



What in the world is

Sprayers 101



Dr. Jason S.T. Deveau
@spray_guy
Application Technology Specialist
OMAFRA

Introductions



A common orchard pest – Spray on sight

- **Studied plant cell electrophysiology**
- **Former academic facility planner**
- **OMAFRA's Application Tech Specialist (2008)**



Estimated Number of Airblast Sprayers for Specified Commercial Fruit Crops by Harvested Area, Ontario, 2018

March 27, 2019

Crop	Area Harvested (acres)	Marketed Production ('000 lbs)
Apples	14,580	330,311
Apricots	65	352
Blueberries (Low + High)	643	1,617
Cherries, Sour	1,770	7,848
Cherries, Sweet	363	1,719
Grapes, Labrusca	674	8,188
Grapes, Vinifera	16,280	139,444
Nectarines	540	6,240
Peaches	4,391	40,480
Pears	972	7,130
Plums and Prunes	790	2,743
Raspberries	649	1,697

Totals

Area Harvested (Ha)	Airblast Count (1 / 50 ac)
5,899	291.6
26	1.3
260	12.9
716	35.4
147	7.3
273	13.5
6,587	325.6
218	10.8
1,777	87.8
393	19.4
320	15.8
263	13.0

16,879	834
--------	-----

**Assuming
1 sprayer
per 20
hectares,
maybe
800
airblast
sprayers?**

References: Fruit and Vegetable Survey, Statistics Canada; Ontario Tender Fruit Producers' Marketing Board Annual Report, Grape Growers of Ontario Annual Report and Admin data.



Melbourne and Southern Ontario

- **Share similar experiences**
- **Perhaps some differences...**

“Snowfastness?”





"SNIRT"
(Snow-Dirt)



- **Blowing snow shows how air behaves around obstacles.**
- **Think of oil spray and wood...**

Micron Woman

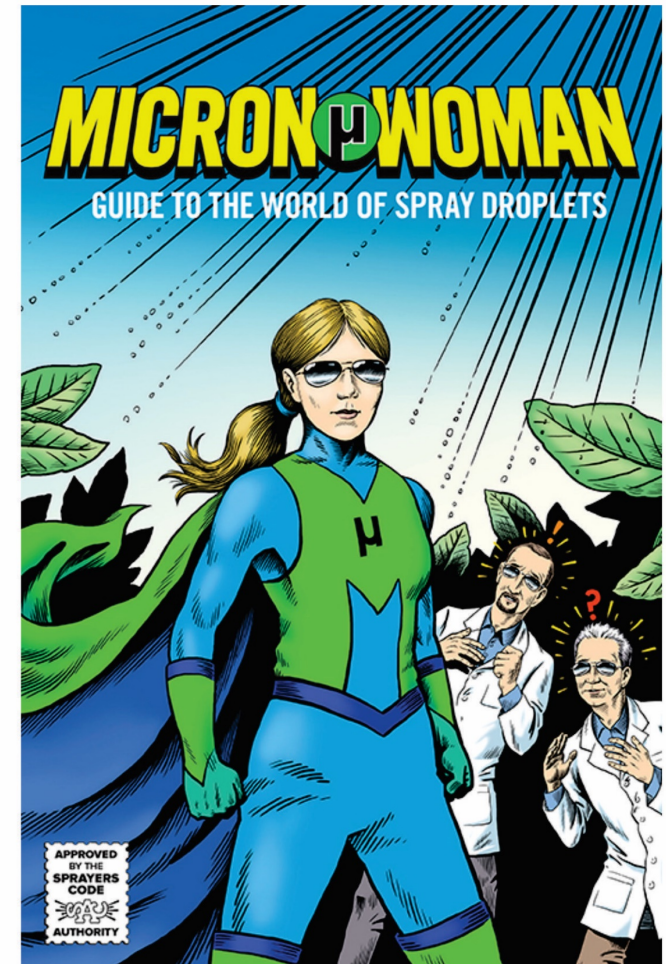
- Produced by OMAFRA, Croplife and Syngenta.
- Novel approach to teaching foundational information
- Has the potential to improve coverage / reduce waste



