Invasive Plant Update

June 2014

Nancy J. Loewenstein

(with Stephen Enloe)

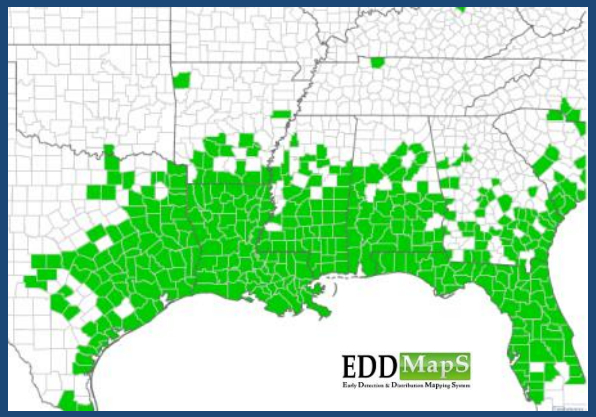
ALABAMA COOPERATIVE Extension SYSTEM
Alabama A&M and Auburn Universities

AUBURN UNIVERSITY
SCHOOL OF FORESTRY AND WILDLIFE SCIENCES

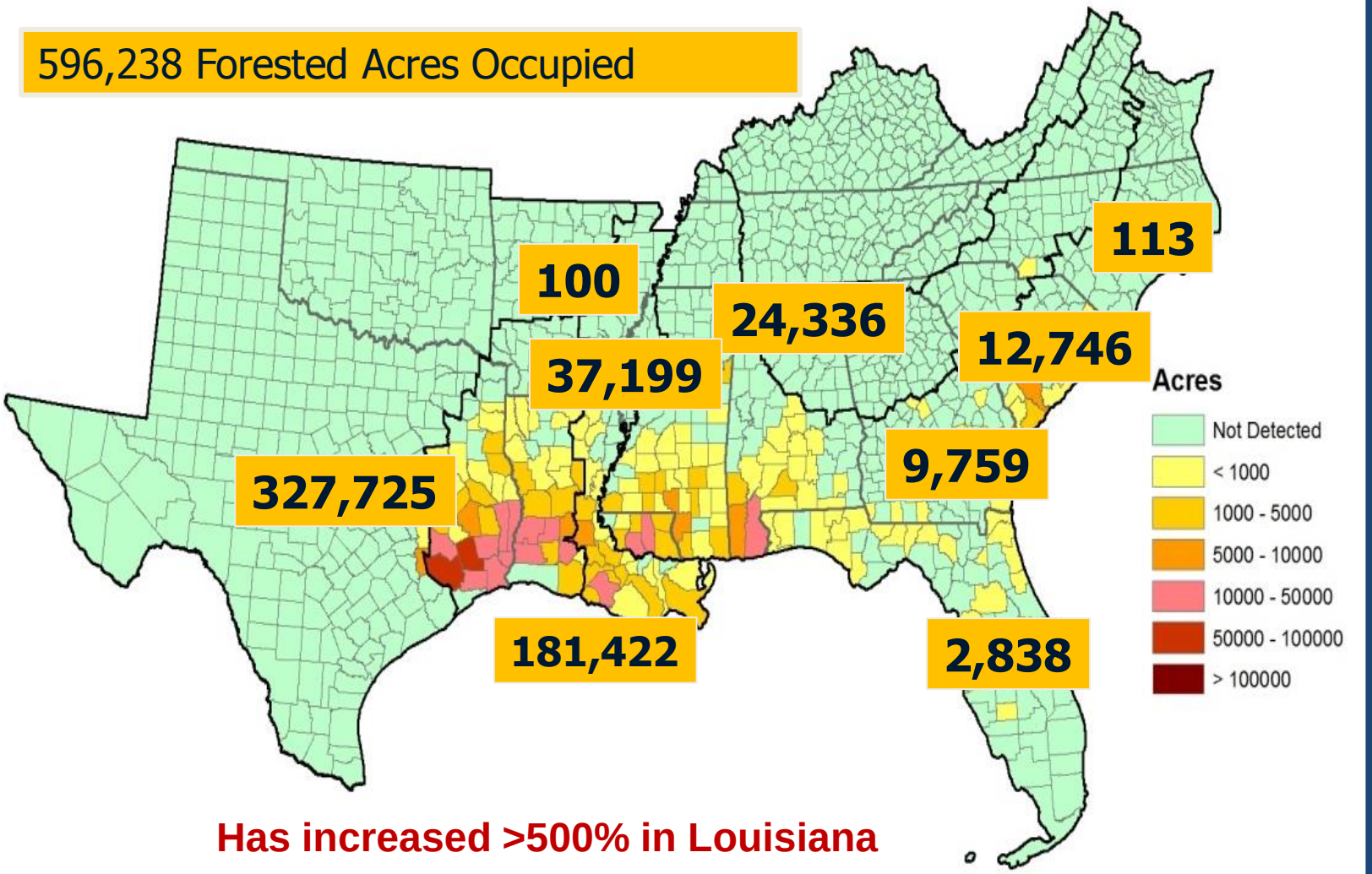
ALABAMA ALIPC INVASIVE PLANT COUNCIL

Chinese tallow tree, popcorn tree

(*Triadica sebifera*)

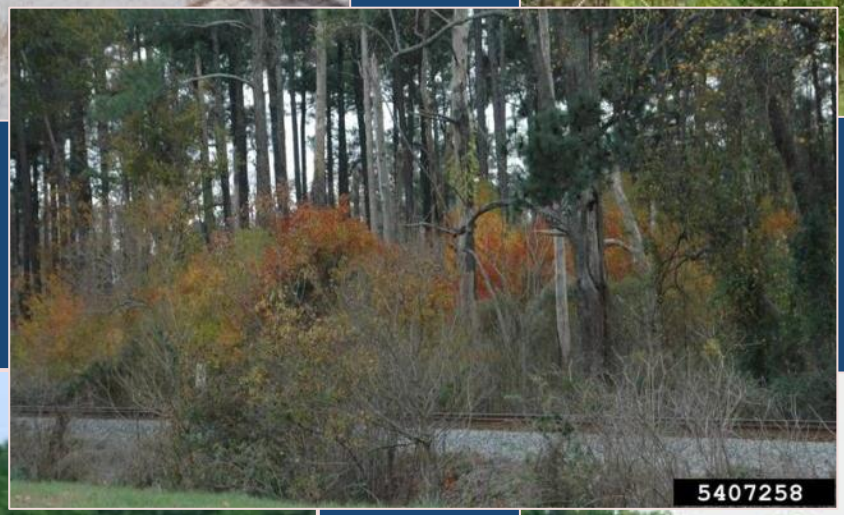


Chinese tallowtree



~ 2000 acre increase in AL since 2008

http://www.invasive.org/fiamaps/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UGA2132049


UGA1879002

Tallowtree control study

- 3 sites
  - Montgomery, AL (black belt)
  - Wetumpka, AL
  - Pineville, LA
- 3 control methods
  - Cut stump
  - Basal bark
  - Foliar
- Several herbicides and rates

