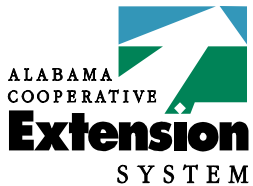


# Basal and cut stump treatments for privet

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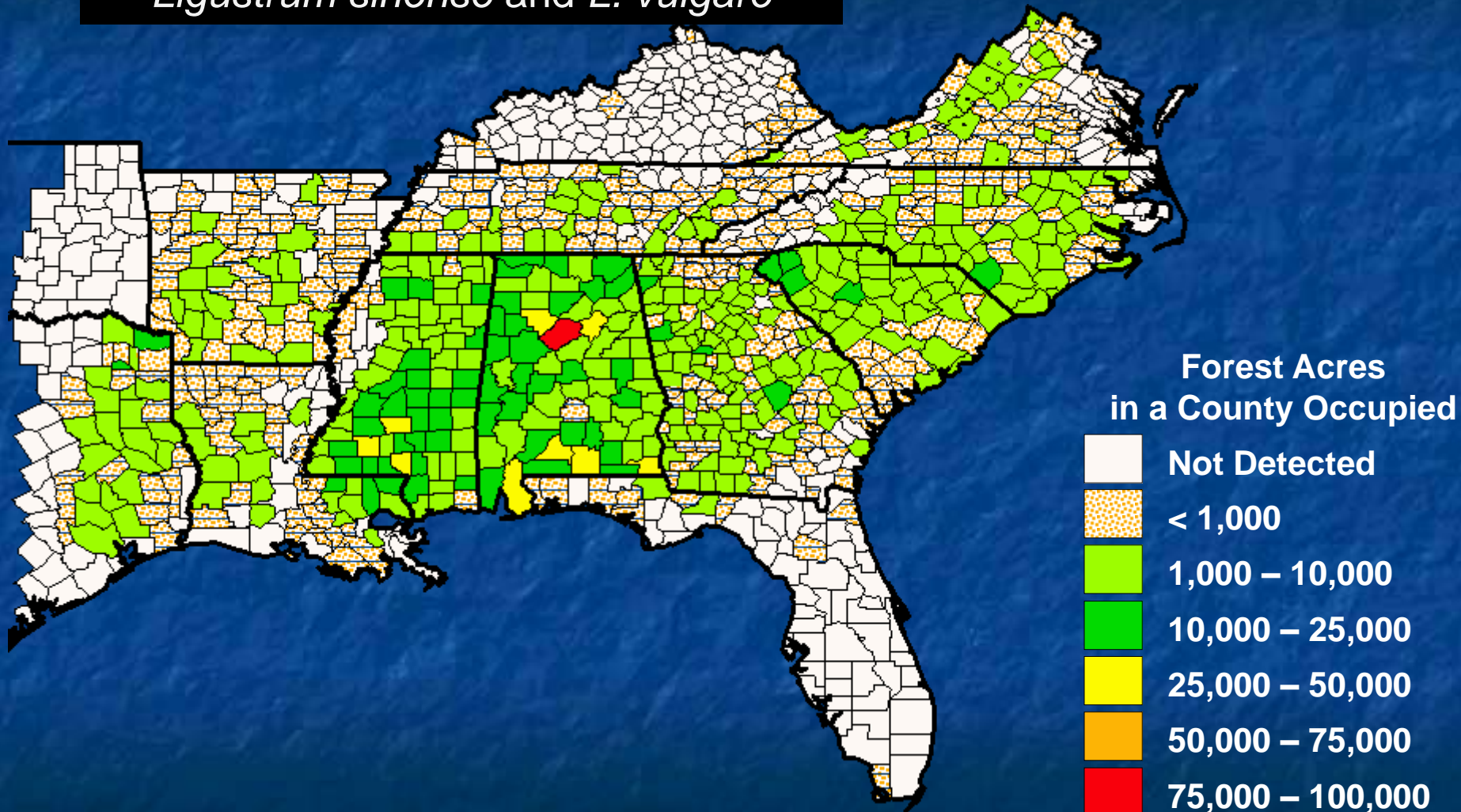


UGA2307079

Chinese privet

# Chinese and European Privets

*Ligustrum sinense* and *L. vulgare*







# Resprouting from Lateral Roots



# Privet Control Options

- Foliar treatment
- Cut Stump treatment
- Basal bark treatment
- Grinding
- Hand pulling/weed wrenching

# Cut stump herbicide treatments

- Written and observation-based recommendations of 20-100% glyphosate or triclopyr formulations
- Herbicide labels often recommend 50-100% for cut stump treatments
- Multiple reports of inconsistent control
- Why?



# Research Questions

- Is there a differential performance between glyphosate and triclopyr?
- Does stem size influence herbicide efficacy?
- Does season of treatment influence herbicide efficacy (spring vs. fall)?
- Does environment (riparian vs upland) influence control?

# Site 1: Riparian



# Site 2: Upland



# Methods

- Split plot design (by timing) where individual stems were experimental units
  - 50 stems per treatment
- Measured root collar diameter and stems were placed in three diameter classes
  - 1-5 cm (0.5-2 in)
  - 5.1-10 cm (2-4 in)
  - ≥10.1 cm (4.1 in and larger)



# Methods

- Stems cut 2.5 cm above the ground with a chainsaw
- Treatments applied within 30 seconds of cutting
  1. Cut stump (control)
  2. Glyphosate (25% v/v) Accord Concentrate
  3. Triclopyr (amine) (25% v/v) Garlon 3A
- NIS added to herbicide treatments at 0.5% v/v
- Entire surface of cut stem sprayed to wet

# Treatment Timings

- April (Early flowering)
- November







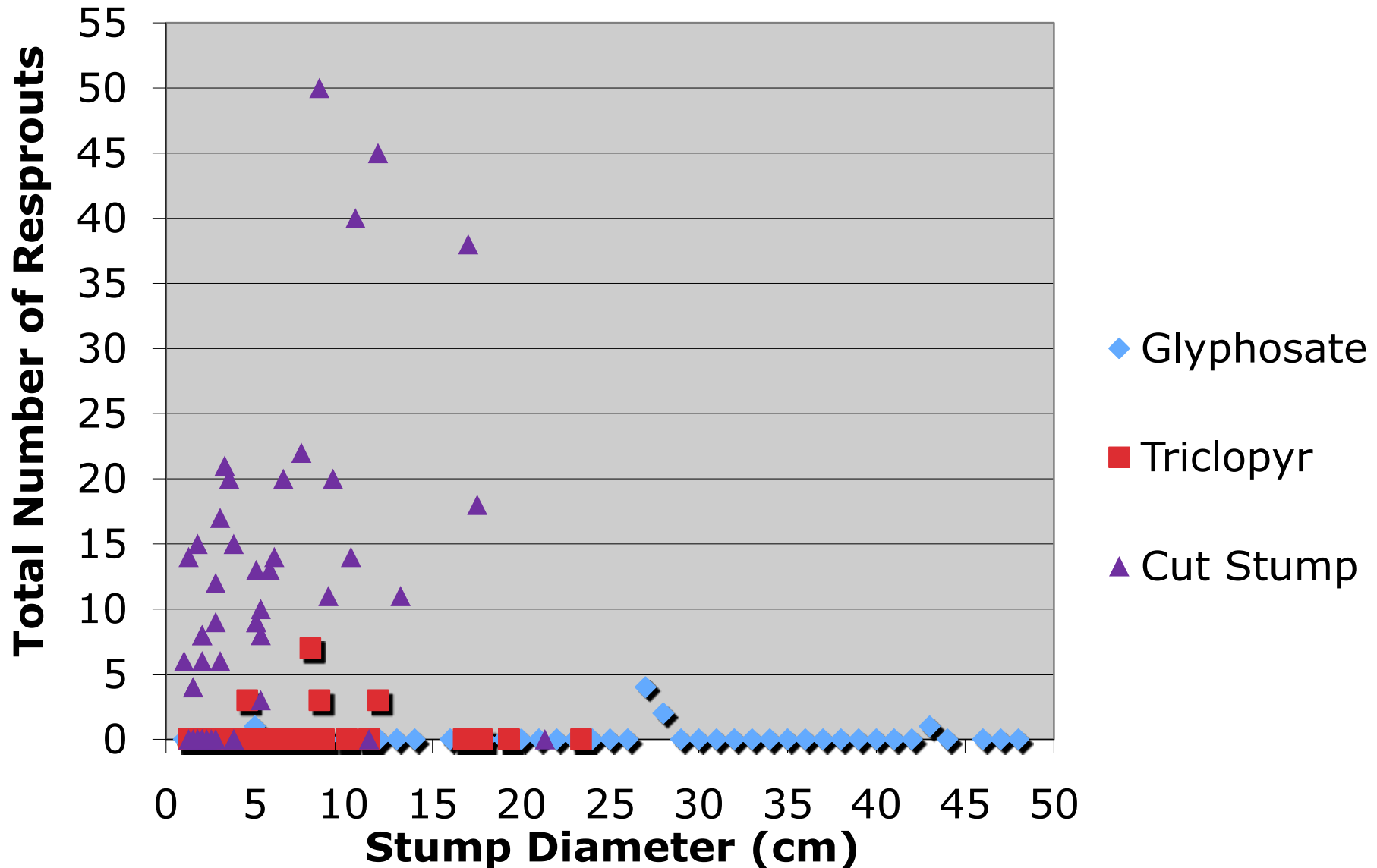
# Data Collected

- Data collected 6, 12 and 18 months after treatment (MAT)
- Number of resprouts per stem
- Total length of resprouts per stem
- Lateral root resprouts within a 30 cm radius of stem are included in totals

