Organic thresholds & scouting: Part II
Whole-Farm Scouting

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What is Whole-Farm Scouting?

"The best pest control is a farmer's shadow on the field."

Scouting that efficiently captures digital data from the whole farm through comprehensive and frequent monitoring to determine **site-specific** thresholds and builds a searchable knowledge base and long-term relationship with the farm and farmer.

What is Whole-Farm Scouting?

The 3 Es:

1. **Economical/Efficient** - Move quickly! But not so quickly you miss something important. Recording it digitally for reference and analysis.
2. **Effective** - Capture information that is most helpful to the block, the crop, and the farm: both short and long-term.
3. **Estimate 'what's going on?' in the field right now** - Pests, diseases, weeds, natural enemies, physiology (nutrition, phenology, water relations, quality), stand establishment, and soil structure

Capturing data

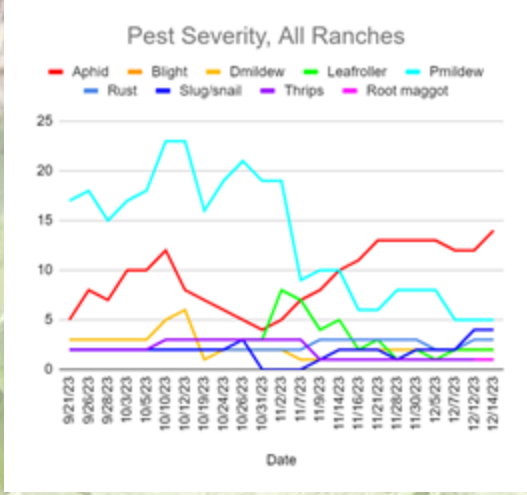
Desktop

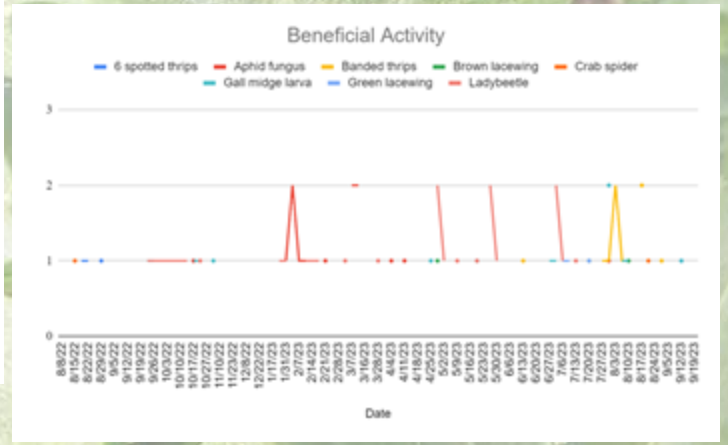
R	BLOCK	CROP	PN	PD	WEEDS	WEEDS Notes	PEST	AMOUNT	PER	UNIT	SEV	BENEFICIALS	PEST Notes	NOTES	TREATMENT
1275	E6	Carrot		9/1										start harvest soon. good quality, getting big.	
1275	GV1	Scallion	1	10/										start harvest any day. good quality.	
1275	GV1	Turnip	1	9/2			Blight				1		bacterial blight increasing south. finish harvest soon.Variable size to sort, some getting big.		
1275	GV2	Bok		11/										Weed and thin to 3"	
1279	A6	Carrot		11/	3	Cultivate and hand weed ASAP								Cultivate and hand weed ASAP	
1279	B1	Bok	2	10/			Aphid	5	10	Plants	2	Aphid fungus	Increasing. small colonies	May benefit from being thinned to 3"	
1279	B1	Radish	1	10/										Finish harvest soon. Getting big, cracking continues. Good quality and greens.	
1279	B2	Parsley	1	9/1										Volume. good quality	
1279	B3	Beet	2	9/2			Dmildev				1		Starting in Golds	start harvest any day. good quality.	
Litchi	GH				3	weeds under								Collards, kale, lettuce ready to	

