



Melon Fly Management Program: Galbraith, Wahiawa

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Wahiawa Cooperative Extension





Situation

2017

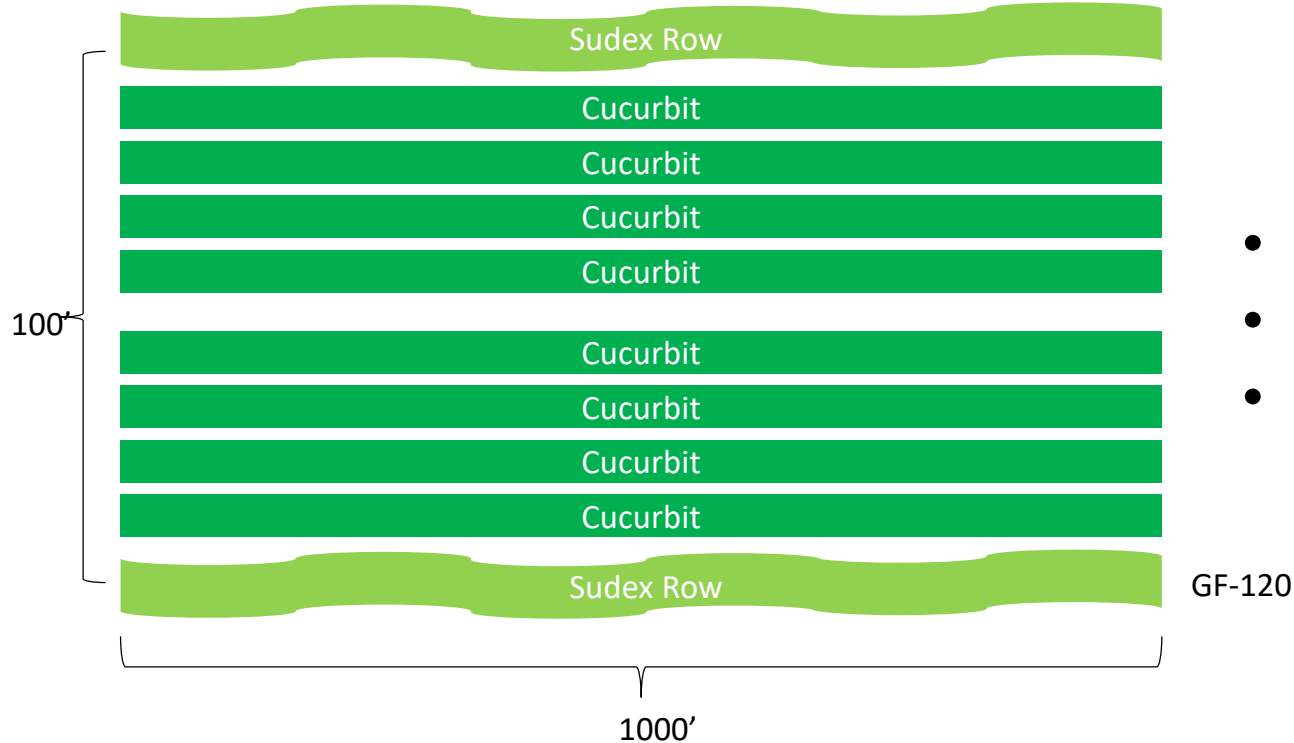
- Watermelon, cucumber, zucchini damage
- August, confirmed resistance to GF -120 (Oahu, Maui)
- Amulet as alternative to GF-120 (June)

