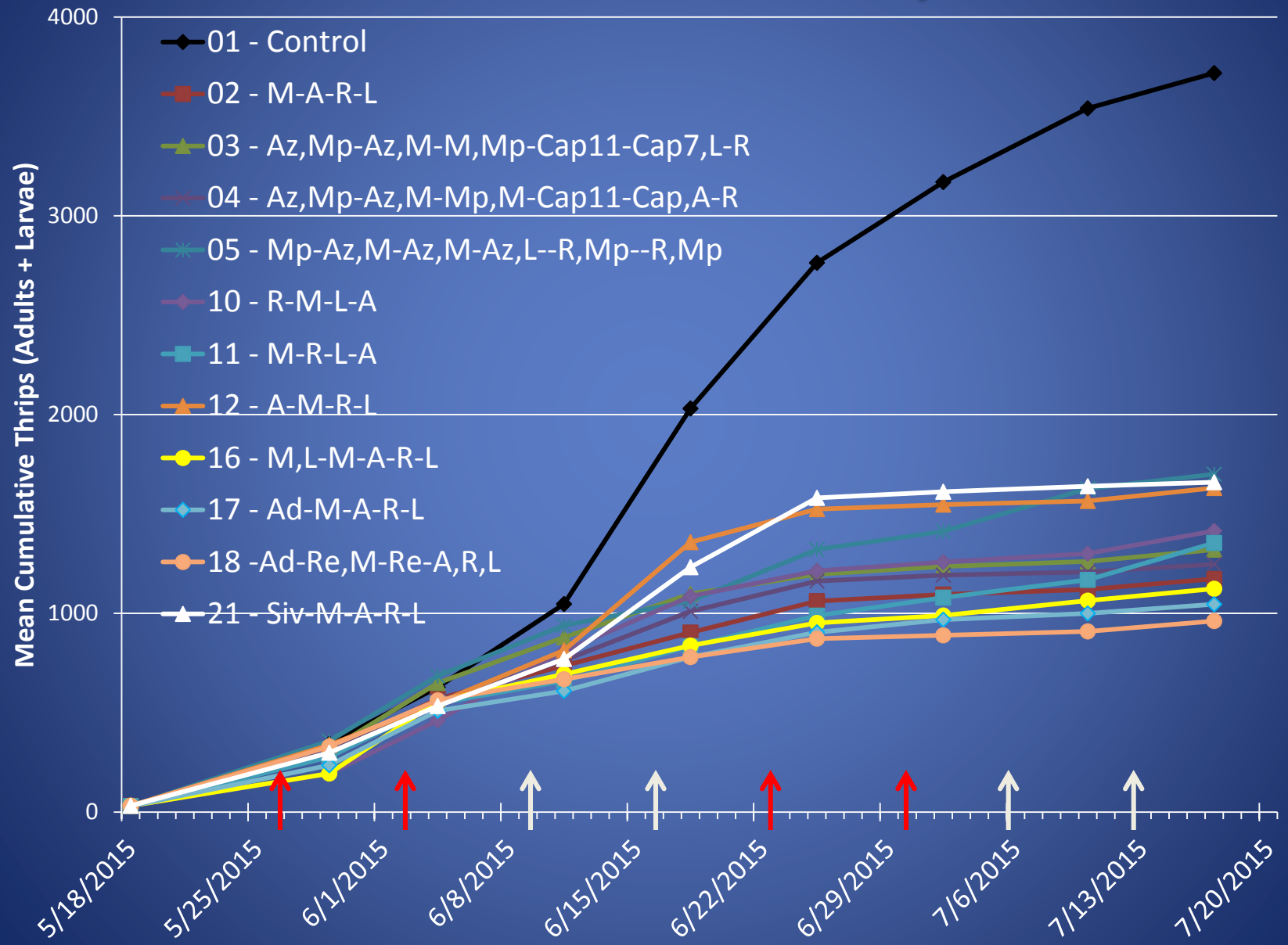


Group 1A

Treatment Sequences

Date	26-May	2-Jun	9-Jun	16-Jun	23-Jun	30-Jun	6-Jul	13-Jul
Treatment	1st	2nd	3rd	4th	5th	6th	7th	8th
1	Control	-	-	-	-	-	-	-
2	Movento	Movento	Agri-Mek	Agri-Mek	Radiant	Radiant	Lannate	Lannate
3	Mpede+ Azadirect	Azadirect + Movento	M-Pede + Movento	Captiva(11)	Captiva(7) + Lannate	Captiva(7) + Lannate	Radiant	Radiant
4	Mpede+ Azadirect	Azadirect + Movento	M-Pede + Movento	Captiva(11)	Captiva(7) + Agri-Mek	Captiva(7) + Agri-Mek	Radiant	Radiant
5	Mpede+ Azadirect	Azadirect + Movento	Azadirect + Movento	Lannate	-	Radiant + M-Pede	-	Radiant + M-Pede
10	Radiant	Radiant	Movento	Movento	Lannate	Lannate	Agri-Mek	Agri-Mek
11	Movento	Movento	Radiant	Radiant	Lannate	Lannate	Agri-Mek	Agri-Mek
12	Agri-Mek	Agri-Mek	Movento	Movento	Radiant	Radiant	Lannate	Lannate
16	Movento + Lannate	Movento	Agri-Mek	Agri-Mek	Radiant	Radiant	Lannate	Lannate
17	Movento (Admire)	Movento	Agri-Mek	Agri-Mek	Radiant	Radiant	Lannate	Lannate
18	Movento + Requiem (Admire)	Movento + Requiem	Agri-Mek + Requeim	Agri-Mek + Requiem	Radiant	Radiant	Lannate	Lannate
21	Movento (Sivanto)	Movento	Agri-Mek	Agri-Mek	Radiant	Radiant	Lannate	Lannate

Cumulative Thrips



Better Performing Programs

Date	26-May	2-Jun	9-Jun	16-Jun	23-Jun	30-Jun	6-Jul	13-Jul
Treatment	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**
2	Movento	Movento	Agri-Mek	Agri-Mek	Radiant	Radiant	Lannate	Lannate
3	Mpede+ Azadirect	Azadirect + Movento	M-Pede + Movento	Captiva(11)	Captiva(7) + Lannate	Captiva(7) + Lannate	Radiant	Radiant
