

# Drift Mitigation Education in the Chemical Industry

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# Syngenta Application Technology

- What are we doing in terms of spray drift mitigation education?
- This is a presentation on the direct involvement of Application Technology in various Syngenta approaches to ensuring spray drift mitigation in the field
- AT: Who are we and what do we do?
- Team of five people supporting NAFTA

# Syngenta Application Technology

- Professional and scientific approach
- Very much hands-on and practical
- Focus on real world spray drift mitigation techniques
- Vast experience of pesticide application methods, but we are still learning!
- Use our in-depth knowledge of the science behind Application Technology to provide excellent stewardship of products
- Leverage considerable group expertise to ensure that products are used correctly and safely, by education of applicators in the field





# Real World of Spraying



# Syngenta Application Technology

- Utilize a global knowledge base
- Use spray drift mitigation knowledge from Europe and other regions for NAFTA guidance
- We have conducted application field trials and training courses in many countries
- US, Canada, Brazil, UK, Germany, France, Portugal, Hungary, Romania, South Africa
- Coordinate with Application Specialists in Europe, LATAM, Middle-East and Africa

# Syngenta Application Technology

- Close to the field and our customers
- Understand customer use practices and application techniques
- Understand real word spray equipment
- Gather information from field technical reps and customer center (calls, e-mails, visits)
- Specific spray drift concerns are scientifically investigated, and specific recommendations communicated to the field to address concerns



# Syngenta Application Technology

- Part of Formulation Development
- Support Stewardship Department
- Support Regulatory Department
- Spray Drift Modeling support
- Drift Reducing Equipment monitoring and evaluation
- Generate technical information for education purposes

# Aerial Application

# Air Tractor AT 402















# CP 11TT





# Ground Boom Sprayers



























# Air-Blast Sprayers











# Syngenta Application Technology

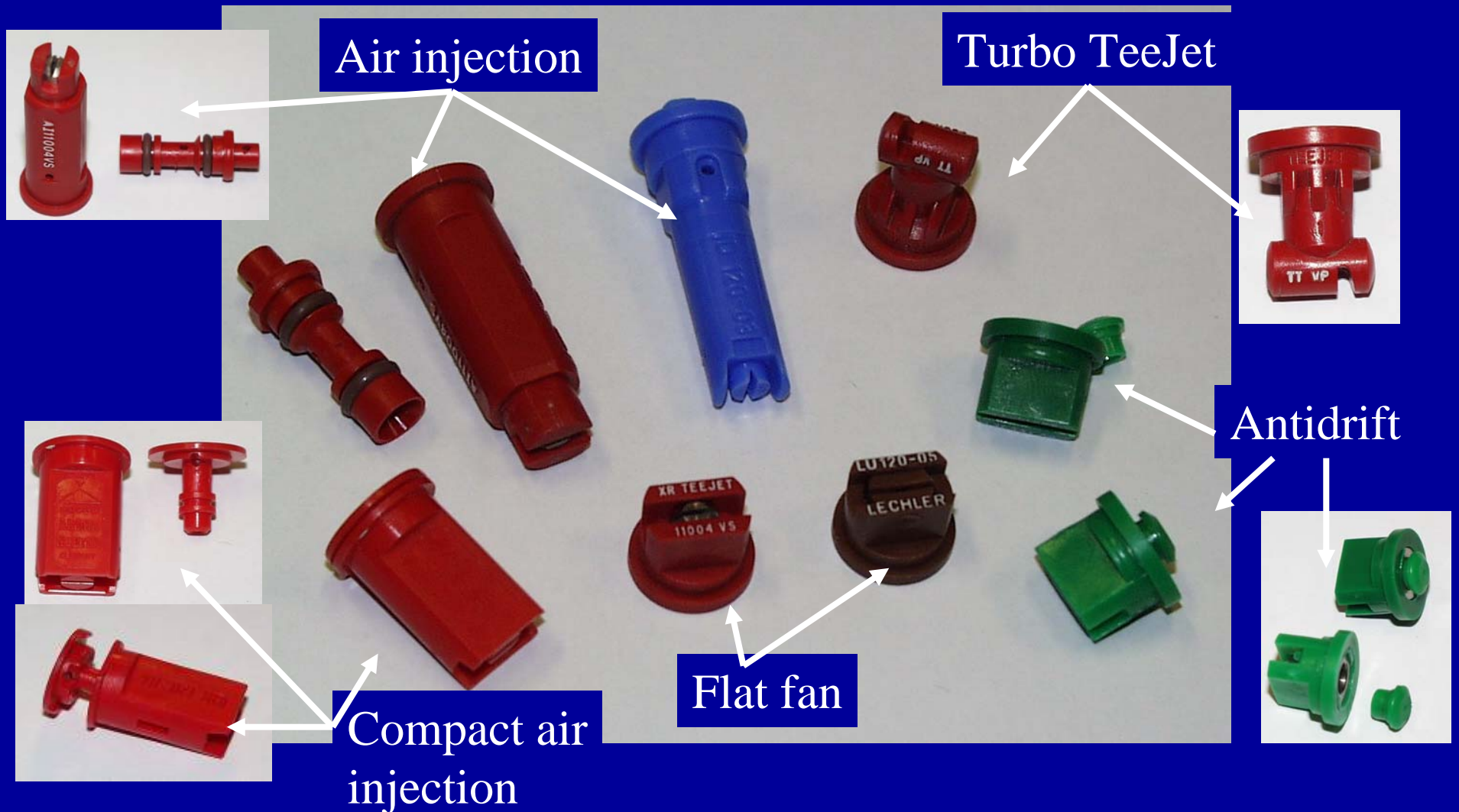
- Evaluate performance of products when applied through Drift Reducing Technology
- Evaluate performance of products when mixed with drift reducing adjuvants
- All new products evaluated for spray drift potential