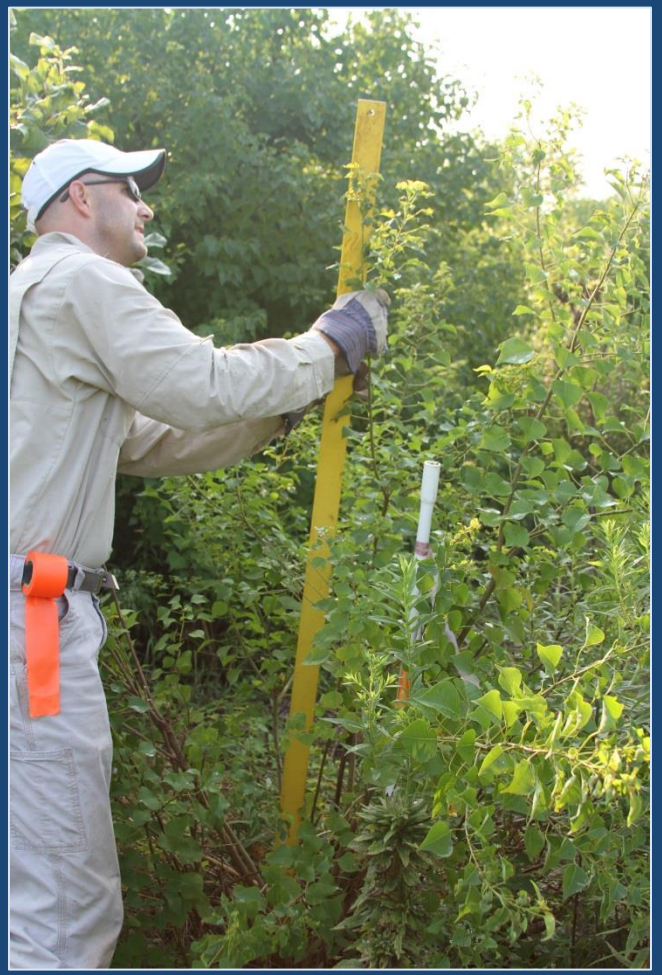
- Forest Service Cooperative Agreement

Cut Stump Treatments

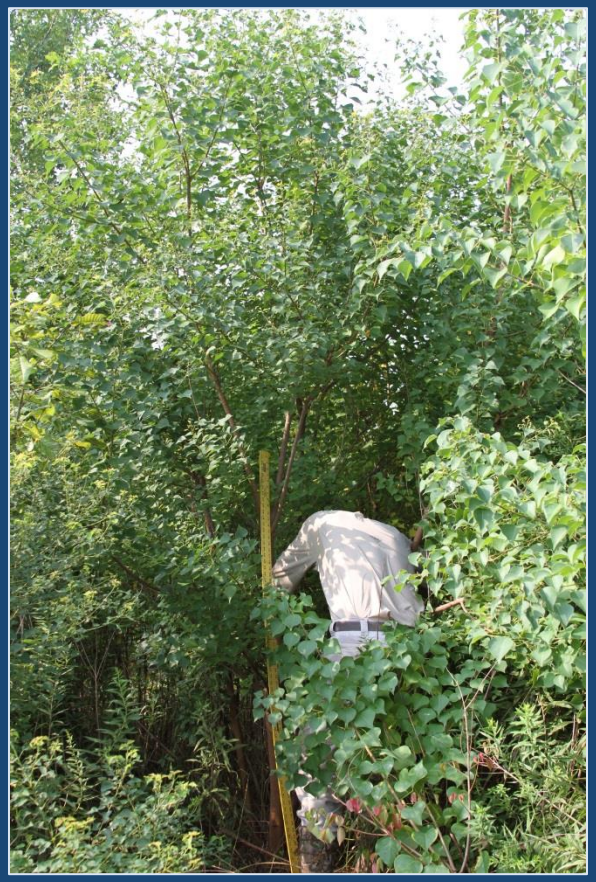
Applied December 2011

- Clearcast (imazamox)
  - 25% v/v
  - 50% v/v
- Garlon 3A (triclopyr amine)
  - 25% /v
- Milestone (aminopyralid)
  - 10% v/v
- Vista XRT (fluroxypyr)
  - 10% v/v
  - 25% v/v
- Untreated

Measurements



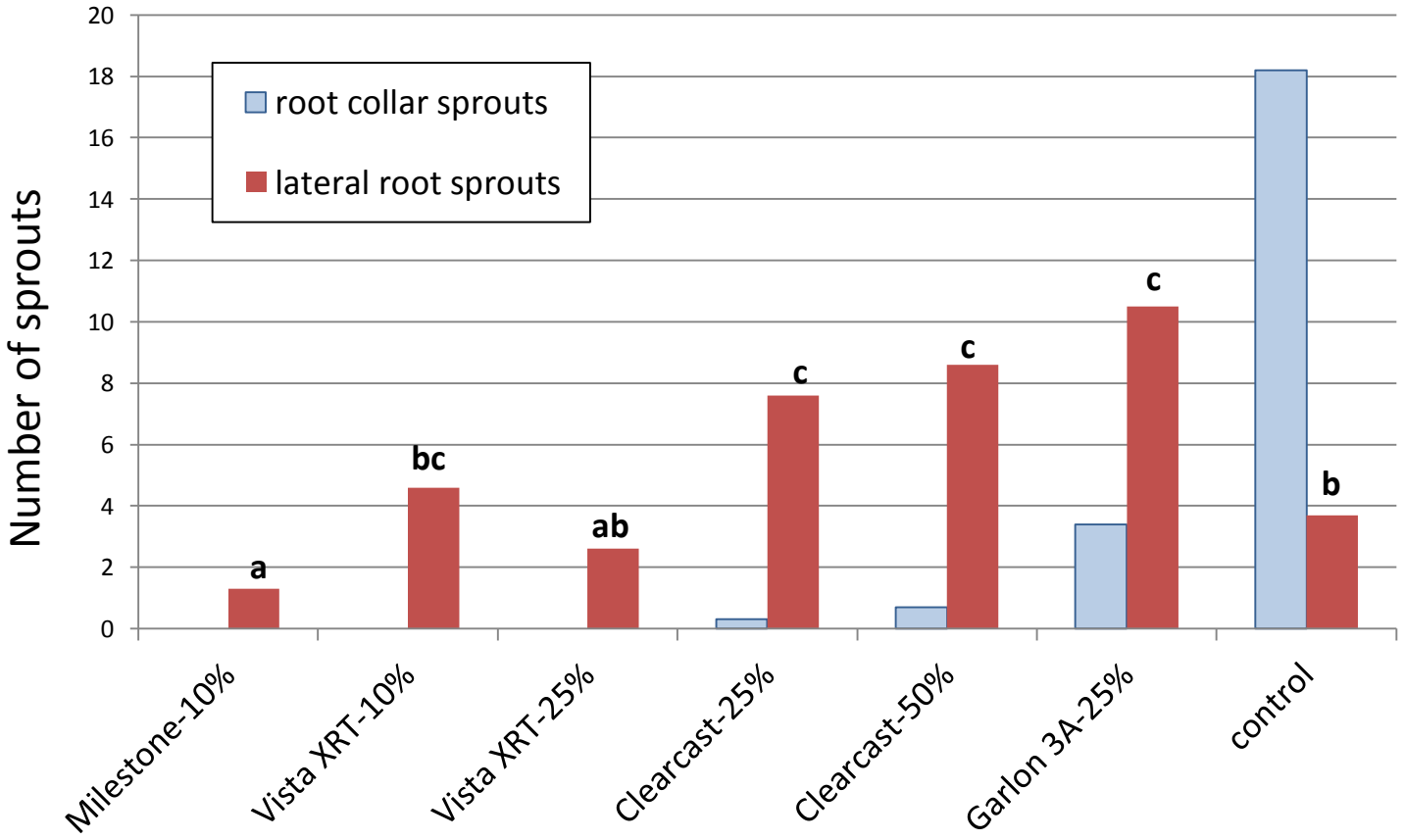
Counted number of root collar sprouts, number of lateral root sprouts within a meter of the stump, height of tallest root collar and lateral root sprouts and noted herbicide damage, one and two growing seasons after treatment (GSAT).