# Results

- In general, both herbicides worked well at both timings at the upland and riparian sites
- No influence of privet size on herbicide efficacy

# Upland: Total number of resprouts 12 months after April 2008 treatment



# Glyphosate



# Triclopyr



# Cut Stump



# Riparian Cut Stump Efficacy with April treatments

	12 MAT	18 MAT
<u>Treatment</u>	----% kill----	
■ Cut stump	6	6
■ Cut stump + glyphosate	96	88
■ Cut stump + triclopyr	92	82



# Upland Cut Stump Efficacy with April treatments

	12 MAT	18 MAT
■ <u>Treatment</u>	----% kill----	
■ Cut stump	24	20
■ Cut stump + glyphosate	92	88
■ Cut stump + triclopyr	90	86

# Riparian Cut Stump Efficacy with November Treatments

	6MAT	12MAT
■ <u>Treatment</u>	----% kill----	
■ Cut stump	8	10
■ Cut stump + glyphosate	100	100
■ Cut stump + triclopyr	100	98

# Upland Cut Stump Efficacy with November Treatments

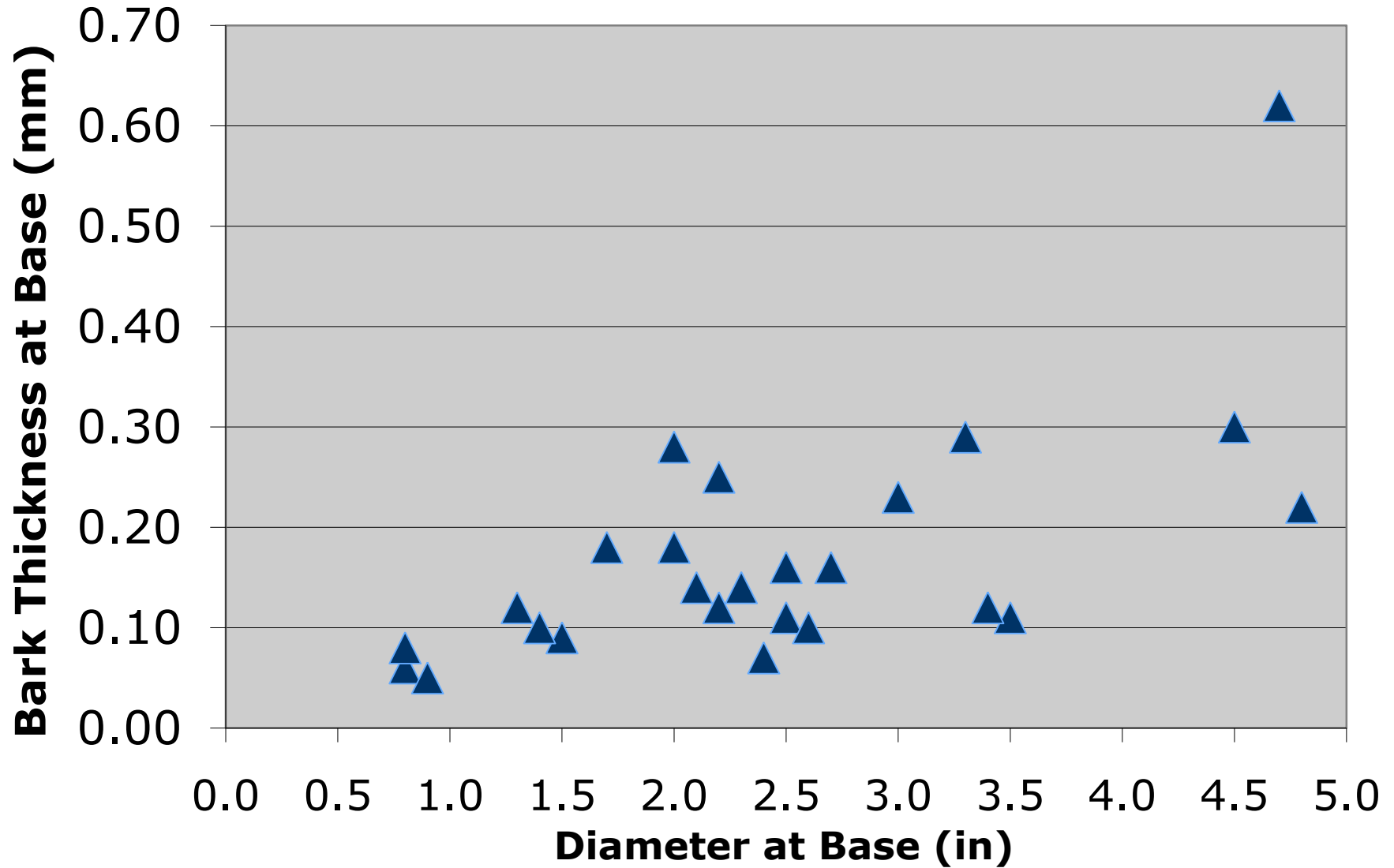
	6 MAT	12MAT
■ <u>Treatment</u>	----% kill----	
■ Cut stump	22	20
■ Cut stump + glyphosate	100	96
■ Cut stump + triclopyr	96	92

# Cut Stump Answers to Date

- Is there a differential performance between glyphosate and triclopyr?
  - Not really.
- Does stem size influence herbicide efficacy?
  - No.
- Does season of treatment influence herbicide efficacy (spring vs. fall)?
  - At 12 MAT, no.
- Does environment (riparian vs upland) influence control?
  - No.

What about basal bark?

## Chinese Privet Stem Diameter vs. Bark Thickness at Base



# Basal Bark Treatments

- Herbicides
  - Pathfinder II
  - Garlon 4 @ 20% v/v
  - Garlon 4 @ 10% v/v
  - Garlon 4 @ 5% v/v
- Timings
  - April 2009
  - January 2010



