

Fund the Science, Find Solutions and Fuel the Change

CPS Innovation Challenge GRABIT

Grower's Risk Assessment Biomarkers Investigative Tool

Webinar - February 15, 2019

8:30am – 9:00pm PST

Agenda

Drew McDonald, VP Quality & Food Safety, Taylor Fresh Foods
Chair of the CPS Technical Committee

Trevor Suslow, VP of Food Safety, Produce Marketing Association,
CPS Technical Committee

Bonnie Fernandez-Fenaroli, Executive Director, CPS

Why is this request important?

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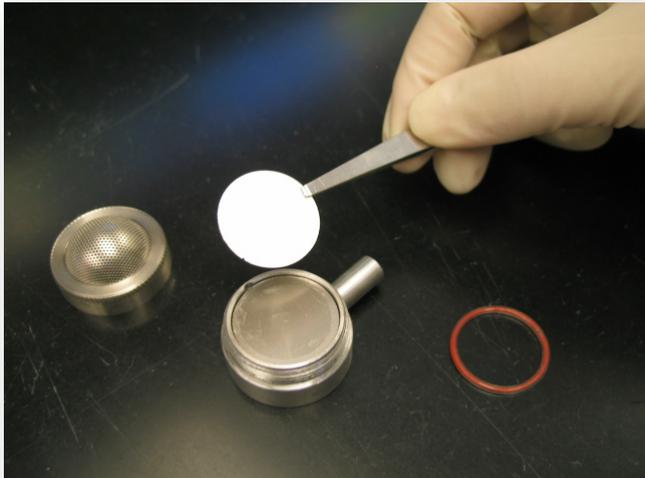
- What is the concept and desired outcome?
- How might it be used and benefit safety?
- Examples
- A Supply-Chain Tool for Regional Alerts and Data Sharing

Application and Awards

Resources

Why is this request important?

- There is an urgent need to bring broad stroke sources of data to separate perception of risk from actual risk
- Setback standards lack practical tools for monitoring and verification
- The need for detailed research studies remains, however...
 - Bioaerosol capture studies by traditional approaches will never be deployed in enough locations or scope to provide this data



Why is this request important?

- Most urgent need are tools to assess chronic and acute risk **potential**
- Priority focus is to expand our knowledge of risk potential at the large AFO and leafy greens interface
- Anticipated GRABIT outcomes will be applicable to highly diverse farm scales and domesticated animal proximity situations





GRABIT

What is the concept and desired outcome?

- Addressing real-time pre-harvest crop monitoring tool(s) for CAFO/AFO proximity risk assessment
- Real-time to < 24h to evidence of biomarker deposition
- Multiple format concepts encouraged
 - In-field to 3rd party lab sample processing
- **Not a pathogen test** but a variety of known and creative CAFO/AFO-specific biomarker(s)
- Ideally, multi-array, redundant confirmatory markers

GRABIT

How might it be used and benefit safety?

Example of leafy greens risk-profiling with a biomarker indicators

- **Details of process and decision-trees will only come with experience**
- **Biomarker detection platforms will vary; many options are possible**