# Nozzles

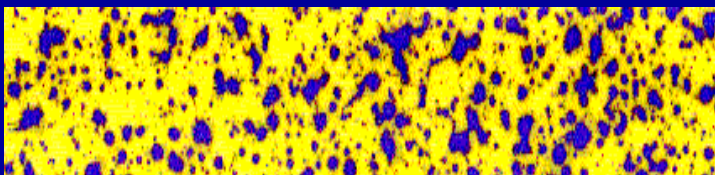
- Use lab spray set up to demonstrate and evaluate drift reducing nozzle technology
- Use particle size analyzer to assess particle size spectra



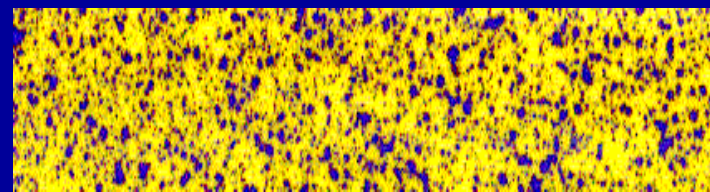
# Major nozzle types in plant protection (Ground Boom Sprayers)



# Relative spray quality



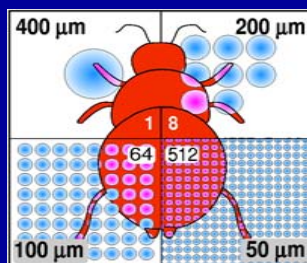
**Air induction**



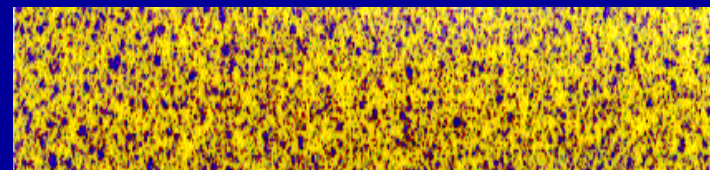
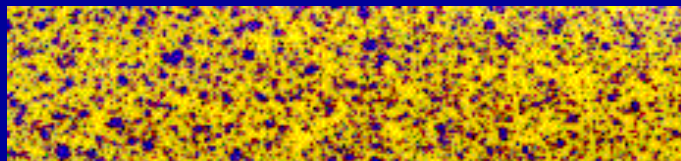
**Low Drift**



