

# Developing a New Extension Resource *-Airblast 101*



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October, 2013

**JANUARY 7, 2013**

-24°C (-13°F)

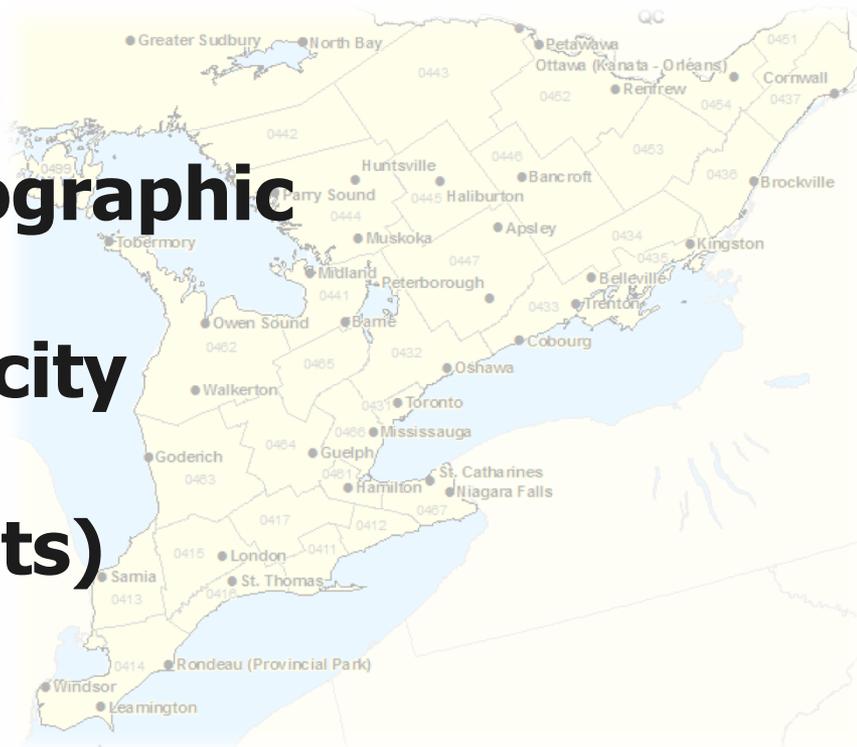
-40°C (-40°F) with wind chill

~35 cm (13.5 in) cumulative snowfall for month



- **When I joined OMAF and MRA in 2008 I found that airblast sprayer operators were at very different levels of ability and understanding across southern Ontario**

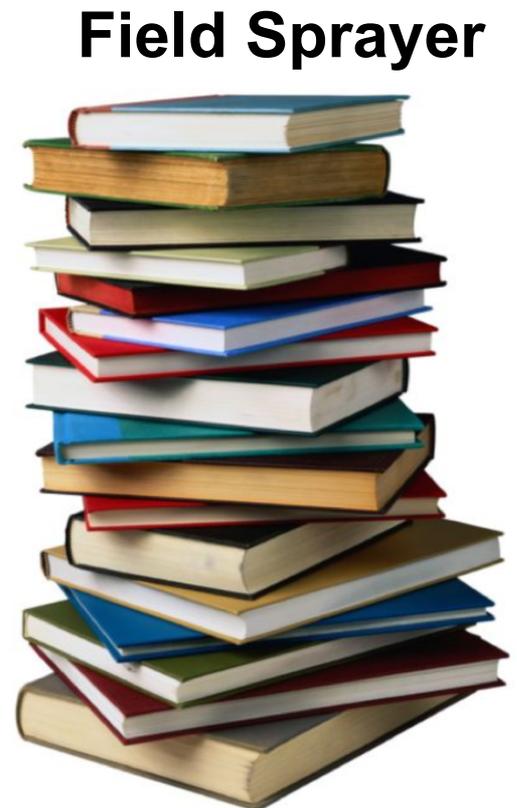
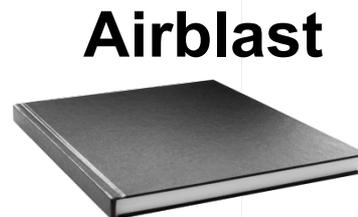
- **This had to do with:**
  - **local culture (geographic or crop-based)**
  - **age and/or ethnicity**
  - **prior experience (good & bad habits)**





