



UNIVERSITY OF
Nebraska
Lincoln®



2021 Crop Production Clinic Drift Management

Bruno Vieira, Estefania Polli, Greg Kruger



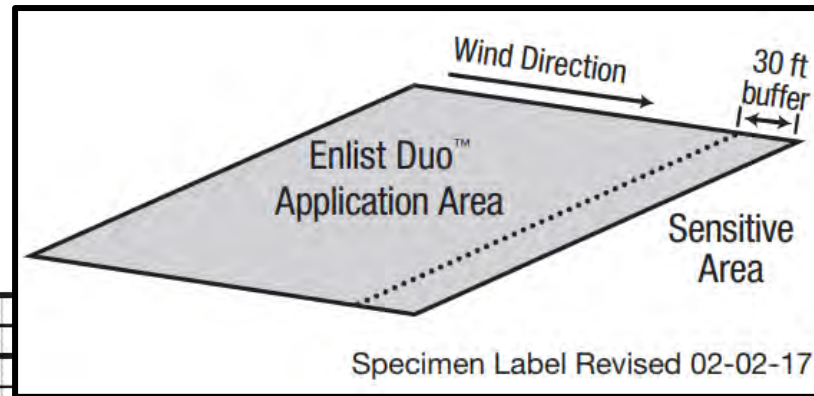
Spray Drift

- Spray drift is the part of a pesticide application that is deflected away from the target area during or following applications



Factors influencing herbicide drift

1. Surrounding vegetation
2. Wind speed
3. Boom height
4. Droplet size



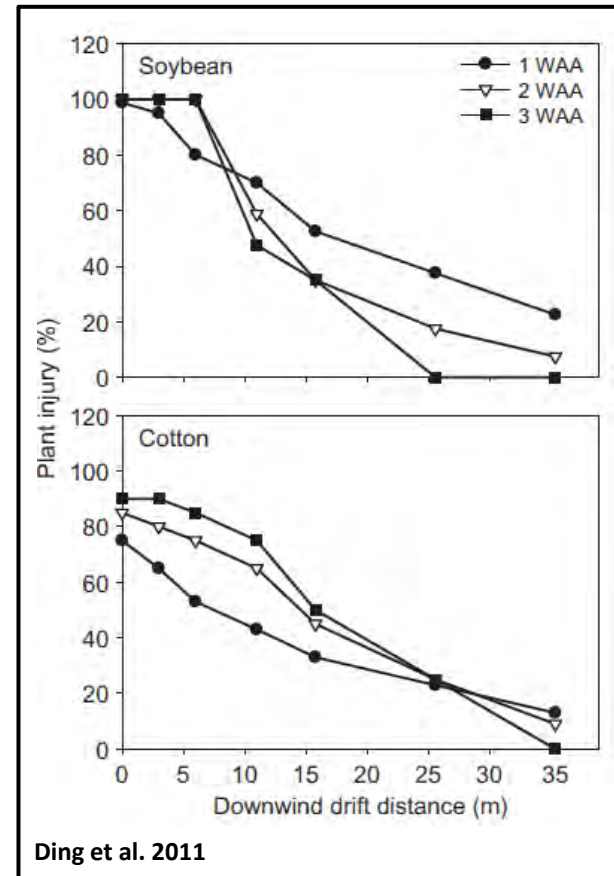
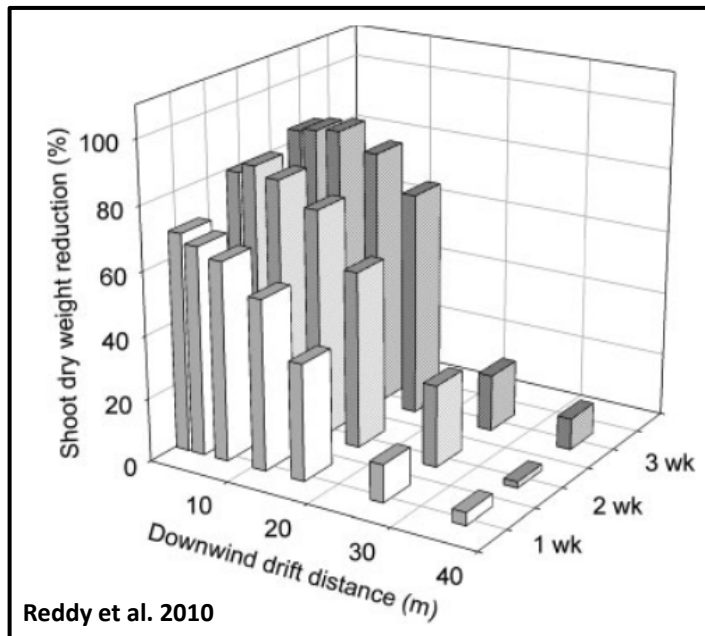
ABJ Agri	ABJ11004	MAX 40		
	ABJ10006	MAX 30		
GreenLeaf	TDXL11003	MAX 40		
	TDXL11004	MAX 45		
	TDXL11006	MAX 75		
	TDXL11003-D		MAX 90	
	TDXL11004-D		MAX 90	
	TDXL11006-D		MAX 100	
	TDXL11008-D		MAX 80	
Hypro	ULD12004		MAX 70	
	ULD12006		MAX 50	
Lechler	ID11004	MAX 40		
	ID11005		MAX 60	
TeeJet	AI11004		MAX 60	
	AI11006		MAX 60	
	AI11008		MAX 70	
	AITJ60-11006	MAX 40		
	AIXR11003	MAX 30		
	AIXR11004	MAX 40		
	AIXR11006	MAX 40		
	TTI11004		MAX 85	
Wilger	MR11006		MAX 60	
	MR11008		MAX 60	