**Standard**



**Hardi TWIN**



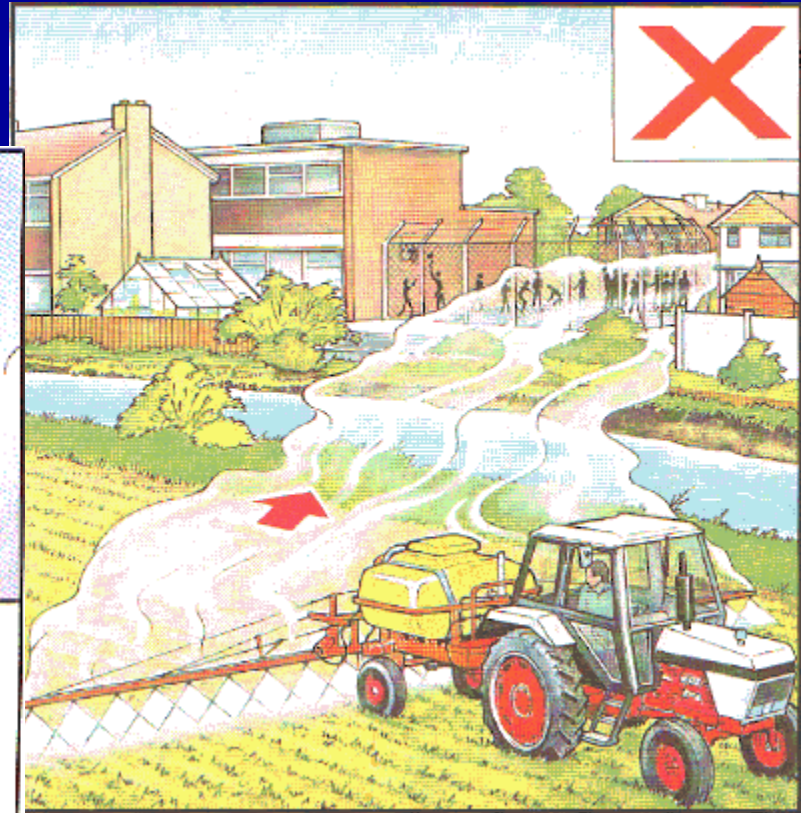
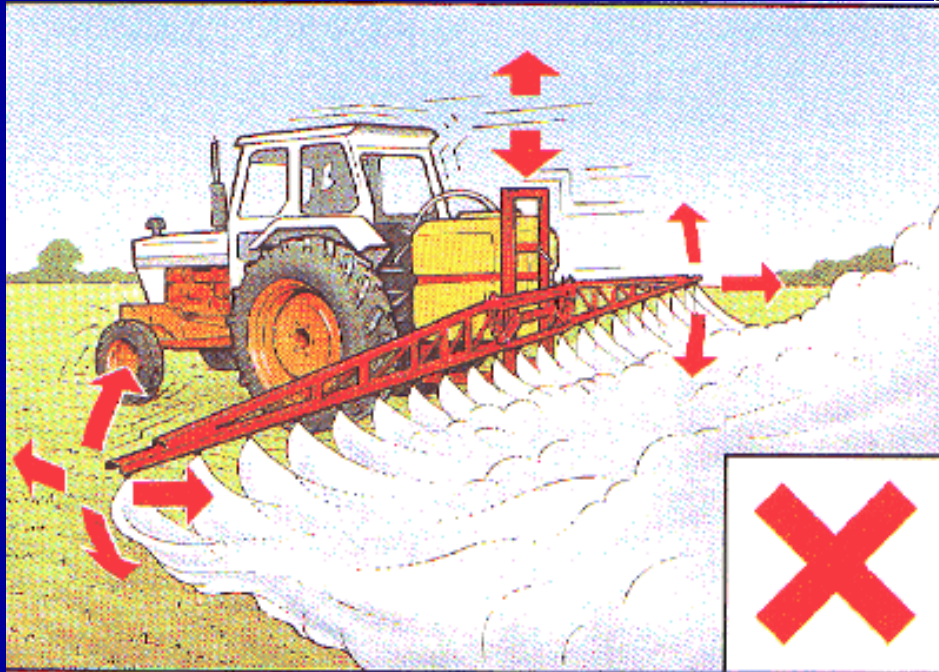


