

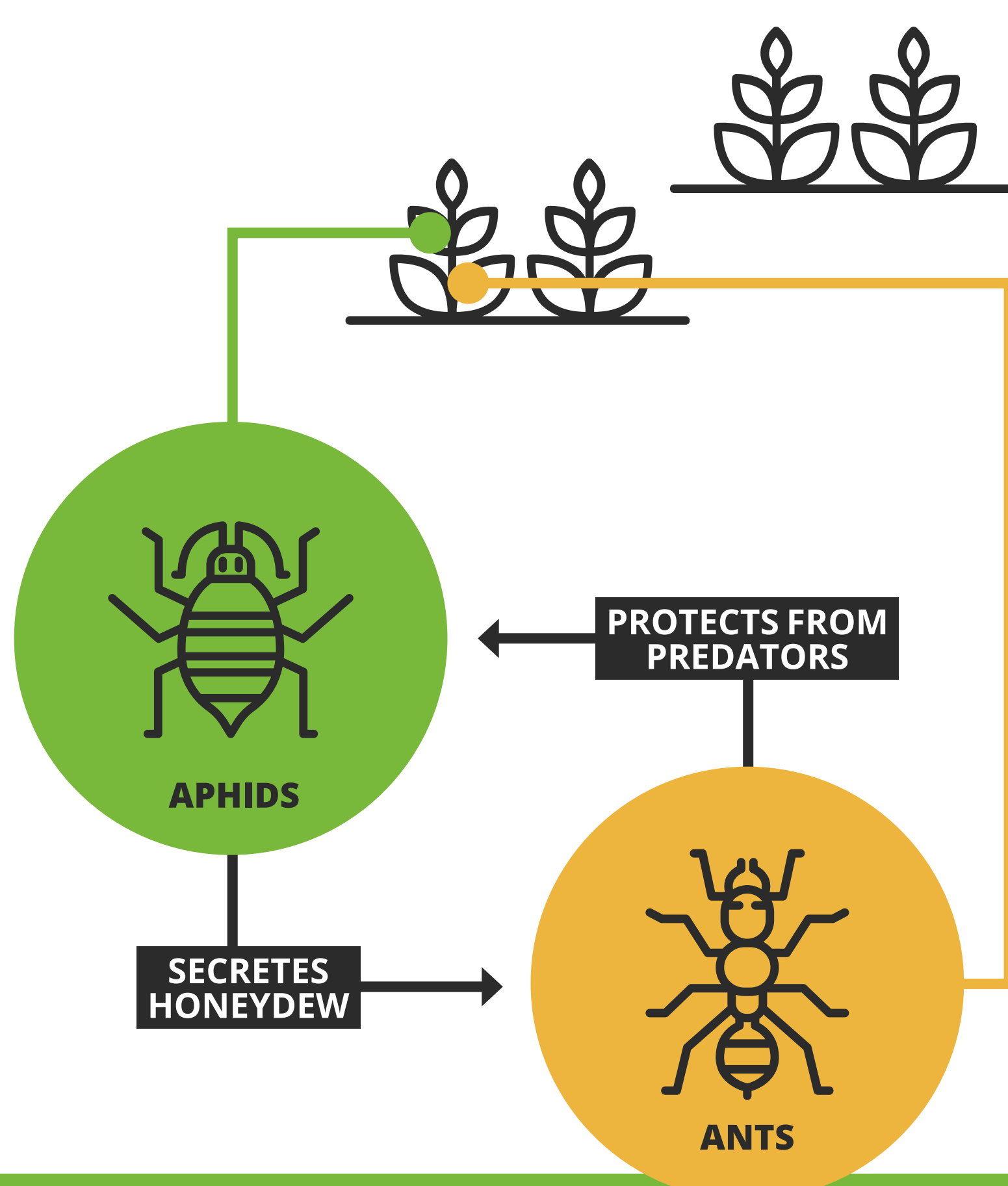
Ants that 'farm': how ants and aphids help each other and can damage sorghum plants



ANTS & APHIDS

Species of insects are often inadvertently introduced into other countries. When they are successful, **they can become invasive species** and damage local farm crops and ecosystems.