Surrounding vegetation



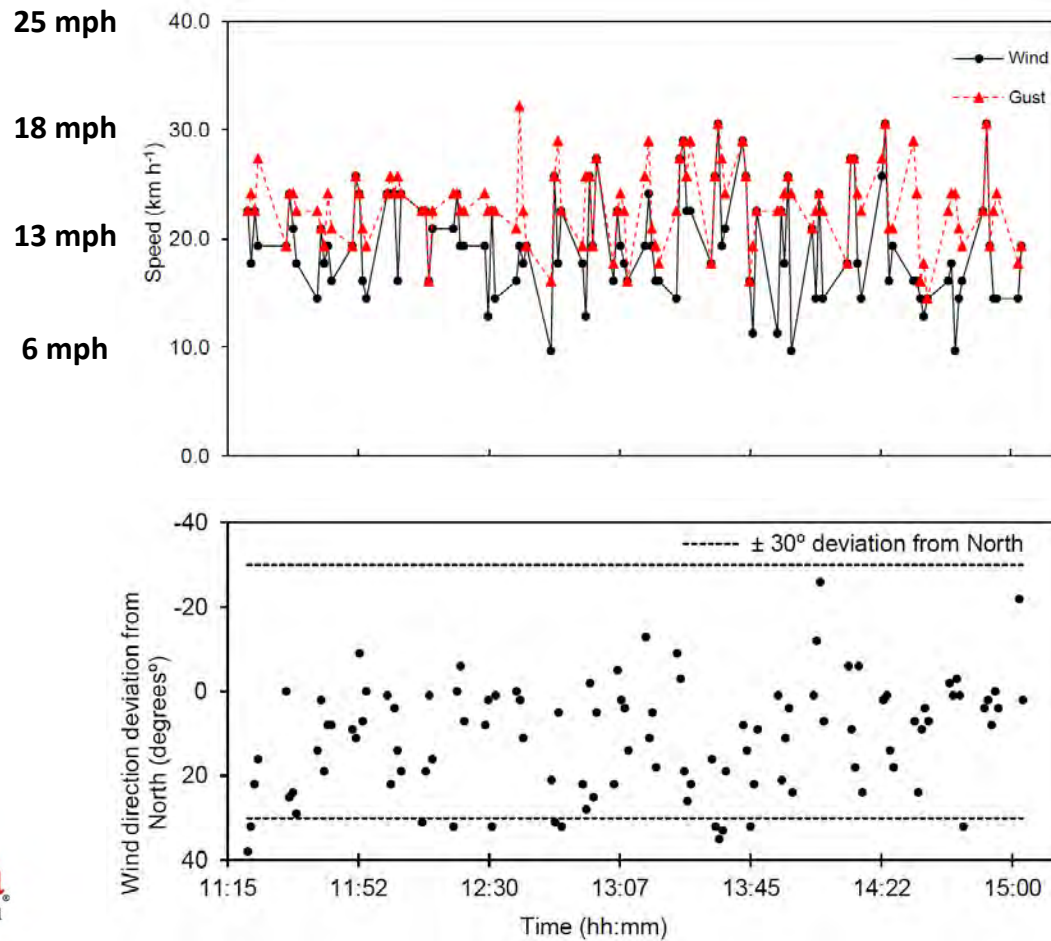
Surrounding vegetation

- Glyphosate drift from aerial application



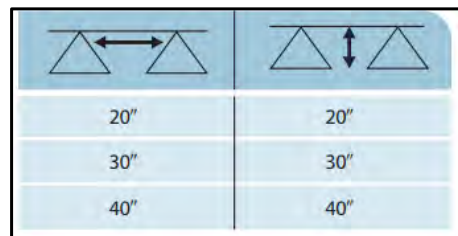
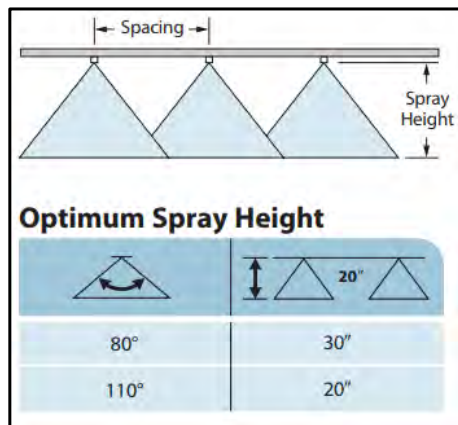
Wind Speed

700% increase in spray drift (90 ft) when the wind speed doubles

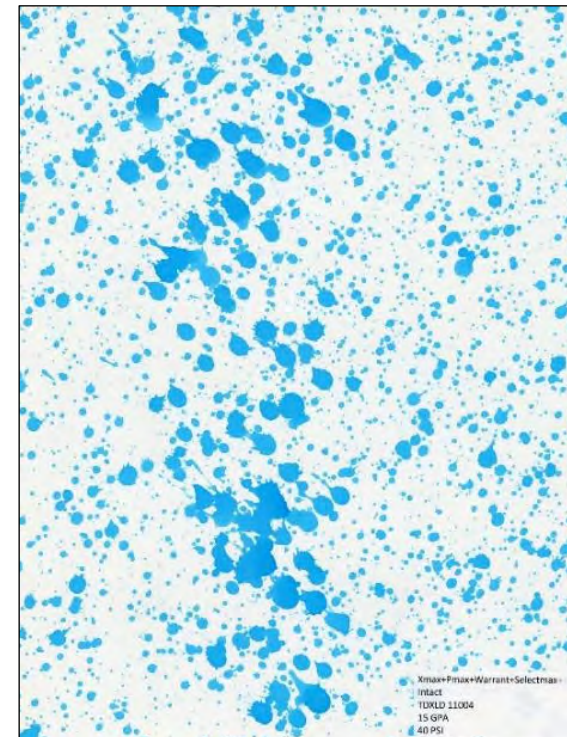
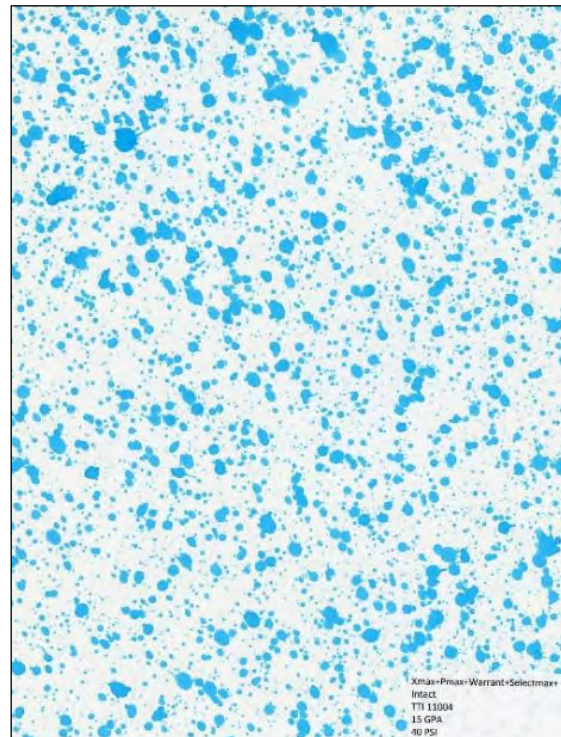


Boom Height

- Particle drift increased 350% (90 feet downwind) as the boom height was increased from 18 to 36 inches
- Boom height dependent on nozzle opening angle and spacing

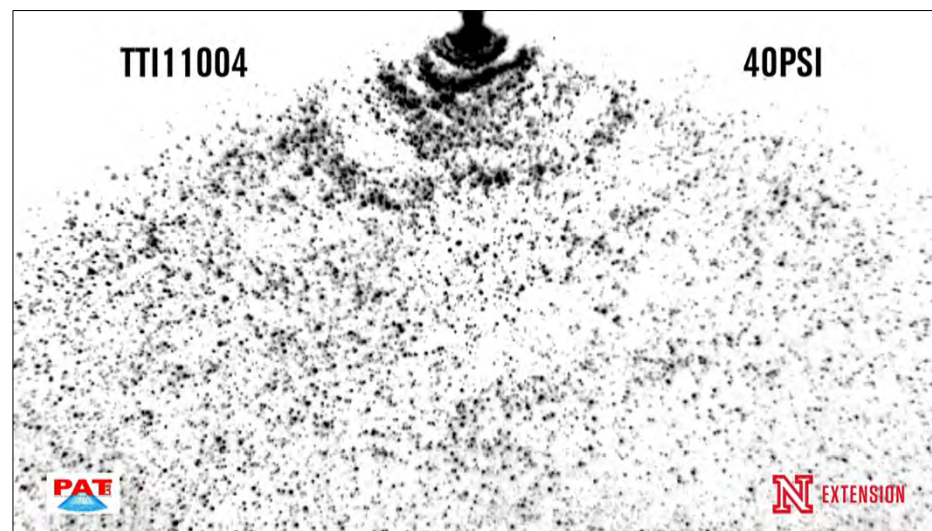
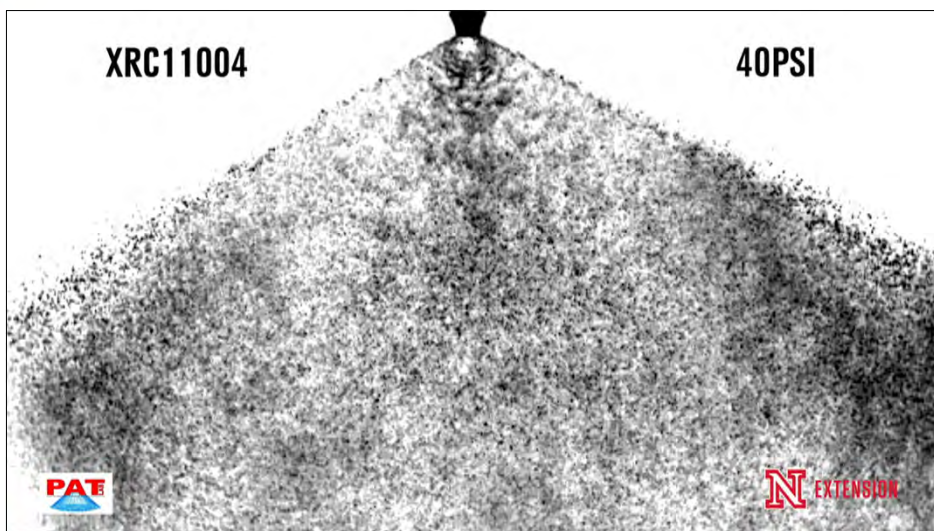