March 2018, 6-8 generation population lose resistance

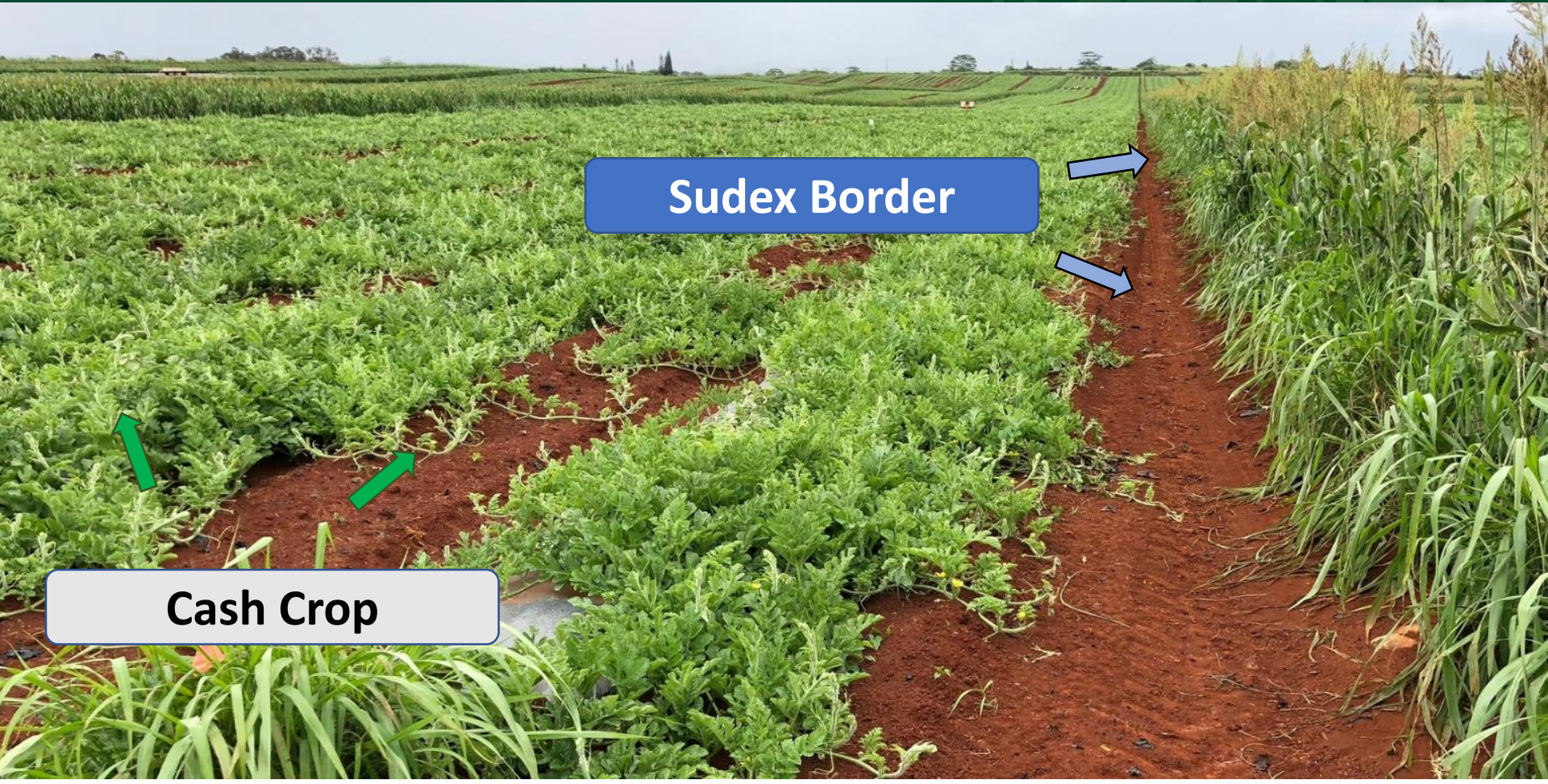




Current IPM Program



- Cue-Lure trapping
- GF-120 Bait sprays
- Field Sanitation



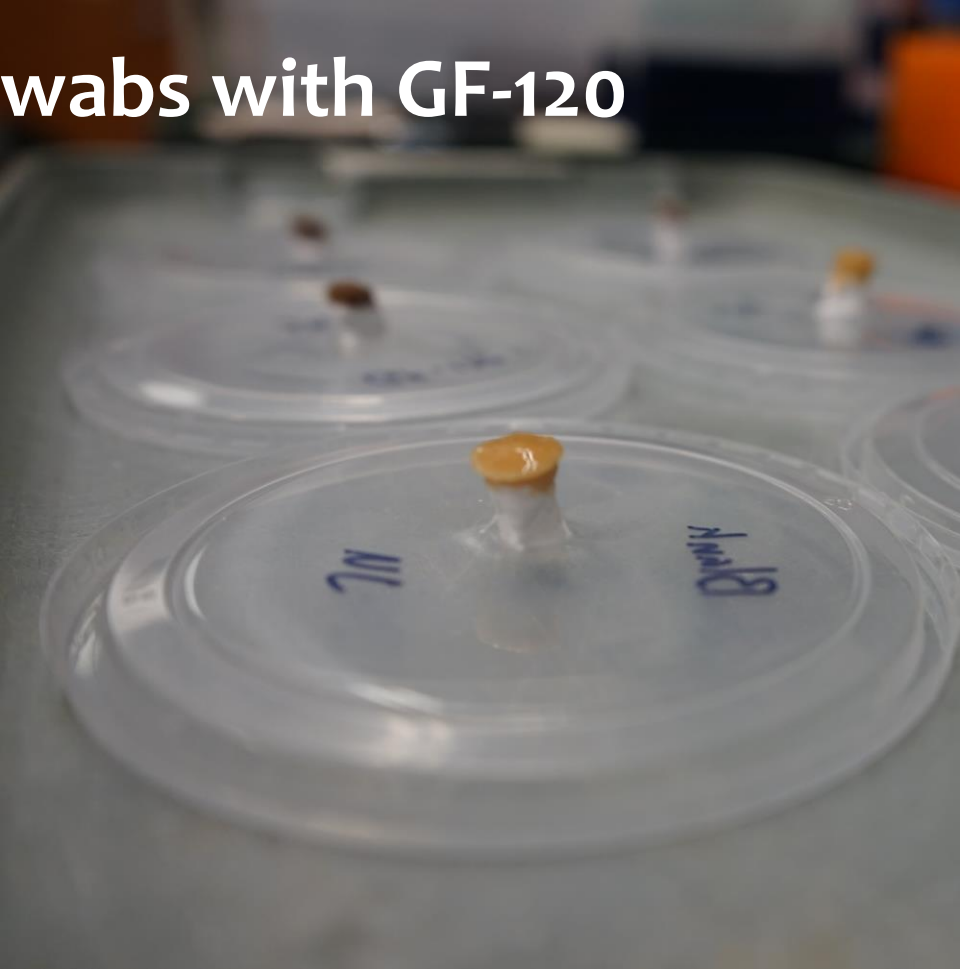
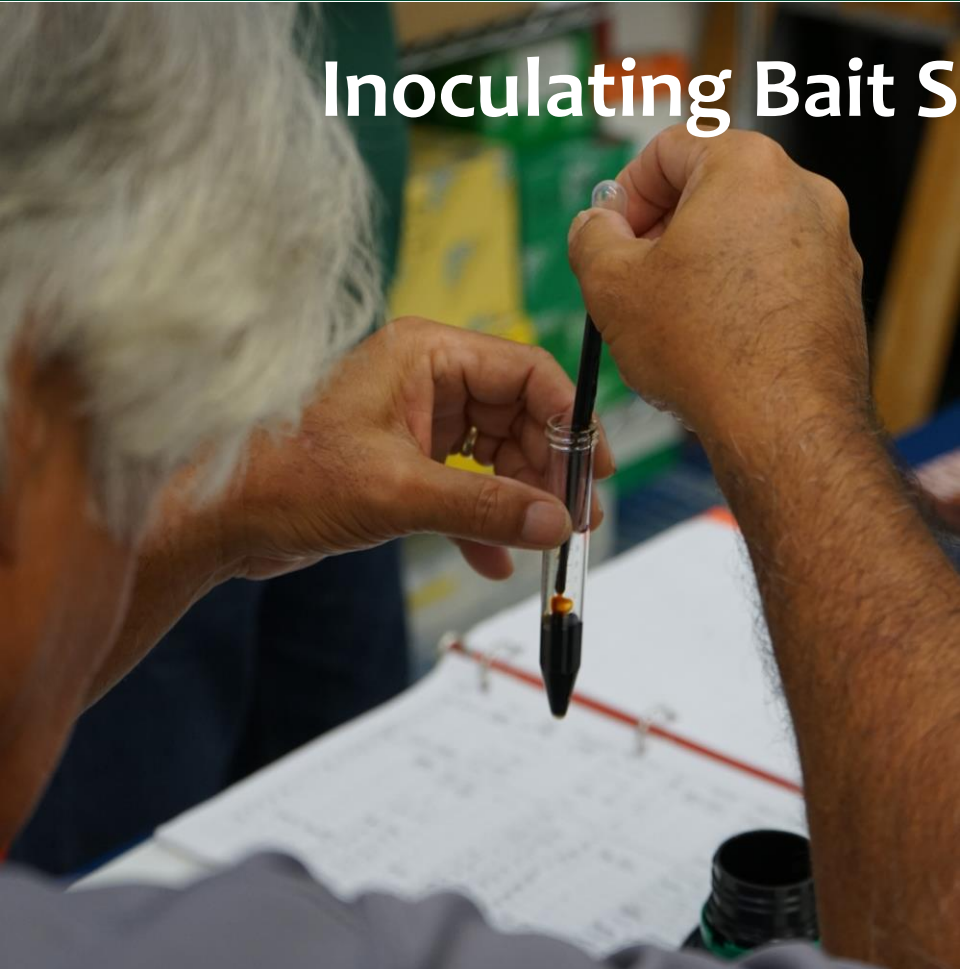
Sudex Border