**Basically, there was a lot of this going on**

- **Field sprayer operator resources were everywhere, but very little was applicable to airblast sprayers**
- **Even airblast sprayer demos were sporadic, partisan, and/or were very specific**



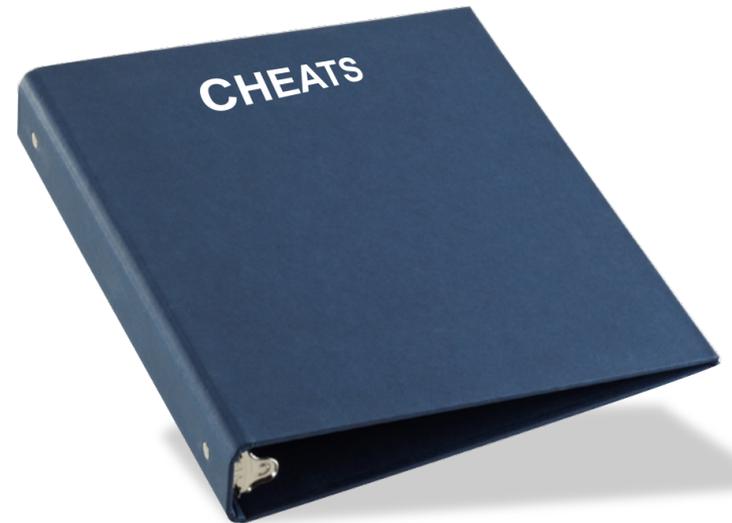
- **Existing training programs ensured airblast sprayer operators knew what to spray, when to spray it, and how to handle pesticides, *but who taught them how to actually spray?***

**Effective, efficient,  
safe airblast  
sprayer operator**

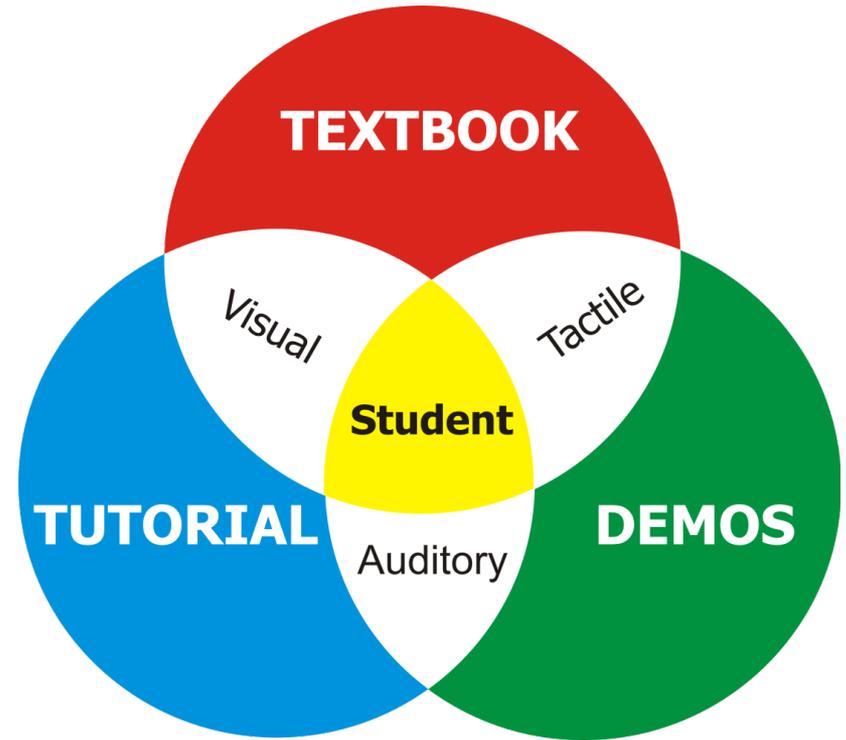


**HOW TO SPRAY?**

- **Guided by the operators and what I saw during farm calls, I began to develop articles, presentations and demos**
- **I carried a binder with me full of crib notes and cheats**
- **Sometime in 2009 I started to recognize that my binder might be useful to others...**