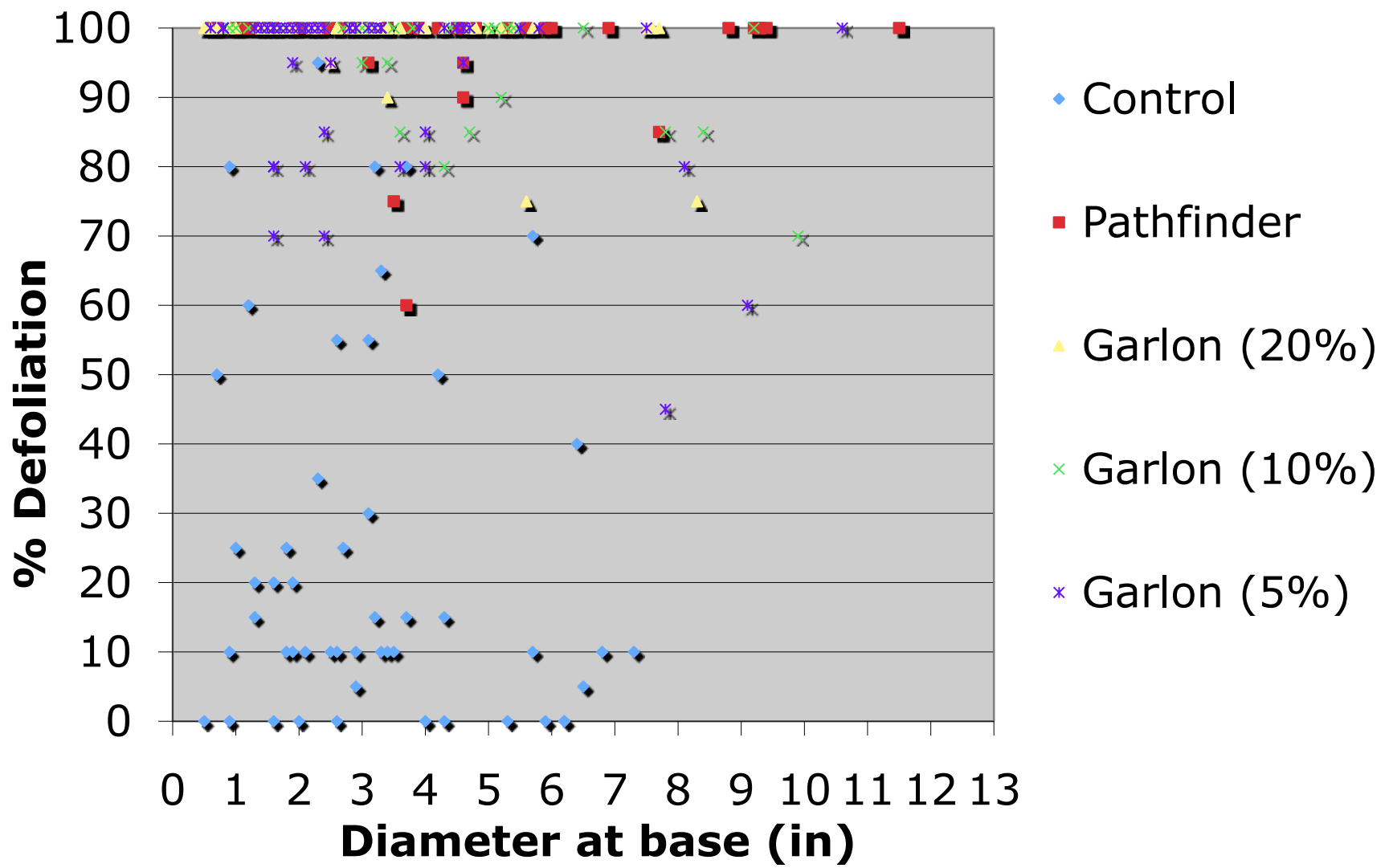




# Basal Results

- At 90 and 180 days after treatment, there was no relationship between privet size and control
- The herbicide treatments were relatively consistent across locations

# Riparian Area: basal spray results 3 months after treatment



# Basal Results (Riparian)

	90 DAT	180 DAT
■ Herbicide	% Defoliation	
■ Control	24	32
■ Pathfinder II	98	99
■ Garlon 4 @ 20% v/v	99	98
■ Garlon 4 @ 10% v/v	97	94
■ Garlon 4 @ 5% v/v	94	88

# Basal Results: Main stem death and new sprouts (Riparian)

180 DAT

■ Herbicide	# Dead	# w/Sprouts
■ Control	1/50	39/50
■ Pathfinder II	47/50	5/50
■ Garlon 4 @ 20% v/v	42/50	8/50
■ Garlon 4 @ 10% v/v	37/50	13/50
■ Garlon 4 @ 5% v/v	26/50	9/50

# Basal Results (Upland)

	90 DAT	180 DAT
■ Herbicide	% Defoliation	
■ Control	13	25
■ Pathfinder II	93	97
■ Garlon 4 @ 20% v/v	93	96
■ Garlon 4 @ 10% v/v	81	85
■ Garlon 4 @ 5% v/v	80	84

# Basal Results: Main stem death and new sprouts (Upland)

180 DAT

■ Herbicide	#Dead	#Sprouts
■ Control	0/50	41/50
■ Pathfinder II	45/50	3/50
■ Garlon 4 @ 20% v/v	42/50	2/50
■ Garlon 4 @ 10% v/v	35/50	11/50
■ Garlon 4 @ 5% v/v	30/50	5/50

# Basal summary to date

- No relationship in size to initial treatment efficacy
- All treatments are working across sites
- 12 month after treatment (MAT) data just completed
- 18 MAT will be collected in September