Cash Crop



Inoculating Bait Swabs with GF-120





Adding Flies To Bioassay Containers



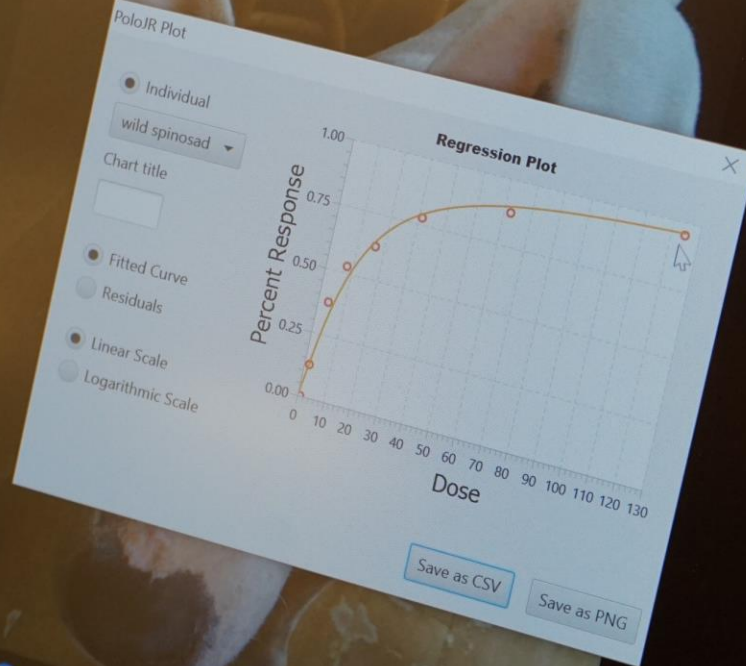


Monitoring Fly Mortality



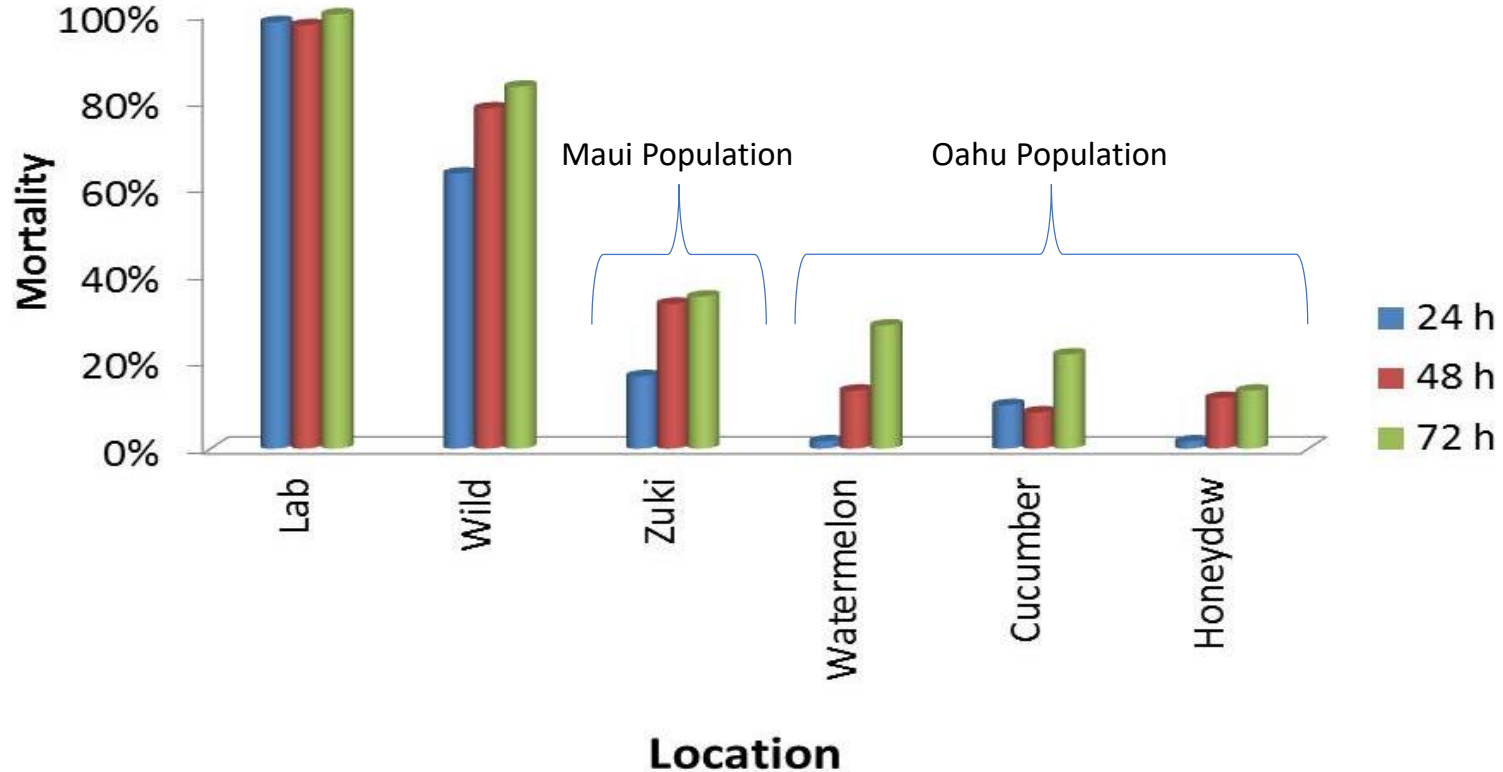


Analyzing Mortality using Polo Analysis Software





GF120 1:1.5 (80 ppm)





Male Melon Fly Monitoring

- Cue-Lure (Scentry Biologicals)
- Cue-Lure plus DDVP (Vapor Tape II)
- 1mL = 9.5 flies



