

How to analyze life table with two types of reproduction

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Mixed reproduction

Creative thinking

If there are both parthenogenetic and sexual production in the same population, how can you analyze your data?

How to analyze data with mixed reproduction types?

1. Data file for all: both female types are included (to get curve of $f_{xj, \text{all}}$ and population parameters).
2. Data file for parthenogenetic females (females with sexual production are assumed as type N) (to get curves of $f_{xj, \text{parthenogenetic}}$)
3. Data file for sexual production females (parthenogenetic females are assumed as type N) (to get curves of $f_{xj, \text{bisexual}}$)

Data file for all: both female types are included (to get curve of $f_{xj, \text{all}}$ and population parameters)

"Project: Myzus persicae at 25°C"

"User: XXX YYY"

"Date: 2001.4.16.-2001.6.10."

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3,3

F,Egg,Nymph,**FemaleAll**

M,Egg,Nymph,Male

N,Egg,Nymph,Unknow

Egg,Nymph

1,F,8,15,7,6,6,5,5,4,-1 (parthenogenetic female)

2,F,7,13,6,4,12,9,5,8,-1 (female with sexual reproduction)

3,N,-2

Data file for parthenogenetic females (females with sexual production are assumed as type N) (f_{xj} , parthenogenetic)

"Project: Silverleaf whitefly at 25°C"

"User: Ta-Chi Yang"

"Date: 2001.4.16.-2001.6.10."

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3,3

F,Egg,Nymph,**FemaleP**

M,Egg,Nymph,Male

N,Egg,Nymph,Unknow

Egg,Nymph

1,F,8,15,7,6,6,5,5,4,-1

2,N,-1

3,N,-2

Data file for sexual production females (parthenogenetic females are assumed as type N) (to get curves of f_{xj} , bisexual)

"Project: Silverleaf whitefly at 25°C"

"User: Ta-Chi Yang"

"Date: 2001.4.16.-2001.6.10."