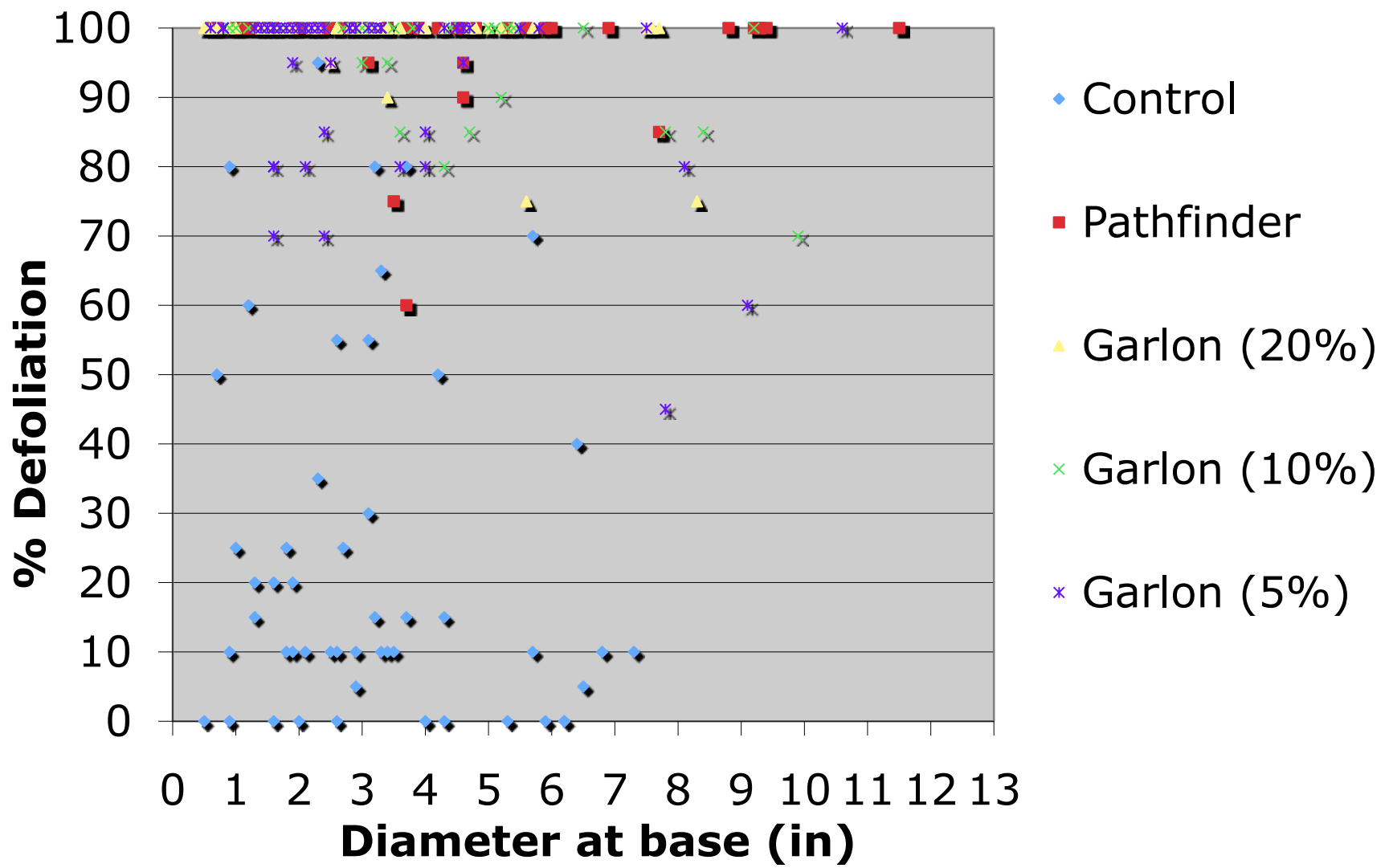


# Conclusions to date

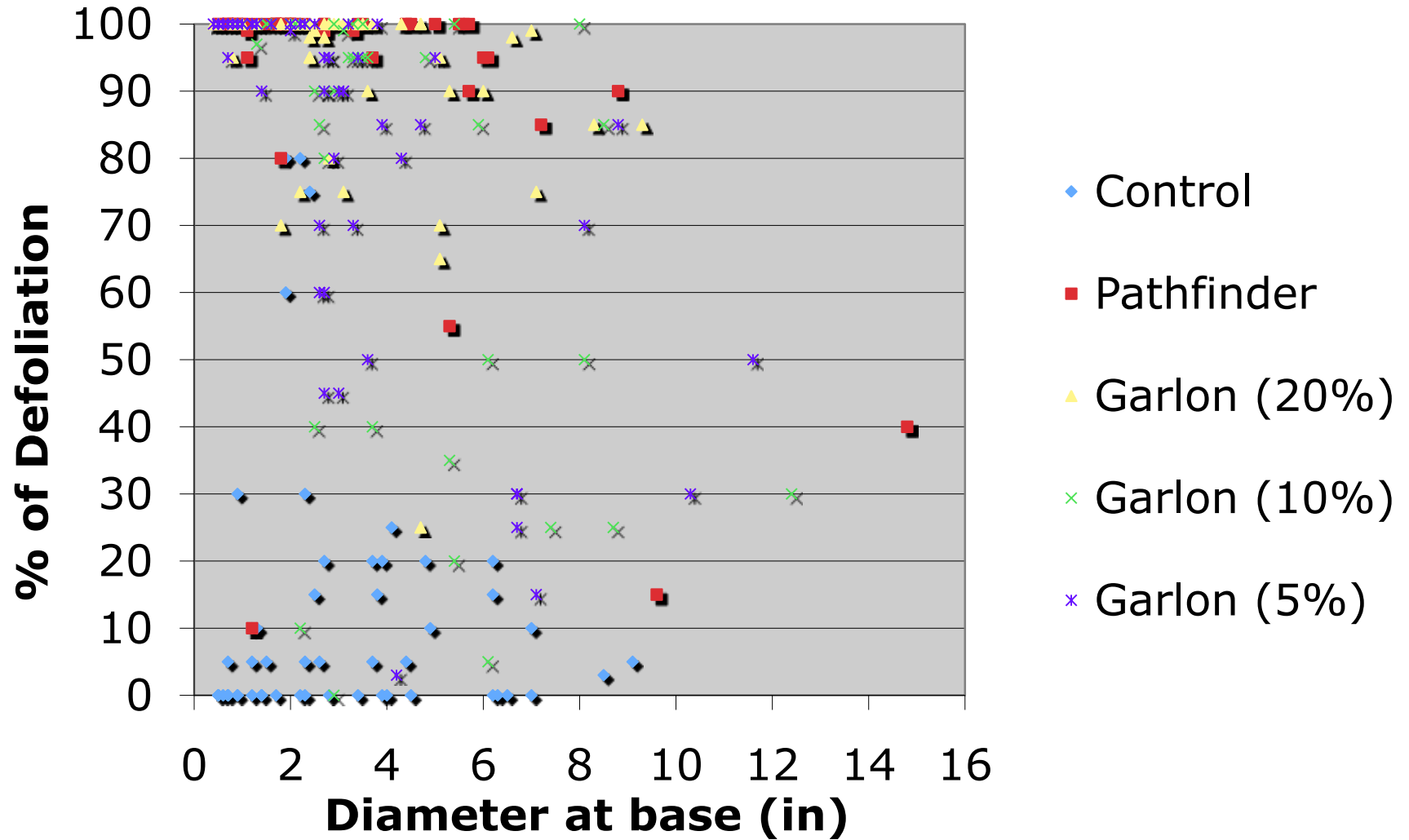
- Both cut stump and basal treatments are working well on Chinese privet
- Glyphosate and triclopyr amine at 25% v/v for cut stump
- Triclopyr ester at 20% v/v or Pathfinder II still recommended
  - Jury still out on lower rates

Questions?