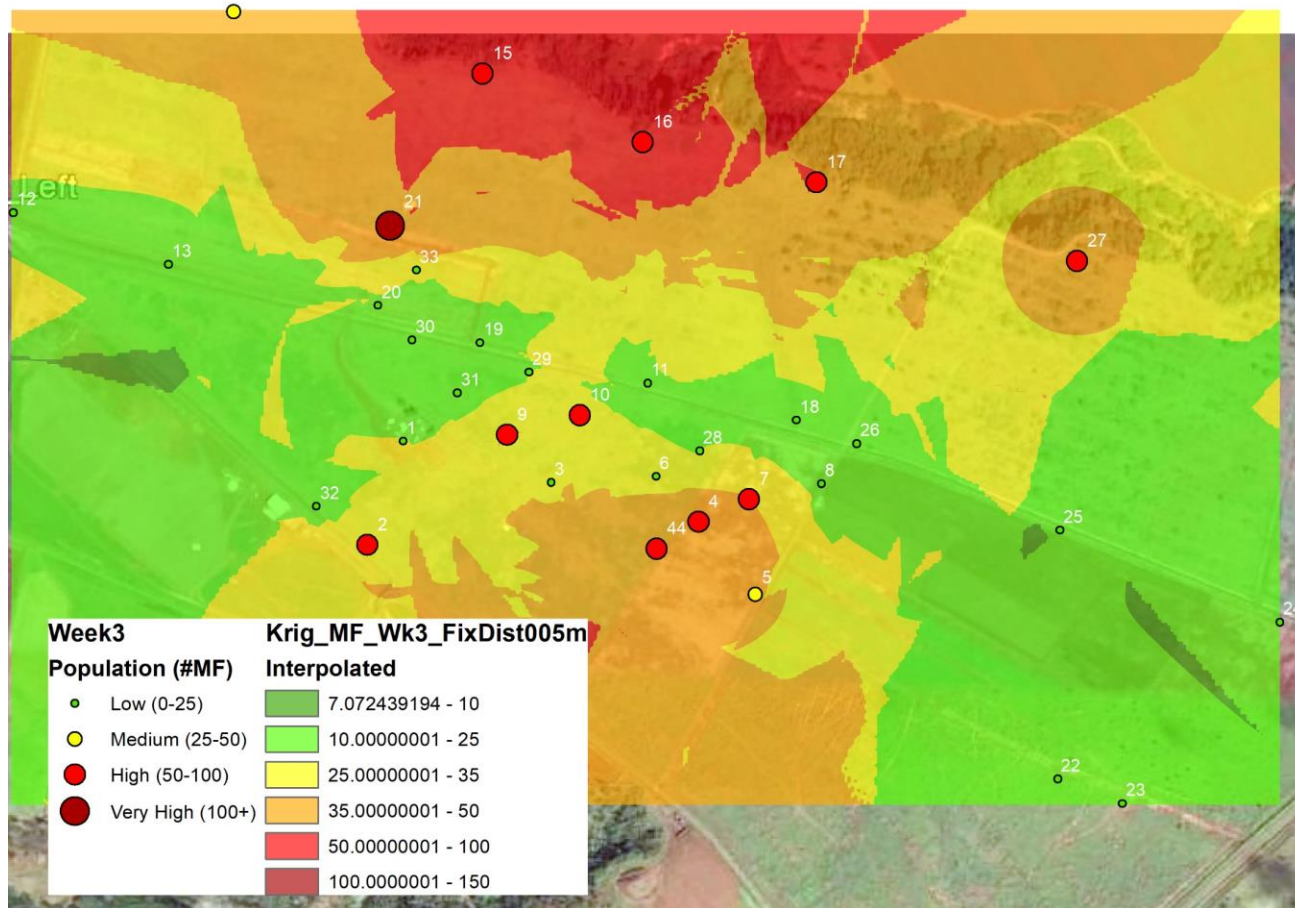
Threshold Values



• 0-25 Flies per day

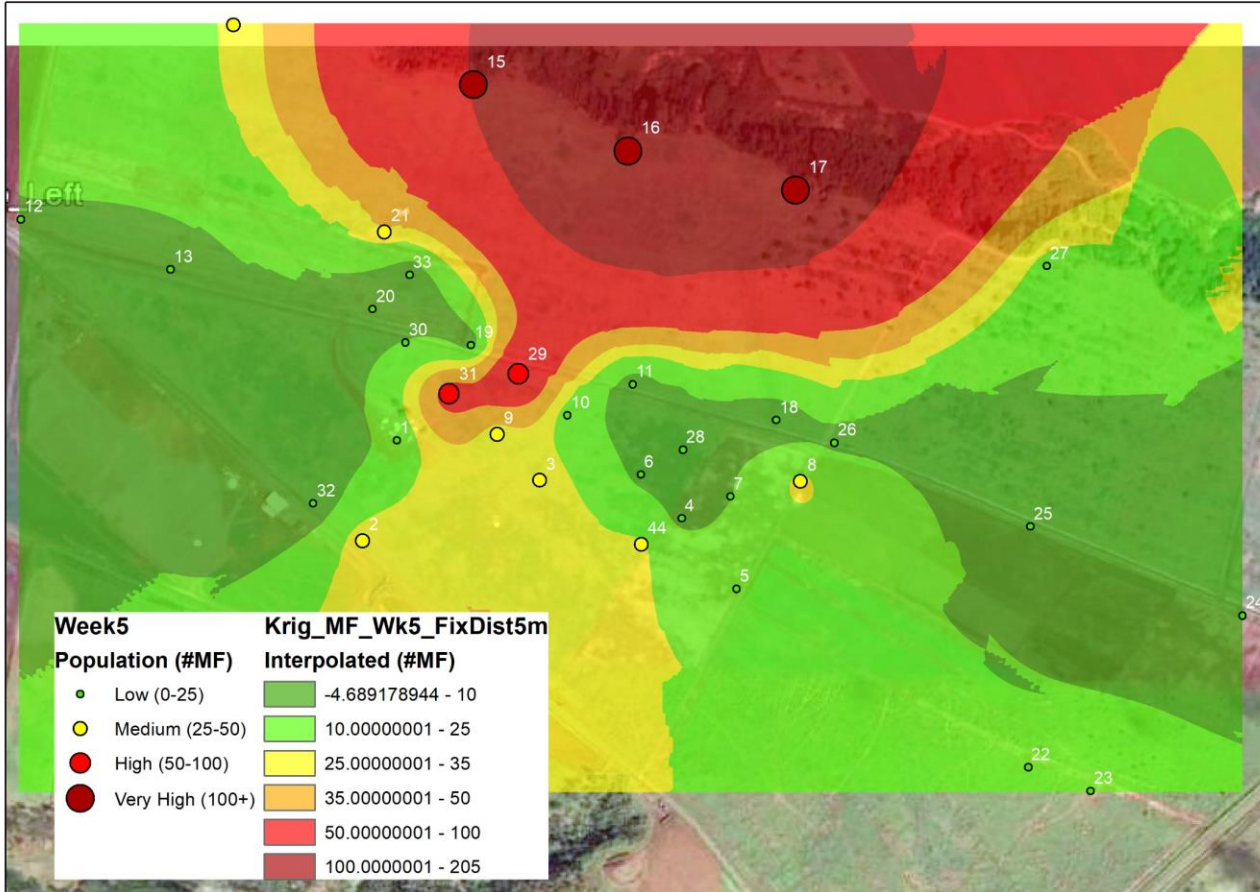
• 25-50 Flies per day

• 50+ Flies per day



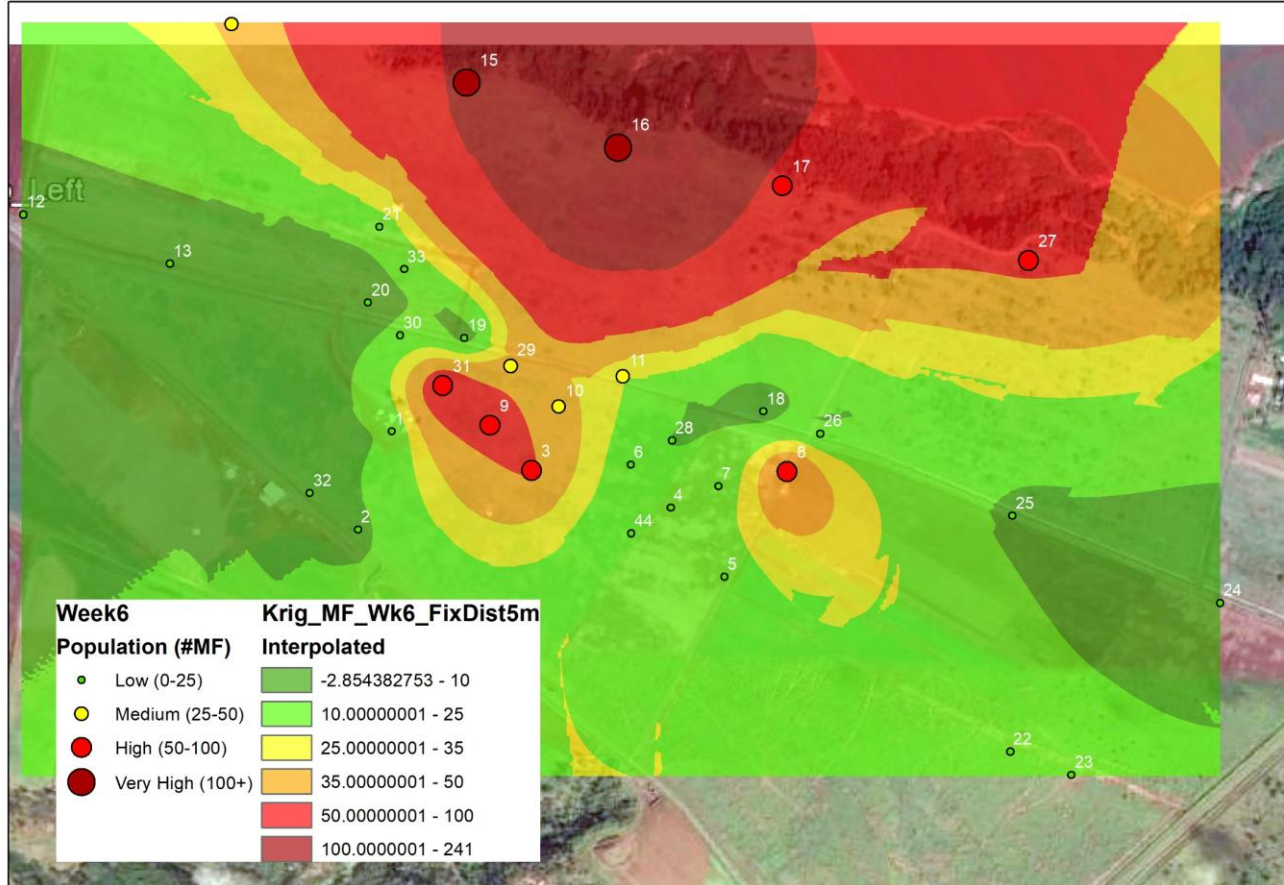
Week 3

- 6/19/17 - 6/26/17
- Cue Lure Traps: 31
- Amulet Stations: 0