TeeJet Catalog 51A

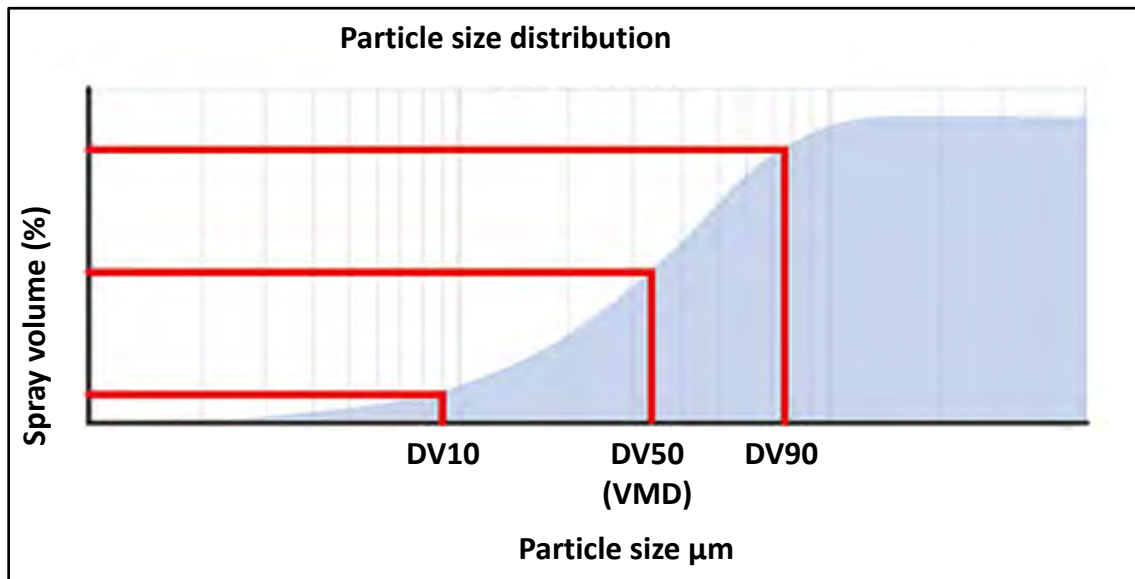


Droplet Size

- Nozzle selection
- Spray pressure
- Spray solution (physicochemical properties)



Droplet Size Classification



Malvern Instruments Limited, 2015.

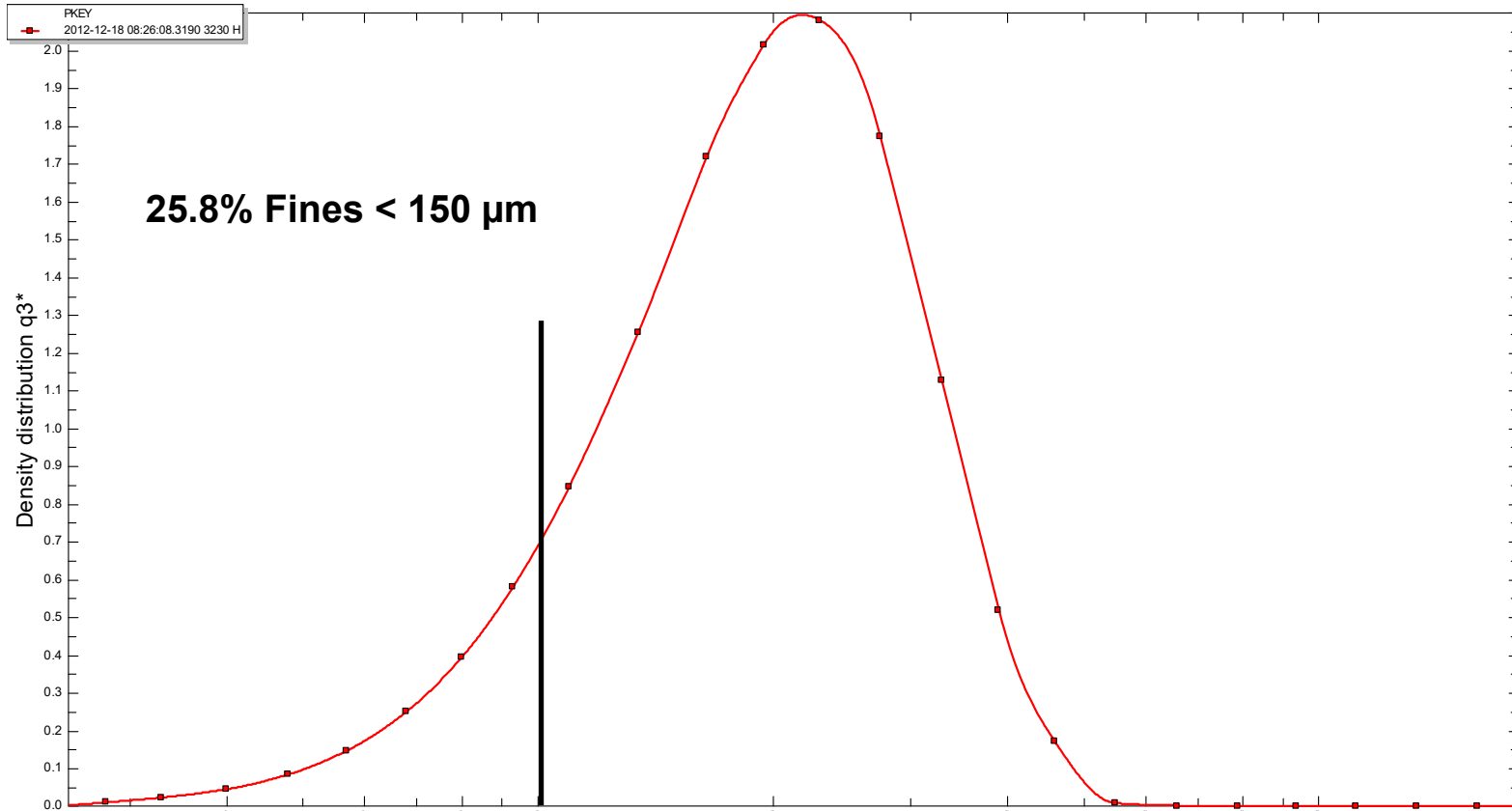
Droplet Size VMD Range	ASABE S-572.1 Classification Category	Color Code
Under 60	Extremely Fine (XF)	Purple
60-105	Very Fine (VF)	Red
106-235	Fine (F)	Orange
236-340	Medium (M)	Yellow
341-403	Coarse (C)	Blue
404-502	Very Coarse (VC)	Green
503-665	Extremely Coarse (XC)	White
Over 665	Ultra Coarse (UC)	Black