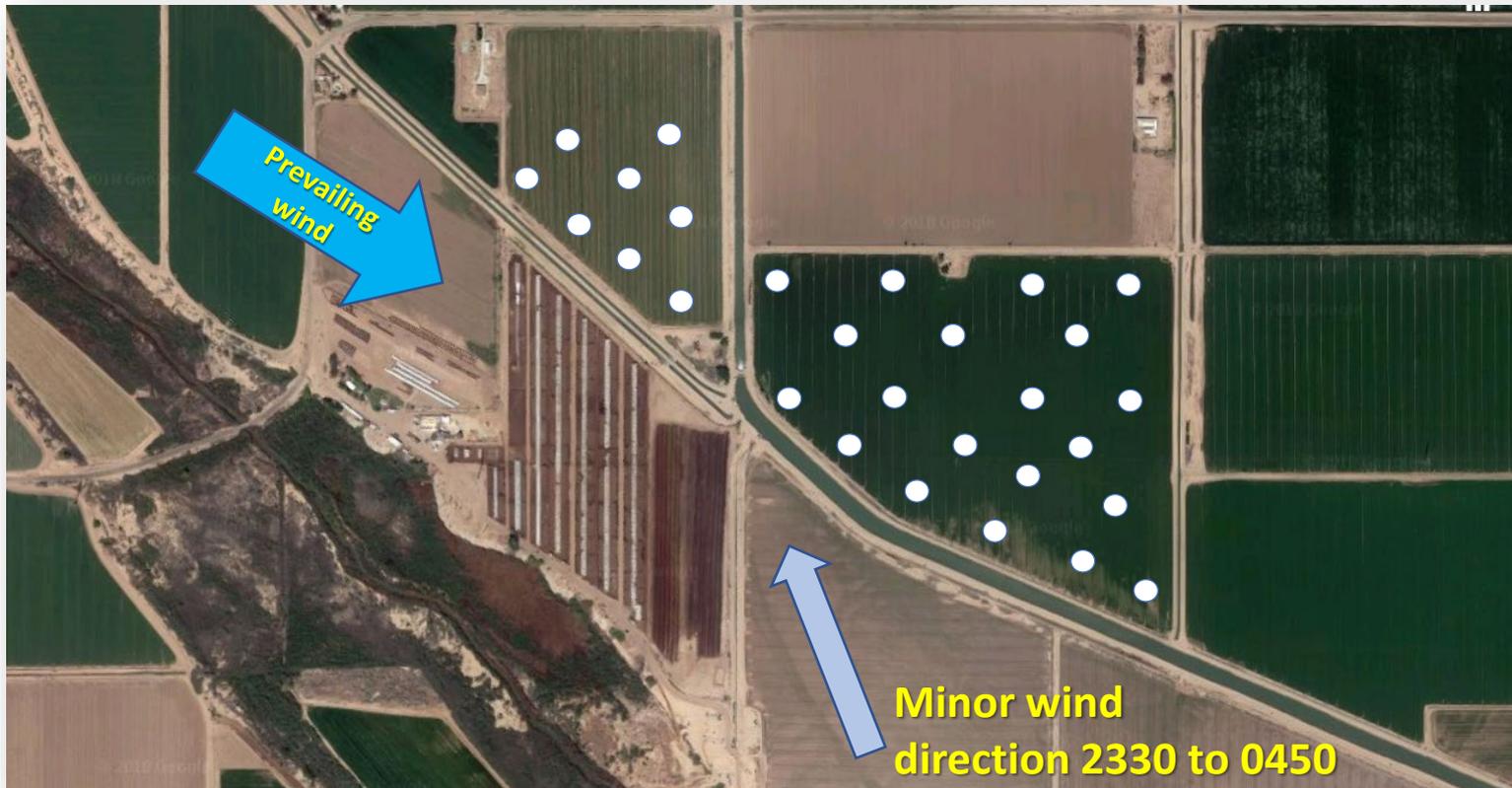


Example of a site-selection and harvest decision process

1. Grower decides to continue long practice of planting several fields adjacent to CAFO (> 1,000 head avg/yr).
2. Grower: Handler agree to establish a baseline of biomarker transport and deposition after thinning.
3. Continuation of biomarker mapping nearing harvest (P/A or semi-quantitative).