# Syngenta Application Technology – Training Courses

- Use information such as nozzle performance data
- Disseminate information to technical reps
- Provide training courses and materials
- Support fly-ins
- Spray drift mitigation best management practices



# Typical Training Materials – Do not make applications if:



# Syngenta Application Technology – Regulatory Support

- Support regulatory department with advice on label language
- Spray drift mitigation instructions included on product label
- Provide product specific recommendations for spray drift mitigation – technical sheets

# Label Language - Ground Applications

- 1) Follow label directions to reduce the potential for drift incidents.
- 2) Do not make ground applications within a surface temperature inversion when applying near an area requiring protection to avoid an unreasonable adverse effect. Applicators may determine presence of an inversion by noting the presence of ground fog, light variable wind, or layering of smoke and dust.
- 3) Applicators must estimate the prevailing wind speed and direction in the vicinity of the application site prior to and during the application. Measuring wind speed with an anemometer, observing wind speed and direction using a wind sock or wind vein, or obtaining a report from a local meteorological station are acceptable methods of estimating wind speed and direction.

# Label Language - Ground Applications

- 4) Apply at the nozzle height that produces uniform coverage of the target.
- 5) Apply when prevailing wind speed is 3 to 10 miles/hour.
- 6) Many factors, including droplet size and equipment type, determine drift potential at any given speed. Drift reduction technology or other mitigation methods should be employed to reduce drift potential.
- 7) Use nozzles which deliver a coarser spray quality (droplet size spectrum) at application according to nozzle manufacturer, ASABE, or USDA classification.



# Syngenta Application Technology – Spray Drift Mitigation

- Spray drift mitigation is taken very seriously
- Relatively few spray drift complaints
- Shows impact of stewardship and training programs
- Involvement with EPA, DRT project team
- Support Crop Life America – Spray Drift Issues Management Team
- Cooperate with state regulatory agencies to resolve issues

# Syngenta Water Sensitive Paper

## Handling and Storing

*By following the guidelines below, the integrity of Water-Sensitive Paper remains intact, which ensures the accuracy of your results.*

### HANDLING

- Be sure to wear gloves when touching the Water-Sensitive Paper to prevent moisture from being transferred onto the paper.
- Make sure it is dry where you attach the paper. This way the paper will only pick up the spray, not extraneous water.
- It's a good idea to photocopy results to allow for later evaluation and record keeping.

### STORAGE

- Water-Sensitive Paper can be stored up to 10 years if it remains in its original package and the packaging isn't damaged.
- Once the strips have been used, they must be stored in dry conditions, like an airtight box or bag.
- After exposure, strips can be protected in plastic sleeves or with a thin, clear, adhesive tape (be sure to apply it without air bubbles).



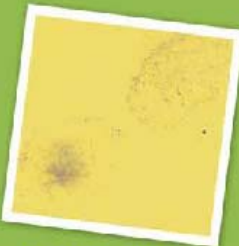
#### IDEAL SPRAY

*This is an example of an ideal spray. Coverage and droplet size are even and consistent, illustrating proper product coverage.*



#### IMPROPER APPLICATION

*This is an example of an improper application. Coverage and droplet size are not even and consistent, illustrating improper product coverage and poor application calibration.*



#### HANDLING ERROR

*This is an example of a handling error. Always wear gloves when touching the paper to prevent transfer of moisture from your hands to the paper.*



## Water-Sensitive PAPER

AN INNOVATIVE SOLUTION

Over the past 20 years, Syngenta Crop Protection has developed a way to monitor spray distribution in your fields to help ensure optimized application of fungicides, herbicides and insecticides to a variety of crops and plants. Water-Sensitive Paper is a rigid, yellow paper designed to turn dark blue when aqueous drops contact it.

This provides an instant visual of the spray distribution and droplet size, allowing growers to adjust sprayer settings to achieve optimal spray patterns. Water-Sensitive Paper confirms the actual spray pattern on the target surfaces in the field.



For more information, visit the Syngenta Crop Protection website at [www.syngentacropprotection.com](http://www.syngentacropprotection.com) or [www.farmassists.com](http://www.farmassists.com) or call 866-SYNGENTA (866-796-4368).