ASABE Standard 572

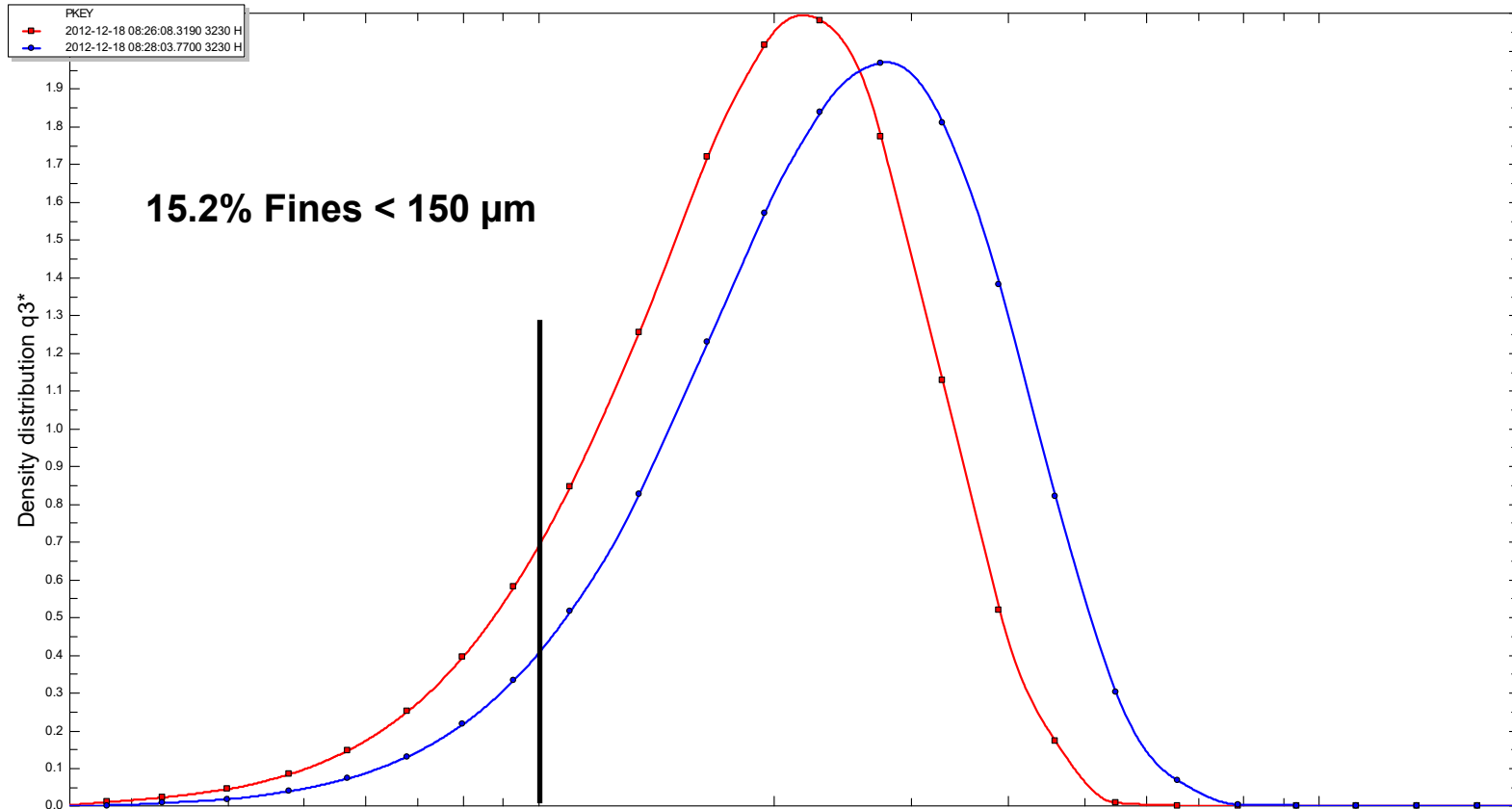
Comparison of Micron Sizes (approximate values)

Pencil lead		2000 μm
Paper clip		850 μm
Staple		420 μm
Toothbrush bristle		300 μm
Sewing thread		150 μm
Human hair		100 μm