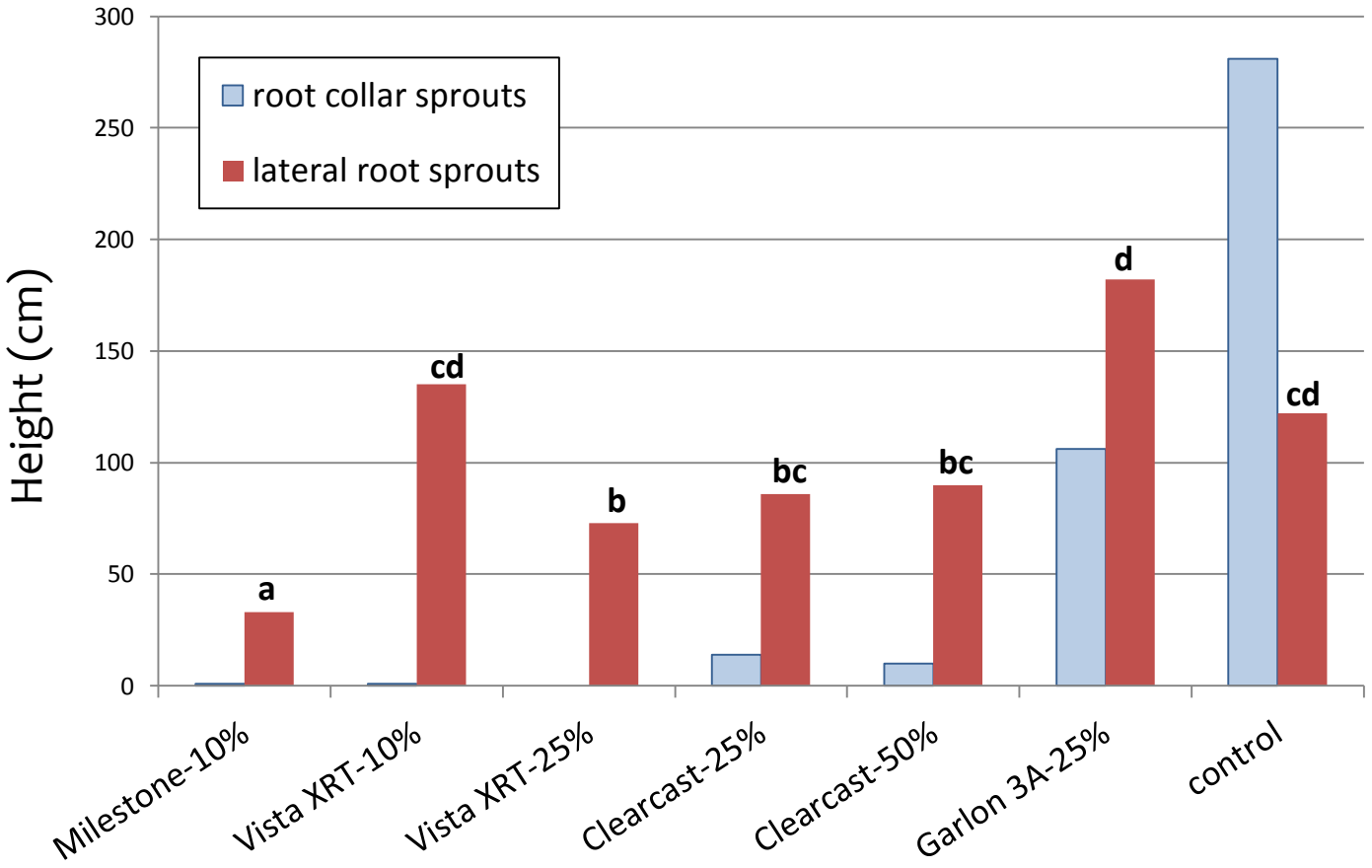

Cut stump control treatment two growing seasons after treatment

Range of treatment responses two growing seasons after treatment.

Chinese tallowtree sprouting response to cut stump herbicide treatment



Sprout height following cut stump herbicide treatment (avg over 2 growing seasons)



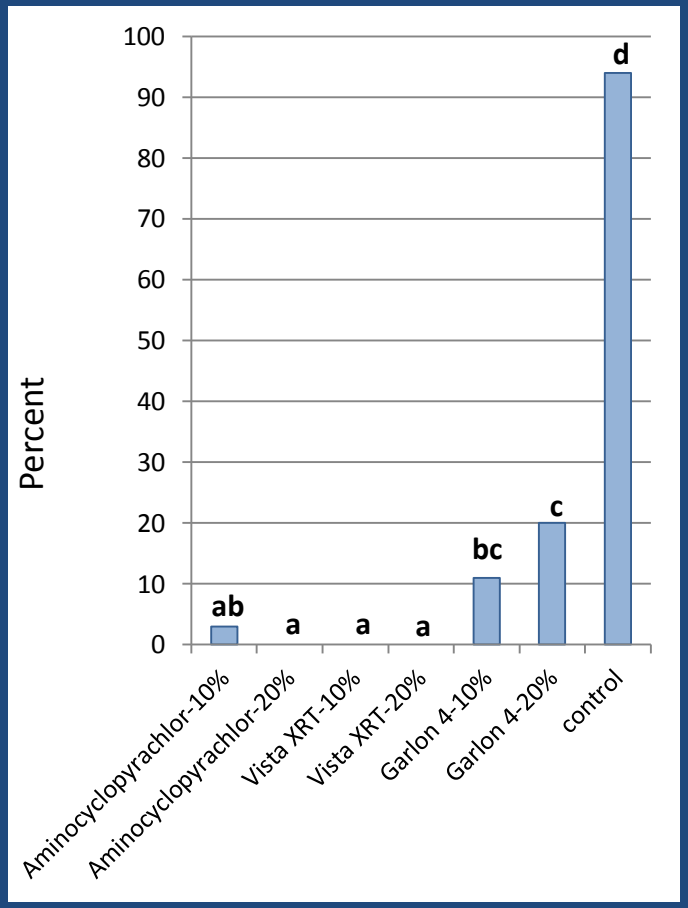
Basal bark treatments

Applied December 2011

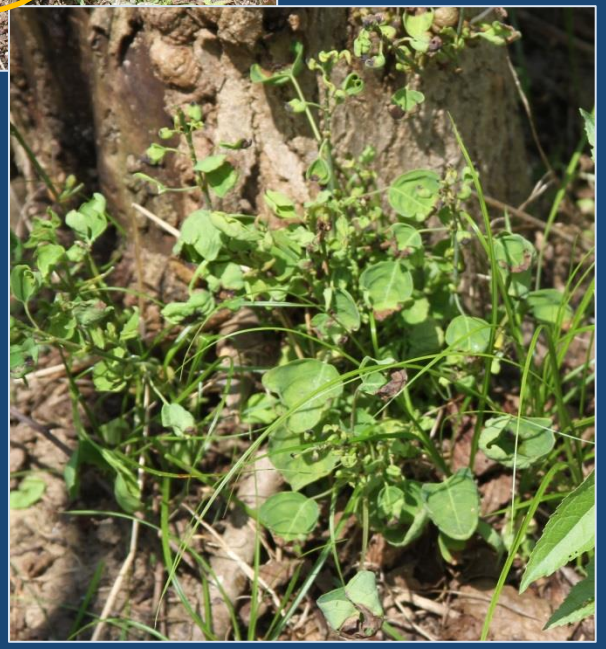
- Garlon 4 (triclopyr ester)
  - 10% v/v
  - 20% v/v
- Vista XRT (fluroxypyr)
  - 10% v/v
  - 20% v/v
- Aminocyclopyrachlor* (Streamline)
  - 10% v/v
  - 20% v/v
- Untreated

