

Myzus persicae (Sulzer) (Hem.: Aphididae) as
host for *Aphidius colemani* Viereck and
Lysiphlebus testaceipes (Cresson)
(Hym.: Aphidiidae)

Vanda H.P. Bueno

Depto. Entomologia/UFLA

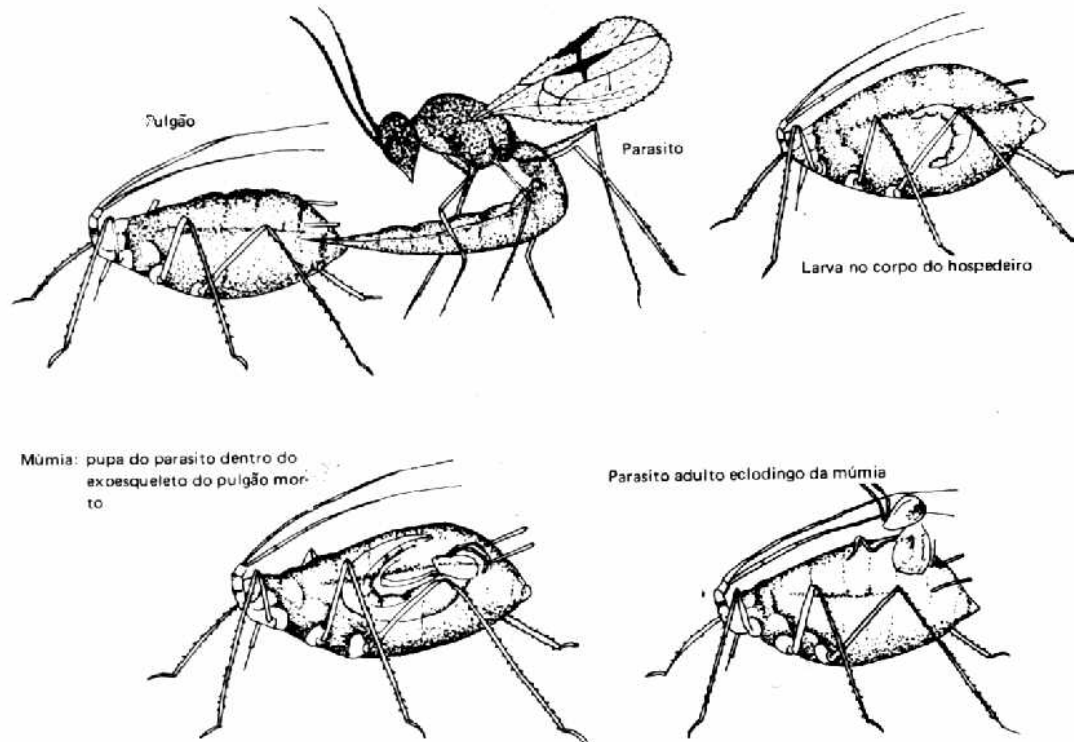
Myzus persicae (Sulzer)

- ↘ The most important aphid virus vector
- ↘ Sweet pepper, tomato, potato, lettuce, tabbaco, cotton, chrysanthemum, peach trees