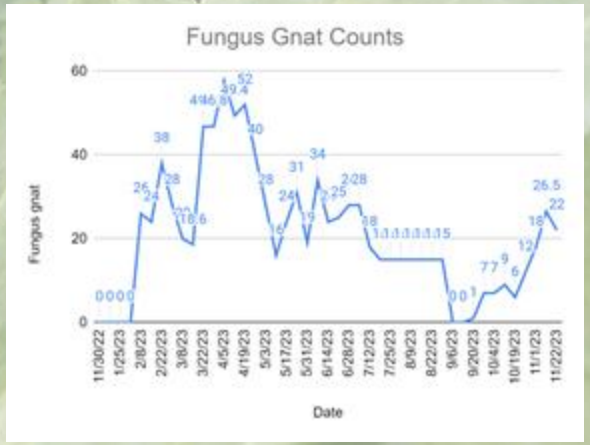
12/14/23 | Map - Ranch 1 | Map - Ranch 2 | Map - Ranch 3 | Lists

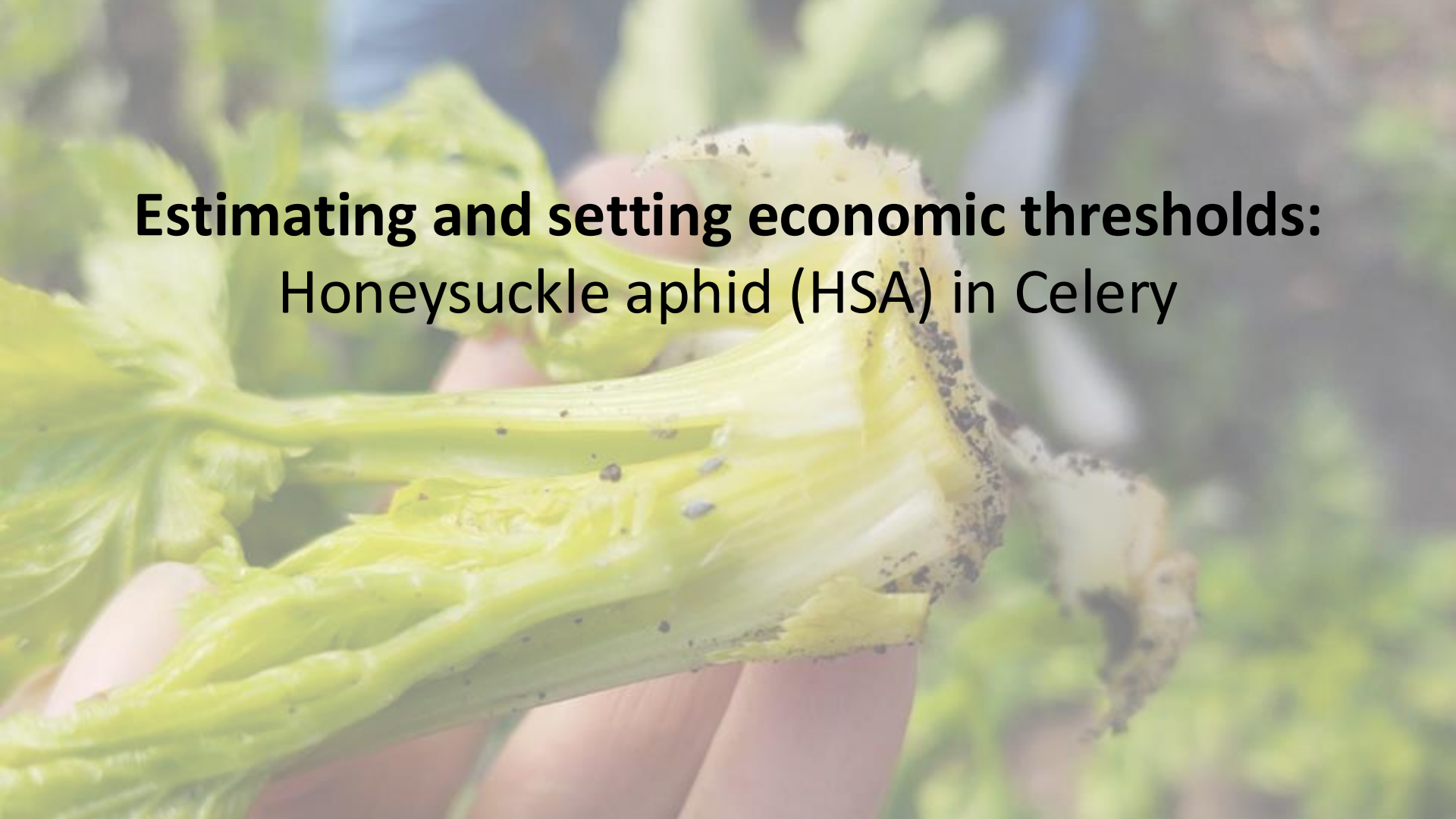
Mobile

Data analysis









Estimating and setting economic thresholds: Honeysuckle aphid (HSA) in Celery

Setting site-specific thresholds - Estimating 'What's going on'

Example: Honeysuckle aphid (HSA) in Celery

1. **Take a sample -** 10 plants per block. If they're mature, cut them open and look inside. If they're young, open up the growing points by hand.
2. **Count and record the pests -** Count the number of plants in 10 with HSA
3. **Note and record any natural enemies** - Existence (occasional, common, abundant) and type
4. **Assign a severity level** - **This is where you set your action threshold** Regular analysis and reference of historical data, crop performance, control method performance helps calibrate these severity levels

Young celery. Photo: Jessica Vaughan 2025

Mature celery. Photo: Jessica Vaughan 2024

Setting site-specific thresholds - Setting severity levels

Example: Honeysuckle aphid in Celery

1 = The pest/condition exists
Mature plants, 1-few/10 with HSA.

2 = The pest/condition is increasing
Mature plants, 5+/10 with HSA.

3 = The pest/condition is at action threshold
Mature plants, 10/10 with HSA. Young plants, 1/10 HSA.

4 = The pest/condition is beyond economic threshold
Mature plants, 10/10 with HSA, large colonies, can't be effectively cleaned. Young plants, 8+/10 HSA, medium-large colonies.

5 = The crop was lost to this pest/condition.

Parasitoid, *Aphdius colemani,* on Honeysuckle Aphid in Celery. Photo: Jessica Vaughan 2024

Setting site-specific thresholds - Considerations for severity

Example: Honeysuckle aphid in Celery

- **Consider plant age**