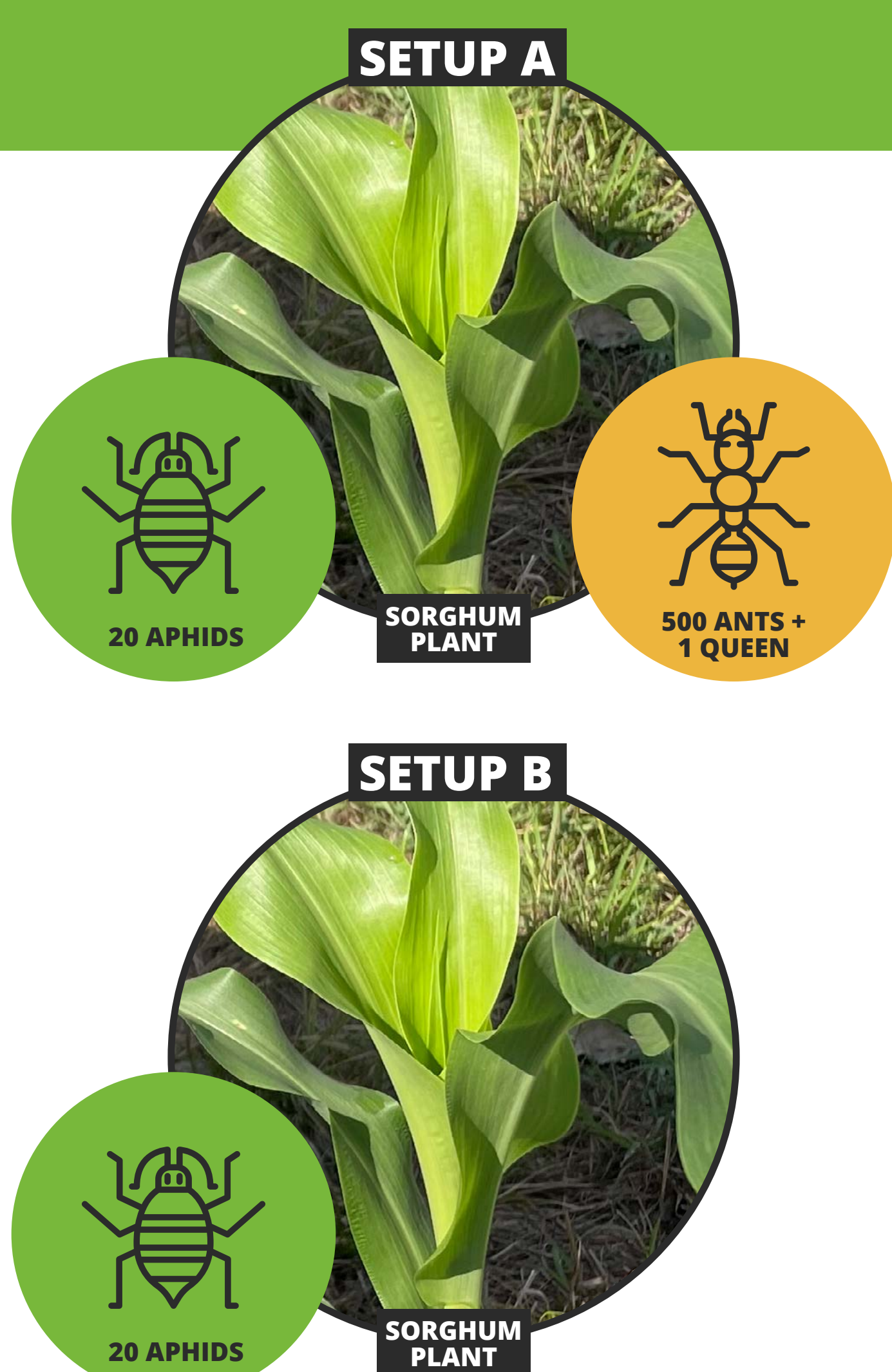
Ants and aphids are able to form symbiotic relationships that can make both species more successful. The ants 'farm' the aphids: they protect the aphids and in return they eat the sweet honeydew excreted by the aphids.



In the United States, invasive species of aphids and ants have been found on crops such as sorghum. **We studied the invasive sorghum aphid (*Melanaphis sorghi* Theobald) and the tawny crazy ant (*Nylanderia fulva* Mayr).**

OUR STUDY

- 1** We **collected aphids from 3 different host plants:** sorghum, sugarcane and Johnson grass.
- 2** We **placed the aphids and ants on sorghum plants** in a greenhouse. Aphids were placed on either stems or leaves of the plants, with or without a colony of tawny crazy ants present.
- 3** We then **observed the interactions**, and after 5 days we **measured aphid biomass**.