Aphidiidae

Family highly specialized → all species are parasitoids on aphids

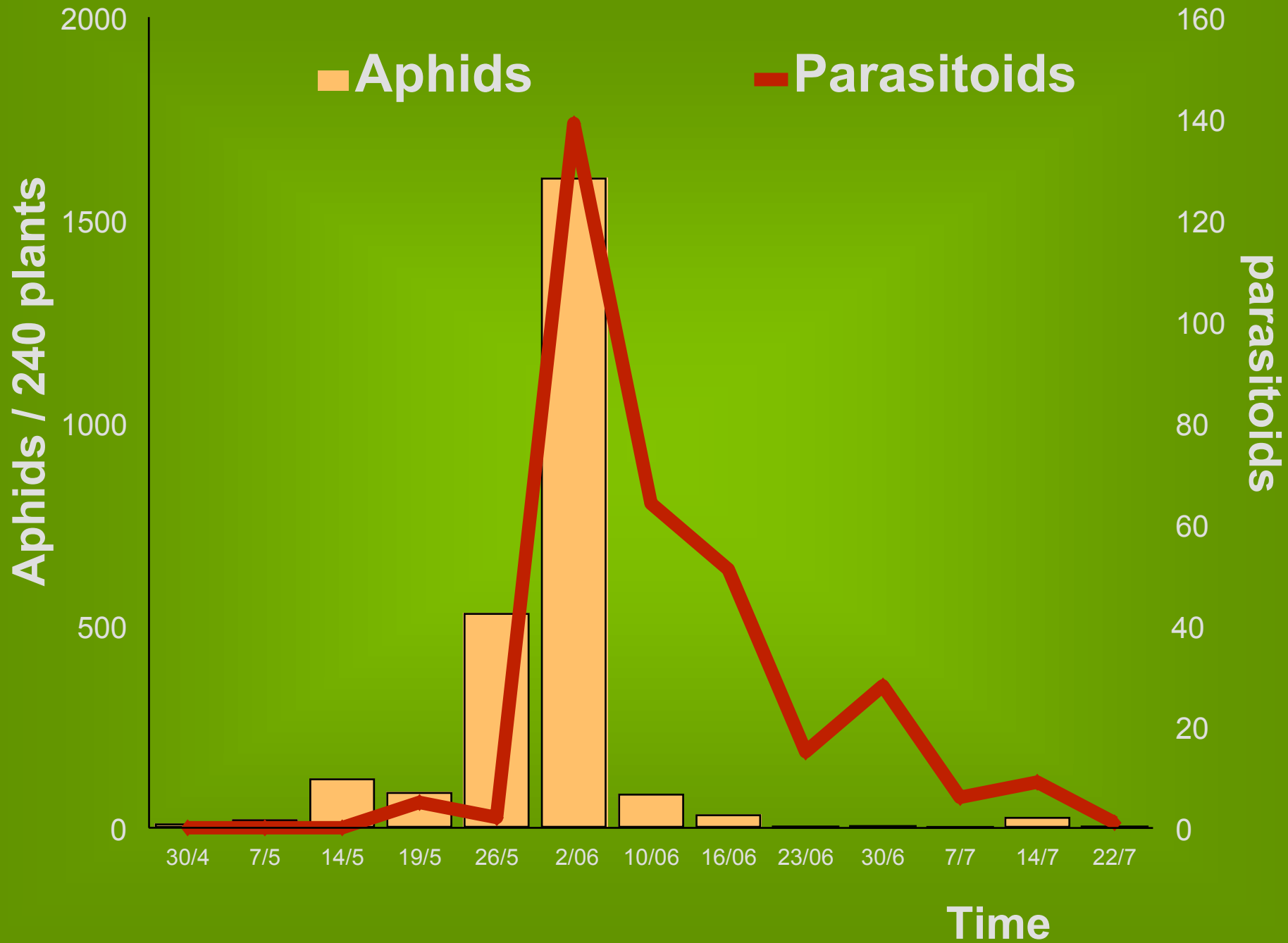


Aphidiidae

Candidates for biological control of aphids

- high reproductive capacity
- short generation time
- good dispersal capabilities
- a life cycle well synchronized with their aphid hosts





Aphidius colemani and *Lysiphlebus testaceipes*

- Are species dominants in South America
- Large range of hosts (including *M. persicae*, *A. gossypii*)
- *A. colemani* - optimal development at $20\pm 1^{\circ}\text{C}$
- *L. testaceipes* - optimal development at $25\pm 1^{\circ}\text{C}$