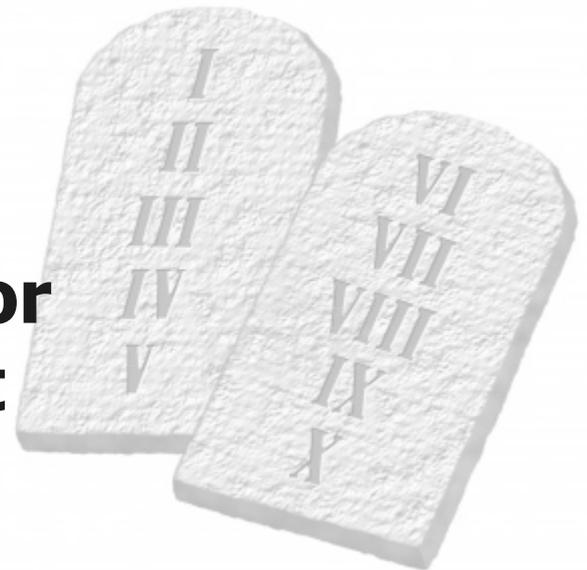
- **I decided to turn it into a course for airblast operators**
- **I wanted it to be multi-faceted: a combination of workbook, lecture and demo to support all learning styles**
- **I started defining what it should be...**



- **The workbook should be a resource long after the course was over**
- **The workbook should have a logical progression, and each page should be an individual stand-alone topic to facilitate easy reference**
- **The workbook should be full colour, and have space for growers to write questions and comments**



- **The writing style should be conversational and heavily illustrated to overcome language issues and ease the more boring or difficult concepts**
- **To keep the course interactive, it should be limited to ~15 people**
- **That way, participants could direct the instructor to the content they want to hear more about**



- **The course should be delivered before the spraying season so participants can plan to make changes to their program**
- **The course should have value for all stakeholders: from farm managers that control large spray programs to airblast spray operators who use and apply agrichemicals, to regulators, consultants and industry**



- **It should NOT be about pesticide selection or specifically about safe handling or storage. That's already covered by IPM and certification courses**





- **A nice idea, but to realize this vision I needed money**

- 
- 
- **I explored government funding, but there were drawbacks:**
    - **Content approval**
    - **Branding (look and feel)**
    - **Performance measures reporting**
    - **Prolonged timelines**
    - **Lots and lots (and lots) of paperwork**
  - **I decided collaboration with industry would streamline the process:**
    - **Faster decision-making**
    - **“Discretionary” funding**

- **I reached out to Croplife Canada's Stewardship Division. They'd funded sprayer-based activities in the past and I knew their mandate aligned with mine**
- **I submitted a few excerpts from the course and they agreed to fund a pilot year**



Ontario



- **With content and partner in place, I focused on style. I felt that if it looked professional, participants would take it more seriously**

**WORKSHOP COMING SOON**  
Operators plan now to attend:  
**Airblast Sprayers 101**



An interactive workshop that includes hands-on demonstrations and dialogue with an experienced airblast technician that will:

- provide you with tips on calibration, maintenance and how to adjust your sprayer to the crops you spray
- bring your sprayer pressure gauge(s) in and have their accuracy tested
- FREE samples of water sensitive strips to test your application

**COMING**  
Space is limited  
For more information  
BROUGHT TO YOU BY  
**CropLife**  
ONTARIO



**YOUR TURN**



Read "Six Elements of Effective Spraying in Orchards and Vineyards"  
Factsheet 09-039"



**DID YOU KNOW?**

Never mix and match different sprayer calibration methods. The calculations may not work. If you already have a method you are comfortable with, use it.




