

Carriage Rates of *Trypanosoma cruzi* among Kissing Bugs (*Triatoma* spp.) in Southern Arizona



Kissingbug.arizona.edu



Citizen Science Program

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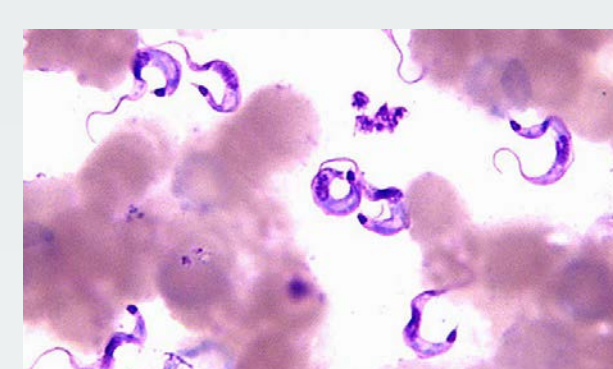
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Introduction

The three predominant **triatomine species** found in southern Arizona (*Triatoma rubida*, *T. protracta*, *T. recurva*) are known to harbor *Trypanosoma cruzi*, the causative agent of **Chagas disease**.

Methods

- We analyzed **219 triatomines** for carriage of *T. cruzi*. (*T. rubida*, N=114; *T. recurva*, N=87; *T. protracta*, N=18)
- Specimens were provided from our **citizen science program** and field collections from **Tucson, Arizona** and surrounding regions.
- DNA extraction was performed with Qiagen DNeasy® Blood & Tissue Kit.
- DNA was then amplified by RT-PCR using the *T. cruzi*-specific primers **TCZ1 and TCZ2**.



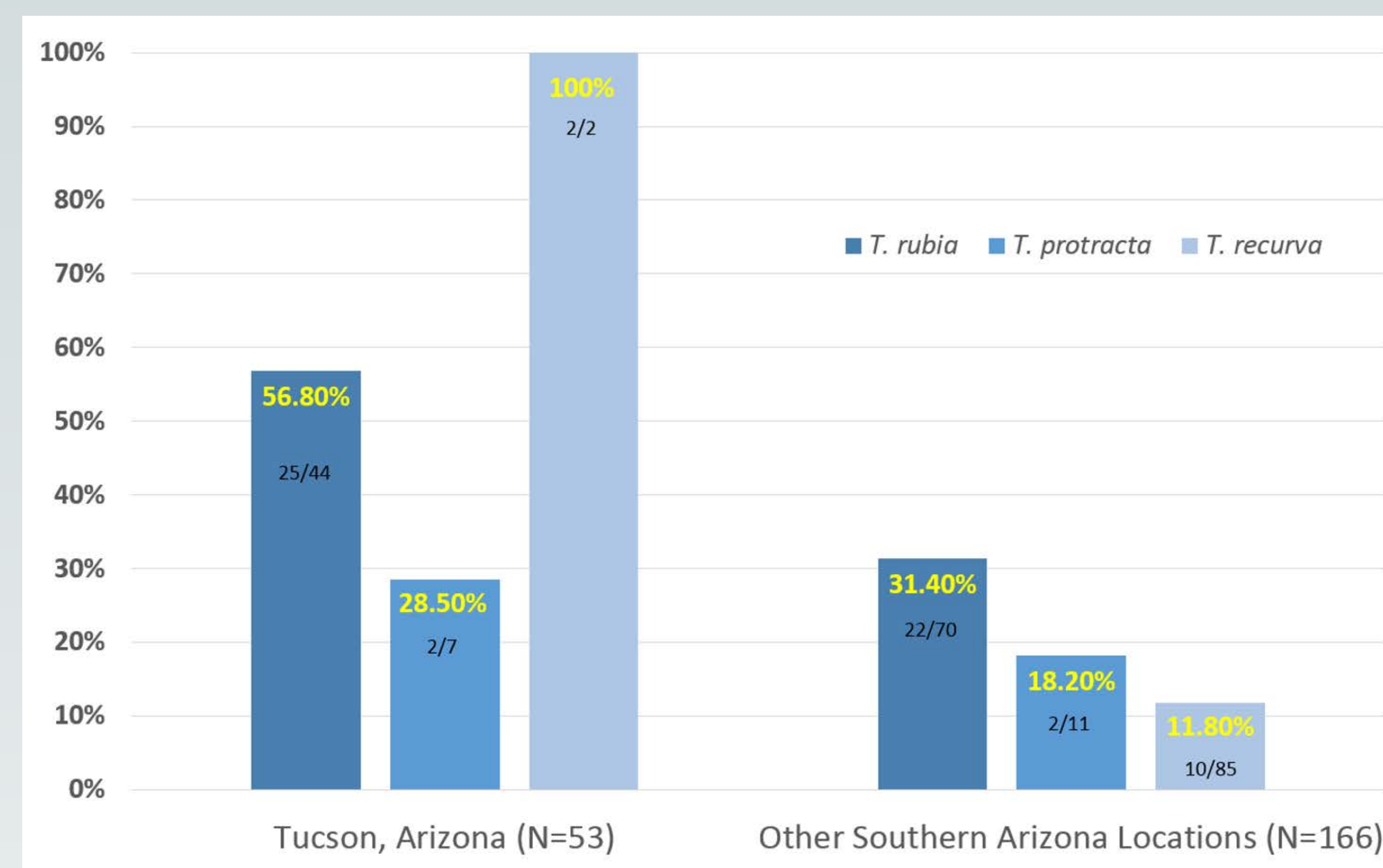
Results

Trypanosoma cruzi was detected in **28.8%** (63/219) of the total tested kissing bugs.