  Young celery plants with few HSA quickly become mid-sized plants with many HSA that are difficult to control. Mature plants with a few HSA can easily be rinsed at harvest.
- **Consider populations of natural enemies**
  Learn what a suppressive population of natural enemies looks like in your crop. A few ladybeetle larvae/plant or a couple parasitized aphid/plant in celery can be suppressive. Note the stage of their lifecycle (egg, larvae, breeding, adult, etc).
- **Consider weather and growing conditions**
  HSA in fall hoophouse celery is unlikely to be controlled by native natural enemies that are dormant and rarely come into the tunnels. The mild conditions of the tunnels favor the HSA.
- **Consider the potential damage**
  HSA can quickly build up populations and make the crop unsellable.
- **Consider your control options, their availability, cost, and the time they need to be effective**
  Ladybeetle and Aphidius colmani (parasitic wasp parasitoid of aphid) can be effective if applied early and at the same time to provide quick localized suppression (Ladybeetle) and populate throughout the hoophouses (Aphidius).

Setting site-specific thresholds - HSA in Celery

Severity 3: Action threshold

- 1/10 HSA in young plants many weeks from harvest
- 10/10 HSA in mature plants close to harvest

Early instar Honeysuckle Aphid in Celery. Photo: Jessica Vaughan 2024

Summary

- Monitor your farm frequently (1-3+x/week)
- Take consistent samples from different places in the crops each time
- Record your findings digitally
- Track pests and their natural enemies
- Monitor your data regularly to identify pest trends and efficacy of treatments
- Set thresholds for each crop and key pest based on these trends
- Adjust thresholds as needed to improve crop quality

Thank you!

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https://bit.ly/scoutingtemplate