## Riparian Area: basal spray results 3 months after treatment

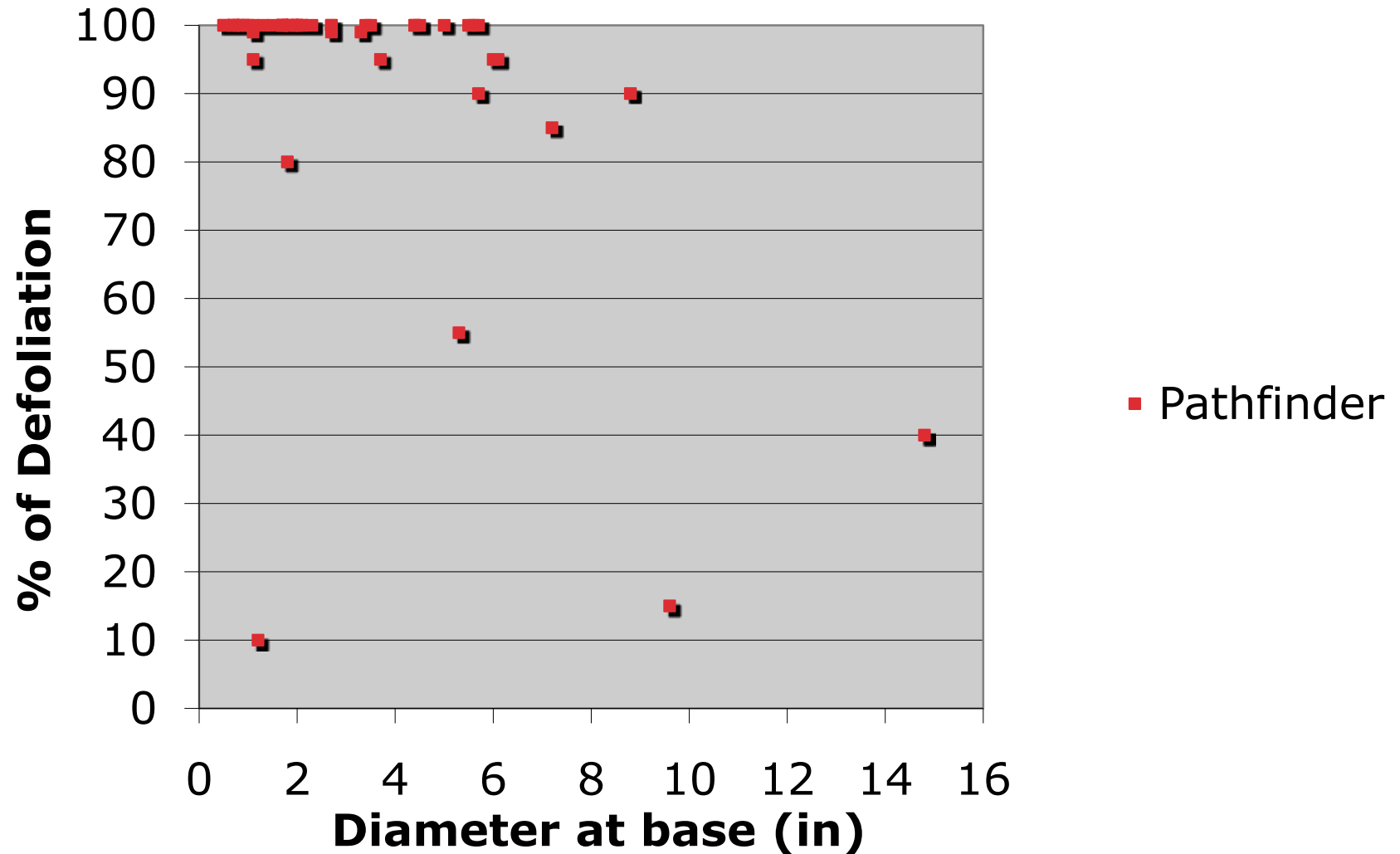


# Upland Area: basal spray results 3 months after treatment

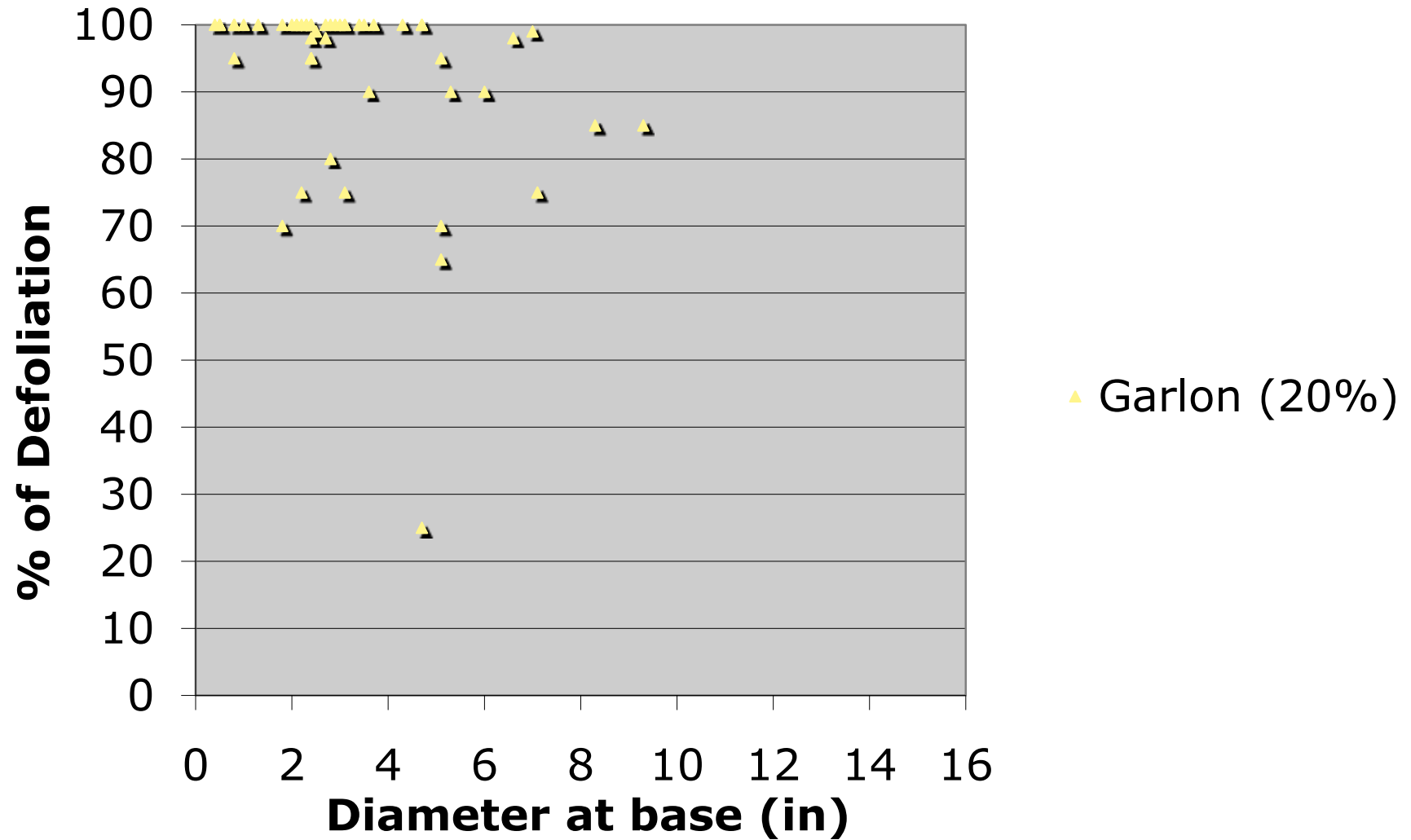




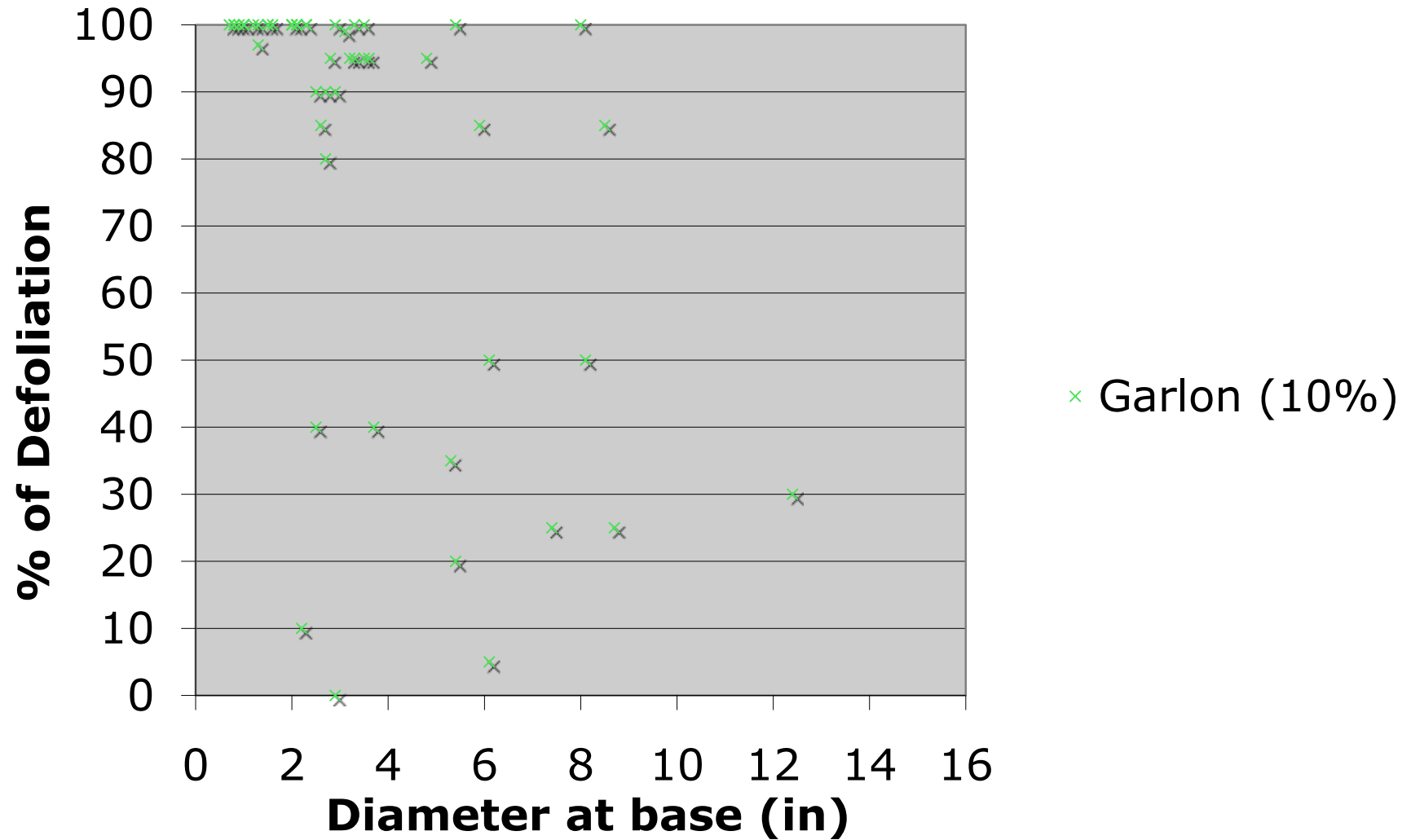
## Upland Area: basal spray results 3 months after treatment



