

Controlling San Jose Scale on Apple With Early Season Insect Growth Regulator Applications



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Can we achieve season long control of SJS with early season applications?

Potential problems:

- 3 generations of SJS in NY
- Infests both tree bark and fruit
- Populations in research orchard are very high (UTC - 78% fruit damage @ harvest 2013)
- Potential of infestation from untreated areas in research orchard
 - Every other row left unsprayed as border trees/insect refuge



LAURA JESSE

Trial Design

- Applications made with air-blast equipment @ 100 gpa
- High gallon/A for bare trees to ensure coverage
- Replicated 3x in RCB design
- Treatments did not receive any other insecticide applications
- Applications were made at either 'delayed dormant' or 'pink' against overwintering 'black cap' stage
- Assessments made before and after applications and through out growing season
- 1st year wood examined under scope before apps to determine overwintering population survival
- Several wood samples taken after apps to determine efficacy
- Fruit damage assessments were made after the 1st and 2nd summer generations had emerged, as well as at fruit harvest



Treatments

- Esteem 0.86 EC

- Applied at 'pink' (13 May)
- 16.0 oz/A
- Active ingredient – Pyriproxyfen



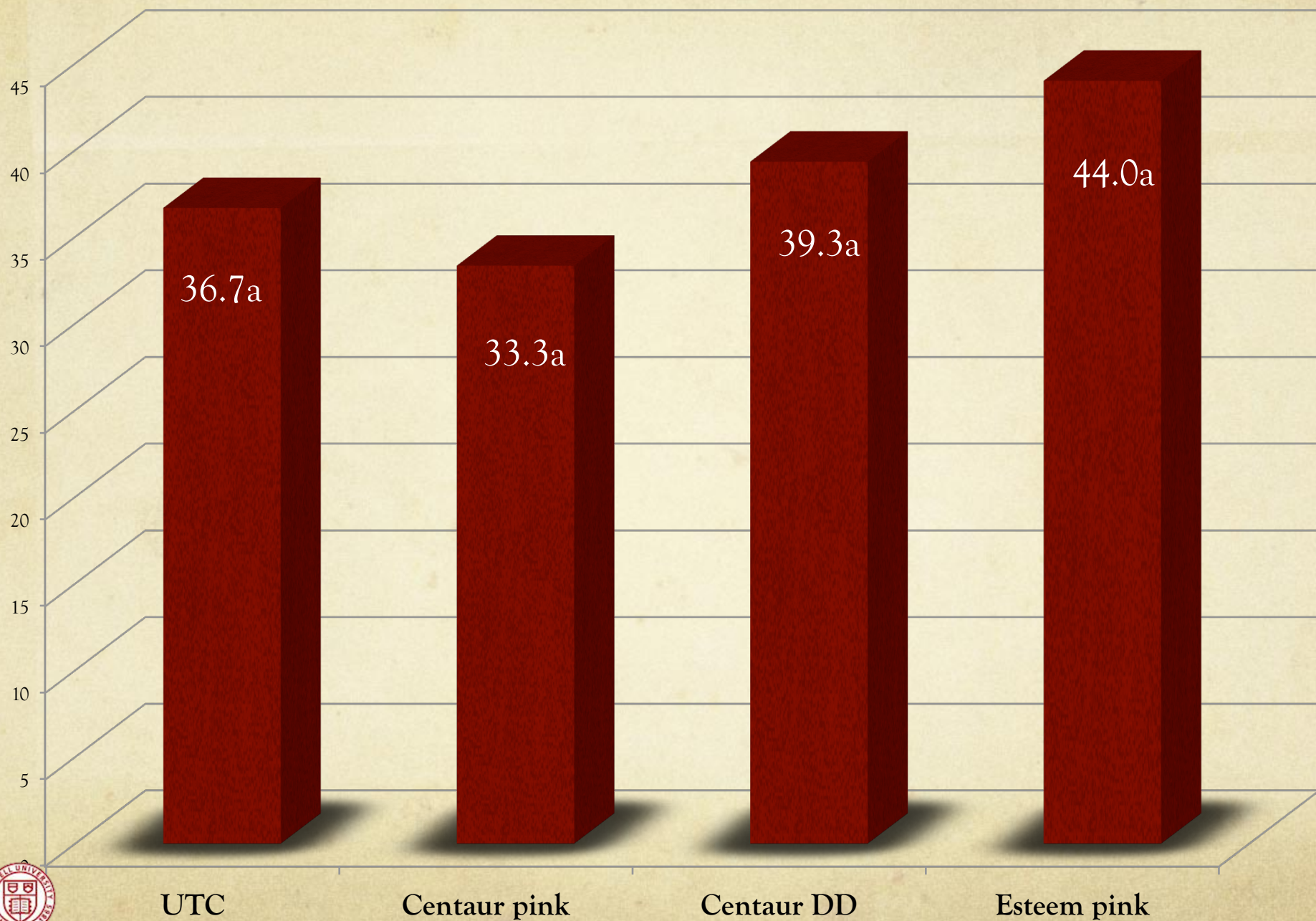
- Centaur WDG

- Applied at 'delayed dormant' (24 Apr) and 'pink' (13 May)
- Both treatments 34.5 oz/A
- Active ingredient – Buprofezin