A. colemani



L. testaceipes

Host Selection by Parasitoids

➤ Host habitat location

➤ Host location

➤ Host acceptance

Touch with antennae

Touch with ovipositor

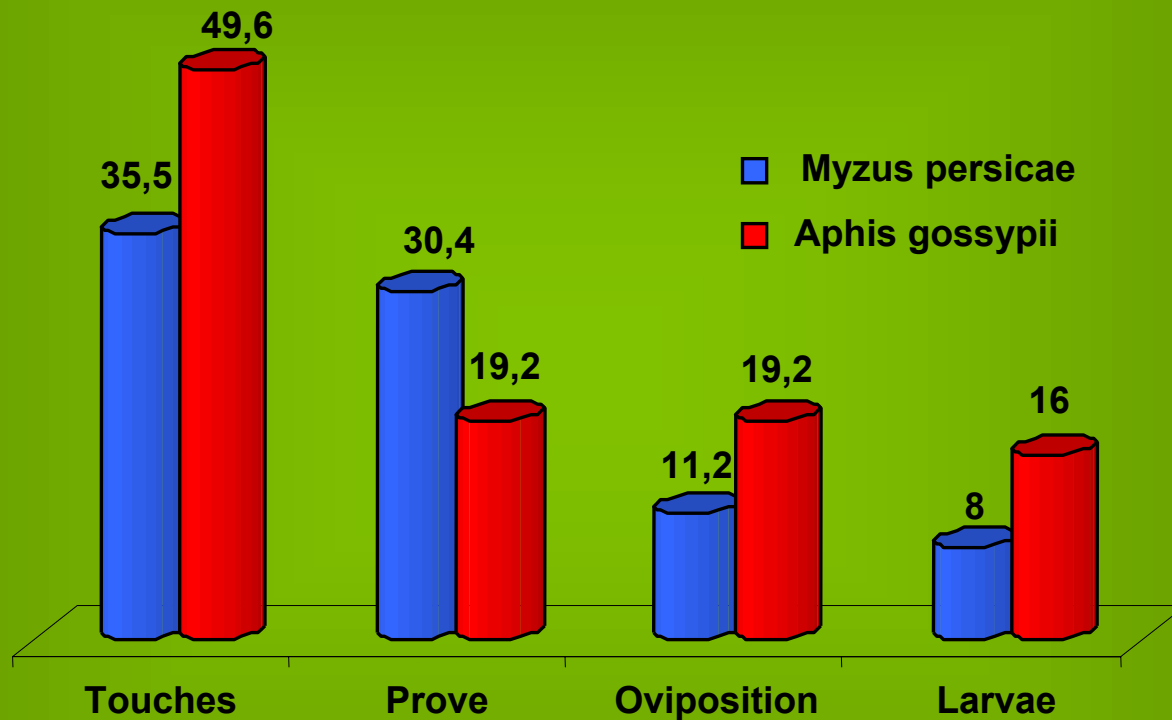
accepted or

rejected