Get involved in the conversation:



@spray_guy

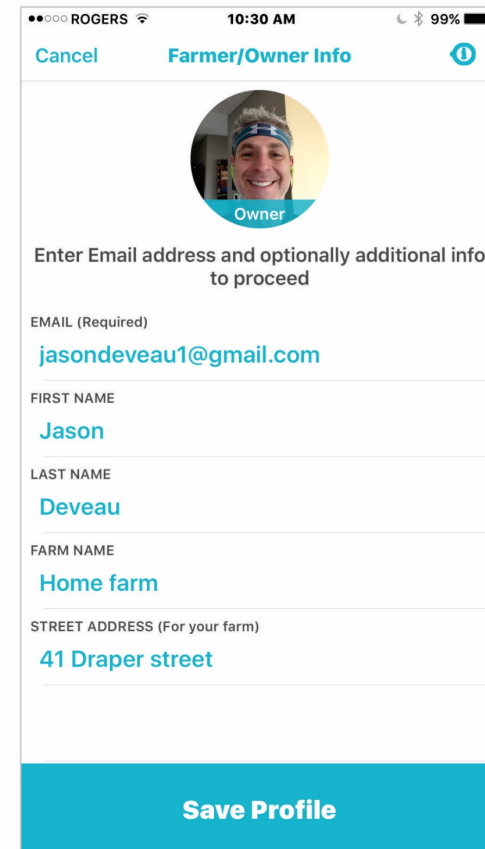
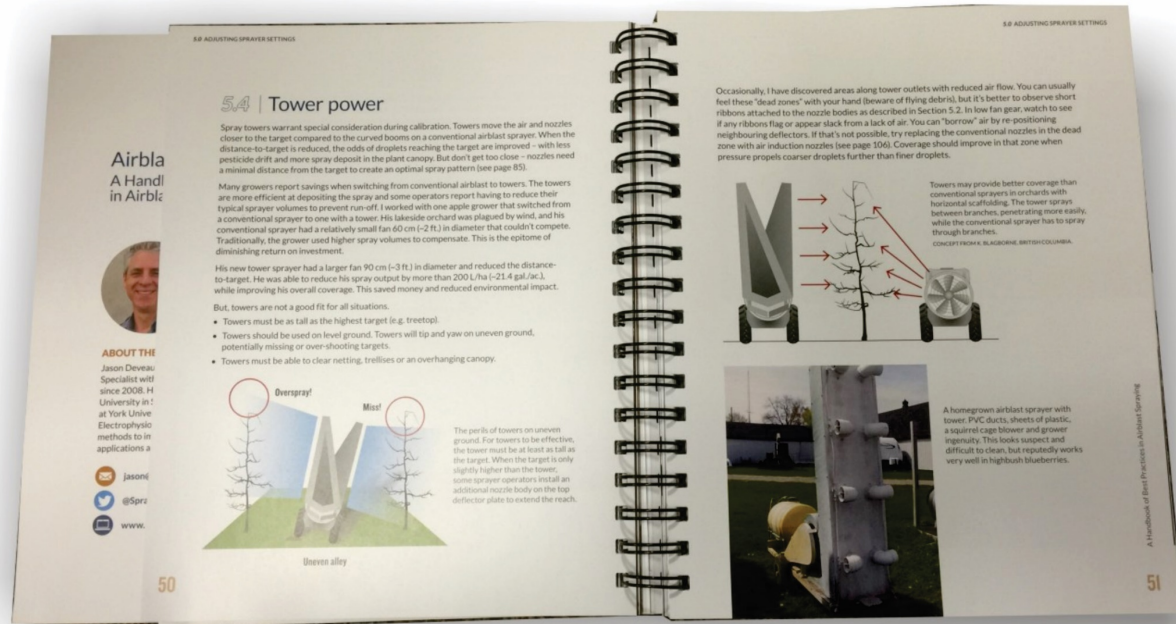