## Upland Area: basal spray results 3 months after treatment

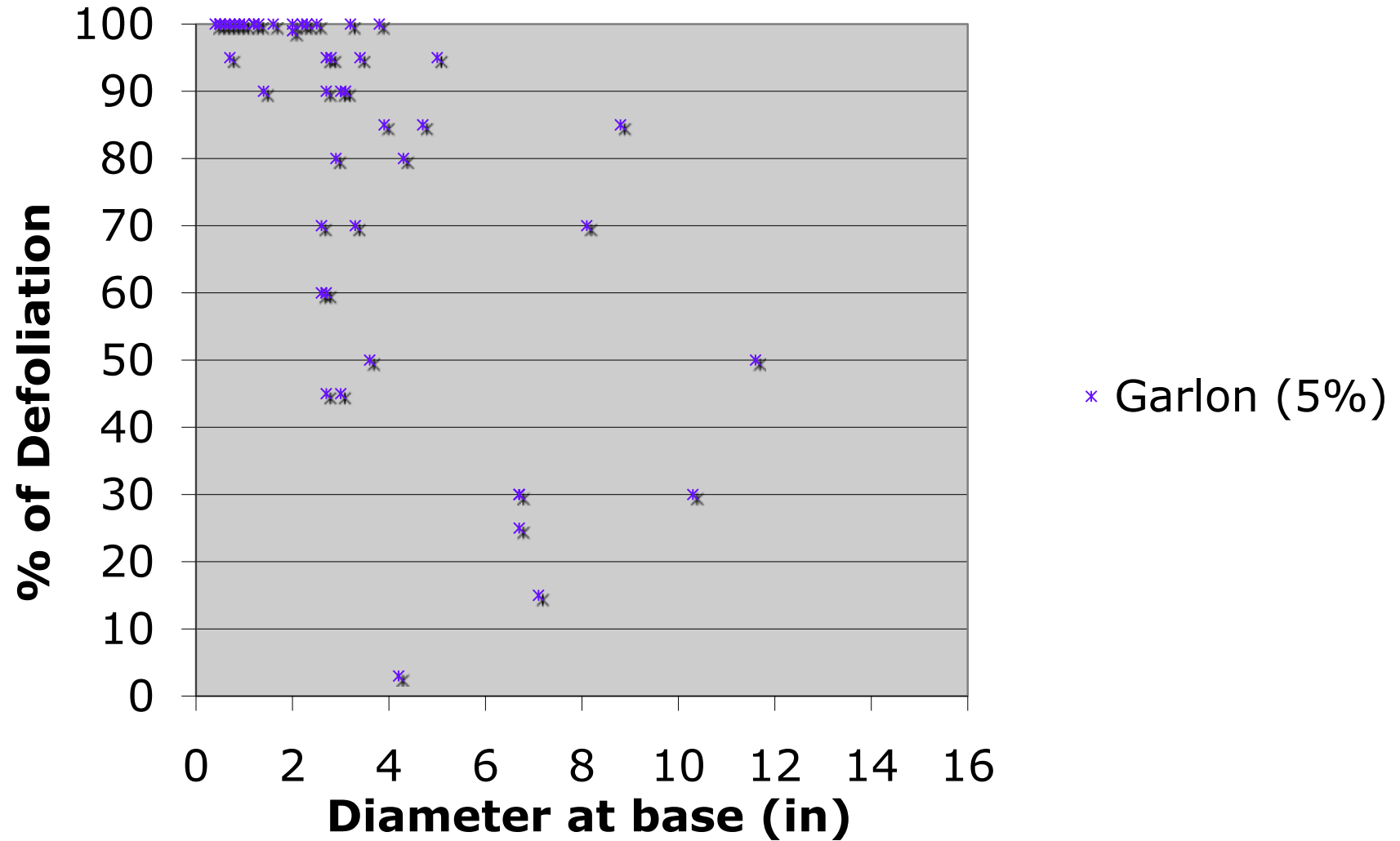


## Upland Area: basal spray results 3 months after treatment



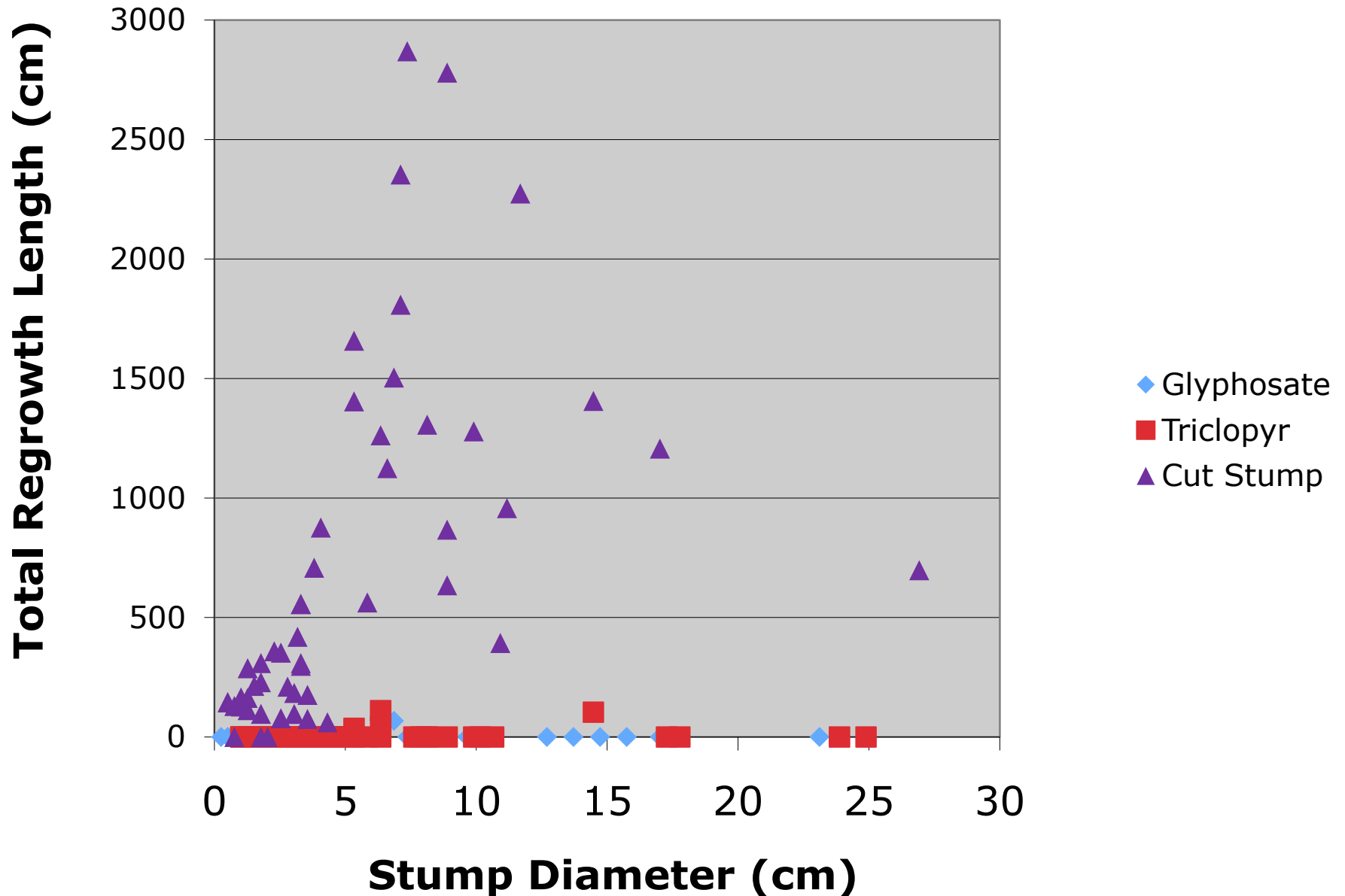


## Upland Area: basal spray results 3 months after treatment

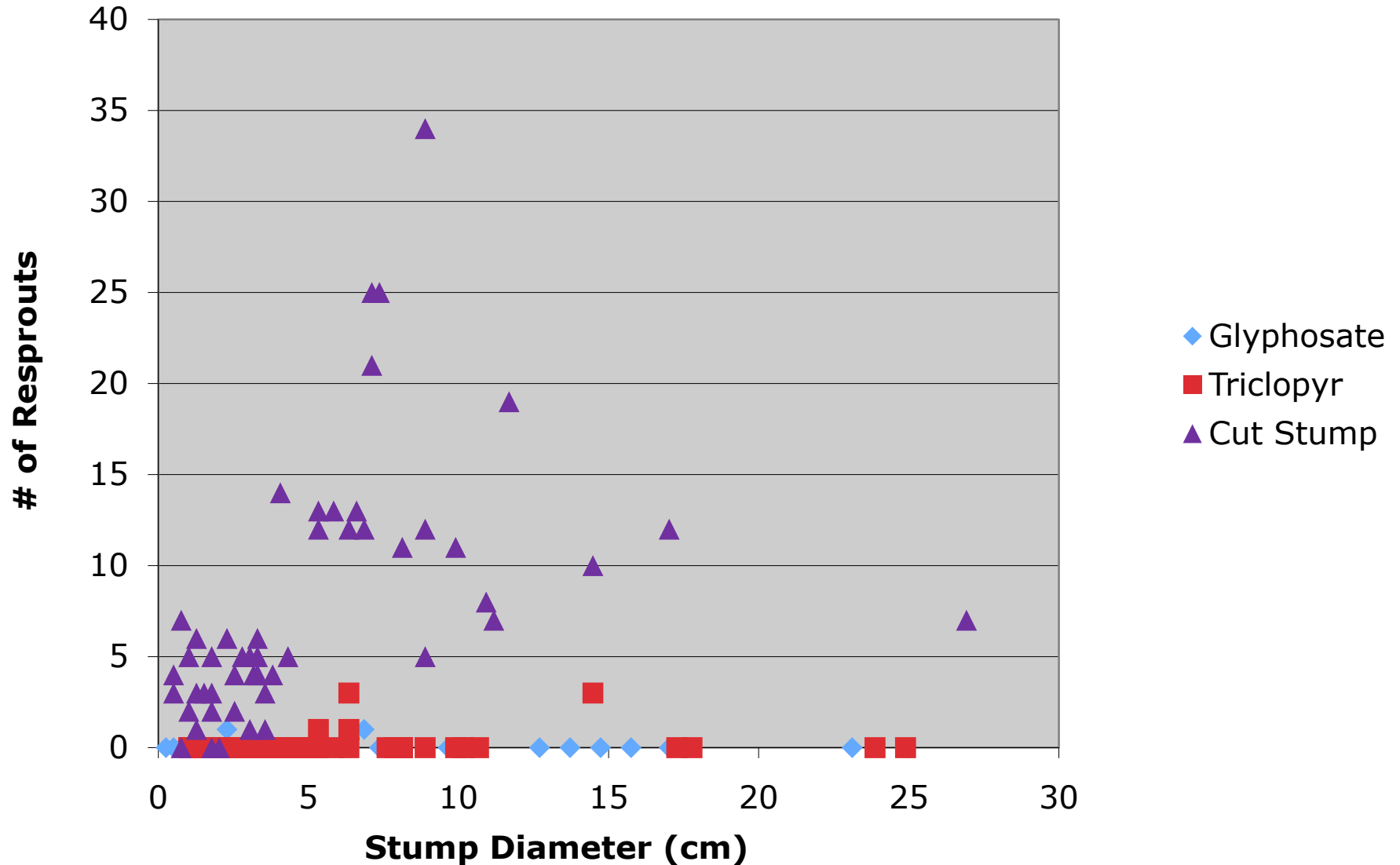