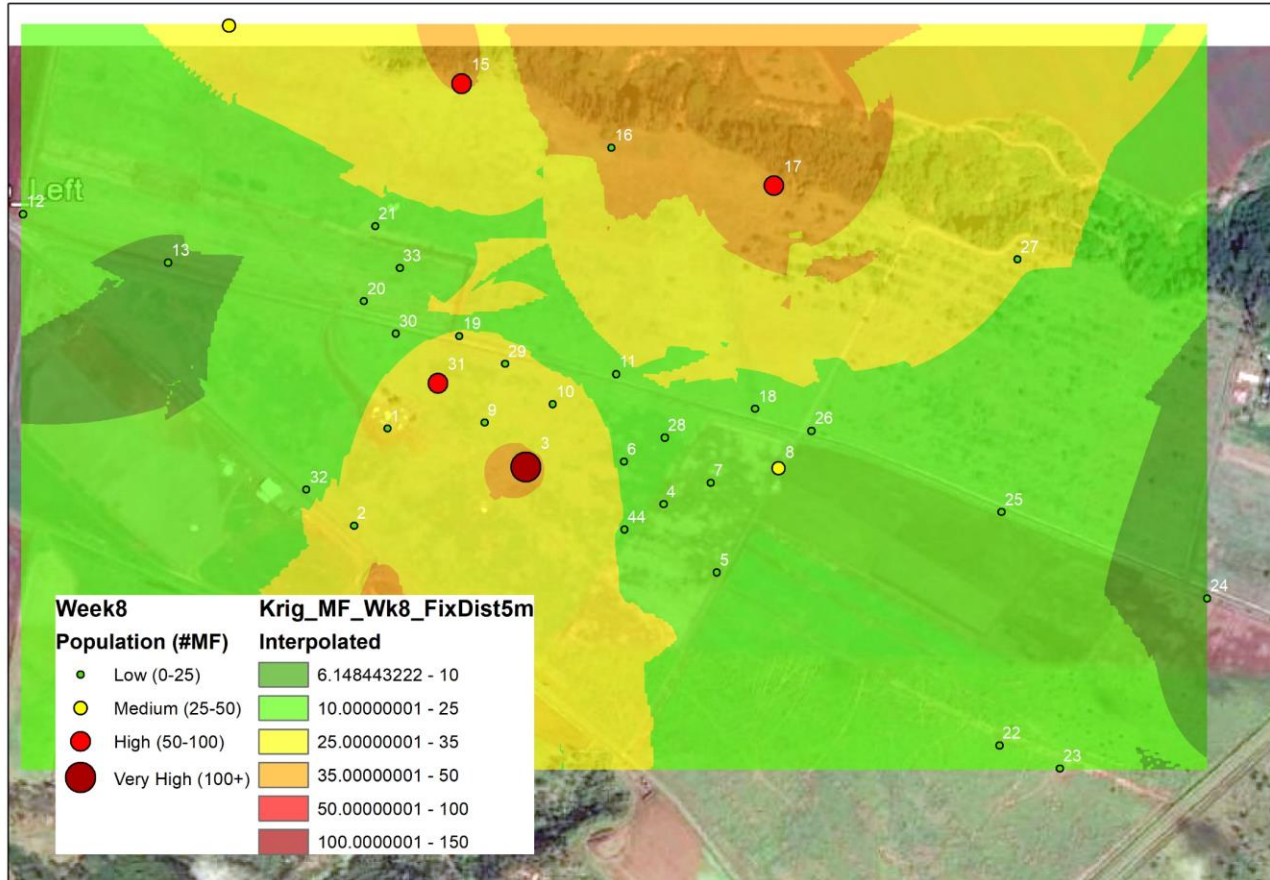
Week 5

- 7/3/17 – 7/10/17
- Cue Lure Traps: 31
- Amulet Stations: 46



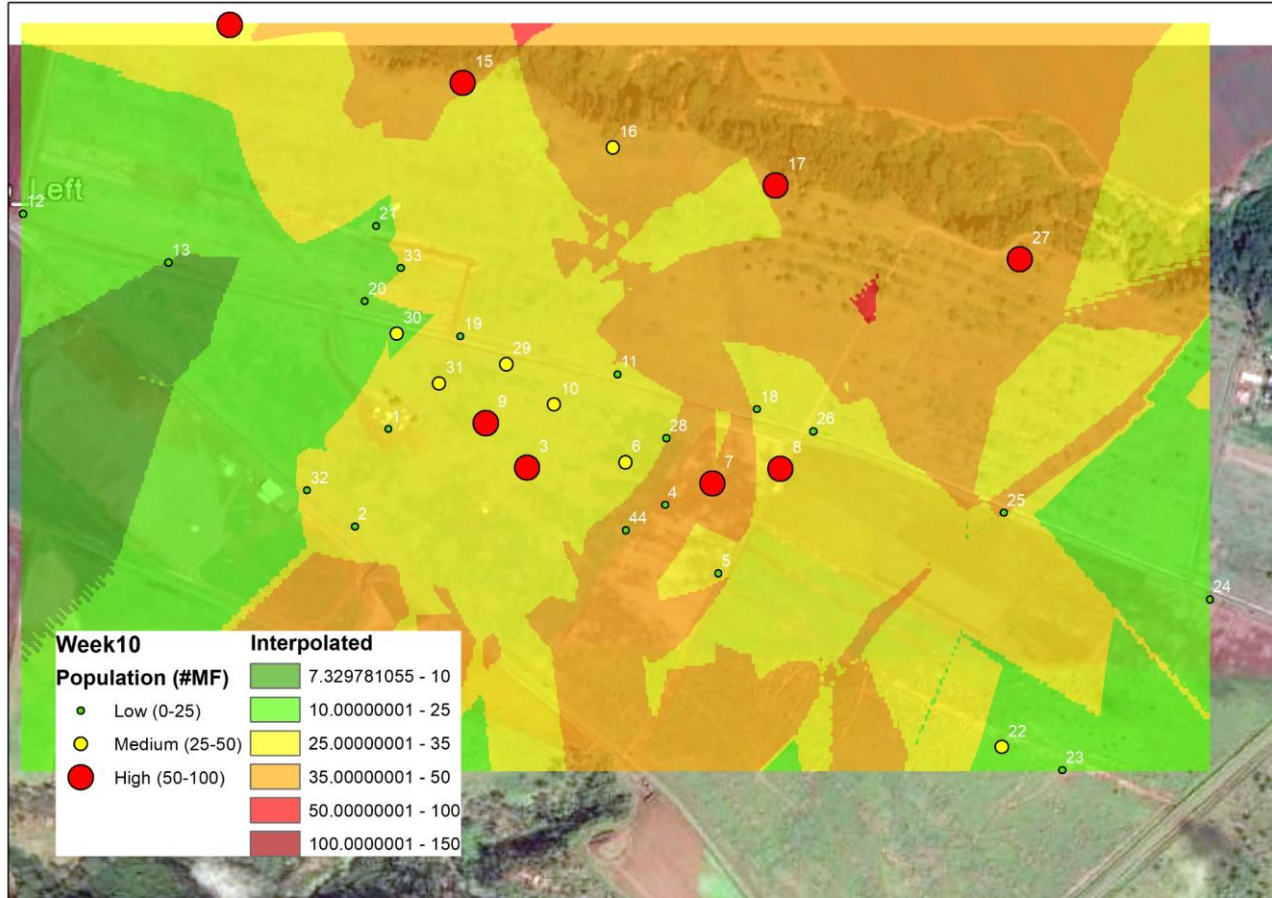
Week 6

- 7/10/17 - 7/17/17
- Cue Lure Traps: 39
- Amulet Stations: 47



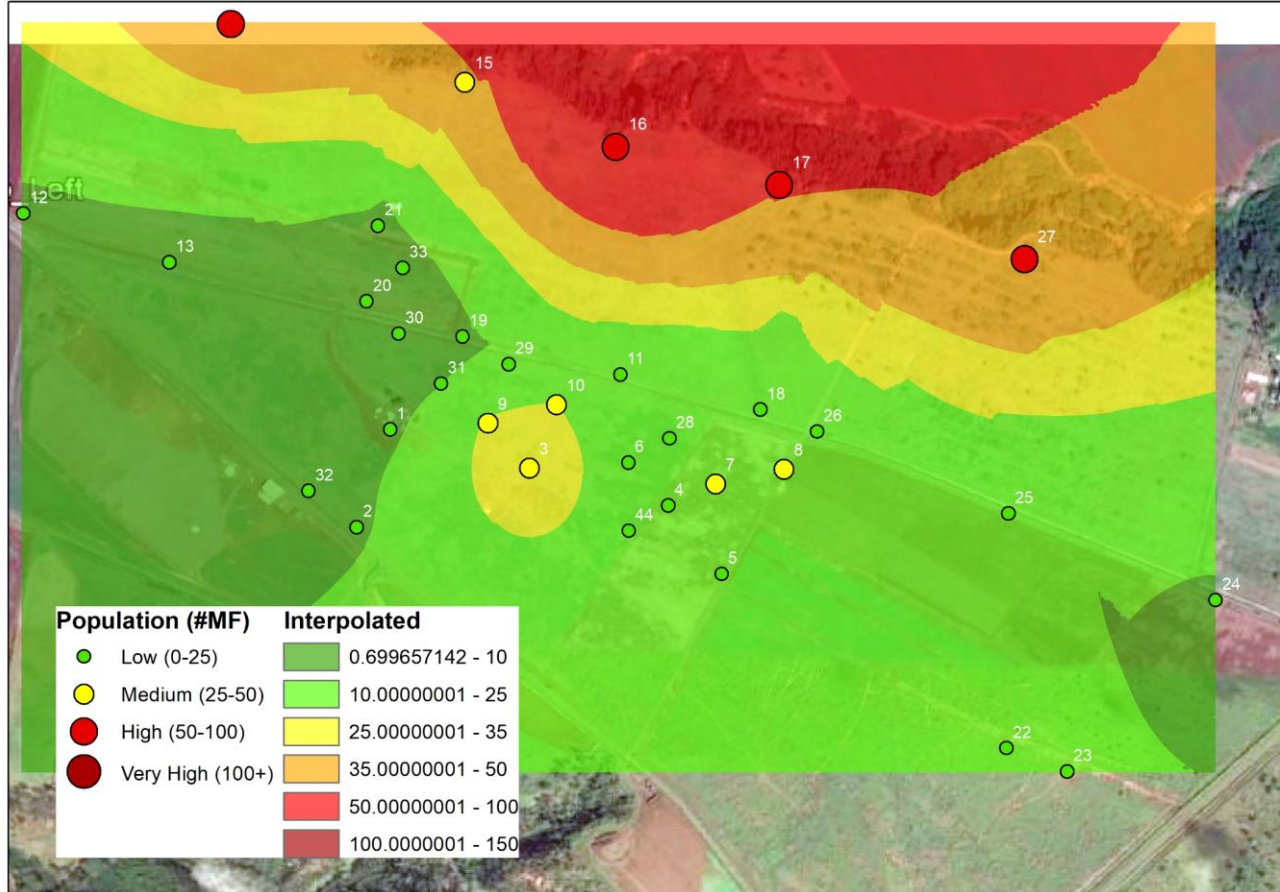
Week 8

- 7/25/17 – 7/31/17
