Prevalence of *Trypanosoma cruzi* in Triatomine Insects Around the St. Louis Area
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**BACKGROUND**

- Triatomines, commonly known as kissing bugs, are found in the United States.¹
- Kissing bugs are known as vectors because they have been shown to transmit the protozoan, *Trypanosoma cruzi* (*T. cruzi*), that causes Chagas disease.²
- Commonly biting around the eyes and mouth of humans, these bugs generally feed on mammalian blood.³
- Infected individuals may present with or without symptoms, and if untreated may have long-term cardiovascular and gastrointestinal complications.³
- Chagas disease is not spread through direct contact with an infected individual, but may be spread via other methods.⁴
- *T. cruzi* was predominately found in South and Central America, but in recent years has been found throughout the southern United States.⁴
- It is unknown how far north the protozoan *T. cruzi* may be found in the United States.

**METHODS**

- Collection of kissing bugs was performed utilizing two different methods: trapping (light trap, Figure 1, and LDPDS laced traps) and social media (Citizens Science Program).⁵
- After collection, samples were dissected, DNA was extracted, and PCR was performed.
- Gel electrophoresis was used to identify if the samples were positive or negative for *T. cruzi*.
- Samples were tested amongst positive and negative controls.

**RESULTS**

- Kissing bugs were collected around various areas of St. Louis including Bethalto, Edwardsville, Ewing, Grafton, and Springfield (Figure 2).
- Most samples were collected outside (54%), while some were collected inside (38%) (Figure 3).
- Thirteen kissing bugs were collected during July 2022 to October 2023 via Citizens Science Program, none were collected in either type of trap.
- Six of the samples (46%) were presumed positive for *T. cruzi* and seven were negative (54%) (Figure 4 & 5).

**DISCUSSION**

- Chagas disease affects a wide variety of mammals, including humans and dogs. Current medications (benznidazole and nifurtimox) are most effective in the early stages of the disease.⁶
- While the number of kissing bugs collected was small, the percentage of positive was large meaning the impact is still significant.
- There were a few limitations to the study including small sample size. However, the number of kissing bugs in St. Louis area is not presumed to be numerous.

**CONCLUSION**

- Even though the kissing bug population is not presumed to be numerous in this area, the fact that almost half the collected samples were positive for *T. cruzi* is important.
- Most of the population is unaware of the spread of this disease to the United States, and now the causative agent could be found around the St. Louis area.
- The next steps to help manage the spread of Chagas disease would be patient and provider education.

**REFERENCES**