➤ Host suitability

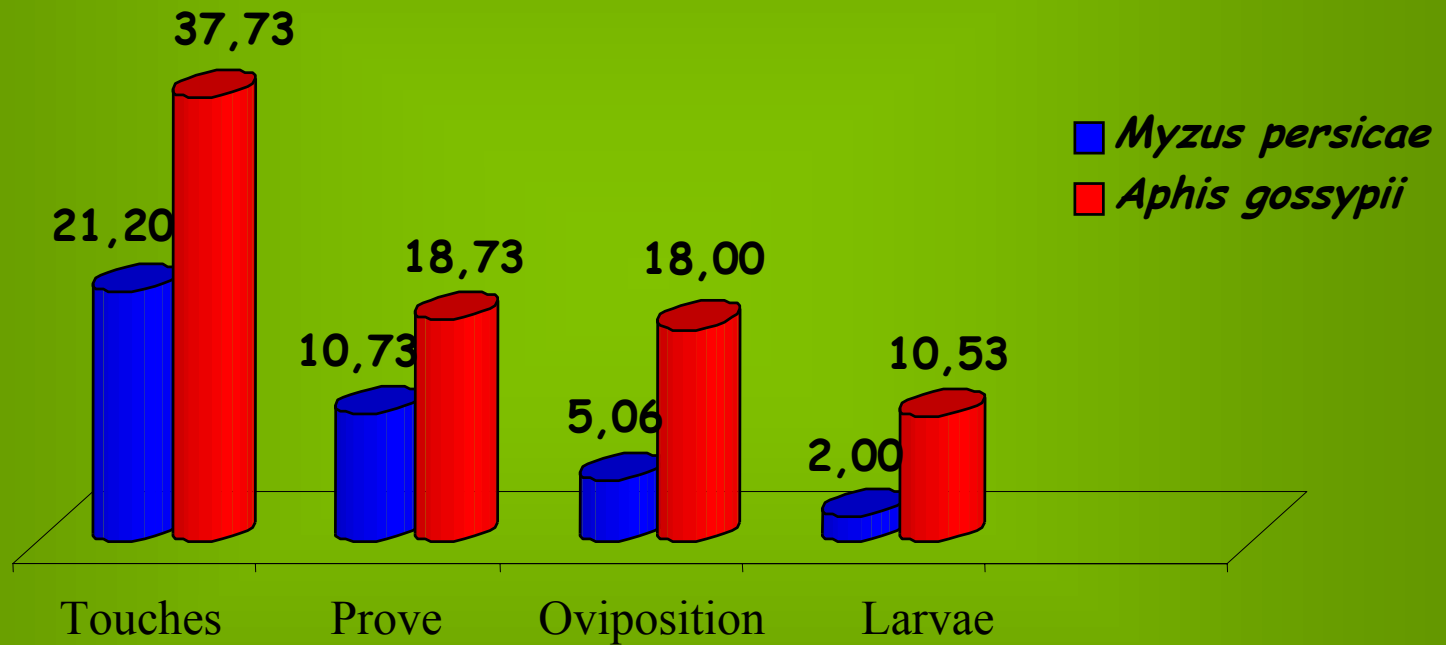
➤ Host regulation

Host Acceptance by *Aphidius colemani*



Non-choice test

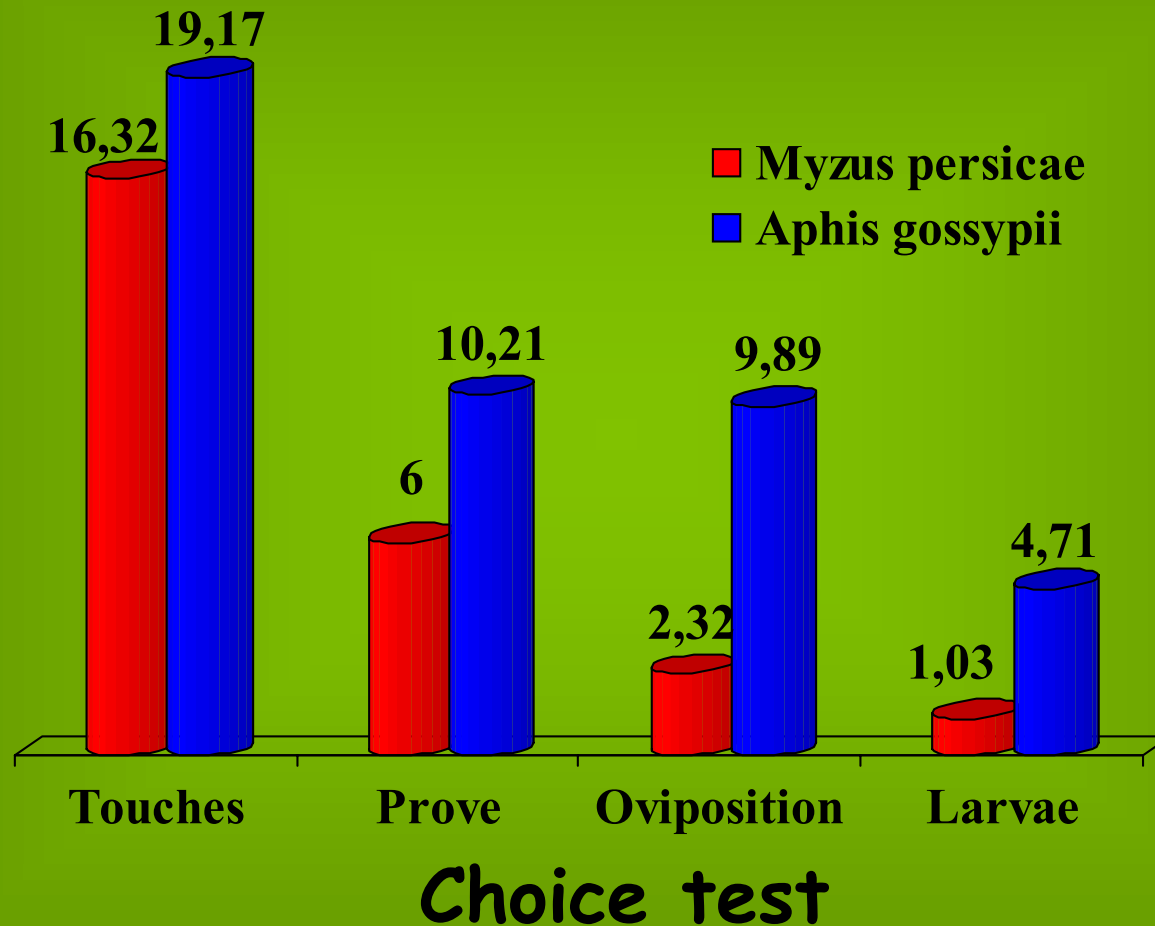
Host Acceptance by *Lysiphlebus testaceipes*