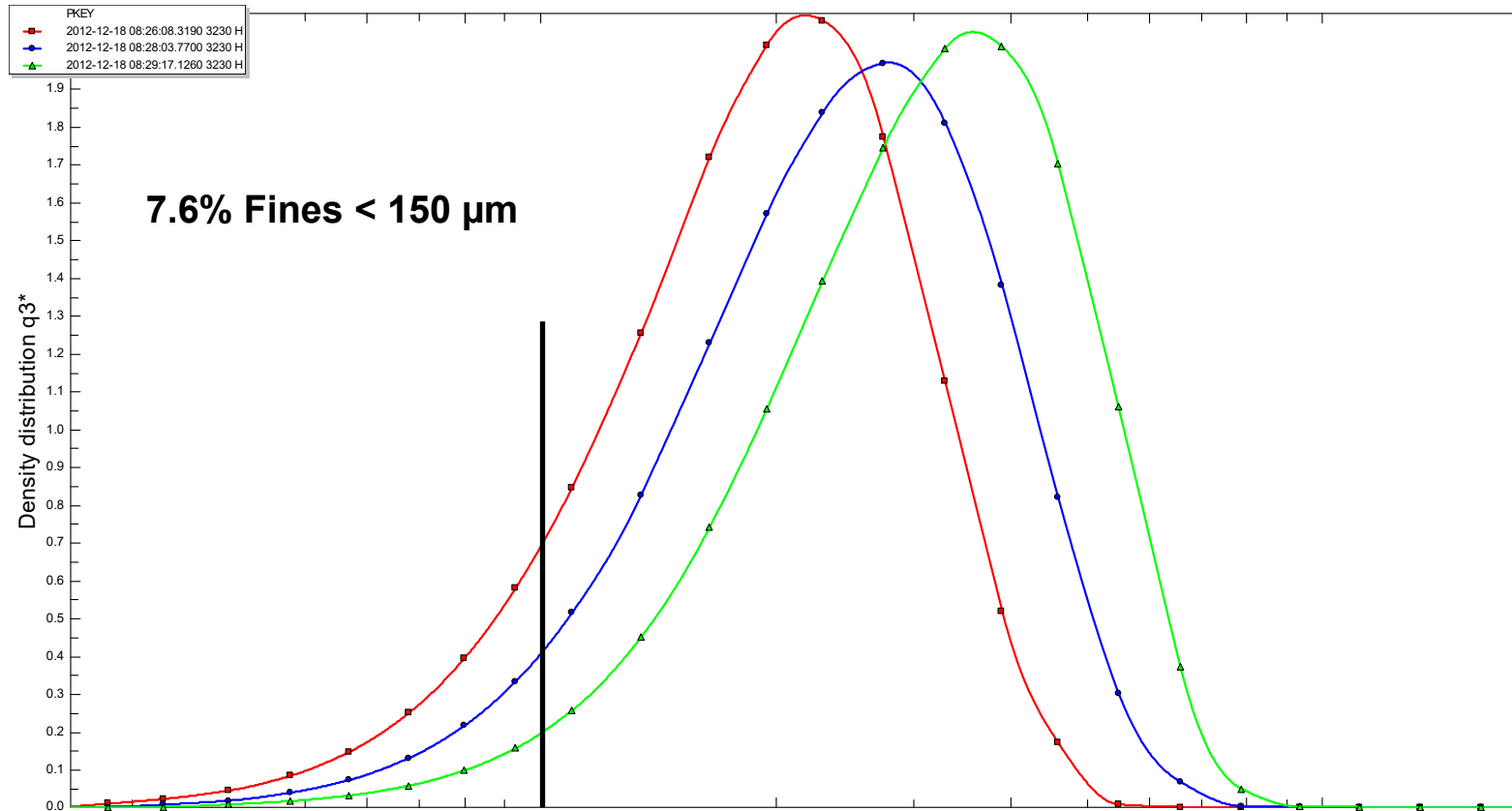
XR 110025 at 60 psi using Water



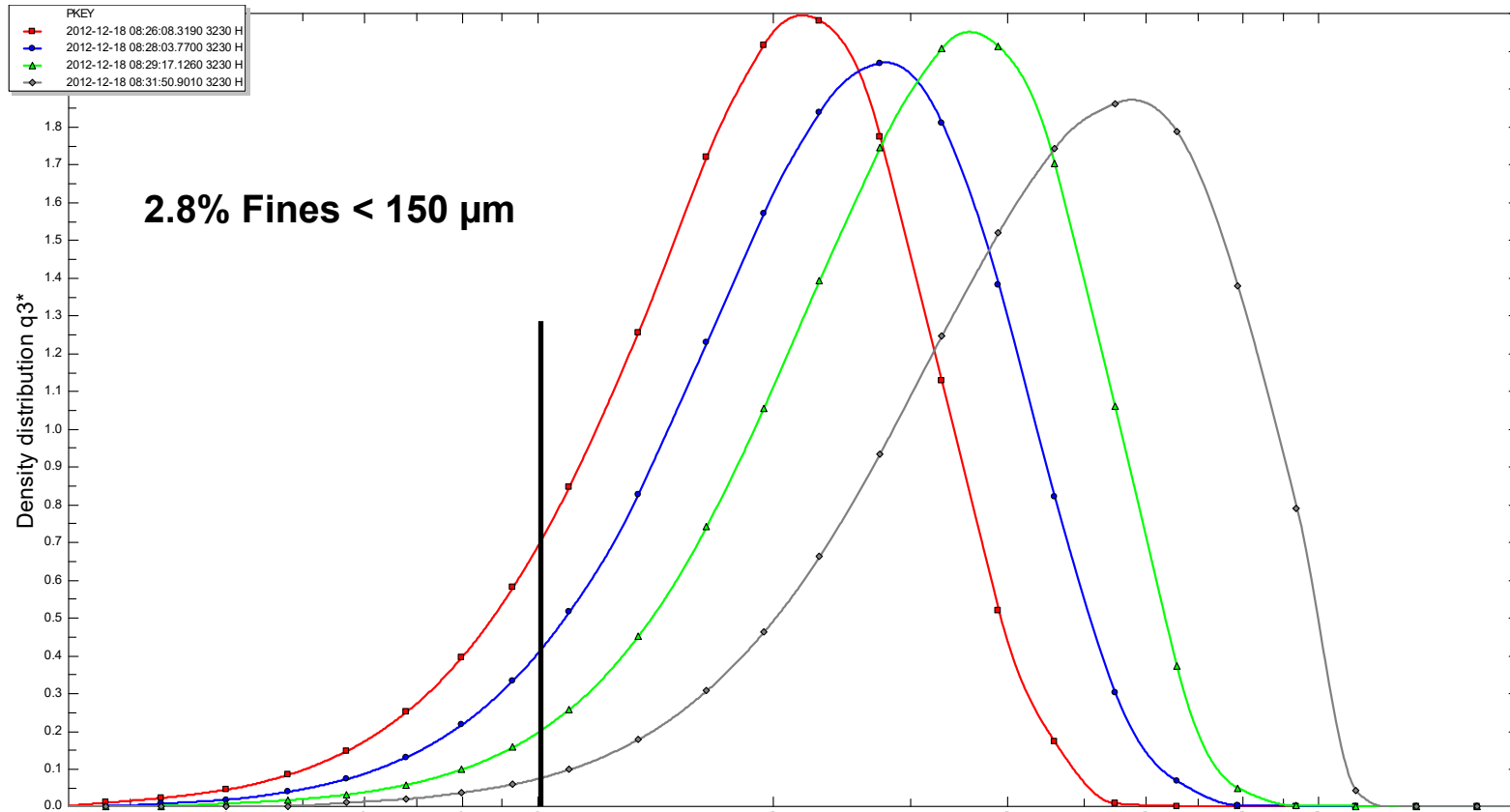
XR 110025 at 30 psi using Water



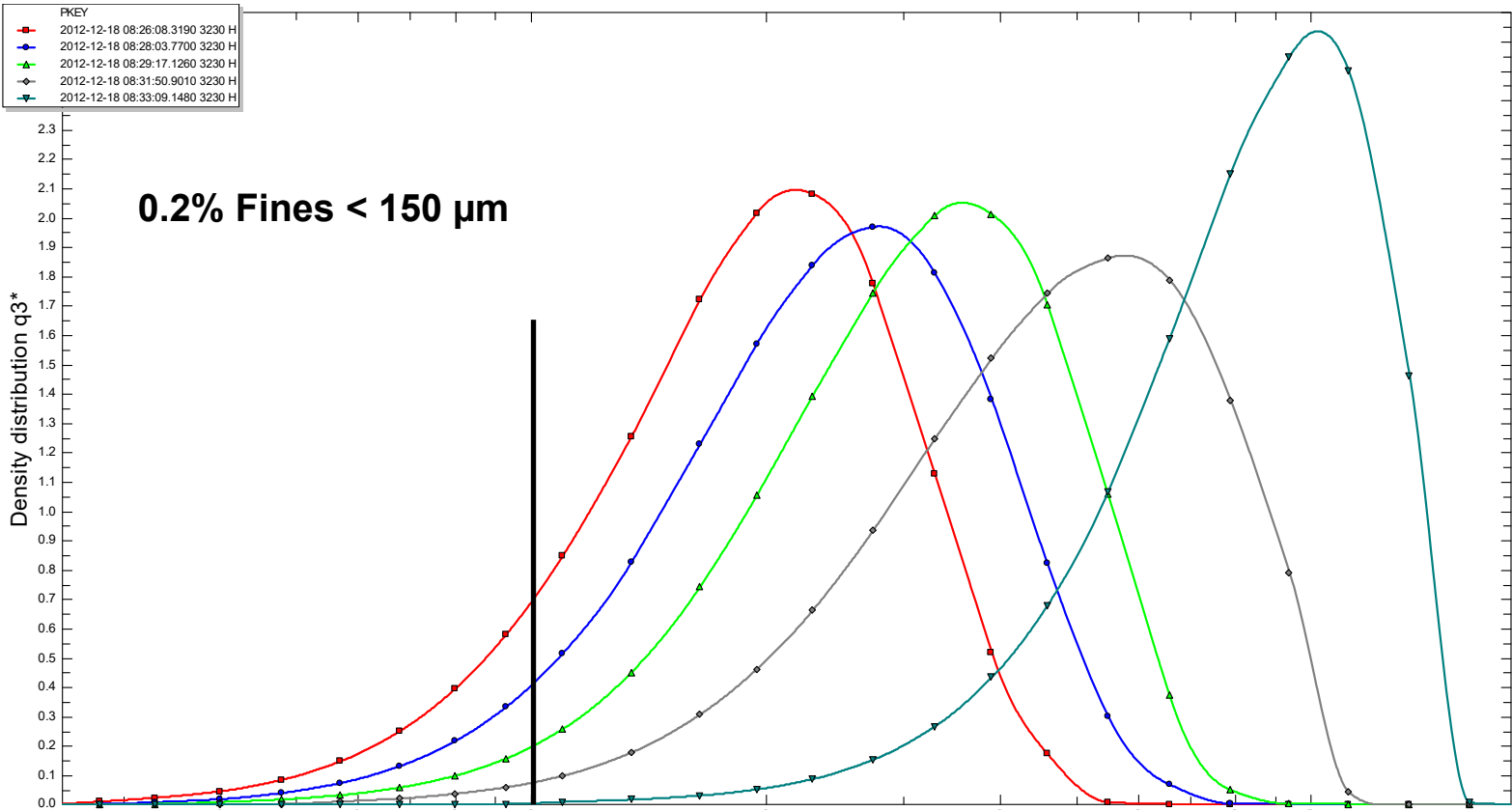
XR 11005 at 30 psi using Water