# Cut stump graphs

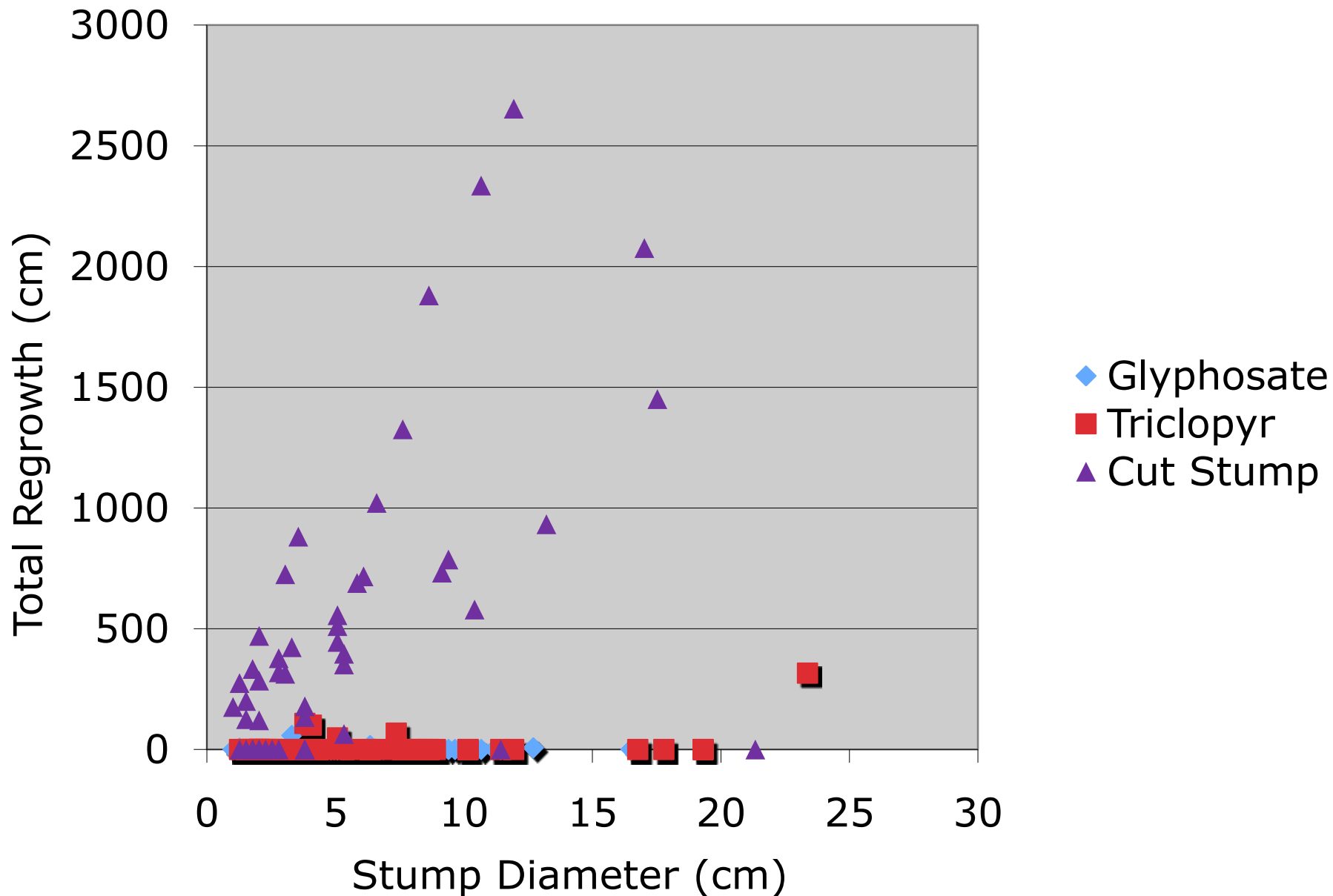
# Riparian Area: Total shoot regrowth 12 months after April treatment



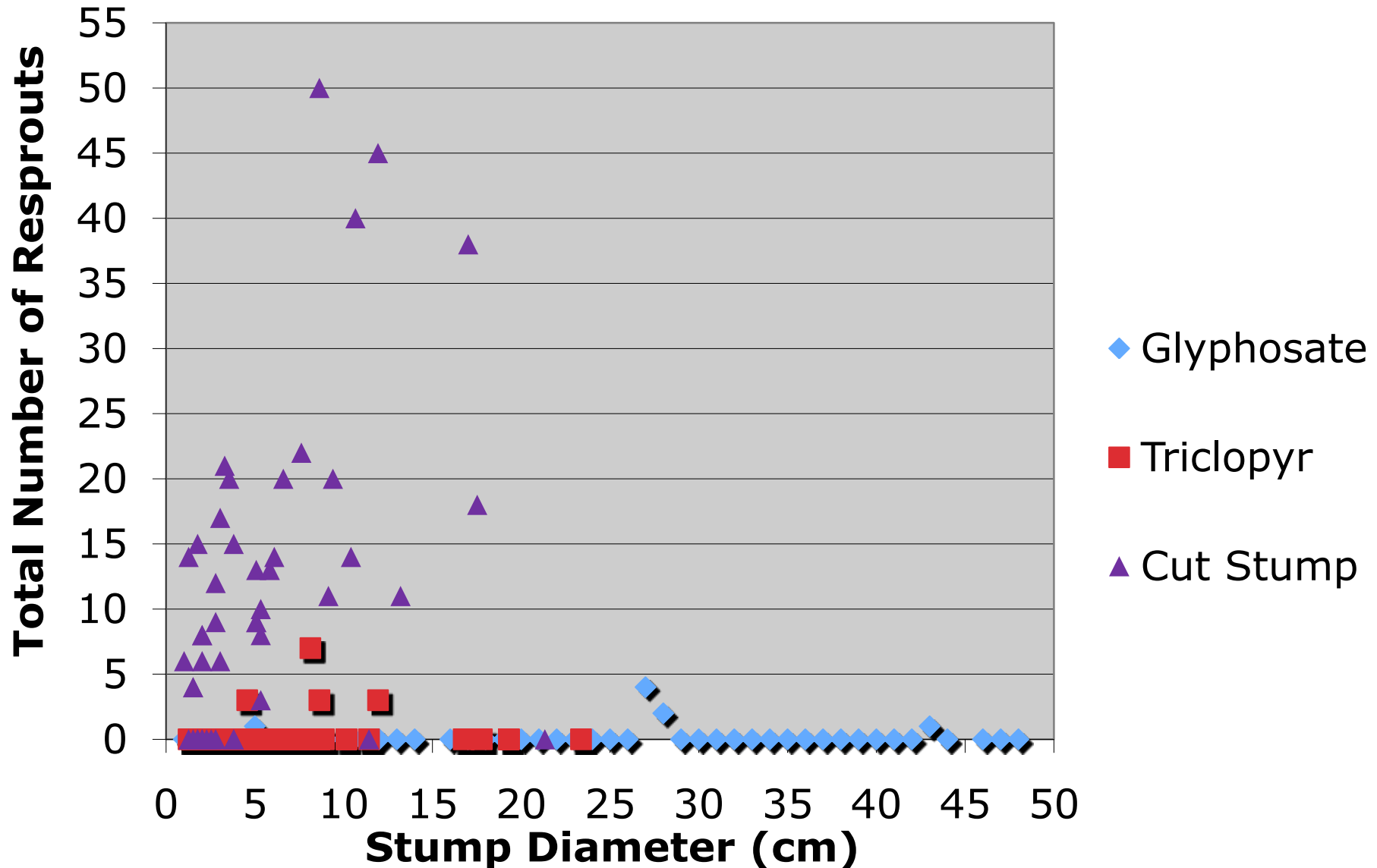
# Riparian Area: Total number of sprouts 12 months after the April 2008 treatment