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SCP 007-00020-A



# Syngenta Water Sensitive Paper

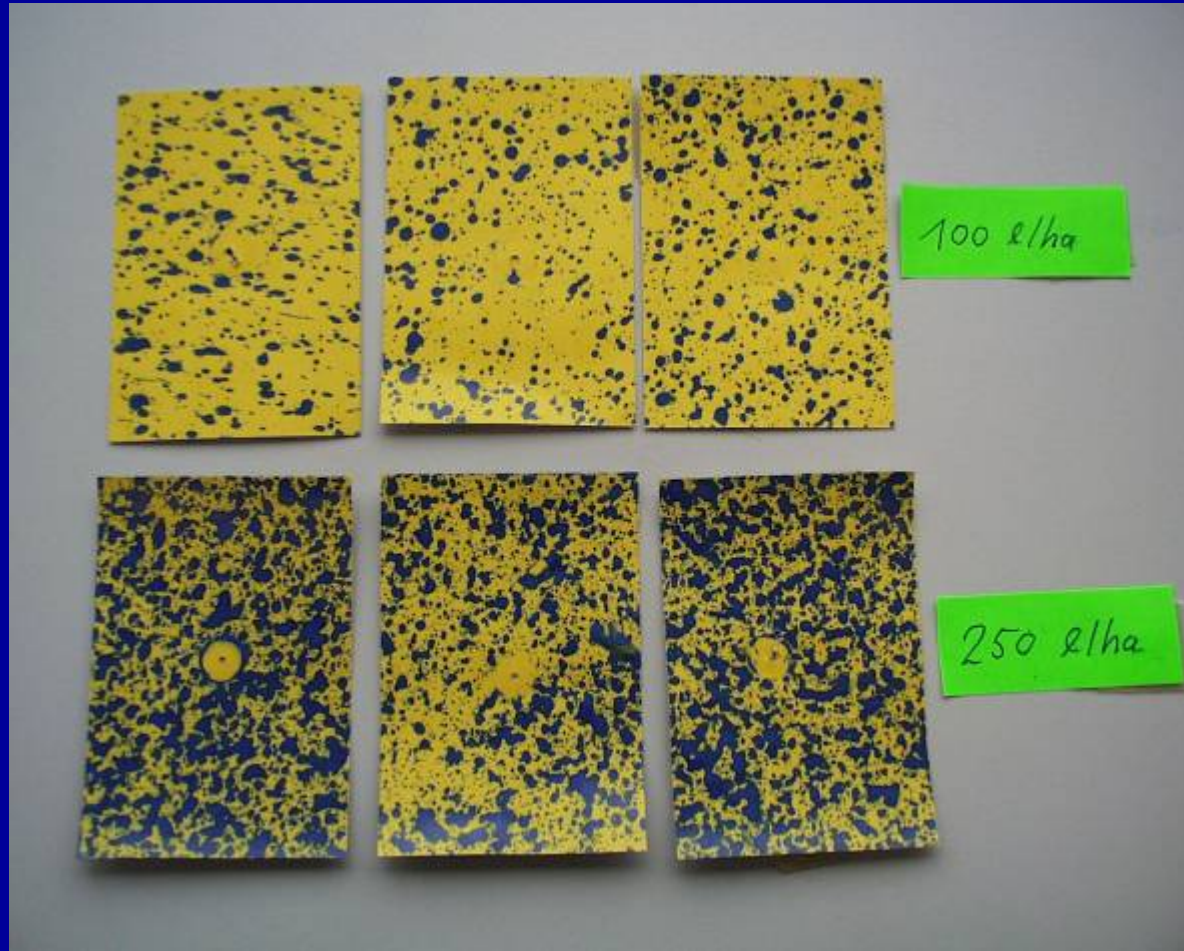




# Syngenta Water Sensitive Paper



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# Link to Syngenta Stewardship

- Stewardship partners – growers distributors, government agencies
- SDTF participation (previously)
- CLA SDIMT participation (currently)
- Address spray drift issues through – industry work groups and outreach, technical expertise and promoting awareness

# Link to Syngenta Stewardship

- Continuing education for farmers, growers, applicators
- Web based approach
- Support for university extension workers
- NGO's eg CURES
- Literature – BMPs, bulletins etc.

Thank you for your attention!