% *T. cruzi* Detected

Triatomines Collected in Southern Arizona



Tucson – 54.7% (29/53) positive

Other Southern Arizona Locations – 20.5% (34/166) positive

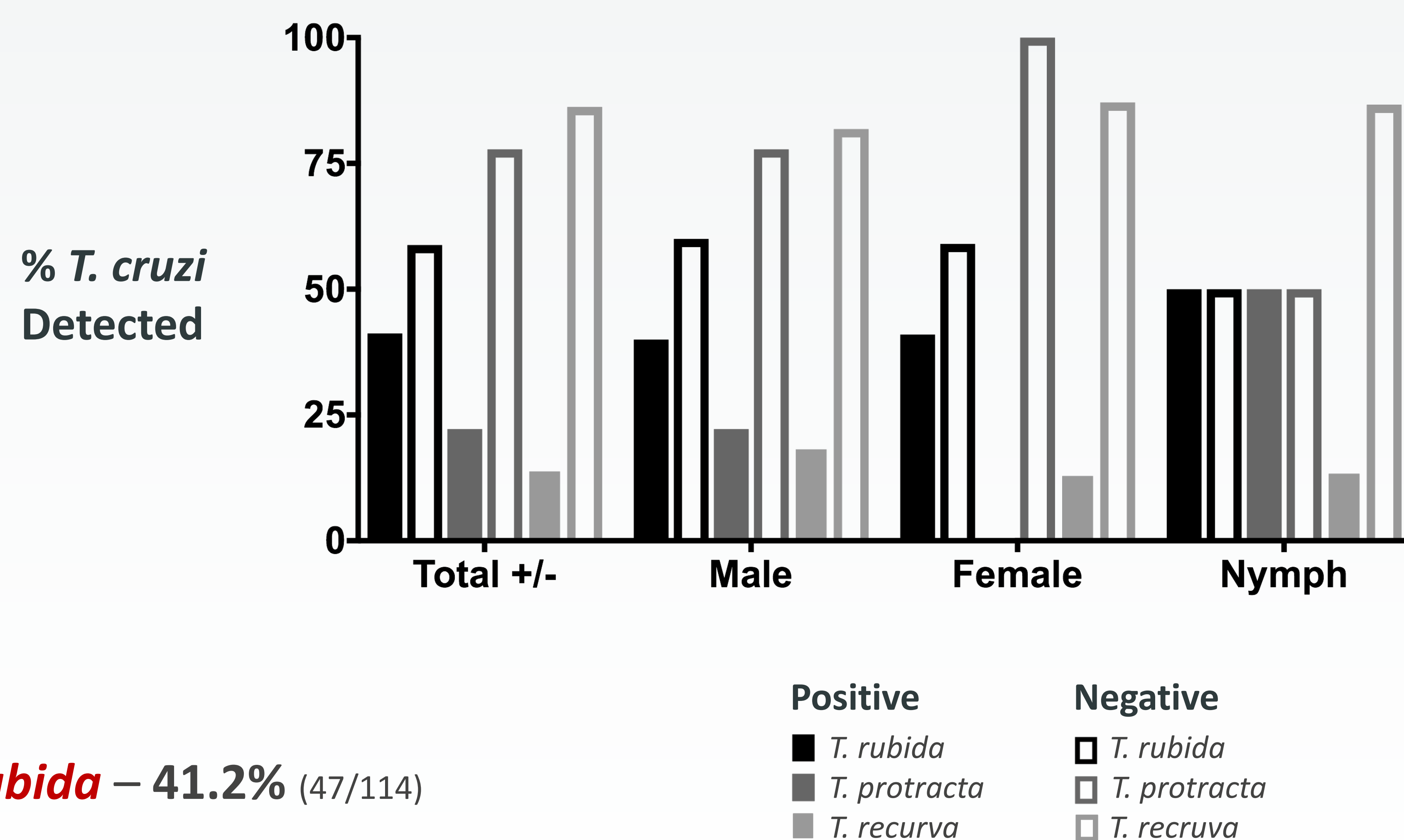
Discussion

Trypanosoma cruzi is common among the triatomines that naturally inhabit southern Arizona.

Carrier rates were nearly **two-fold higher among *T. rubida*** compared to *T. protracta* and *T. recurva*, but not significantly different among male, female, and nymphal stages.

This is the **largest analysis** to date utilizing molecular techniques to assess the incidence of *T. cruzi* carriage among triatomines in **southern Arizona**.

Further studies are needed to better understand the risk and potential transmission of *T. cruzi* to humans in this region.



T. rubida – 41.2% (47/114)

T. protracta – 22.2% (4/18)

T. recurva – 13.8% (12/87)

Among those triatomines that we could sex, 34.3% (24/70) of male and 29.3% (27/92) of female specimens were positive; nymphal stages were 21.1% (12/57) positive.