This Certifies that \_\_\_\_\_  
has successfully completed  
**AIRBLAST SPRAYERS 101**

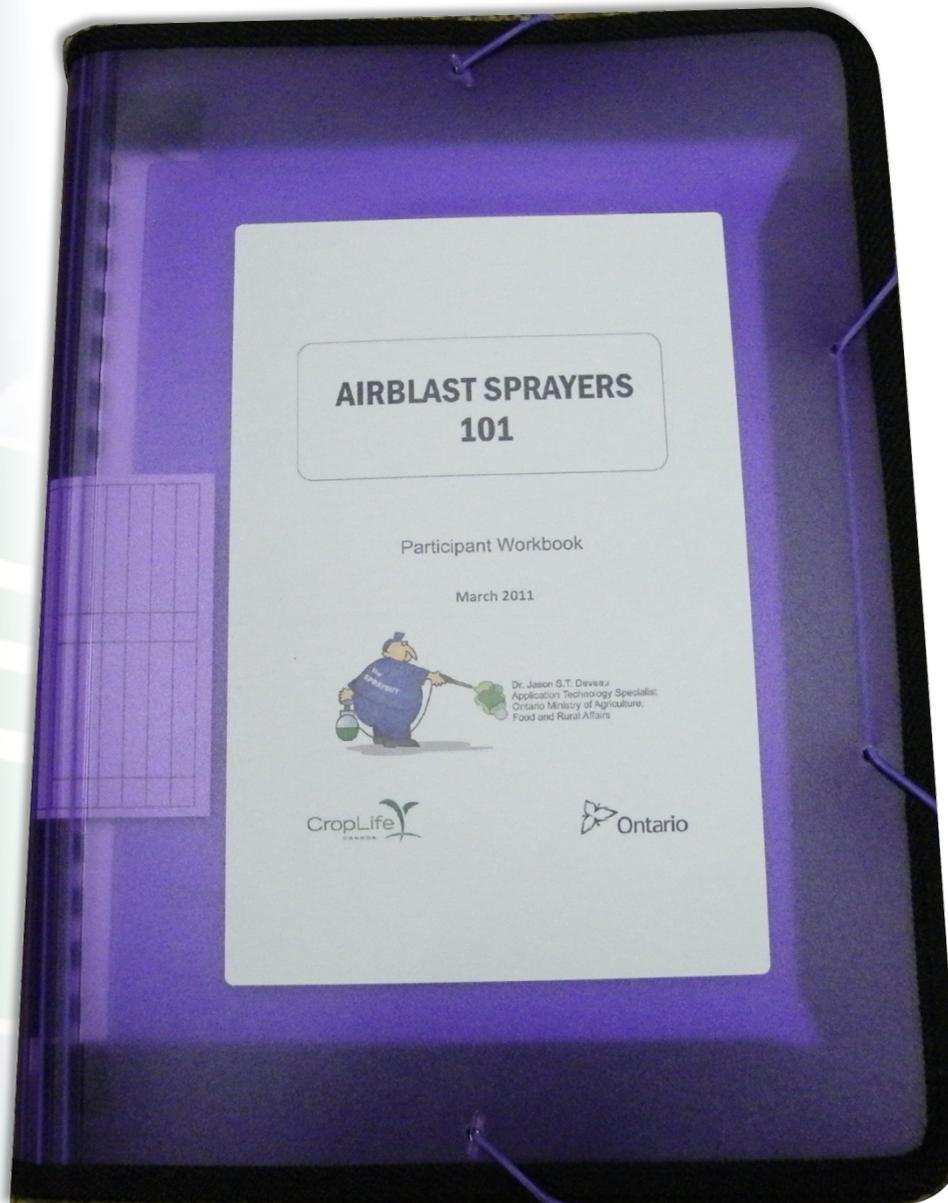
\_\_\_\_\_  
Instructor

\_\_\_\_\_  
Date

**CropLife**  
ONTARIO




# V1.0 (2010-2011)



- **The first version was little more than a binder full of articles, factsheets and a short workbook**