- Cue Lure Traps: 33
- Amulet Stations: 63



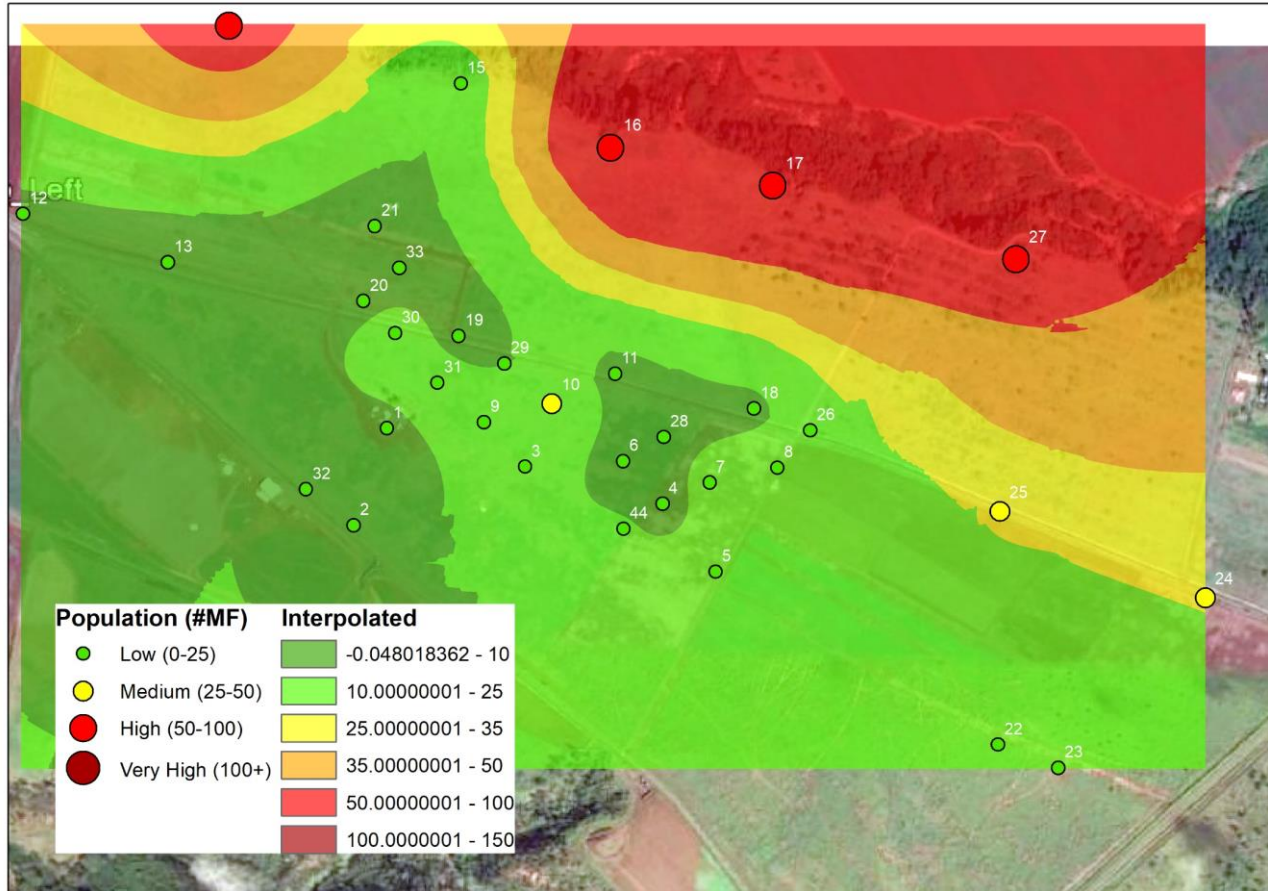
Week 10

- 8/7/17 – 8/14/17
- Cue Lure Traps: 33
- Amulet Stations: 63



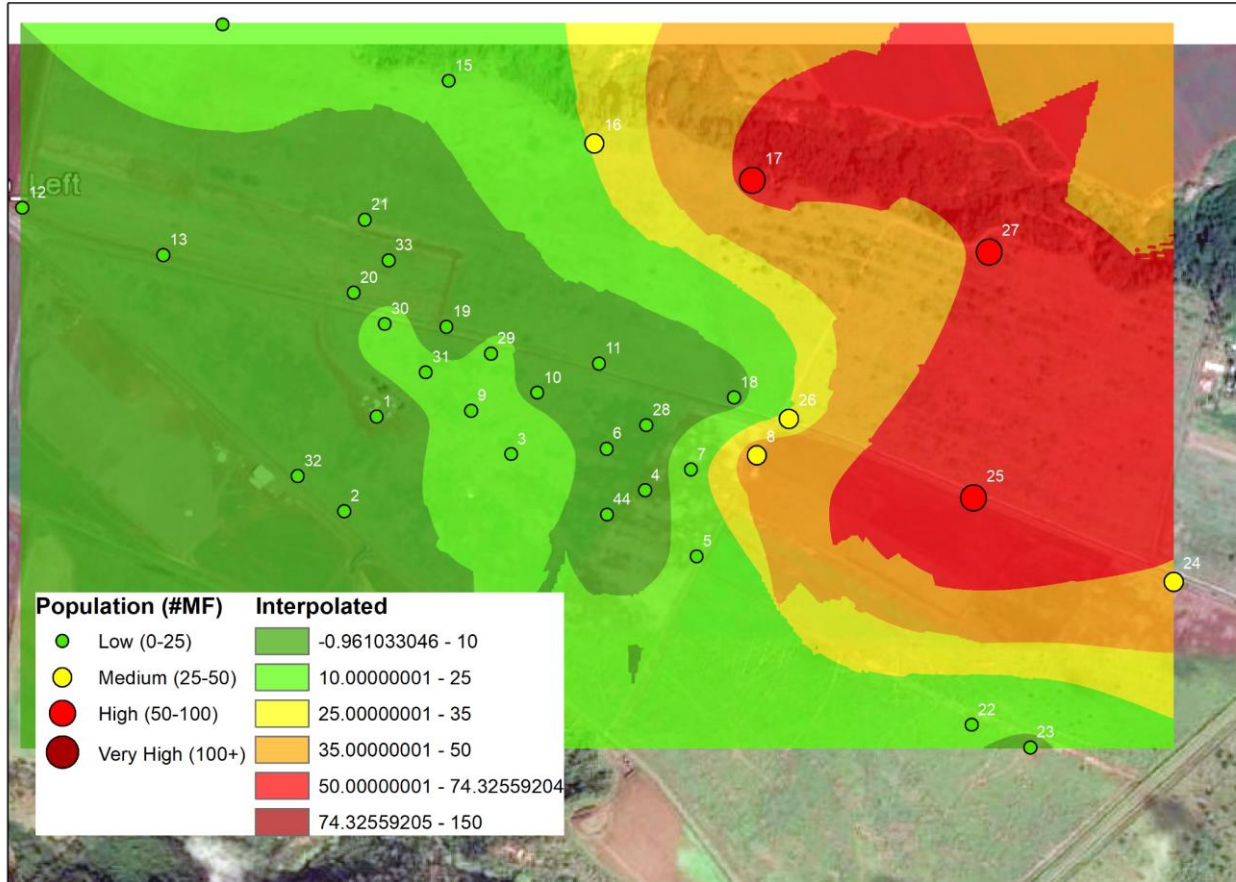
Week 12

- 8/14/17 – 8/31/17
- Cue Lure Traps: 33
- Amulet Stations: 79



Week 14

- 8/31/17 – 9/11/17
- Cue Lure Traps: 33
- Amulet Stations: 79



Week 16

- 9/11/17 – 9/25/17
- Cue Lure Traps: 33
- Amulet Stations: 79



Amulet Bait Stations

Cue-Lure attractant (3-4 month)

Active Ingredient

- Fipronil (1-4hr)
- Lateral Transfer, Regurgitate

10-20 traps per acre (label rate)