* 1 lb ae/gal oil soluble formulation

Chinese tallowtree canopy cover following basal bark treatments (2 growing seasons after treatment)

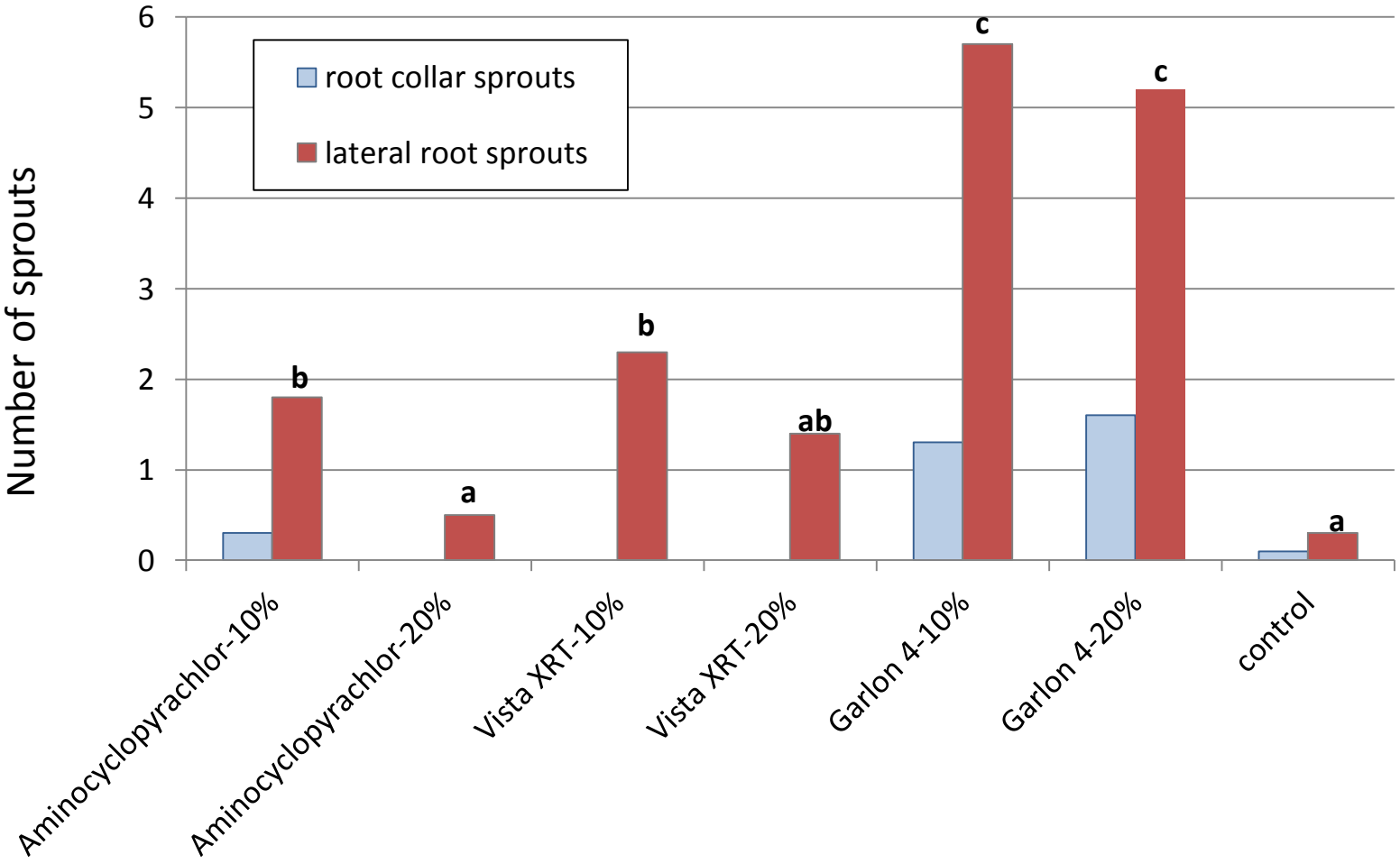


Sprouting following basal bark treatment

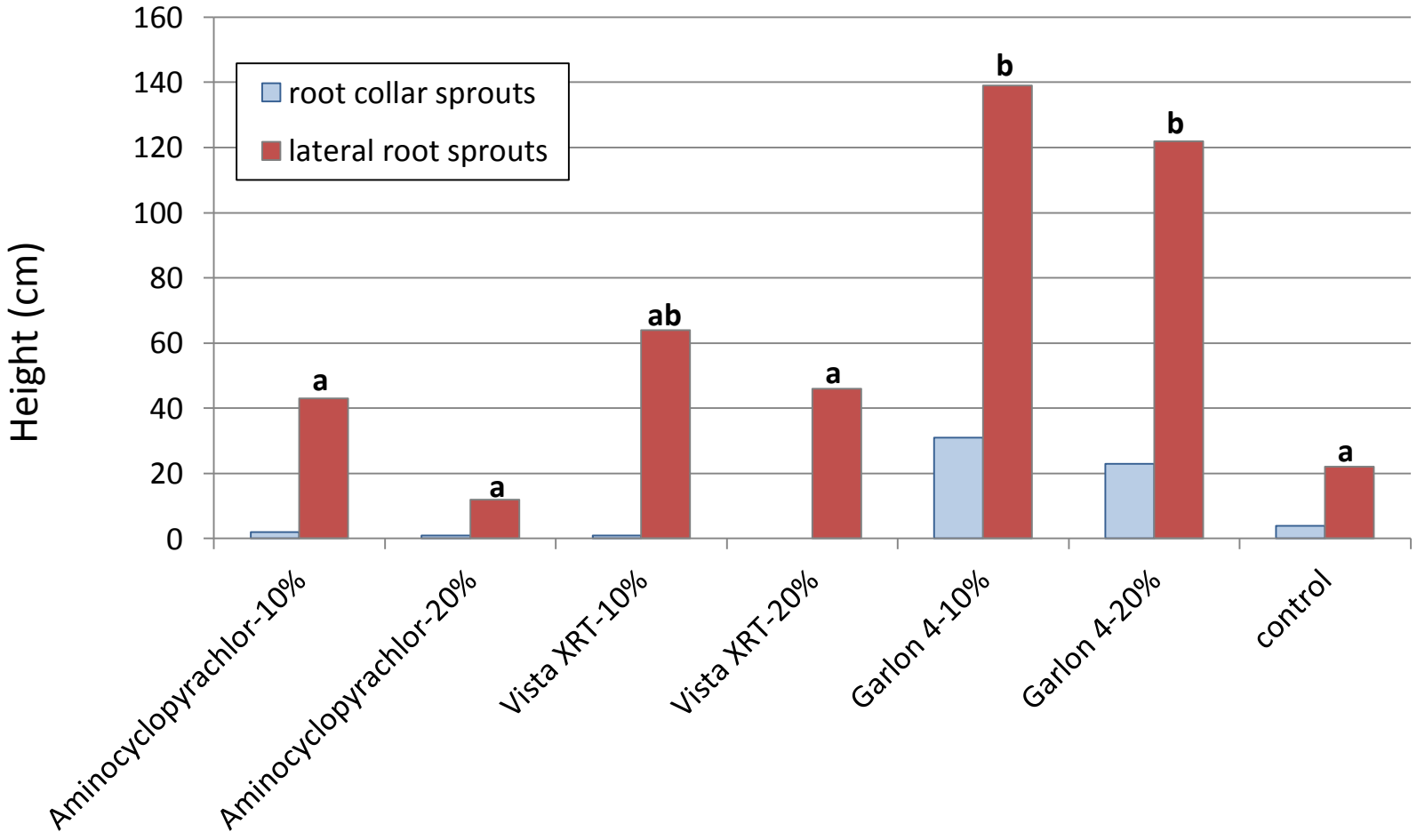