Exploding Sprayer Myths Video Series

- 10 episodes, thousands of views, actionable info.
 - Used by university educators
 - Used by certification programs (e.g. OPEP)

ORCHARD MAX

- Based on three years of Crop-Adapted Spraying research
- Improves spray coverage uniformity between blocks
- Has the potential to reduce annual chemical inputs by 20%
- OrchardMAX is now available as an Apple / Android app



Airblast 101: A Handbook of Best Practices in Airblast Spraying

- Full colour, >200 pages, >200 illustrations
- Available as eBook, PDF and glossy spiral-bound

Get involved in the conversation:



@spray_guy



Sprayers 101

Welcome to Sprayers 101

Sprayers 101 is a non-profit resource describing best practices in safe, efficient and effective agricultural spraying. We invite you to browse our library of articles, videos, presentations, apps, calculators, tables and ePubs.

- Enter a keyword in the search bar
- Explore topics under the drop-down menus
- Vote on content using our star system
- Subscribe to receive an email when new information is posted

Sprayers 101 | A Resource for S

←

→

↺

🏠

https://sprayers101.com

⋮

🔒

★

📖

📄

🛒

🛡️

👤

☰

My ZwiftEndomondoSprayers 101NetflixTwitterStrava

Sprayers101

SPRAY BASICS ▾BOOM SPRAYERS ▾SPECIALITY SPRAYERS ▾MULTIMEDIA ▾TABLES & APPS ▾


STRAINERS (AKA FILTERS)

The level of filtration required for any given spray operation depends on the materials sprayed and the nuisance factor:

Search the site

Search

Our tweets




Tom Wolf

@nozzle_guy

@kelly_byer

Ooooooooooooooooooh. 😂

Oct 29




Jason Deveau

@Spray_Guy

@LangenakensJan

@spray_kiwi Couldn't find part of the citrus anatomy that would help us do that part ;)

Oct 29



Jason Deveau

@Spray_Guy

RT @cowbrough: @PetkerFarm

Welcome to Sprayers 101

🏠📁🔥🎧📄🏠

⬆️📄🛡️☁️🔋📶🔊ENG

4:02 PM2019-10-29

🗨️

A user-friendly, not-for-profit community resource

SUBSCRIBE

Sign up and receive the latest posts right in your inbox.



* indicates required

By subscribing I agree to receive periodic communications from Sprayers 101. You can opt-out at any time by clicking the unsubscribe link at the bottom of any email.



Our tweets



Tom Wolf

@nozzle_guy

@kelly_byer

Ooooooooooooooooooh. 😂

Oct 29



Jason Deveau

@Spray_Guy

@LangenakensJan

@spray_kiwi Couldn't find part of the citrus anatomy that would help us do that part ;)

Oct 29



Objectives

- **Calibrate airblast sprayers**
- **Optimize sprayer configuration**
- **Evaluate coverage**



Elements affecting Effectiveness and Efficiency

Page 17

- **Elements affect each other**
- **Operator affects all elements**
- **Currently, operator skill trumps any technology... for now**



Equipment	Method	Weather	Target	Product	Operator
Sprayer Design Air - Assist Direction Volume Speed Deflectors Spray Quality Pattern Droplet Size Nozzle Orientation	Forward Speed Work Rate Spray Technique Alternate Row-Middle Spraying Gear-Up, Throttle-Down Crop-Adapted Spraying	Wind Speed Direction Temperature Relative Humidity Thermal Inversion	Canopy Structure Time of Season Density-Area Canopy Management Target Size Location	Mode of Action Timing Spray Mix Specific Gravity Adjuvants Carrier Volume Application Rate	Aptitude Attitude Manager, Boss or Owner