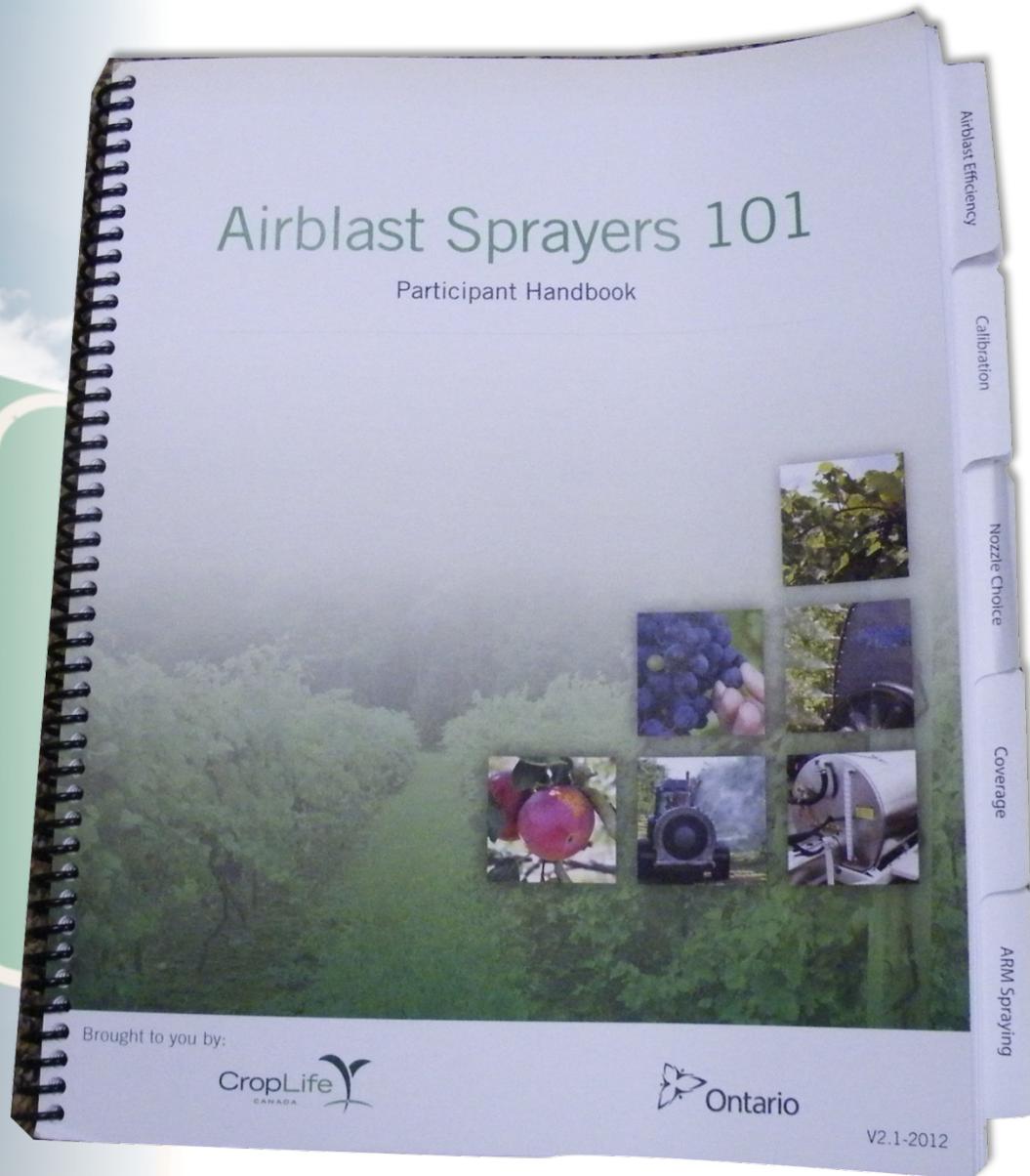


- 
- **In 2011 we delivered three classroom style courses, quietly advertised through grower group mailing lists and newsletters**
  - **We charged \$20.00 per person, which was a lost leader, but it covered some of the printing costs and lunches. It also ensured registrants were serious**
  - **CropLife Canada handled pre-registration, printing, arranged meals and facilities, and supplied consumables – I focused on delivery**

# Feedback

- **Exit surveys from participants gave valuable feedback. Three things came clear:**
  - 1) The participants found value in the course: satisfaction averaged 94%**
  - 2) They wanted more material and a longer course (it was already 3 hours)**
  - 3) They wanted hands-on workshops, too, demonstrating course materials**