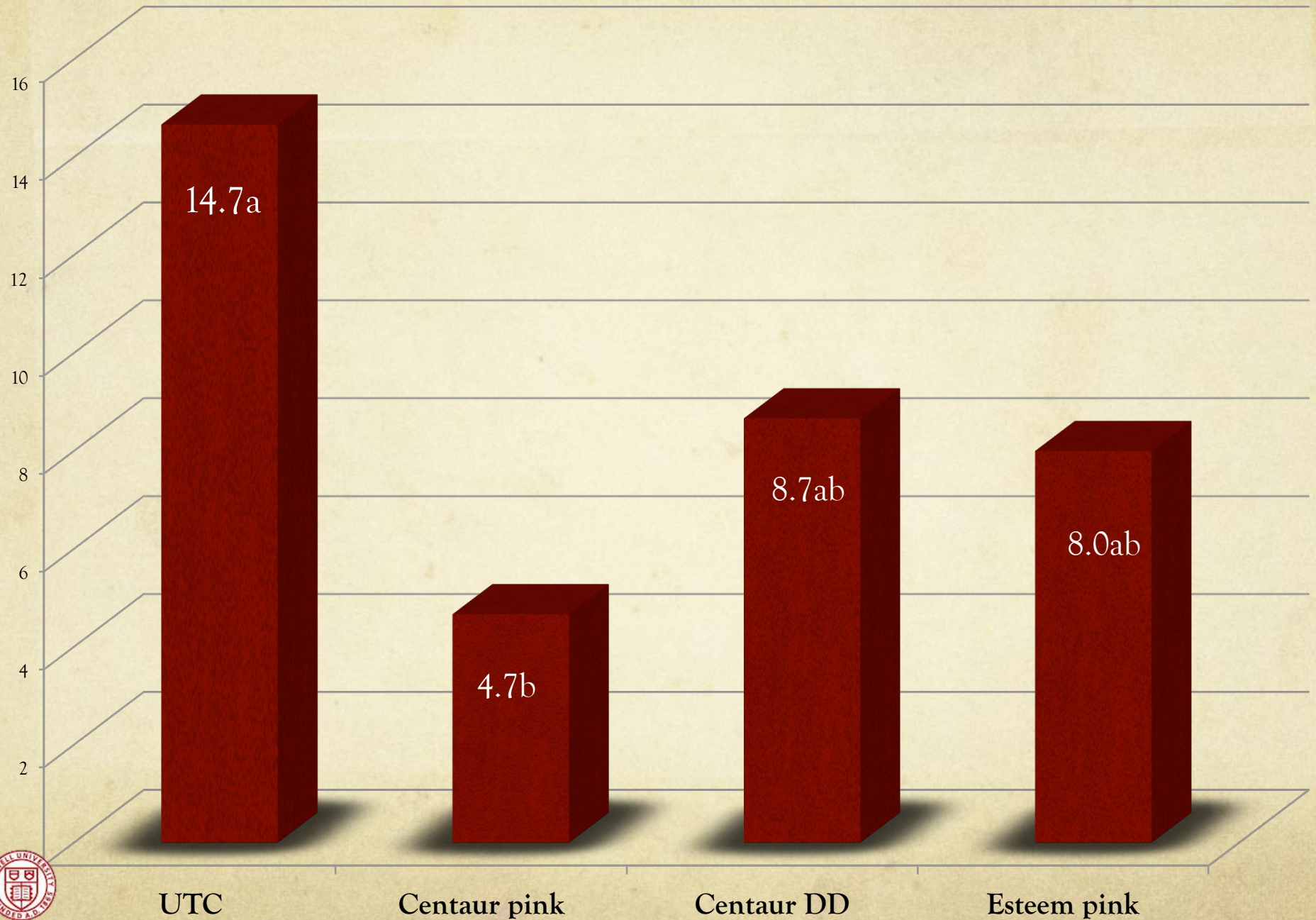
- Untreated Check



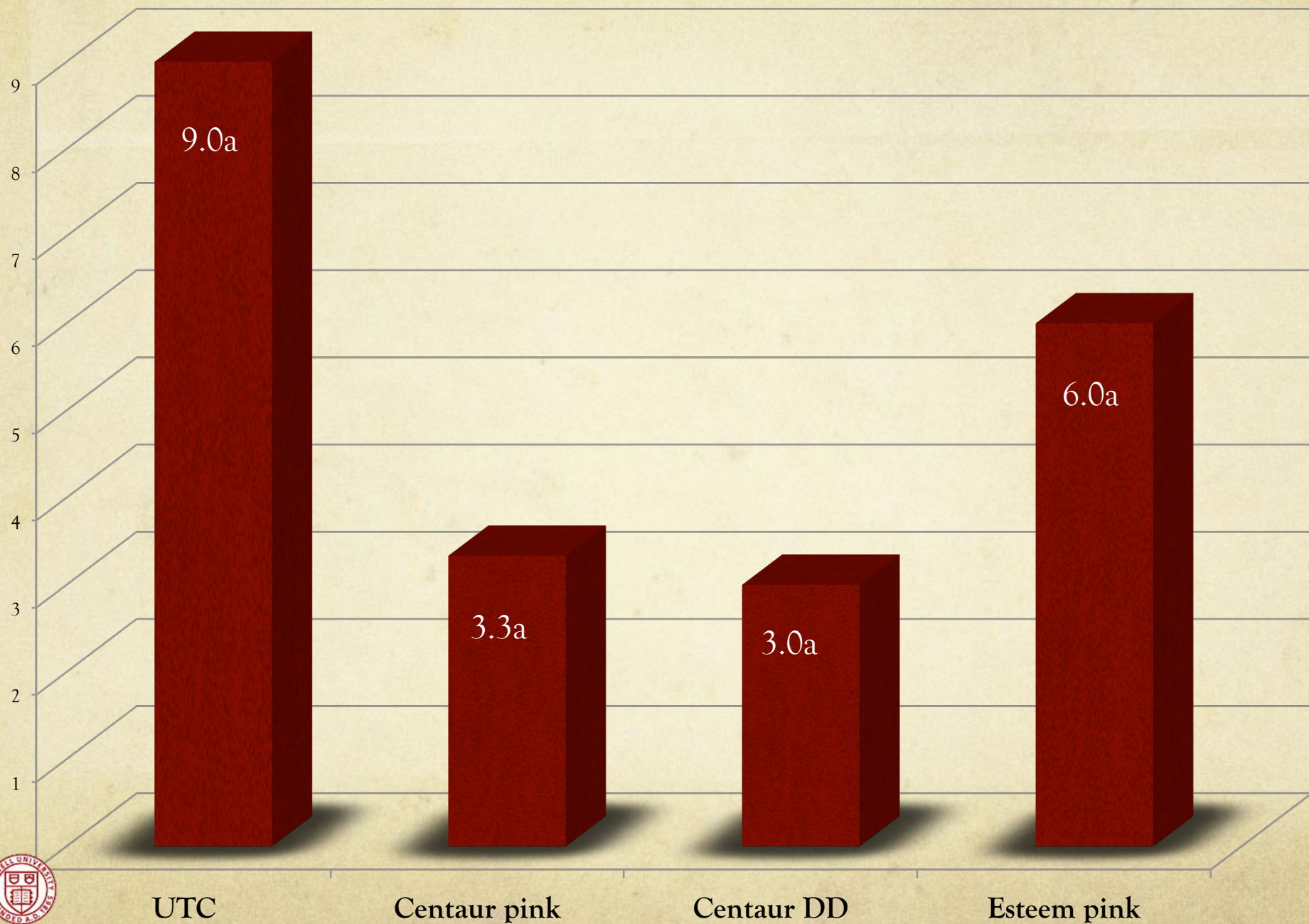
1st Yr Wood Pre-Application % SJS Overwintering Survival 24 Apr