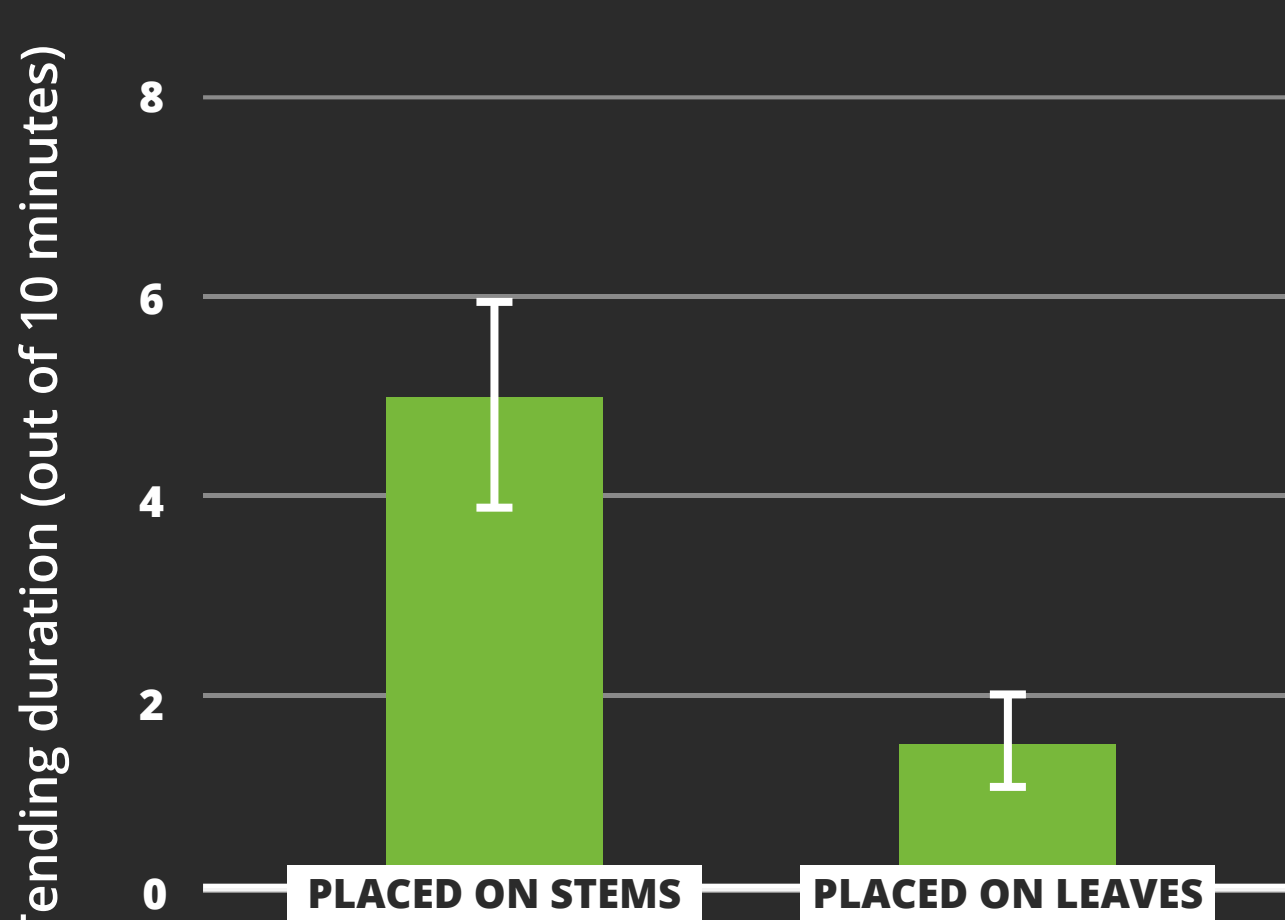


RESULTS

All ant colonies developed tending interactions with the aphids.