4	Mpede+ Azadirect	Azadirect + Movento	M-Pede + Movento	Captiva(11)	Captiva(7) + Agri-Mek	Captiva(7) + Agri-Mek	Radiant	Radiant
10	Radiant	Radiant	Movento	Movento	Lannate	Lannate	Agri-Mek	Agri-Mek
16	Movento + Lannate	Movento	Agri-Mek	Agri-Mek	Radiant	Radiant	Lannate	Lannate

What Works?

- Mid season / bulb initiation - critical window
- Radiant (5)
- Lannate (1A)
- Movento (23)
- AgriMek (6)-Good early or late season choice
- Azadirect + MPede
- Good Adjuvants/Surfactants
- pH

Things to Consider

- Control volunteers & weeds
- Effects on thrips pressure
  - Temperature
  - Variety
  - Onion stress
- Scout often
  - Before & After applications
- Begin applications before thrips populations spike
- Systemic / Translaminar Insecticides
- Use appropriate adjuvants

Adjuvants?

- Do not tank mix BRAVO with insecticides
- Why?
- Spreader/Sticker Adjuvant
- Penetrating Adjuvants

Some Optimum pH Levels

- Radiant pH 6.0 – 8.0
- Agri-Mek pH 6.0 – 7.0
- Aza-Direct pH 5.5 - 6.5
- Lannate pH 5.0 – 7.0
- Vydate pH 5.0
- Movento pH 6.0 – 7.0
- Exirel pH 5.0

Minimizing Risk of Resistance

- Only using insecticides when necessary
  - Monitor before and after applications
- Correct Use
  - Recommended application rate
  - Avoid low rates with marginal pest control
  - Thorough coverage
- No more than 2 applications of any insecticide
- Rotate different Modes of Action

Acknowledgments

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