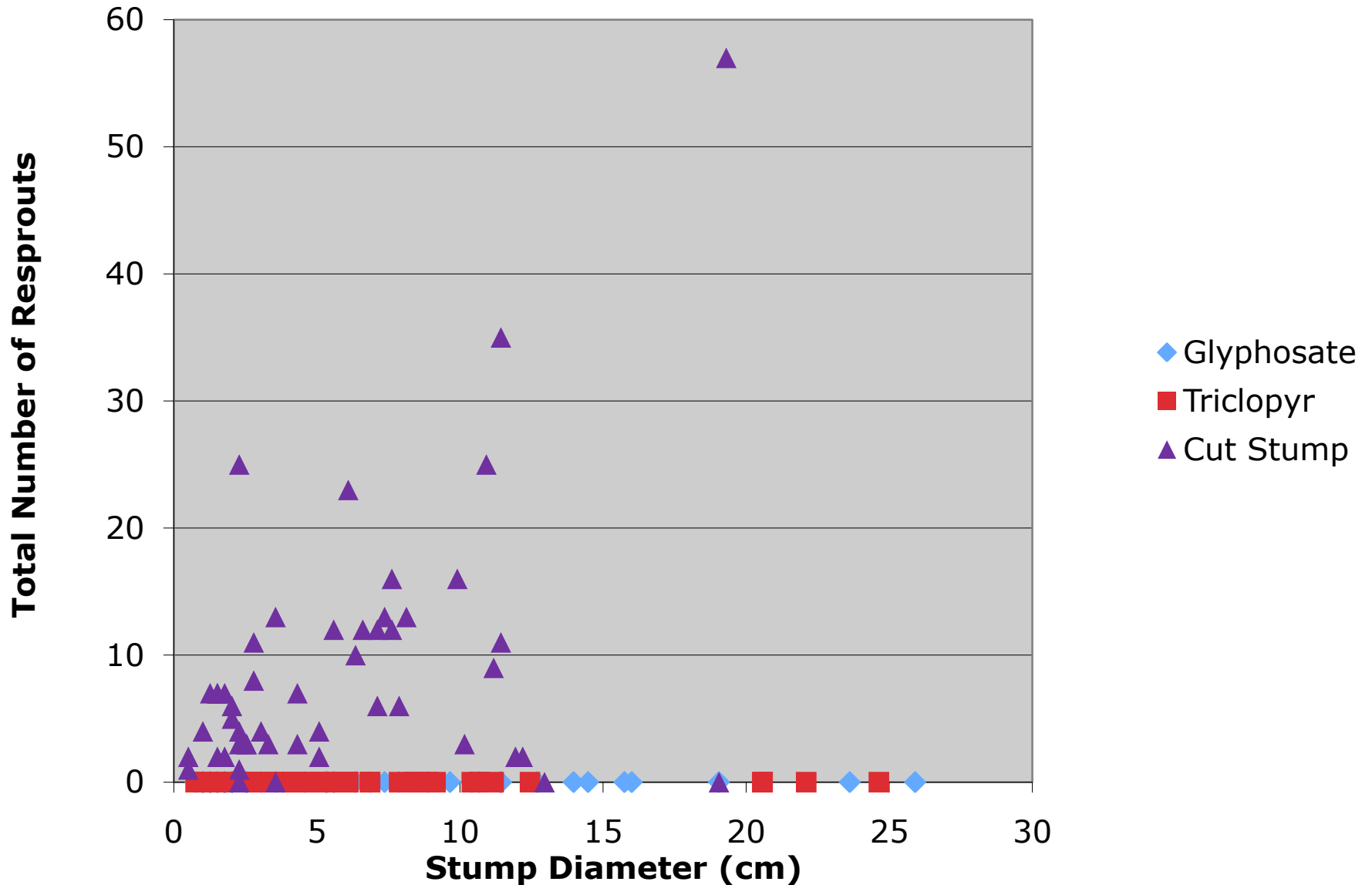
# Upland Area: Total shoot regrowth 12 months after April 2008 treatment



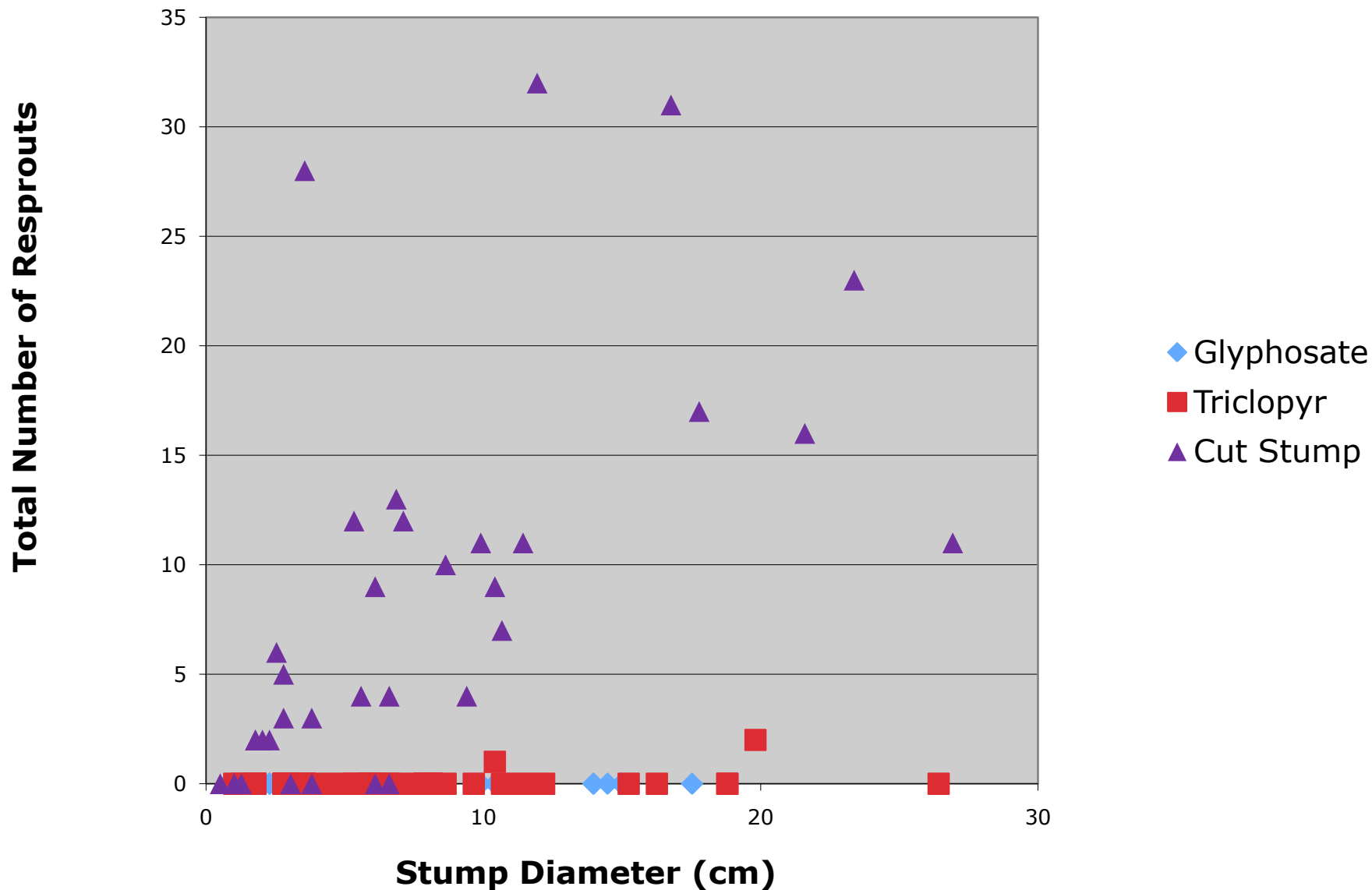
# Upland: Total number of resprouts 12 months after April 2008 treatment



# Riparian Area: Total number of resprouts 6 months after November 2008 treatment



# Upland Area: Total number of shoots 6 months after November 2008 treatment





# Foliar treatments

- Timing: winter is best!
  - November-January
  - Advantage: almost everything else is dormant but privet!
  - What about summer?
    - Variable control

# Recommended privet foliar treatments in winter

- Glyphosate (minimum 41% ai) @ 3% v/v
- Make sure glyphosate has a good surfactant or add NIS @ 0.5% v/v
- Timing: Late fall may be best
  - Winter treatments during prolonged unseasonably cold weather may not work well