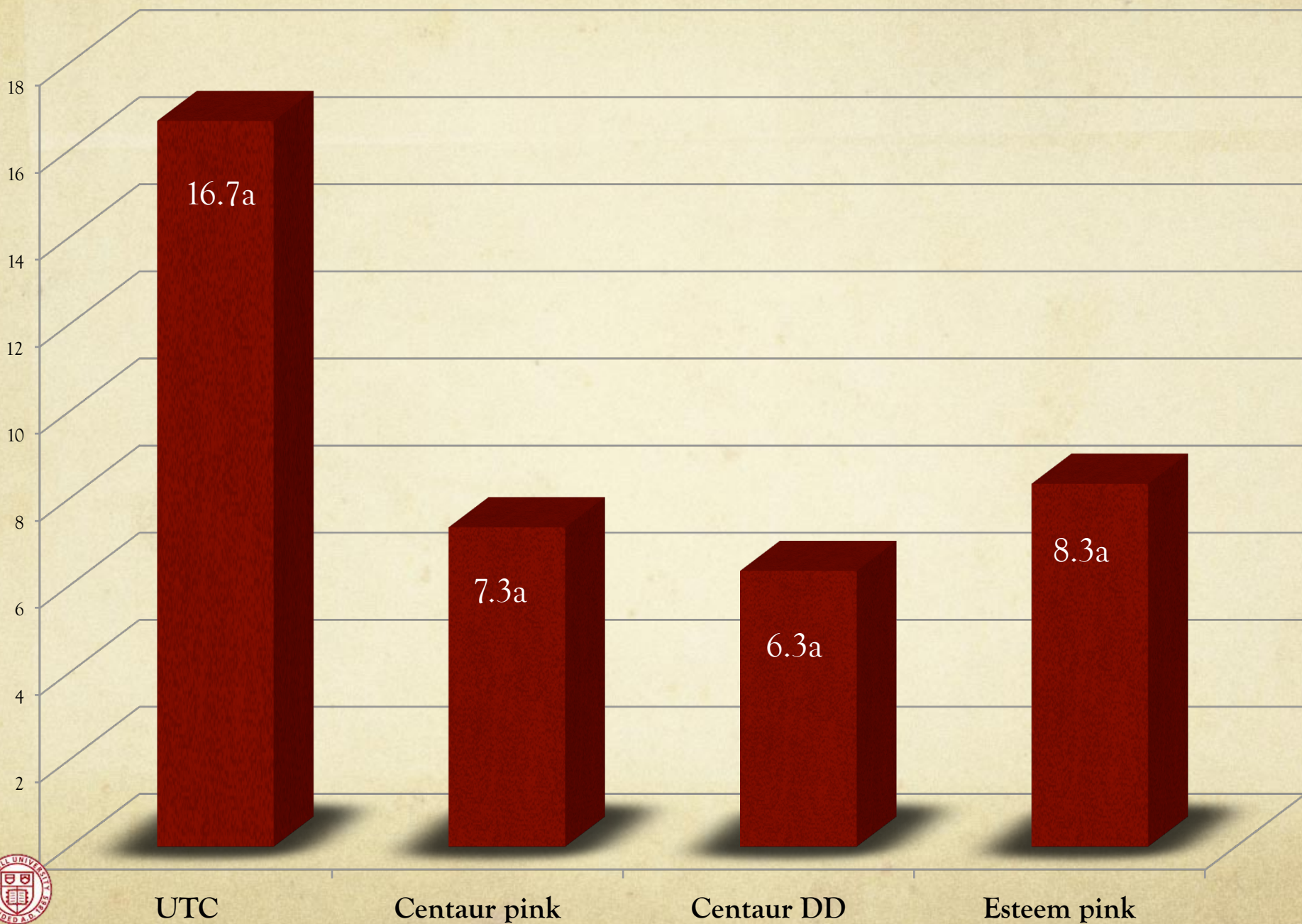
1st Yr Wood Post application % SJS Survival 21 May