Adjusting Configuration





**Where do you put the papers
in the crop?**

Ontario, 2013

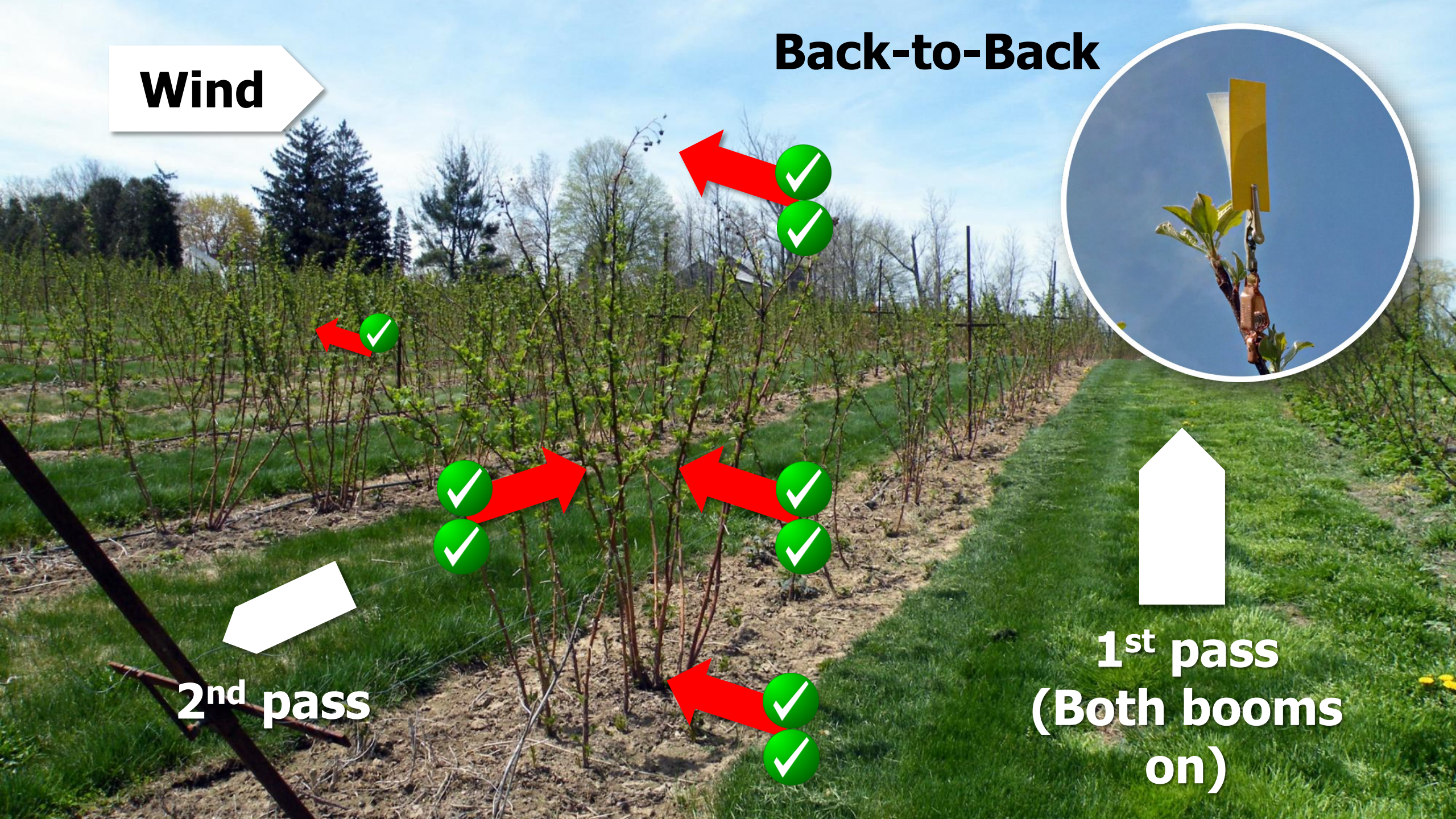
Wind

Back-to-Back



**1st pass
(Both booms
on)**

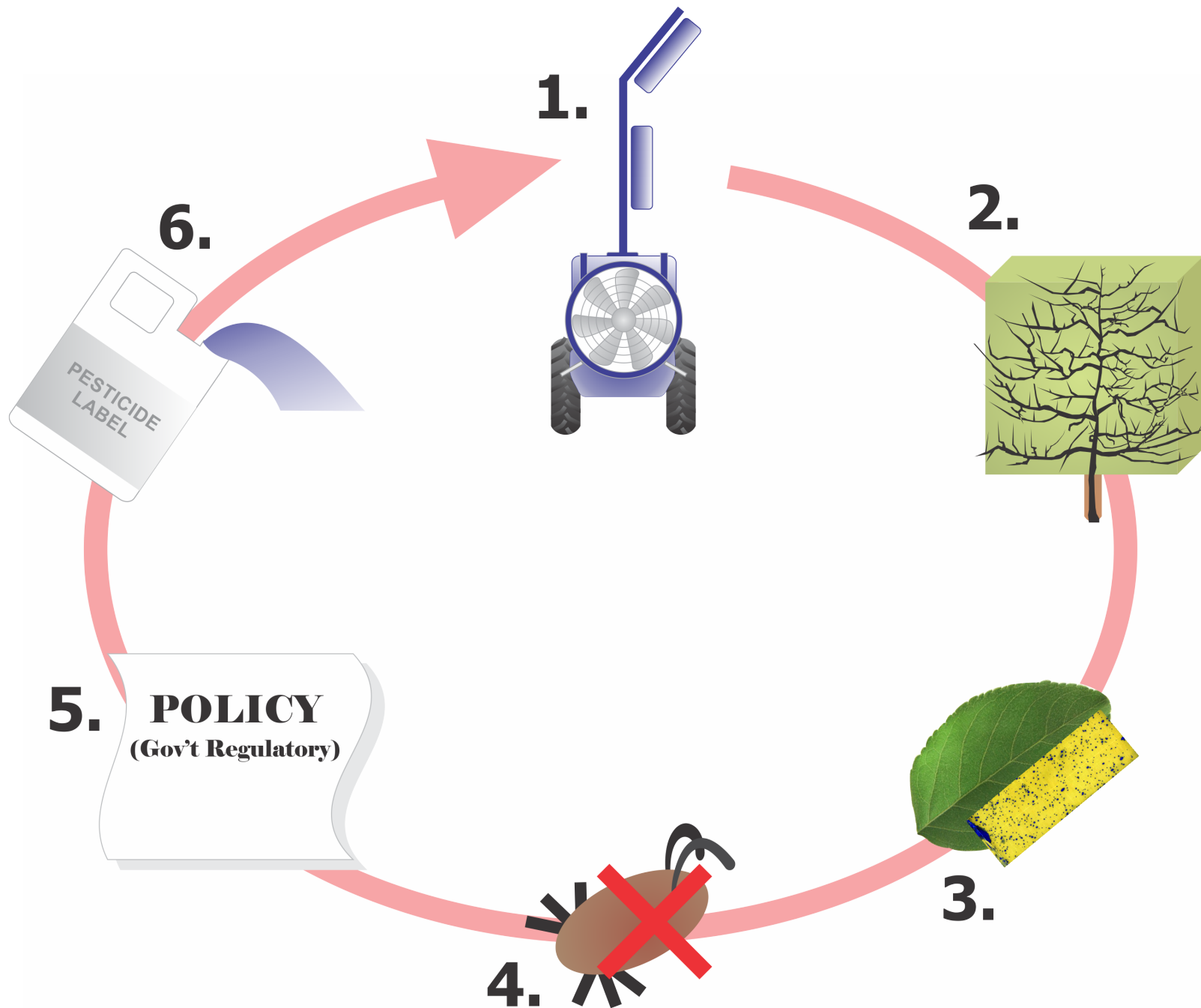
2nd pass





Assess vertical coverage





**1. Sprayer Tech./
Configuration**

**2. Canopy /
Planting Structure**

3. Target Coverage

4. Efficacy / Control

**5. Regulation /
Policy**

**6. Label Direction /
Dose**



MICRON POW WOMAN

GUIDE TO THE WORLD OF SPRAY DROPLETS



Dr. Tom Wolf

@nozzle_guy

Sprayers 101 

Dr. Jason Deveau

@spray_guy