Non-choice test

(Carnevale & Bueno 2002)

Host Acceptance by *Lysiphlebus testaceipes*



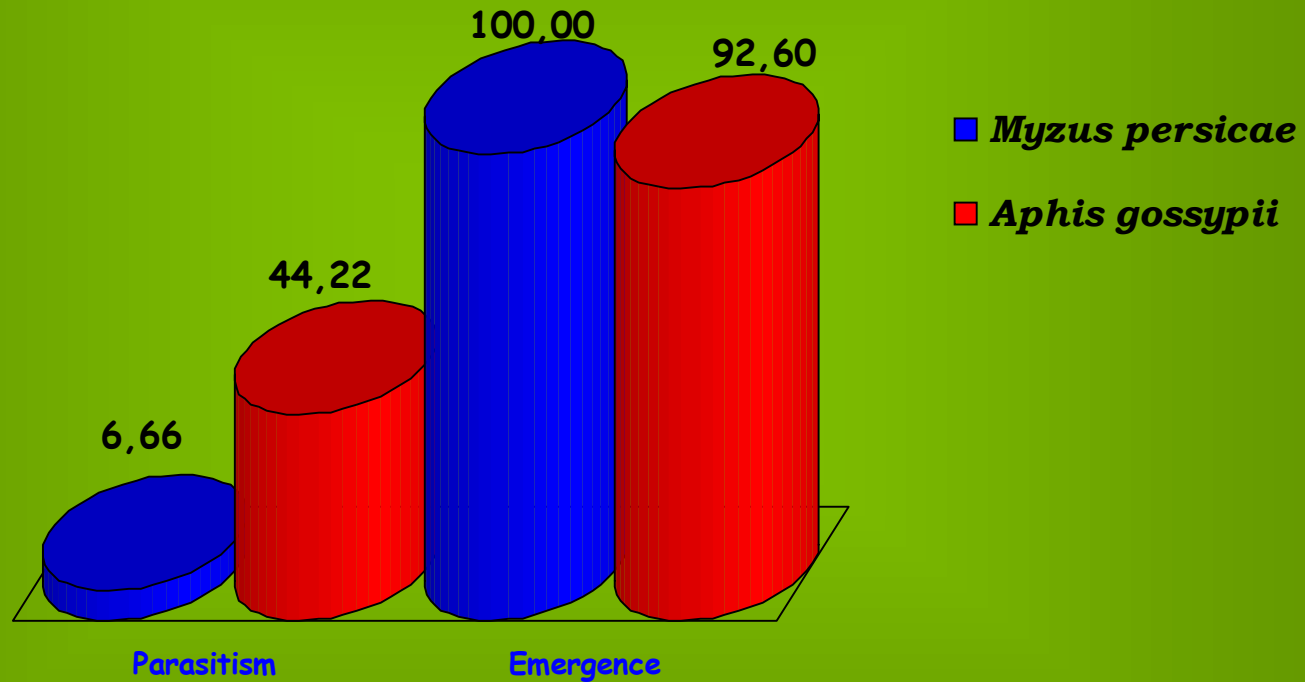
Host Suitability

Once a host is accepted for oviposition and an egg is deposited, the successful development of the parasitoid into an adult depends on host suitability.