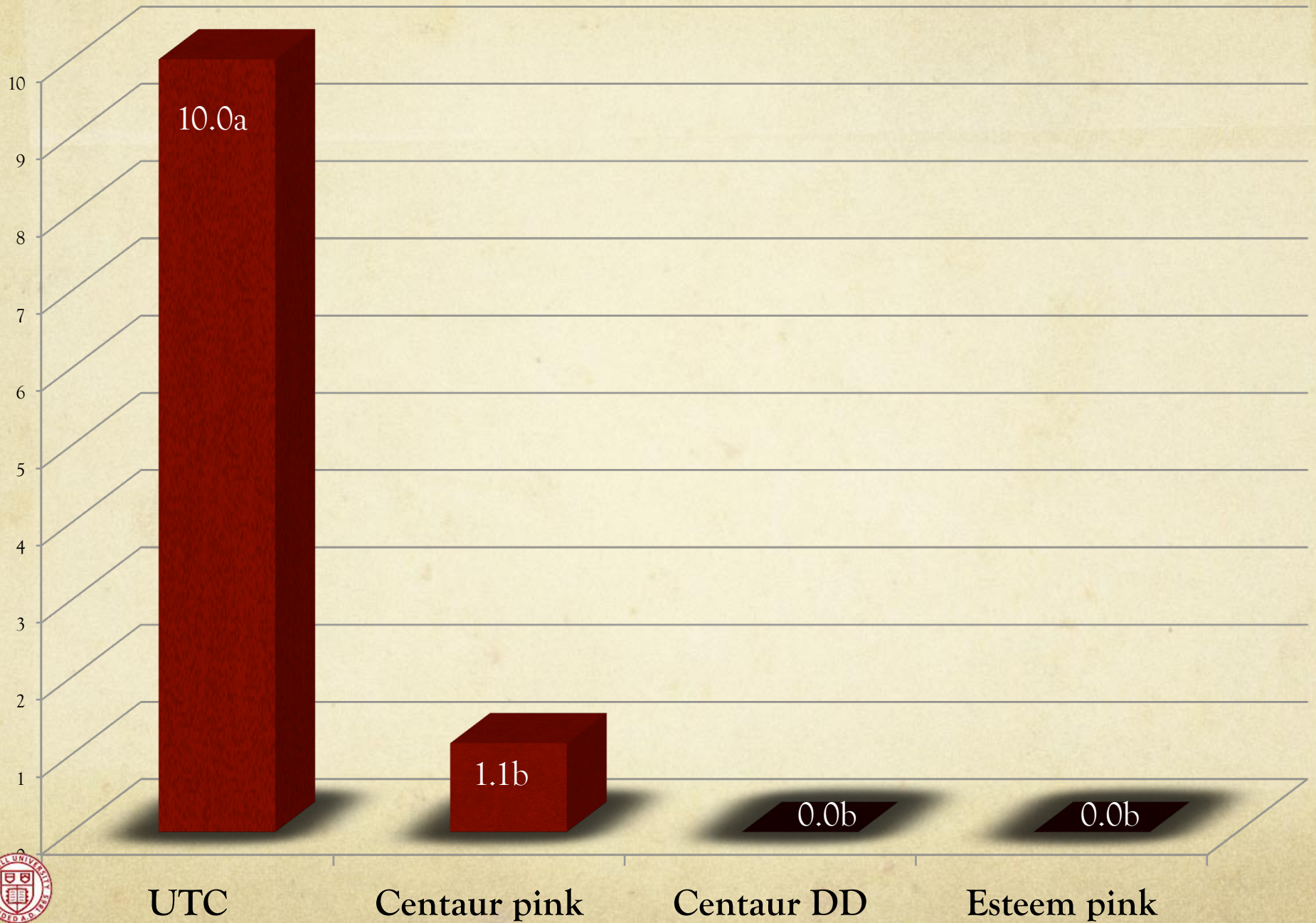
1st Yr Wood Post Application % SJS Survival 29 May