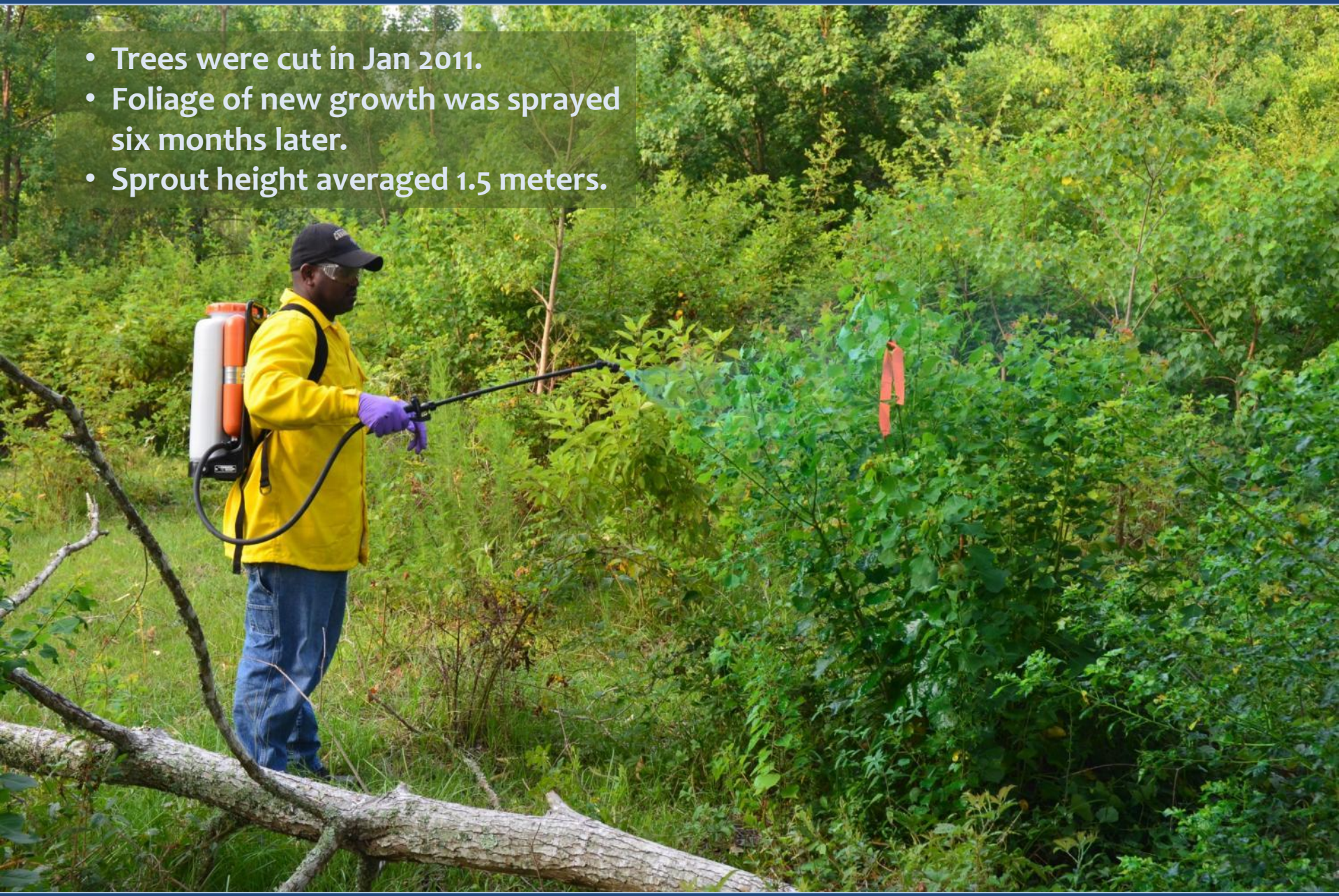
Lateral root sprouting following basal bark treatment

Chinese tallowtree sprouting response to basal bark herbicide treatment



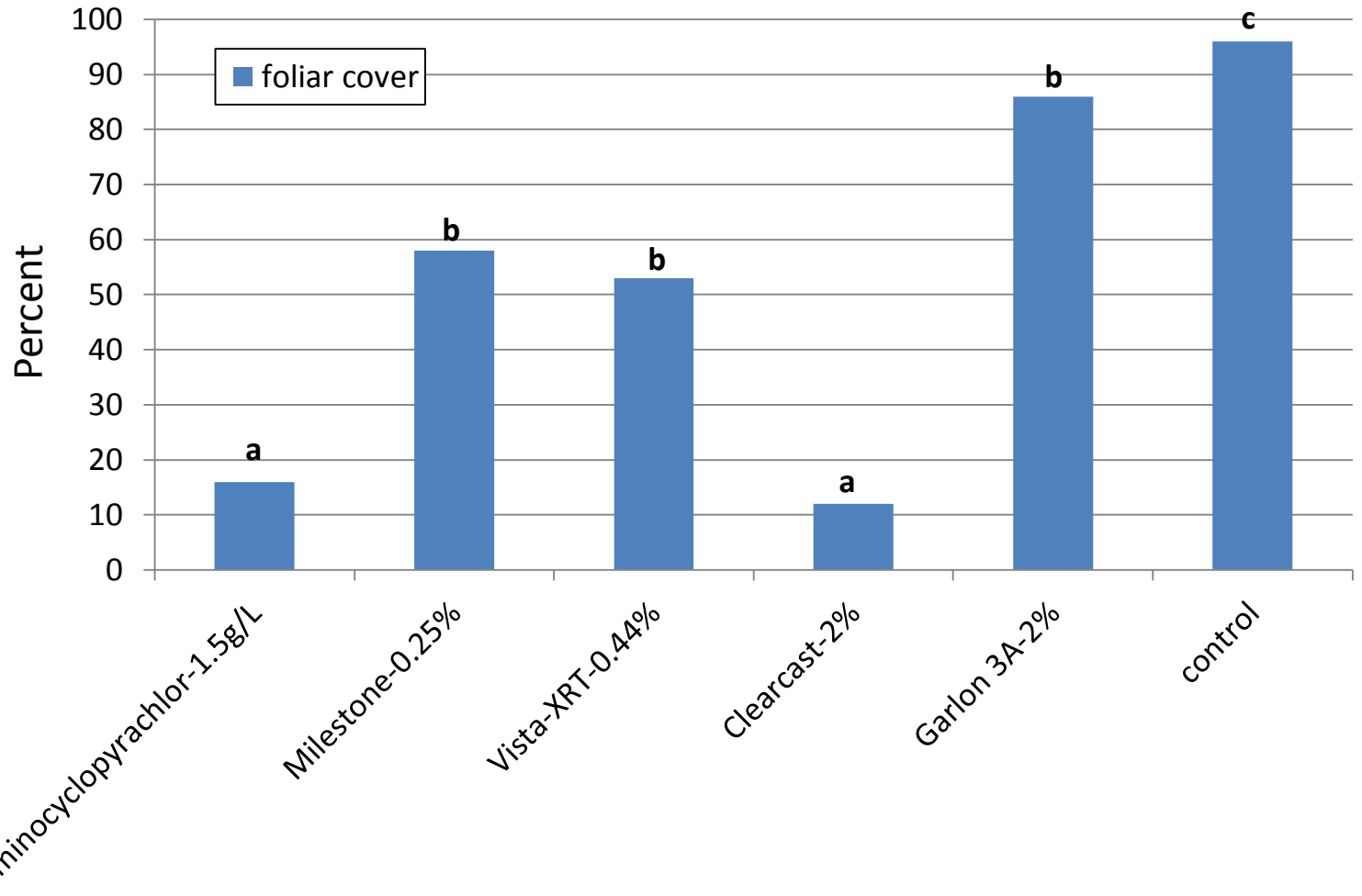
Sprout height following basal bark herbicide treatment (avg over 2 growing seasons)