TT 11005 at 30 psi using Water

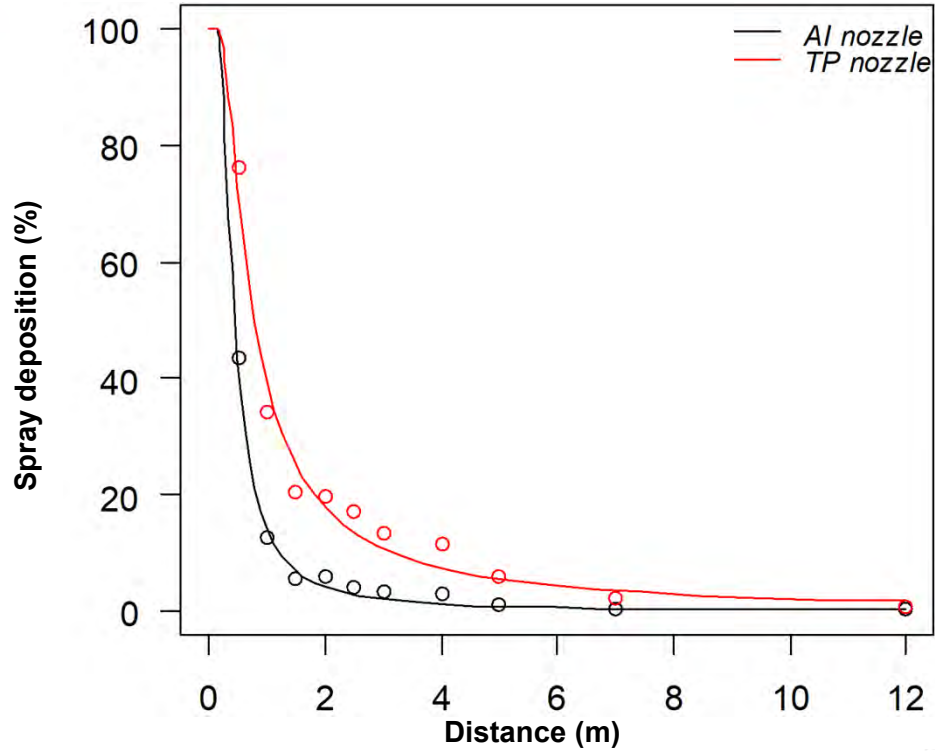


TTI 110005 at 30 psi using Water

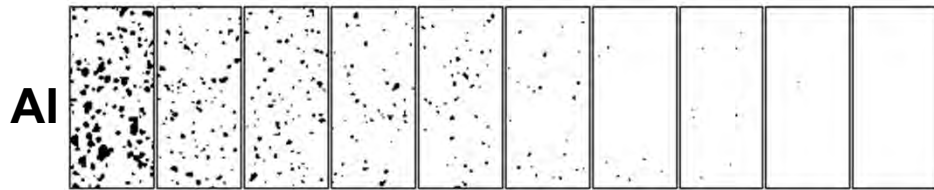
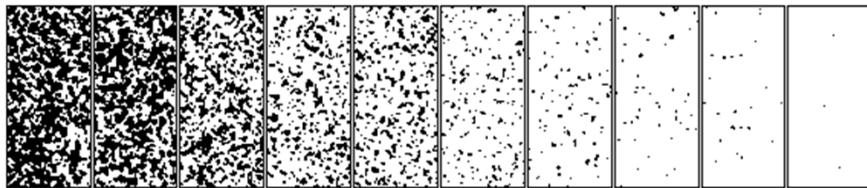
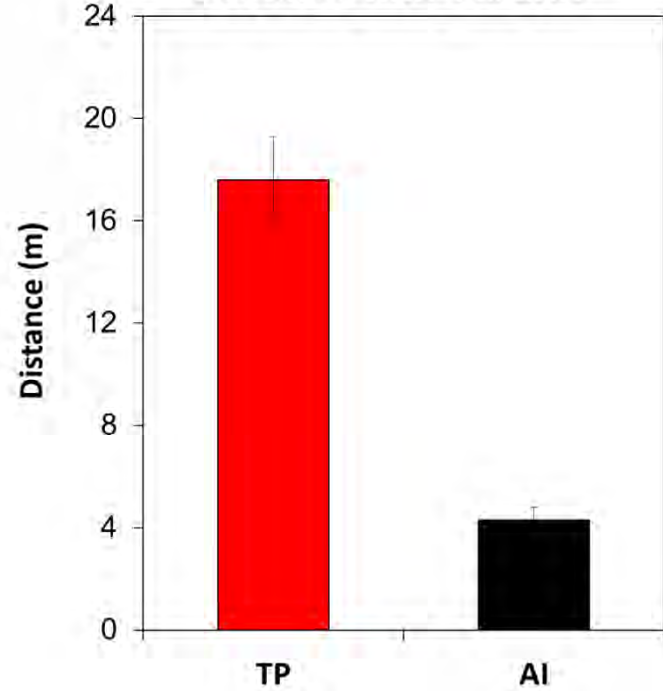