# v2.0 & 2.1 (2012)



- **Version 2 was spiral bound, had reference tabs, and incorporated more material**

- 
- **We taught three more courses in February, and a few at conferences**
  - **Now the course was four hours long, and surveys still indicated satisfaction in the mid 90's, with requests for more material and more hands-on workshops!**
  - **I was invited to teach the course in B.C. as a "train the trainers" event for government and industry**

**Providing Feedback:**

- Verbal
- Write on B & W copy of the presentation
- Complete questionnaire
- Place sticky notes on the wall
- E-mail [Madeline.Warman@bc.ca](mailto:Madeline.Warman@bc.ca)
- Phone Madeline @ 604-556-3027

# Train the Trainers



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- **Many operators have taken the course multiple times, claiming to learn something new each time**
  - **Because so many sprayer operators were taking the course, they were better prepared for advanced topics**
  - **Hands-on workshops spun off and have been taught each summer to tree fruit, nursery, berry and grape growers**



**Grape Growers**

# Tree fruit Growers





**Nursery Growers**

# Highbush Berry Growers

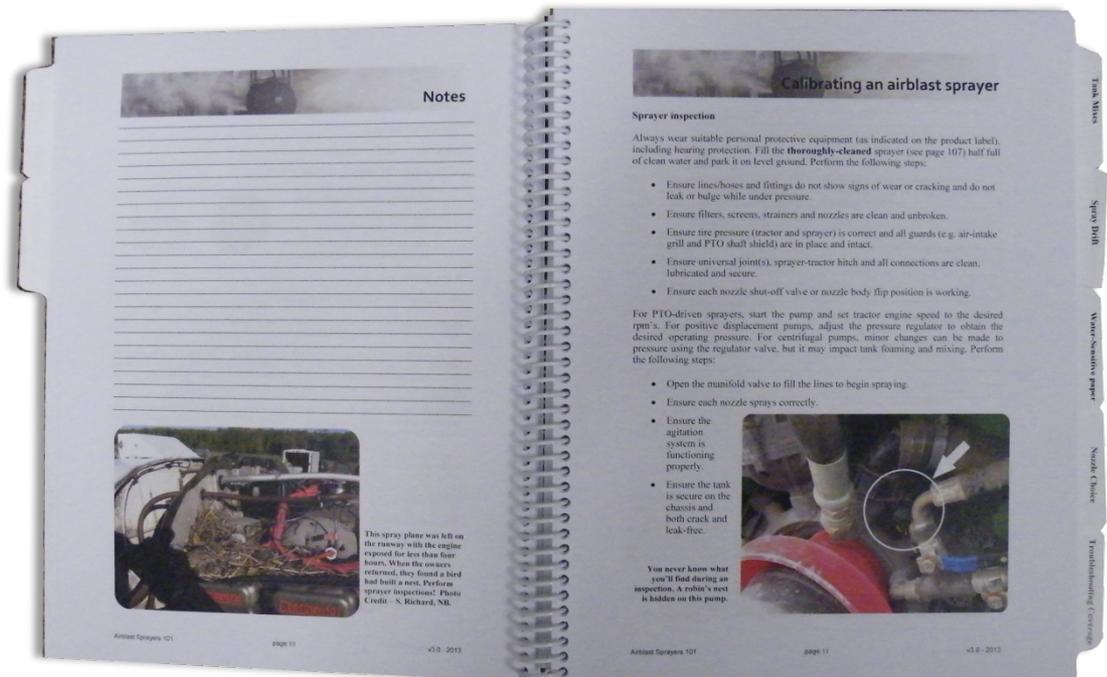




**Grape Growers**

# v3.0 (2013-2014)

- **Something like this is never really 'done'. Version 3 is better still, with many more photos and new content**
- **Colleagues in universities, industry and extension reviewed and greatly improved it**



- **To date, Airblast 101 has been taught to hundreds of participants in Ontario, British Columbia and most recently, Prince Edward Island**
- **It's become a reference for extension in New Hampshire and British Columbia**
- **I'm working to train the trainers for the Canadian Nursery Landscape Association**
- **Workbooks have been requested from as far away as Brazil and Africa**





- **But, it still wasn't available to everyone because I can't leave Ontario to teach it**
- **It had to become more accessible...**



**[www.sprayers101.com](http://www.sprayers101.com)**



HOME

ABOUT AIRBLAST 101

TRAINING

CHAPTERS

CONTACT



Optional Text



## Welcome to Airblast 101



Sed congue, turpis metus convallis accumsan, dolor urna vitae metus. Aliquam in est. Vestibulum laoreet, lacus scelerisque odio adipiscing sollicitudin.