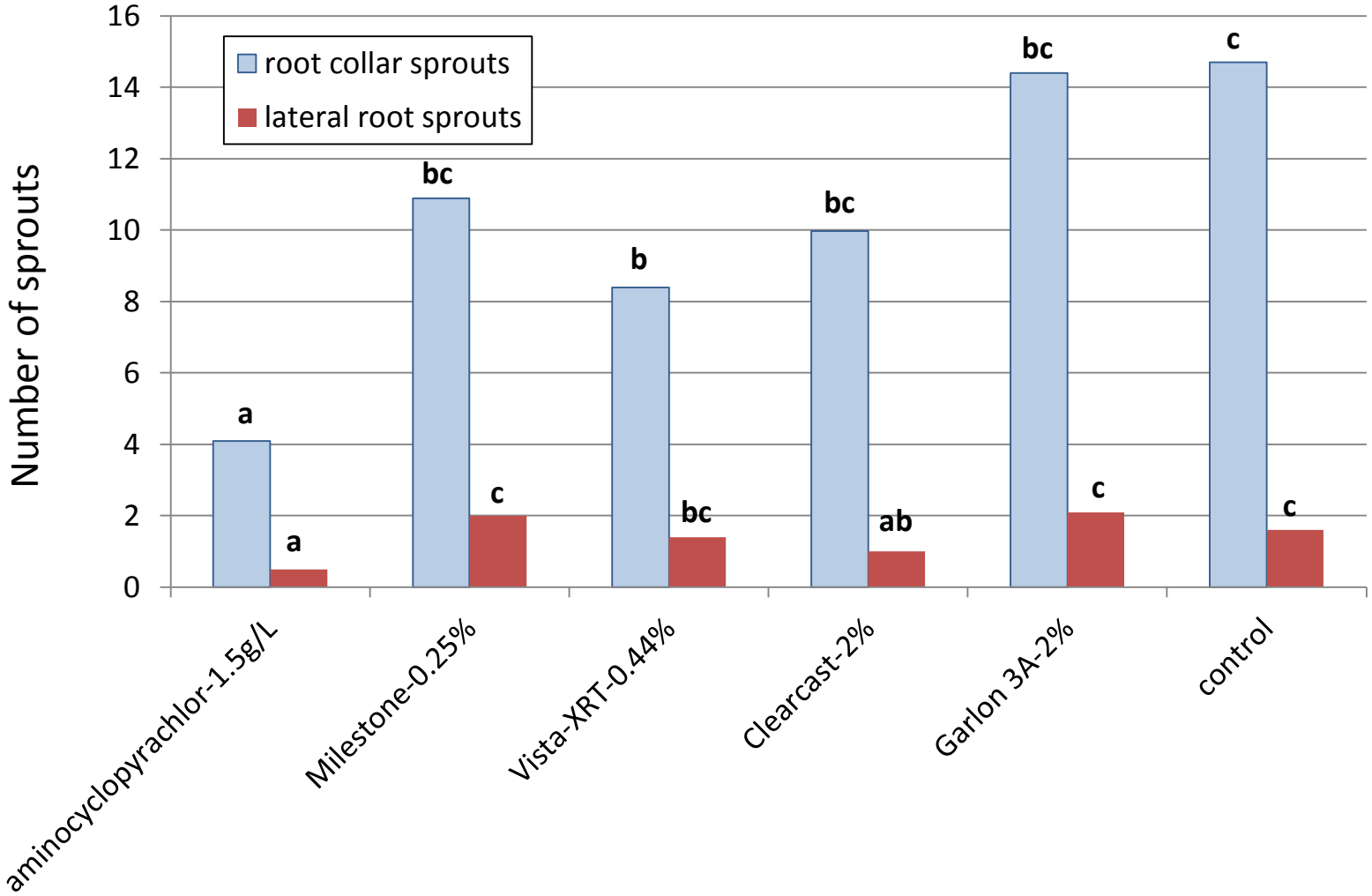


Foliar treatments

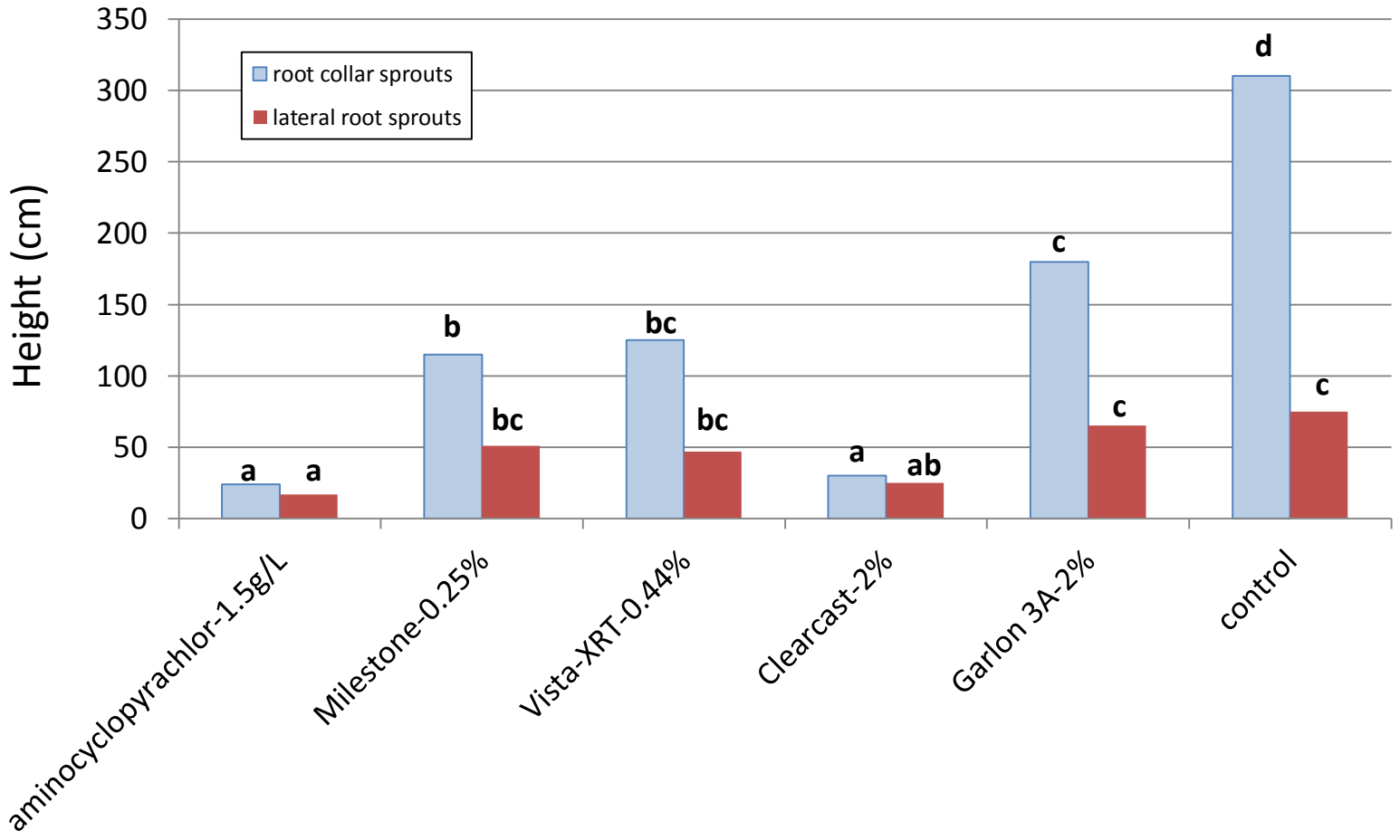
Foliar cover following foliar herbicide treatment (2 growing seasons after trt)