Spray Drift

Herbicide spray deposition

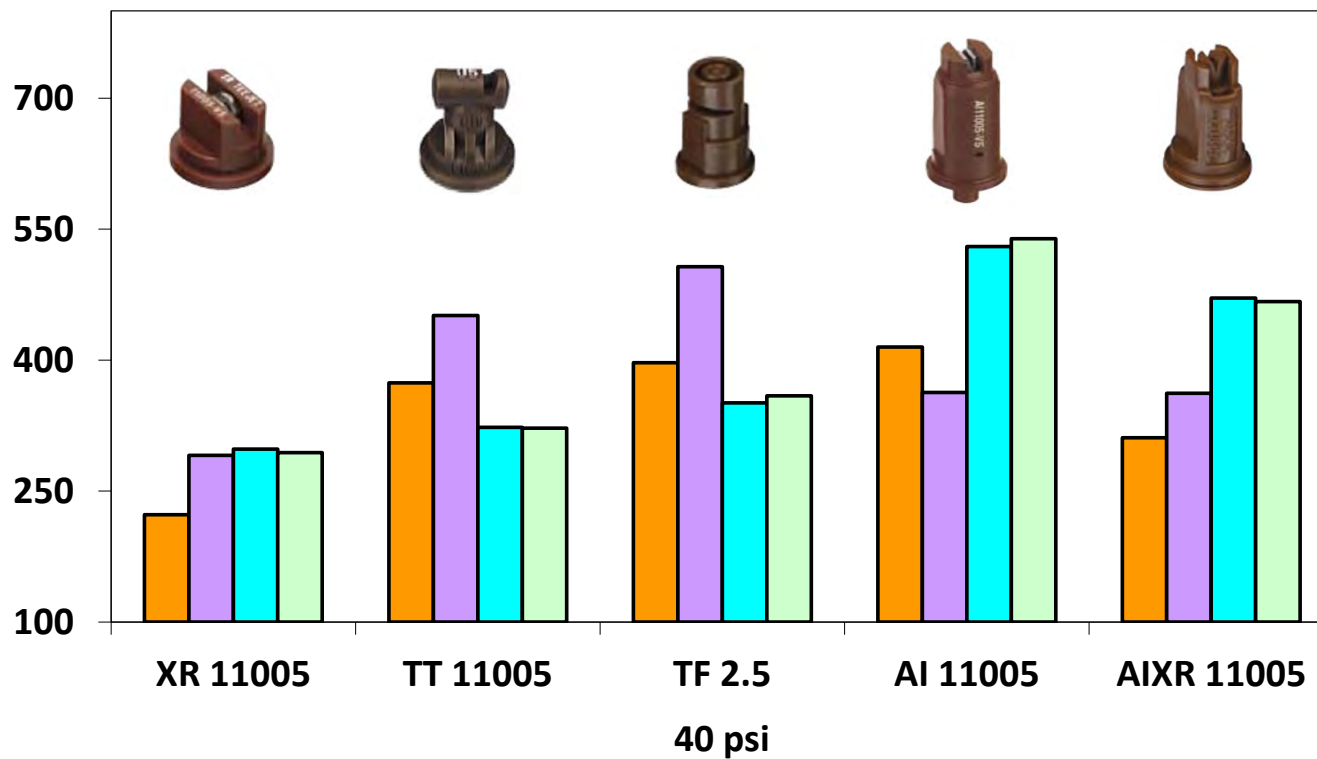


Distance with 1% drift

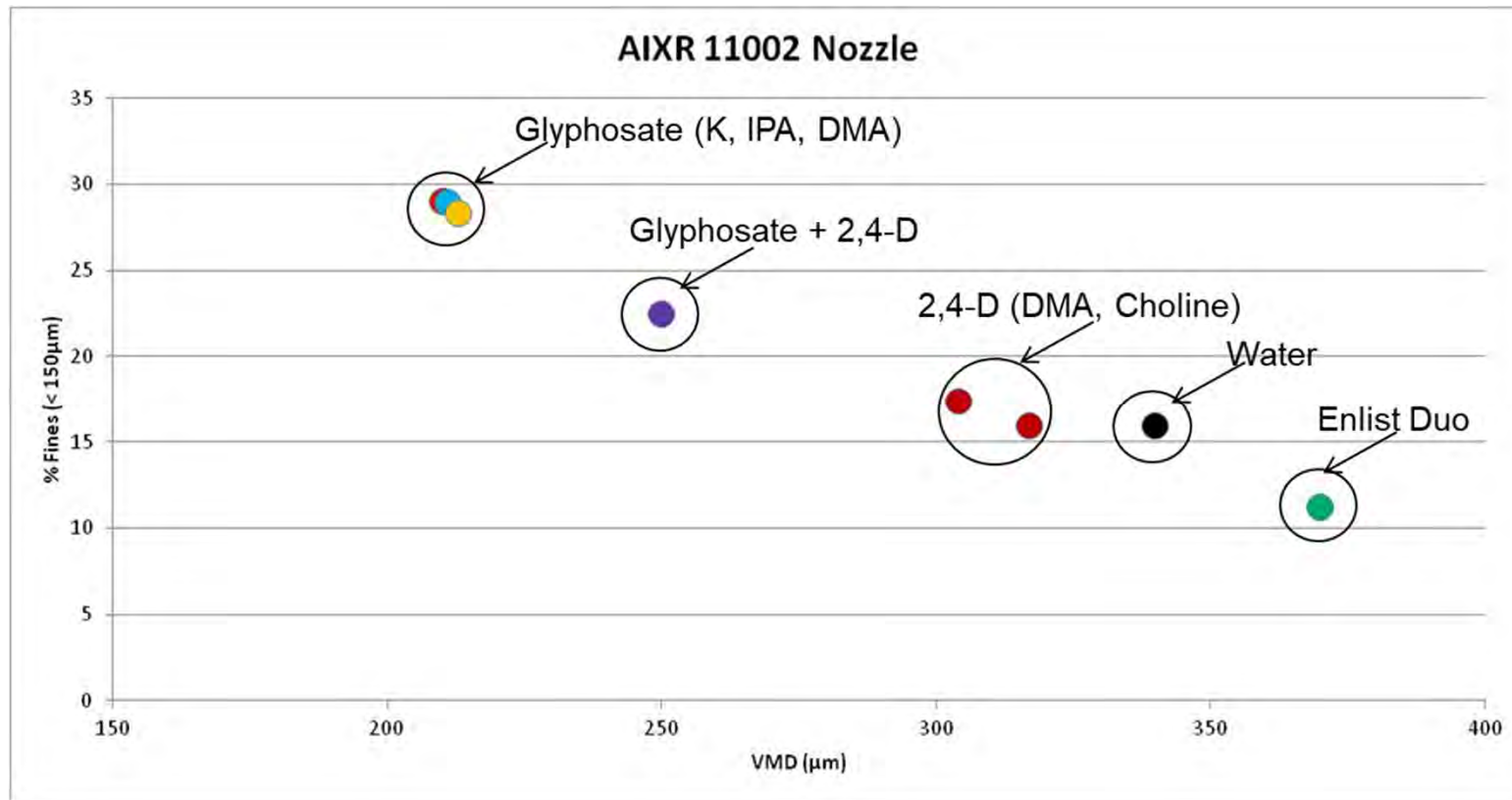


Adjuvants and droplet size

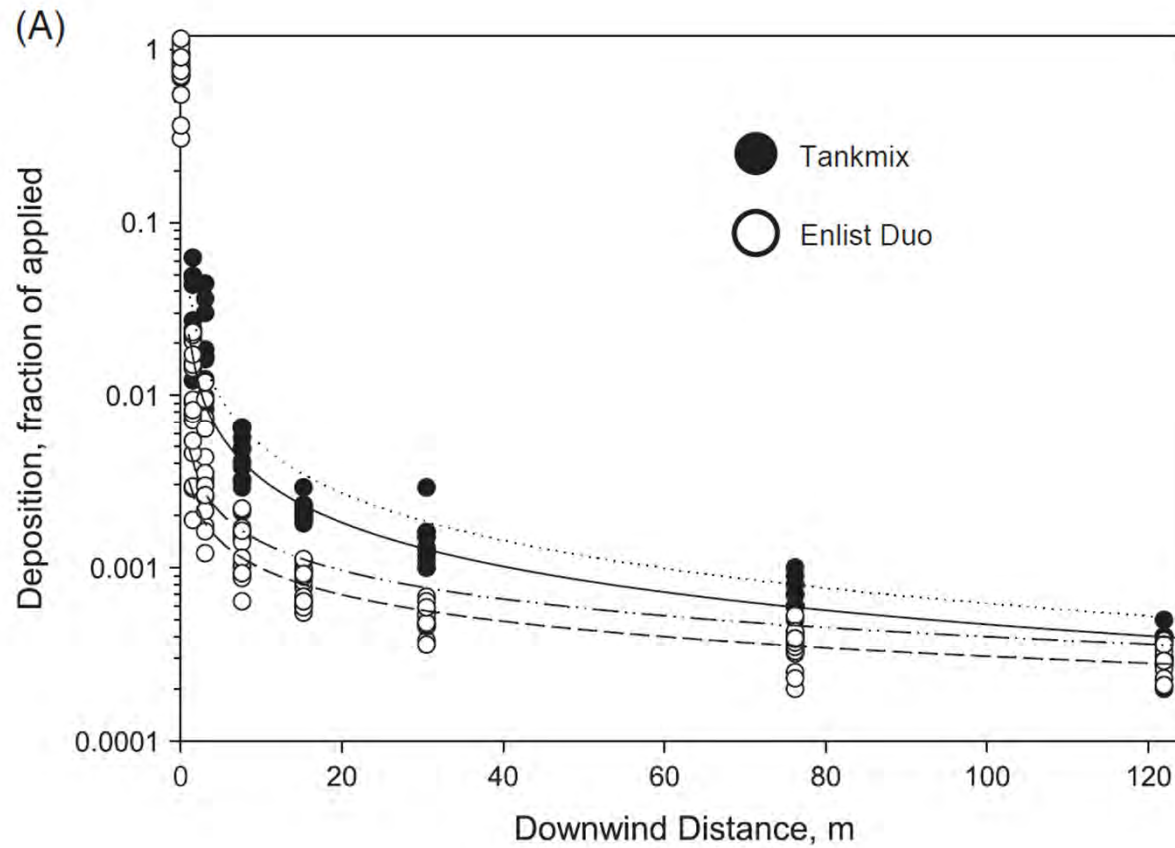
- Roundup WM
- Roundup WM + Polymer
- Roundup WM + Microemulsion
- Roundup WM + Invert Emulsion



Formulation Impact on Droplet Size



Glyphosate + 2,4-D drift (AIXR nozzle)



Labels

RESTRICTED USE PESTICIDE

To be used by certified applicators only; NOT to be used by uncertified persons working under the supervision of a certified applicator, except that uncertified persons may transport containers.

DICAMBA GROUP 4 HERBICIDE

XTENDIMAX[®]

With VaporGrip[®] Technology

This labeling expires on 12/20/2025. DO NOT use or distribute this product after 12/20/2025.

For weed control in cotton with XtendFlex[®] Technology (dicamba-tolerant cotton) and soybean with Roundup Ready 2 Xtend[®] Technology or XtendFlex[®] Technology (dicamba-tolerant soybean).

CAUTION
KEEP OUT OF REACH OF CHILDREN

Please refer to booklet for additional precautionary statements and directions for use.
For MEDICAL and TRANSPORTATION Emergencies ONLY
Call 24 Hours a Day 1-800-334-7577
For PRODUCT USE Information Call 1-866-998BAYER (1-866-992-2937)

For Incidence of Non-performance or Off-Target Movement or for Questions Regarding Buffer Requirements or Sensitive Crop Registries Call 1-844-998XTEND (1-844-779-3263)

Produced For:
Bayer CropScience LP
800 N. Lindbergh Blvd.
St. Louis, Missouri 63167
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ACTIVE INGREDIENT: Dicamba
Dicycloamine salt of dicamba (3,6-dichloro-o-anisic acid) 42.80%
OTHER INGREDIENTS: 57.20%
TOTAL: 100.00%
* Contains 29.0% 3,6-dichloro-o-anisic acid (2.9 pounds acid equivalent per U.S. gallon or 350 grams per liter)
EPA Reg. No. 264-1210

011656C 11/20

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	ABJ10006	MAX 30			