4. Increase number and density of tests, as results direct, close to harvest.
5. Increase to $n = 60$ within 8 and 4 days of harvest.
6. Evaluate disposition of field and commit to pathogen testing on product in any biomarker positive lots, delineated for harvest.



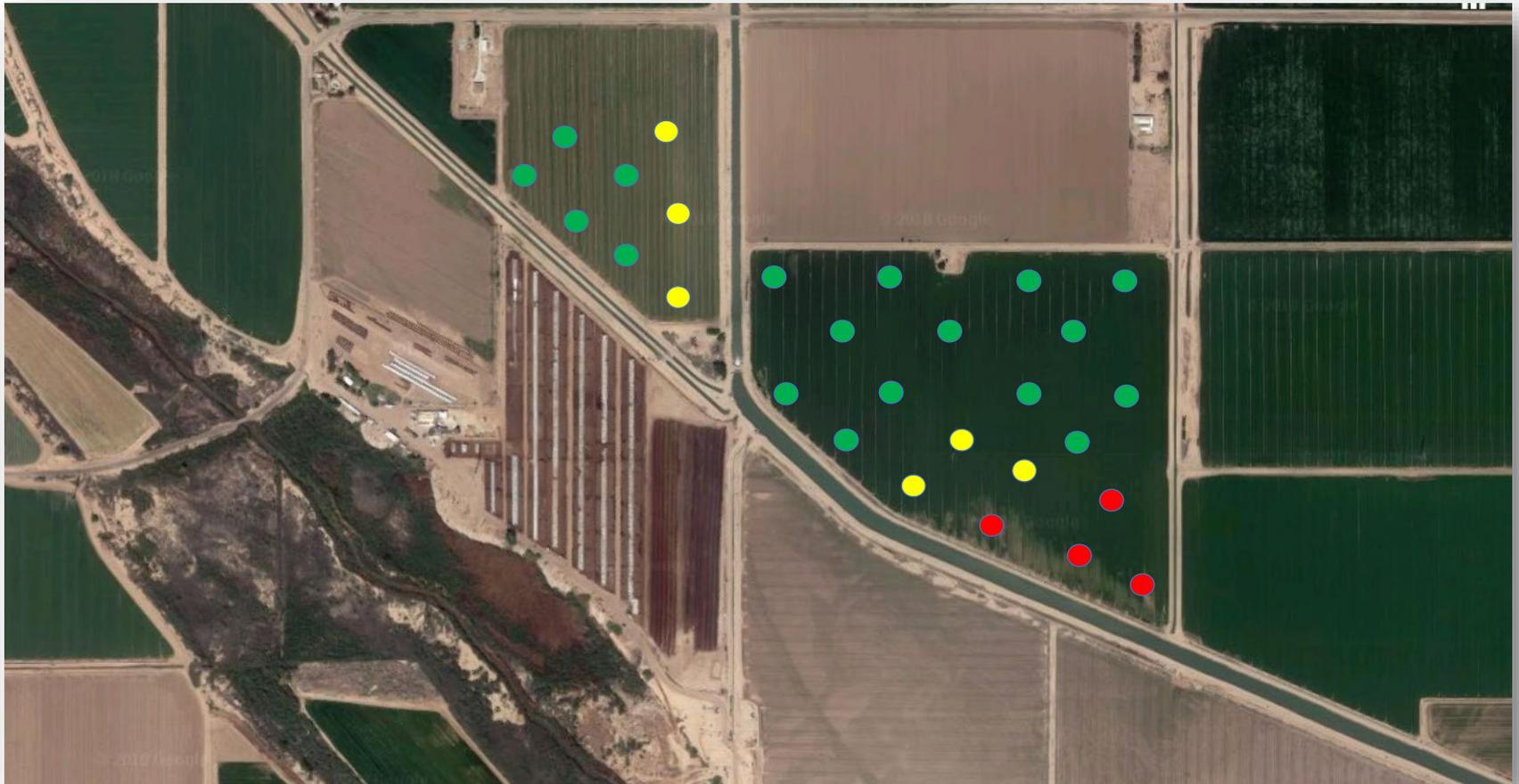
- Initial 28 post-thinning array
- 5 days post-thinning or X to be defined by experience