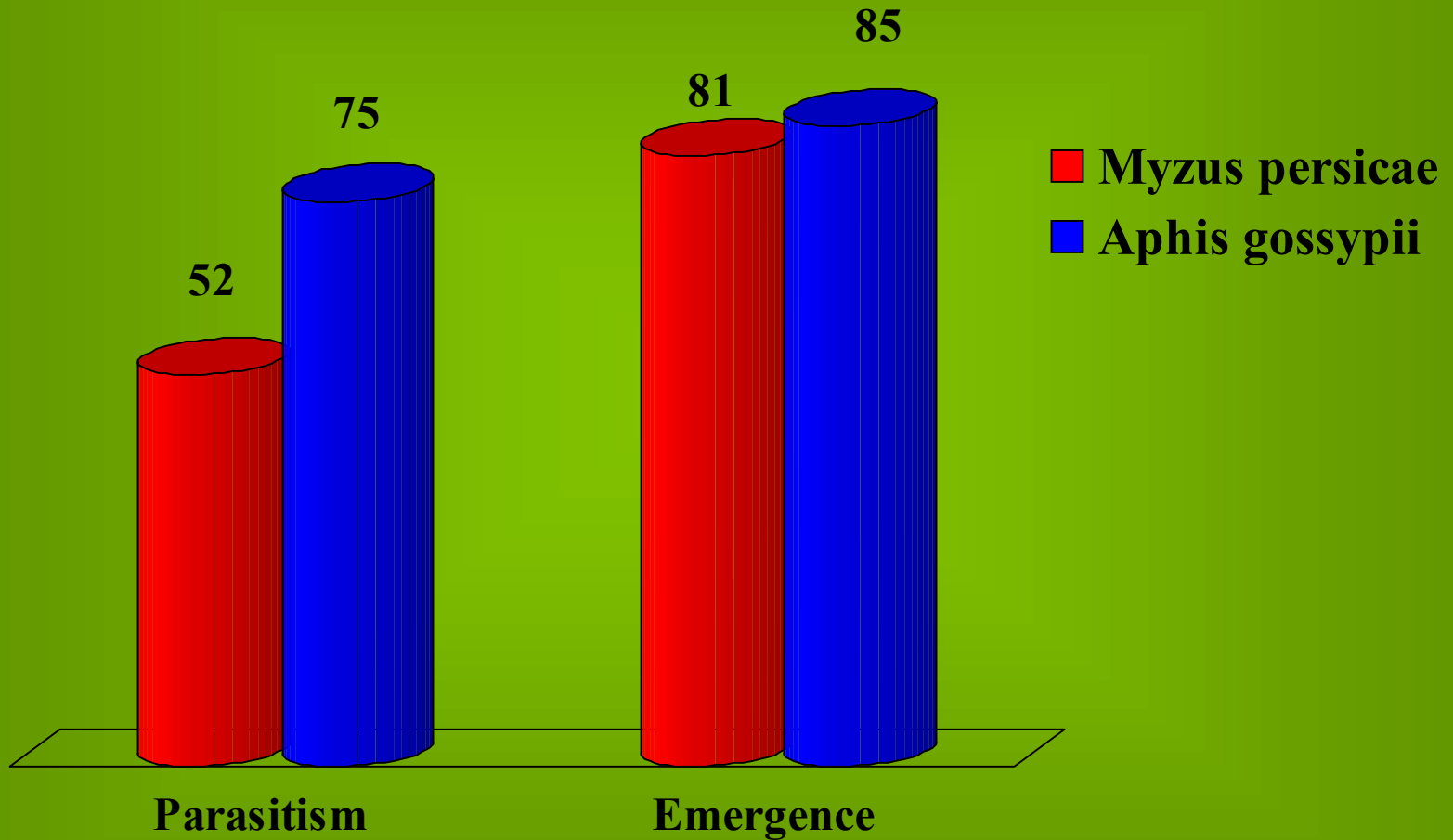
Host Regulation

The ability of a parasitoid to may survive within a host may depend on the capability of the parasitoid to regulate the host's development to meet its own needs.

Percentages of parasitism and emergence of *L. testaceipes* in *M. persicae* and *A. gossypii*



Percentages of parasitism and emergence of *A. colemani* in *M. persicae* and *A. gossypii*



(Sampaio & Bueno, 2002)

Biological aspects of *A. colemani* and *L. testaceipes*

	<i>Aphidius colemani</i>		<i>Lysiphlebus testaceipes</i>	
	<i>M. persicae</i>	<i>A. gossypii</i>	<i>M. persicae</i>	<i>A. gossypii</i>
Development	14	13	9	9
Longevity	—	14	4	5
Sex ratio	0.57	0.64	0.90	0.60

(Carnevale *et al.*, 2002; Sampaio *et al.* 2002)

Aphidius colemani and *Lysiphlebus testaceipes* prefer *A. gossypii* than *M. persicae*

Aphis gossypii is more accepted than *M. persicae* for both parasitoids

Myzus persicae is more accepted as host by *Aphidius colemani* than by *Lysiphlebus testaceipes*

Both aphid species are suitable for the development of both parasitoids. *A. gossypii* is more suitable than *M. persicae* for *L. testaceipes*.

THANK YOU FOR YOUR ATTENTION!

EQUIPE APHIPARAS

Sandra M.M. Rodrigues

Marcus V. Sampaio

Maria C.M. Soglia

Ariana B. Carnevale

Bruno F. de Conti

**Departamento de Entomologia
Universidade Federal de Lavras, Brasil**