Chinese tallowtree sprouting response to foliar herbicide treatment



Sprout height following foliar herbicide treatment (avg over 2 growing seasons)



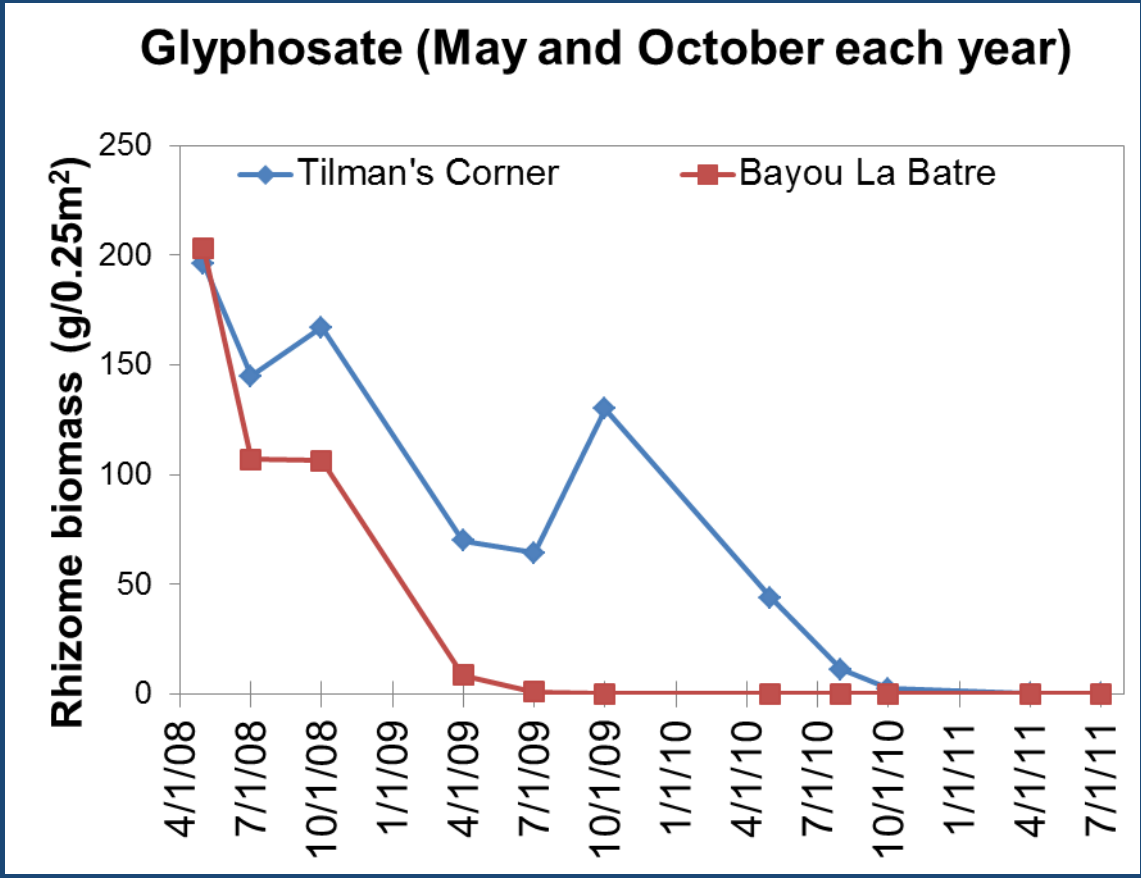
Tallowtree – Preliminary Conclusions

- Amincyclopyrachlor, Milestone, Vista XRT and Clearcast were generally more effective than Garlon
- None of the herbicides completely eliminated sprouting, but several significantly reduced the number and vitality of sprouts.
- Further data analysis is needed before we rank the efficacy of the other herbicides.

New cogongrass research

Regional phenotypic diversity among invasive cogongrass populations and differential responses to herbicides

Previous research and numerous anecdotal reports indicate variation in response to herbicides between some populations of cogongrass.



Primary objective: Determine phenotypic response to glyphosate treatments

- Cogongrass populations from across the Southeast
  - Some for which genetic research has already been conducted
  - Several with known differences in response to glyphosate
- Grown in greenhouse (common garden)
- Dose-response testing with glyphosate
- Evaluate results in light of population genetics and phenotype
- Cooperative agreement with the Forest Service (Dr. Rima Lucardi)

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ALABAMA COOPERATIVE Extension SYSTEM

ANR-2168

Kudzu Control in Residential Areas

Kudzu control is often a frustrating problem in residential settings. It frequently grows unchecked along woodland edges near homes, in vacant lots, and along property lines. Its aggressive nature makes it seem literally uncontrollable in these situations. If left alone, kudzu will cover virtually anything. To make matters worse, kudzu is the primary host plant for the kudzu bug, a new insect pest in Alabama. This obnoxious pest has given many homeowners a new reason to aggressively control kudzu on their properties. Here are some of the most frequently asked questions concerning kudzu control around homes and in urban settings.

Kudzu infestation in a residential area

Q: What do you mean by the term *residential areas*?

We define *residential areas* as the landscaped area around a home and those natural or seminatural areas in the immediate proximity that may contain shade trees, shrubs, turf, vegetable gardens, or other desirable vegetation.

Q: Will repeated mowing or cutting work to control kudzu?

To control kudzu by repeated mowing or cutting, you must do two things. First, cut every vine to the ground. This is difficult for rotary mowers as many vines lie flat on the ground. Simply cutting kudzu back (pruning or trimming) to keep it out of the lawn or at your property edge will not provide long-term control. Second, repeated cutting or mowing must continue until kudzu no longer regrows. This technique may take two to three years of repeated mowing or cutting every week during the summer. Kudzu can tolerate occasional mowing or trimming, but it does not tolerate weekly defoliation to the ground. If you start a mowing or cutting regime but do not follow through for a few weeks, the kudzu will regrow.

Q: I have tried to dig up kudzu and found a large woody root. Do I need to remove the whole root to stop new growth?