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- 5 days post-thinning or X to be defined by experience



- Re-test 28 post-thinning array at 8 days pre-harvest or X days to be defined by weather events and experience





- Based on cumulative baseline outcome, 8 day pre-harvest assessment
- $n = 60$ array



Example Option 1

- 4 day pre-harvest assessment followed by pathogen testing in harvestable “green” zones
- $n = \geq 60$ array



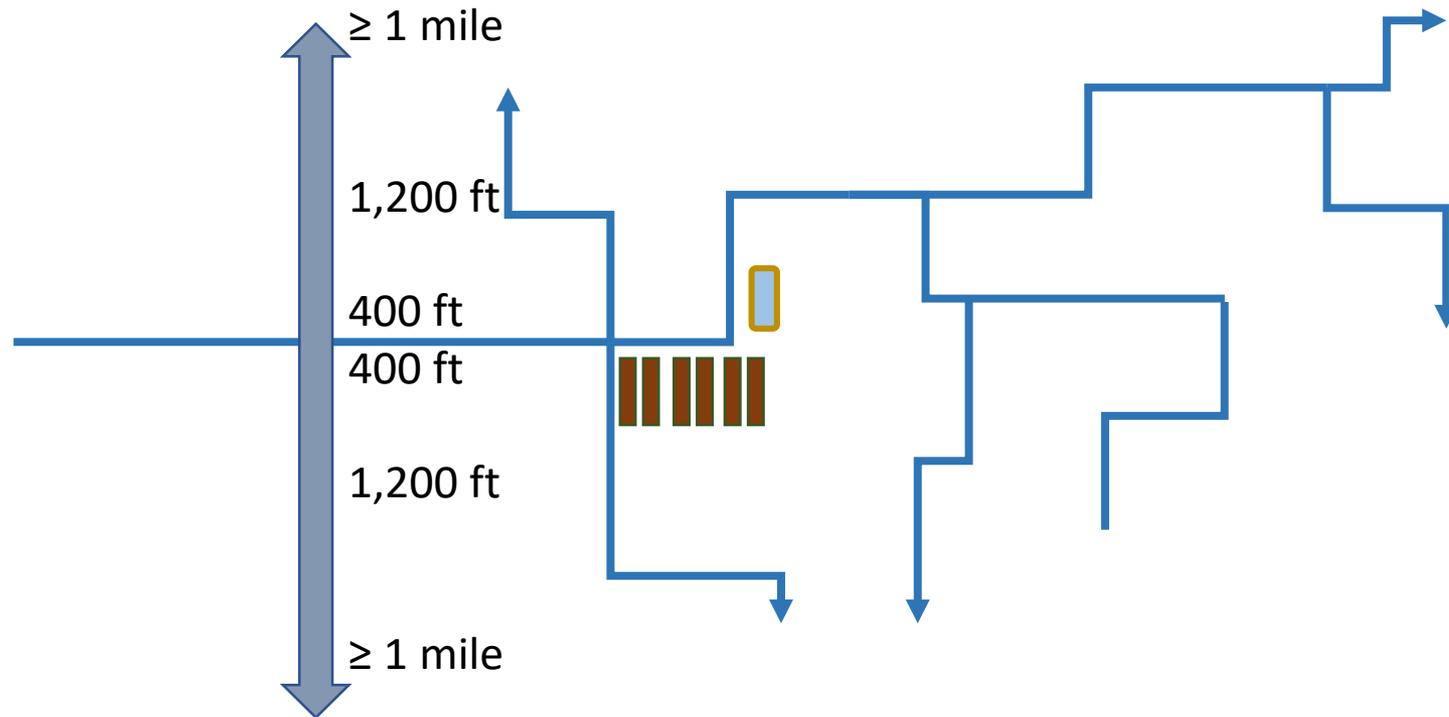
Example Option 2

- Buffer yellow and red zones and move directly to pre-harvest pathogen testing in harvestable “green” zones
- $n = \geq 60$ array



A Supply-Chain Tool for Regional Alerts and Data Sharing

Anticipated advanced kit formats will provide digital “heat-map” results and facilitate regional assessments and cross-regional, multi-regional metadata sharing and lead to better risk modeling



Application and Awards

- April 1 - Notification of Intent
- April 22 - Applications Due
 - Five-page narrative describing the innovation, rationale for biomarker(s) selection, and proof of concept or alpha-test proof of functionality
- May 8-9 - Invited applications will present ideas to reviewers via web
- June 4 - Inform award recipients
- June 18-19 – CPS Symposium - Possible “Flash” presentations from top awardee recipients

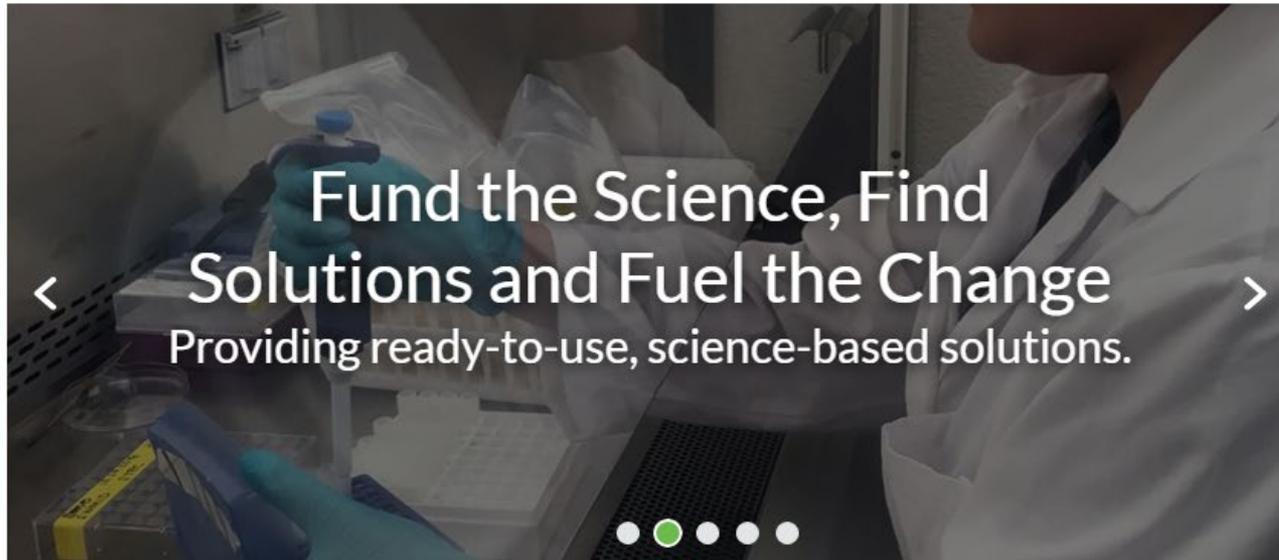
AWARD STRUCTURE*

UP TO \$500,000 AVAILABLE

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- ❖ **Prime Time Ready:** 4 awards, \$75,000 each
 - ❖ **Solid Proof of Potential:** 5 awards, \$30,000 each
 - ❖ **Promising Proof of Concept:** 10 awards, \$10,000 each

Top award recipients will present their ideas at the 2019 CPS Research Symposium in Austin, Texas on June 18-19.

*Not all categories may be awarded; awards will be based on merit and industry readiness



Knowledge Transfer Task Force

Spreading CPS research knowledge to all

MONTHLY RESEARCH REPORTS

Inside look at CPS Funded Research

NEW! GRABIT
INNOVATION CHALLENGE GRANT

Application and Guidance Forms



2019 CPS Research Symposium

Austin, Texas

June 18-19, 2019



Questions:
research@centerforproducesafety.org