The Intelligent Sprayer

Dr. Jason S.T. Deveau
Application Technology Specialist
Simcoe
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The *real* Intelligent Sprayer...
Principal Investigators

Randy Zondag
Heping Zhu
Adam Clark
Richard Derksen
Michael Reding
Chris Ranger
Charles Krause
Jim Locke
Erdal Ozkan
Luis Canas
Stan Ernst
Amy Fulcher
Robin Rosetta
Fact: Optimum spray coverage saves money and maintains or improves efficacy.

Problem: Sprayer operators have to make detailed changes to the sprayer for each significantly different crop.

Objective: Develop an Intelligent Sprayer that makes the changes automatically.
What is Pulse Width Modulation?
Demo Day
J.C. Bakker and Sons Nursery
St. Catharines
August 14, 2013
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Intelligent Sprayer Coverage
Formal Testing

Sunleaf Nursery LLP, Ohio
Willoway Nurseries Inc., Ohio
Hans Nelson and Sons Nursery, Oregon
Walker Nursery, Tennessee
Powdery mildew infection on Norway maple trees
(Farm#3, Sprayed on 6/15, 6/20, 6/29 and 8/17)

- Green triangle: Intelligent sprayer
- Red square: Conventional sprayer
- Cyan circle: Day sprayed

Infection rating on a leaf
0 - no infection
1 - 1%-25% infection
2 - 26%-50% infection
3 - 51%-100% infection

Day of 2013
(May 30) 150 170 190 210 230 250 270 (Sept 27)
Average application rates from intelligent and conventional sprayers to control insects and diseases during a growing season.

- **Intelligent sprayer**
- **Conventional sprayers**

<table>
<thead>
<tr>
<th>Farm</th>
<th>Application Rate (L/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm #1</td>
<td>412</td>
</tr>
<tr>
<td>Farm #2</td>
<td>206</td>
</tr>
<tr>
<td>Farm #3</td>
<td>973</td>
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</tbody>
</table>
Pesticide savings
So, in U.S. tests in 2013, the Intelligent Sprayer reduced spray loss up to 87% and reduced spray volume by as much as 73% - and efficacy is great.
OK! Where can I get one?

**Cost:** $21,000 USD (not including labour to assemble or profit). For future mass production, component costs should decrease dramatically.

**Availability:** No schedule at present.

But…
You can be an Intelligent Sprayer

1: Use water-sensitive paper to assess coverage.

2: Use flagging tape to assess air settings and penetration.

3: Change sprayer settings accordingly from crop to crop.
For more information on calibrating, setting up and using airblast sprayers, go to:

Presentations, articles, videos and more (and it’s free!)
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THANKS