Praesent et malesuada tincidunt, mi libero, fermentum lobortis semper. Sed euismod mi. Pellentesque habitant morbi tristique enim, id diam sodales libero. Suspendisse potenti. Vivamus justo. Curabitur nec lectus sit amet, vestibulum ipsum consectetur at, aliquet ac, ante. Morbi orci, orci ut curus. Fusce mollis tincidunt, risus necus ante, vitae magna diam, venenatis placerat, nulla diam, nisi dui nulla, faucibus justo.

- **Simple navigation, has a search engine, and works on mobile devices**

## When is an application “efficient”?

Are you an efficient spray operator?

Integrated Pest Management (IPM) is a multi-step process that helps growers make informed decisions about when and what to spray. But, the decision to spray is not the end of the process. The spray operator has a lot of decisions to make about sprayer set-up and application method to make the job efficient and effective. Spray application is one of the most important activities regularly done in any horticultural operation. It can also be one of the most expensive. So, while it's important to be effective, it's also important to be efficient. Efficient spraying saves money and reduces environmental impact.

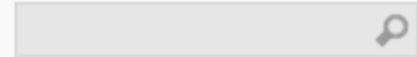


What can you do to make your spray applications more efficient?



### DID YOU KNOW?

With the correct nozzles, an airblast sprayer should not have to operate at pressures over 200 psi. Using 100 psi less saves about 10



Current chapter

### 01 Air Blaster Efficiency

Chapter pages

When is an application “efficient”?

Six elements that affect airblast efficiency



A classic „airblast sprayer“ – owned by B. Panneton, QC.



- **Printable pages, lots of pictures and additional resources, links and content**

## Nozzle materials and wear

Most growers use a disc-core combination (or in the case of John Bean®, disc-whirl plus gasket and spacer). Some will elect hollow-cone and others full-cone – it really depends on the crop, the volume you want to spray and the distance-to-target.

The rate of tip wear depends on spray pressure, product sprayed, and the material of which the nozzle is made. Upgrading to a harder, more durable tip can reduce maintenance costs, but costs more initially. Inevitably, all nozzles wear out - even ceramic. Replace softer materials annually, or when two nozzles are worn by 10% (or even 5%) of the manufacturer's rated output. **This will save you money in the long run.**

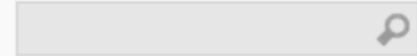


### DID YOU KNOW?

The inner edges of nozzle orifices are extremely delicate. Stop cleaning them with wires or even toothpicks! Keep a can of compressed air (used for cleaning keyboards) in your cab to blow out stuck or dirty nozzles.



Your airblast sprayer has 16 nozzles and sprays a product that costs \$100/ha. Your nozzles are worn by an average 10%, and spray an additional \$10/ha. If 16 new ceramic hollow cone tips and gaskets cost \$160 (i.e. \$10 each), how many hectares before they pay for themselves in saved product?



Current chapter

**05 Nozzle Choice**

Chapter pages

Nozzle materials and wear

Moulded nozzles

Venturi nozzles



Here are a series of TeeJet® full-cone cores and discs from hardest (left) to softest (right) material



- **Always up-to-date, with information about training and current events**

- **As it grows, the website will be more than a digital version of the workbook:**
  - **Factsheets**
  - **Current and archived articles**
  - **Instructional videos**
  - **A portal for anyone teaching the course to post location, times and get registrations**
  - **A clearing house for all things airblast**

- **Got an idea or want to contribute to the site? Write us!**
- **Want copies of the workbook? Want to teach the course in your region? Write us and we'll work it out**

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ANY  
QUESTIONS  
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