6-8 weeks prior to fruit production



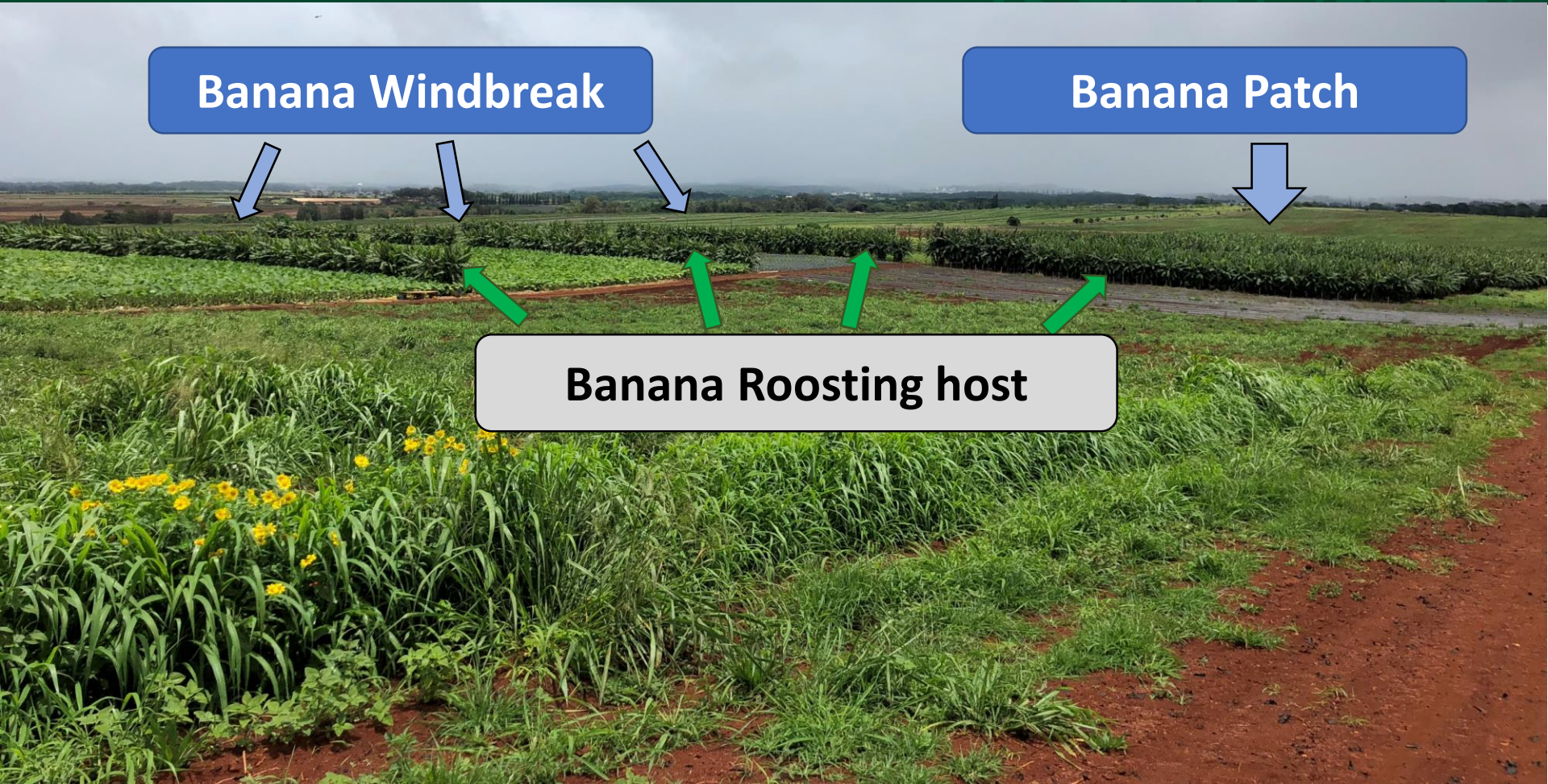
Amulet Bait Stations



Banana Windbreak

Banana Patch

Banana Roosting host





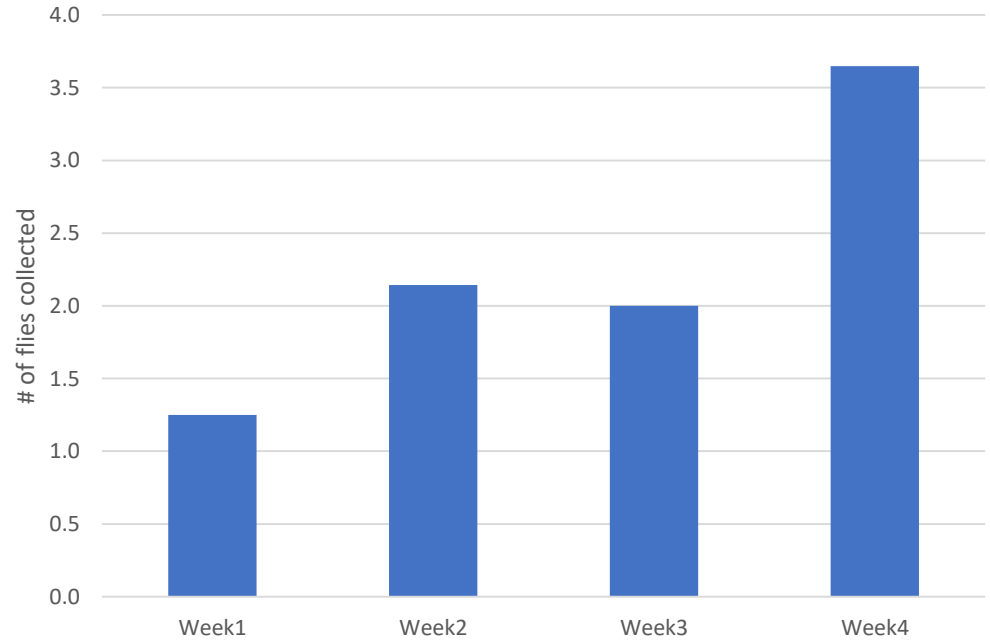
Female Traps

- March 2018, damage in melon field
 - Low male counts
- Torula yeast: female fly populations
- Attract newly emerged females and some males looking for protein food source



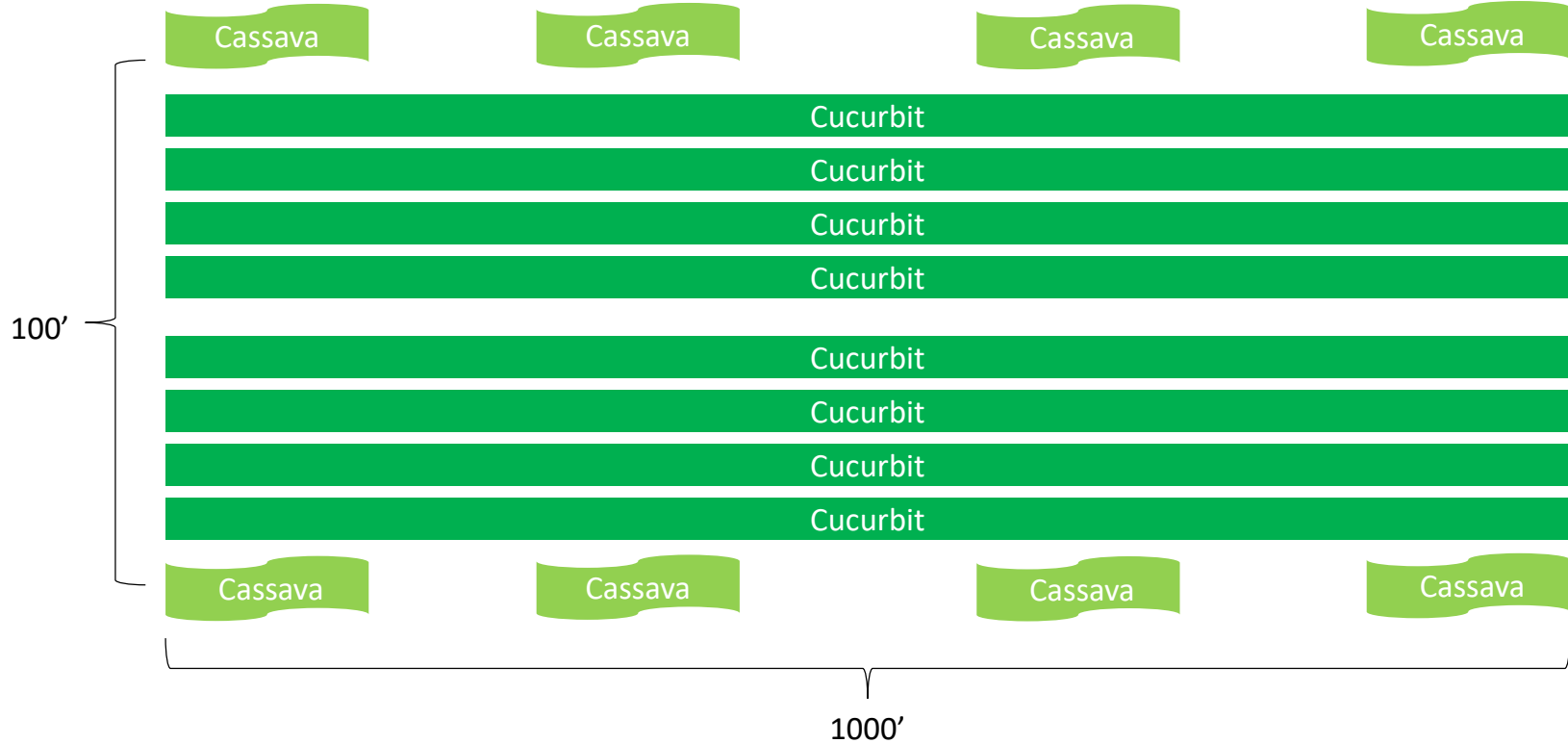


Average Flies Per Day





Proposed IPM Program





Cassava Border

Cash Crop





Cassava Insecticide List

Product	Active	IRAC Group
Assail	Acetamiprid	4a
Baythroid XL*, Leverage 360*	Beta Cyfluthrin	3a
Brigade 2EC*, Capture LFR*, Xpedient FC*	Bifenthrin	3a
Hero*, Steed*	Bifenthrin/Zeta Cypermethrin	3a
Triple Crown*	Bifenthrin/Zeta Cypermethrin/Imidacloprid	3a, 4a
Sevin XLR	Carbaryl	1a
Renounce 20 WP*	Cyfluthrin	3a
Battalion 0.2EC*	Deltamethrin	3a
Sivanto Prime	Flupyradifurone	4d
Declare*	Gamma Cyhalothrin	3a
Warrior II*	Lambda Cyhalothrin	3a
Mustang*	Zeta Cypermethrin	3a
Gladiator*	Zeta Cypermethrin/ Abamectin	3a, 6

* Indicates RUP license requirement for application



DacGel Protein Bait

- Water disposable yeast protein powder
- Food bait for male and female
- Dissolved in water and mixed with an approved insecticide
- Applied to nearby nonfruiting roosting host
- 7 day intervals and 3-5 weeks prior to fruiting





Summary

- GF-120 is no longer effective
- Population loses resistance over time
- Amulet rotation product
- Roosting host need to be identified for Amulet effectiveness
- Torula yeast traps may need to be used to fully understand population
- Cassava border crops may be an alternative to direct crop sprays