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	TDXL11004	MAX 45			
	TDXL11006		MAX 75		
	TDXL11003-D			MAX 90	
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	AIXR11004	MAX 40			
Wilger	AIXR11006	MAX 40			
	TTI11004			MAX 85	
	MR11006		MAX 60		
	MR11008		MAX 60		

Spray Boom Height

Use the minimum boom height appropriate for spray pattern overlap based on nozzle selection and spacing, according to manufacturer recommendations, or 24 inches above canopy, whichever is smaller.

Environmental Requirements

Wind Speed

Wind speed must be measured in the field of application at boom height prior to and after application. Only apply when wind speed at boom height is between 3 MPH and 10 MPH during application.

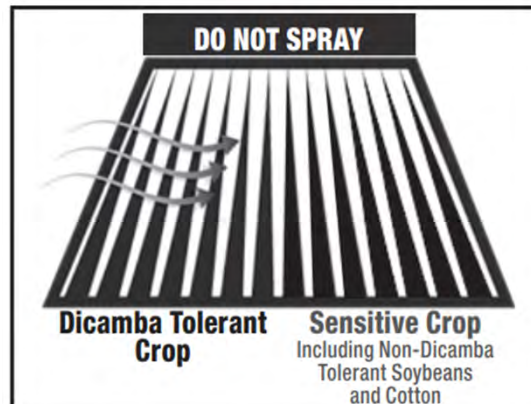
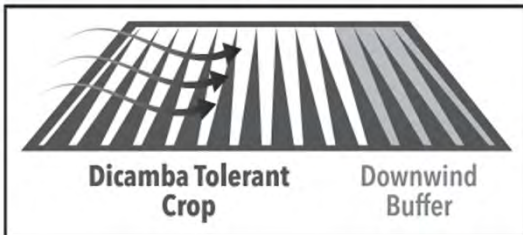
Temperature Inversions

DO NOT apply this product during a temperature inversion as the off-target movement potential is high.

Applications of this product may ONLY occur one hour after sunrise through two hours before sunset. In general, temperature inversions are more likely during nighttime hours.

Buffer Requirements

After determining no adjacent sensitive crops and/or certain plants are downwind, the applicator must always maintain a 240-foot downwind buffer between the last treated row and the nearest downwind field edge when applying using broadcast open-boom equipment. For reduced downwind buffer distances, refer to "Optional Use of Drift Reduction Technology" section of this label.



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Take home messages!

Particle drift can be influenced by formulation

Nozzle selection has the greatest influence on particle size

Adjuvants can reduce drift potential, but must be tested

There is no substitute for common sense – if the wind is blowing droplets will move

Pay attention to sensitive vegetation in surrounding areas

Drift **WILL** happen! Mitigating drift is essential!