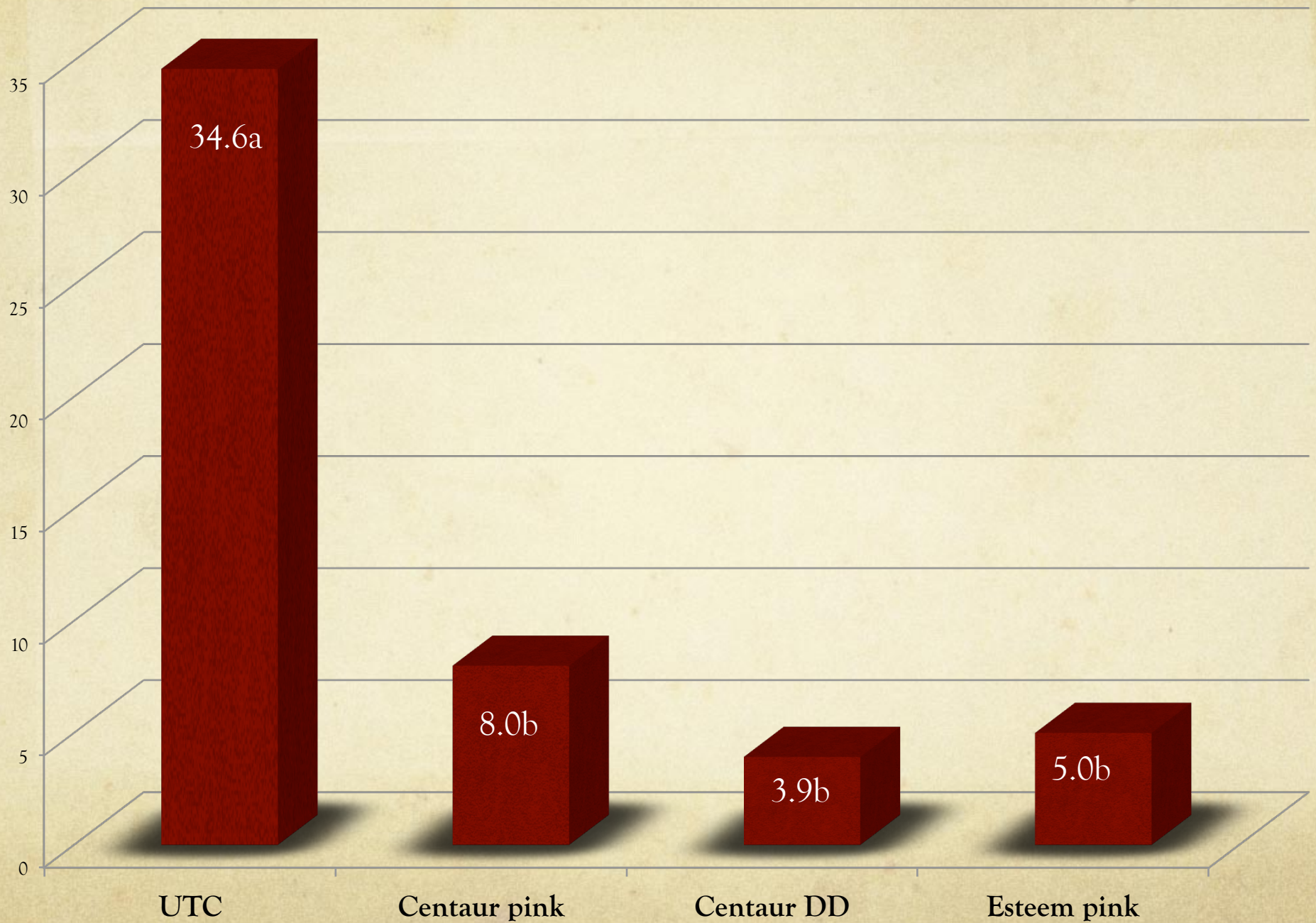
1st Yr Wood Post Application % SJS Survival 4 Jun