No, you do not need to remove the whole root. The large root is a storage organ loaded with energy reserves, but it has no ability to sprout. Kudzu grows from seed and from root crowns. You can see these root crowns if you follow a vine to where it roots in the soil. Dig just a little around it and you will see several buds, new sprouts, or mature vines emerging from just at, or below, the soil surface. This is the root crown. To stop new kudzu vine growth, cut just below the root crown and remove it from the soil. Kudzu cannot regrow from below the root crown, and it does not sprout from any lateral roots. Sometimes vines, which can root, may be buried under a few inches of organic matter and leaf litter. This gives them the appearance of lateral roots, but they are not. Buried vines make control more difficult because they are hidden and may produce many new shoots.

www.aces.edu

Enloe SF, Loewenstein NJ (2014)

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ANR-2176

Kudzu Bug Control in Soybeans

Kudzu bug has become a serious pest of soybeans since its debut as a nuisance pest in Georgia during the fall of 2009. Yield loss due to kudzu bug feeding has been observed to reduce pod size, seeds per pod, and seed weight. Research reported that this invasive insect is capable of reducing soybean yields by nearly 60 percent without proper control management. Control of the kudzu bug in agricultural settings is possible and begins with proper insect identification, attention to economic thresholds, and timing of chemical treatments. This publication answers some of the most frequently asked questions concerning kudzu bug control in soybean fields.

Q: When will kudzu bugs be found invading soybean fields?

Adults have been observed entering soybean fields as early as the early planted soybean plants reach V1–V3 growth stage, often in early May. Once adult insects are observed in fields, they will persist there throughout the growing season. Nymphs are normally first encountered in June and last through September.

Q: Where do kudzu bugs tend to aggregate initially in soybean fields?

When kudzu bugs first encounter a soybean field, they will aggregate abundantly on the outside rows or edges of the field (figure 1). As the season progresses, they will move toward the center of the field.

Q: Are early season soybeans more susceptible to kudzu bug infestation?

Field observations show that kudzu bug numbers tend to be greater in early-plant soybeans than in later planted soybeans.

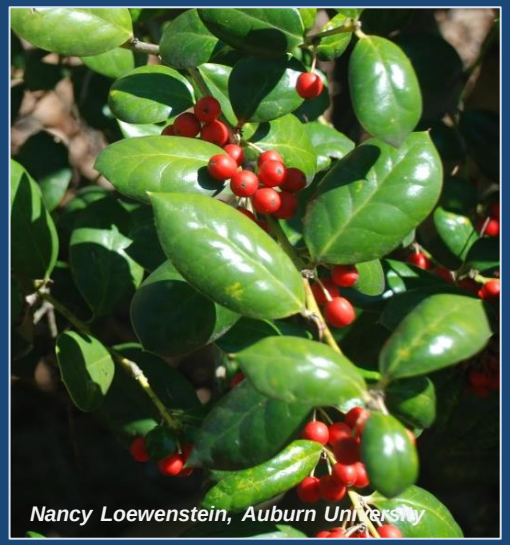
Figure 1. Kudzu bugs invading soybean field by first aggregating on outside rows

www.aces.edu

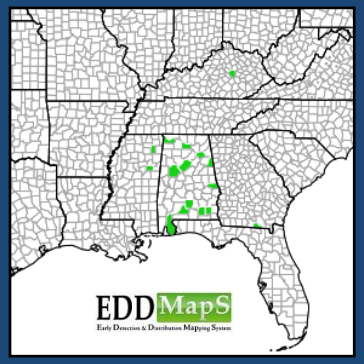
Hu XP, Golec J, Yang L, Reed T (2014)

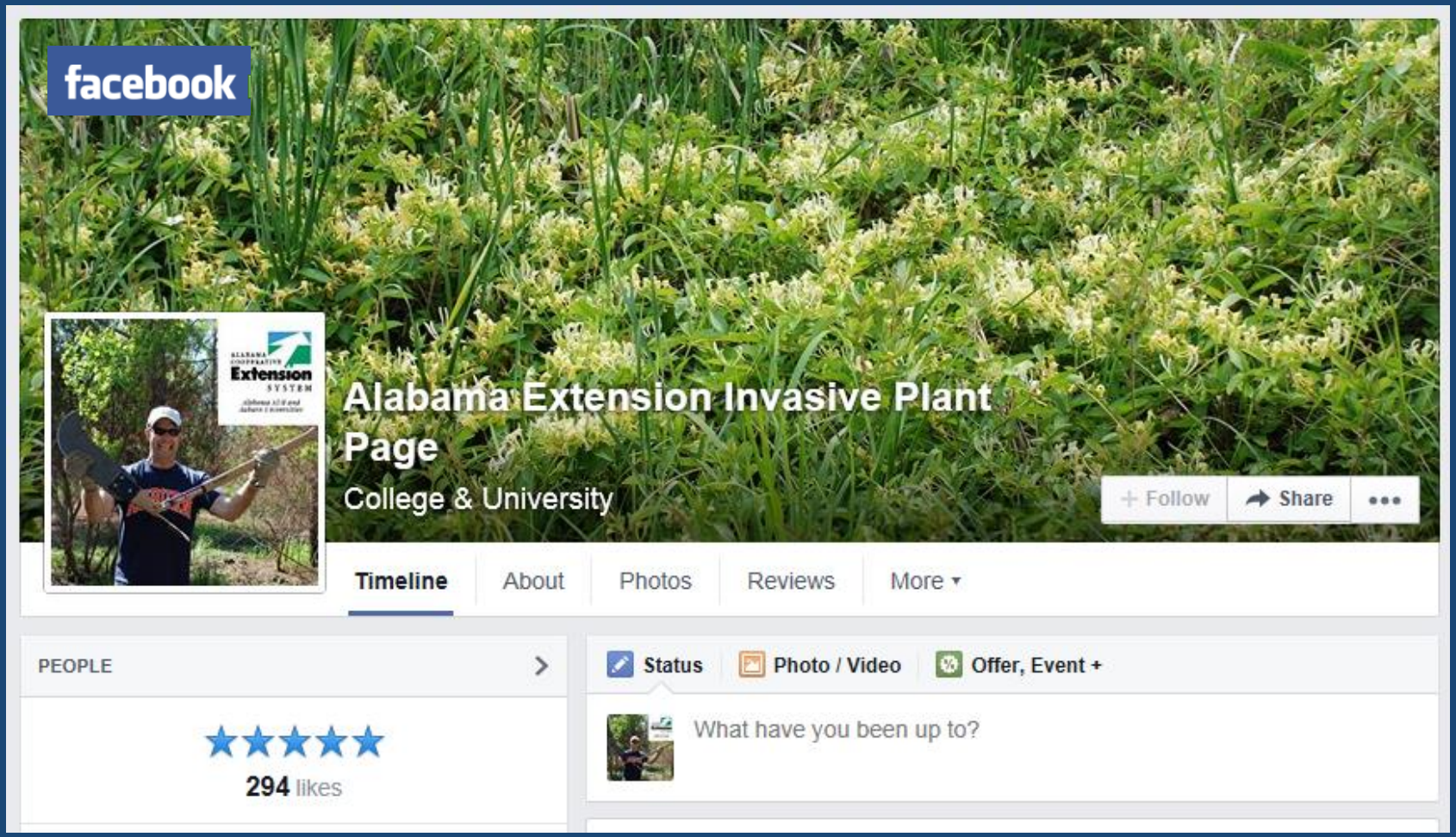
Chinese holly *(Ilex cornuta)*

glossy, leathery, evergreen leaves … terminal spine points down, next two point up like horns (scientific name '*cornuta*' means horn)



There are many cultivars … spines are lacking in some.





Invasive plant updates on Facebook.