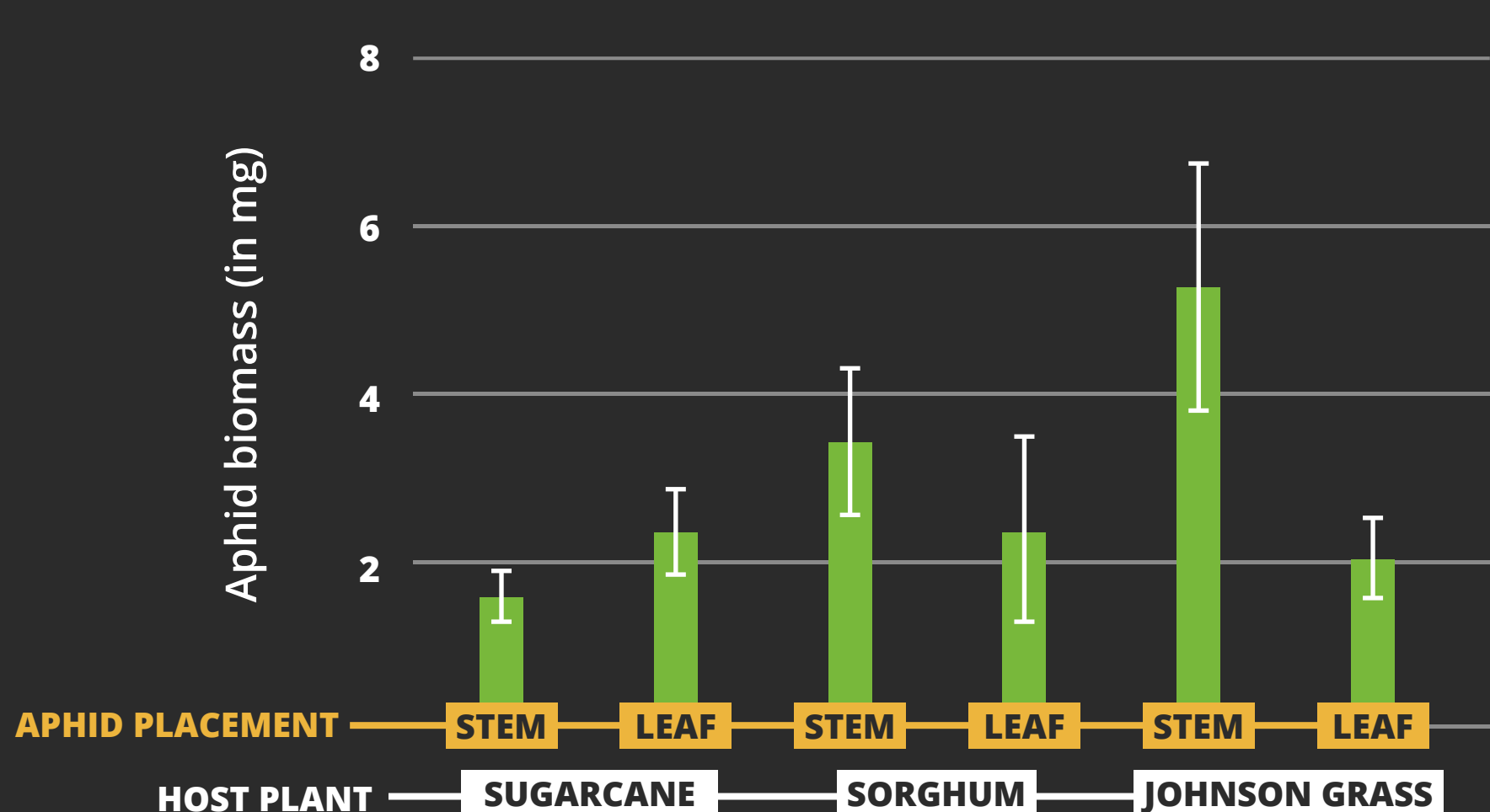
When aphids were placed on stems the ants tended them the longest: for 5 out of 10 minutes on average. When aphids were placed on leaves, tending duration was much shorter.

HOW LONG DID ANTS TEND APHIDS?



Aphid biomass increased most when aphids were taken from Johnson grass and placed onto Sorghum stems.

DID ANT TENDING INCREASE APHID BIOMASS?



SORGHUM APHIDS FEEDING ON SORGHUM STEM

CONCLUSIONS

Symbiotic interactions can establish relatively quickly between recently introduced invasive species. The tawny crazy ants and sorghum aphids did not coevolve in their native habitats, yet still showed a symbiotic relationship.

More information is needed on how sorghum health may be impacted. We recommend monitoring the interaction in the field, as there is a potential for aphid biomass to increase and sorghum plants to be damaged.



TAWNY CRAZY ANTS TENDING SORGHUM APHIDS