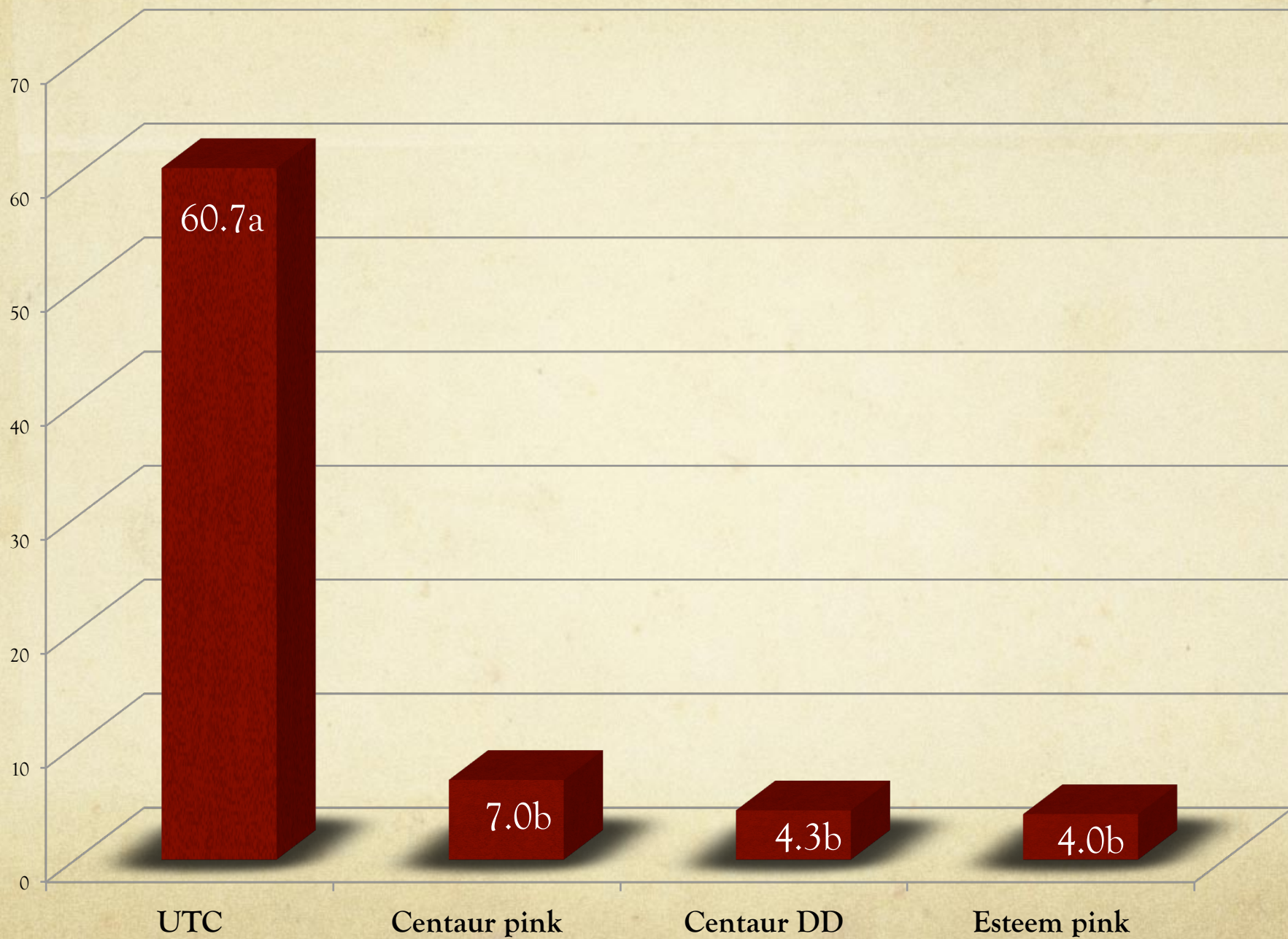
1st Generation % SJS Fruit Damage 27 Jun



2nd Generation % SJS Fruit Damage 29 Jul



% SJS Fruit Damage at Harvest 10 Sep



Can we achieve season long control of SJS with early season applications?

- Given the pressure in the research orchard – Yes.
- Both Centaur timings (DD and pink) and the Esteem (pink) controlled SJS at acceptable levels through out the growing season
- However, very few differences among 1st yr wood samples
- All treatments were significantly better in controlling SJS for each date of fruit samples compared to the UTC
- No statistical differences among insecticide treatments in fruit samples



One Step Further?

- Fall IGR applications
 - Against pre-overwintered 'black caps'
 - Pre-application samples – fall
 - Post application samples – spring
 - Fruit evaluations – summer and harvest

Applications were applied 14 Oct

<u>Treatment</u>	<u>Rate</u>	<u>% Fruit Damage at Application</u>
Esteem 35WP	5.0 oz/A	39.0a
Centaur	34.5 oz/A	49.0a
UTC		51.0a



Thanks

- Nichino America
- Valent
- Steve Gordner and Forrest Loeb - summer assistants