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3,3

F,Egg,Nymph,**FemaleB**

M,Egg,Nymph,Male

N,Egg,Nymph,Unknow

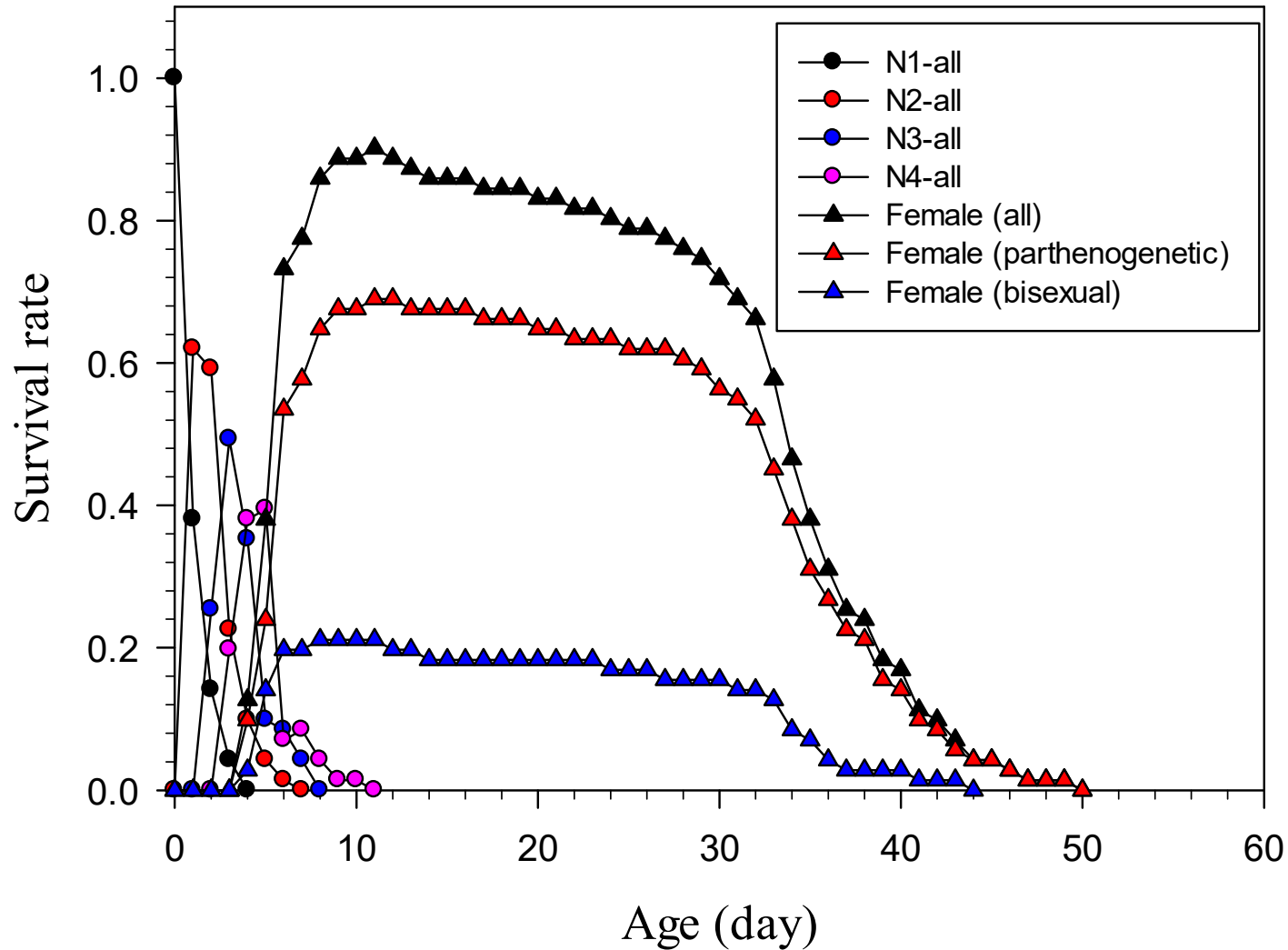
Egg,Nymph

1,N,-1

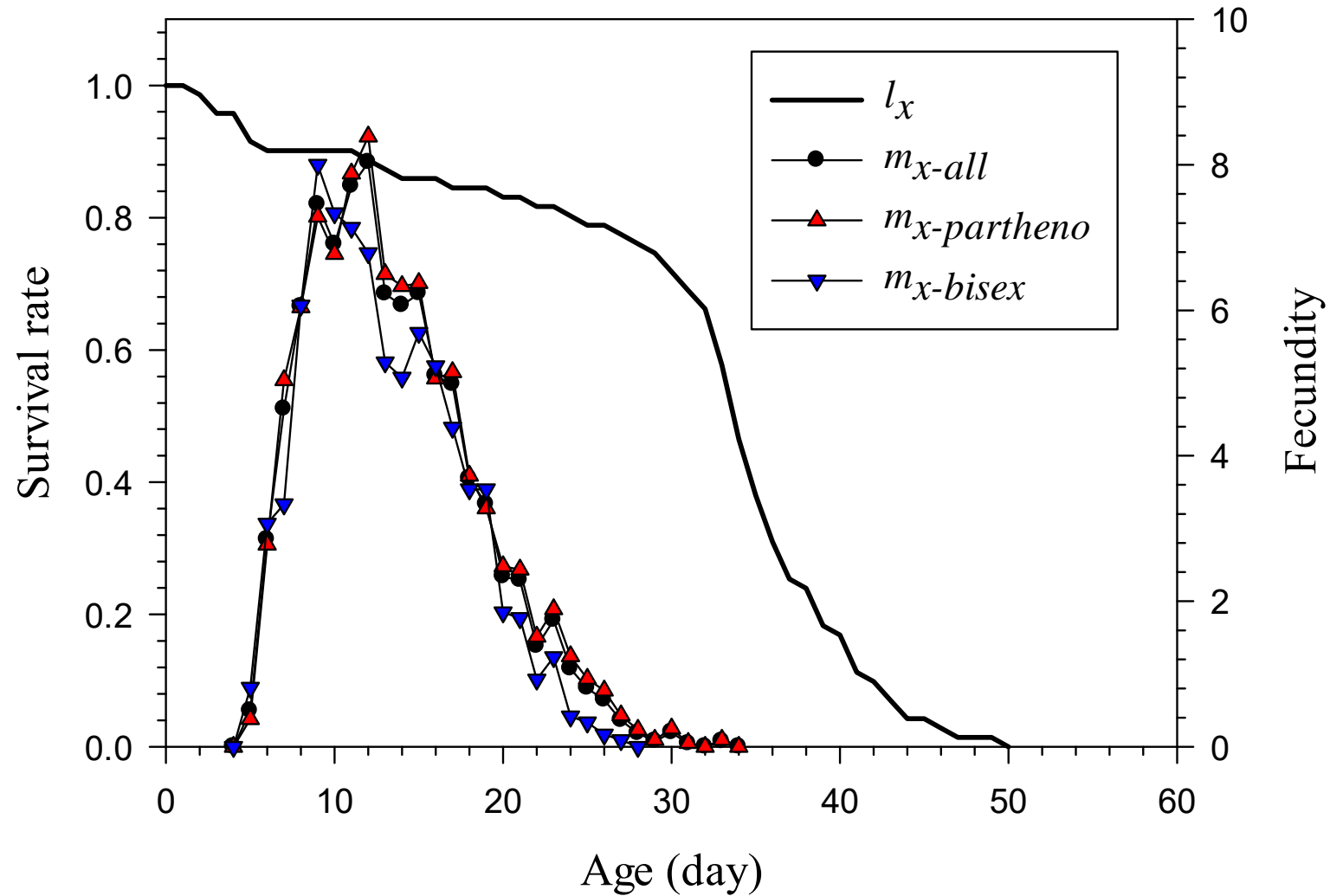
2,F,7,13,6,4,12,9,5,8,0,-1

3,N,-2

Graph of s_{xj}

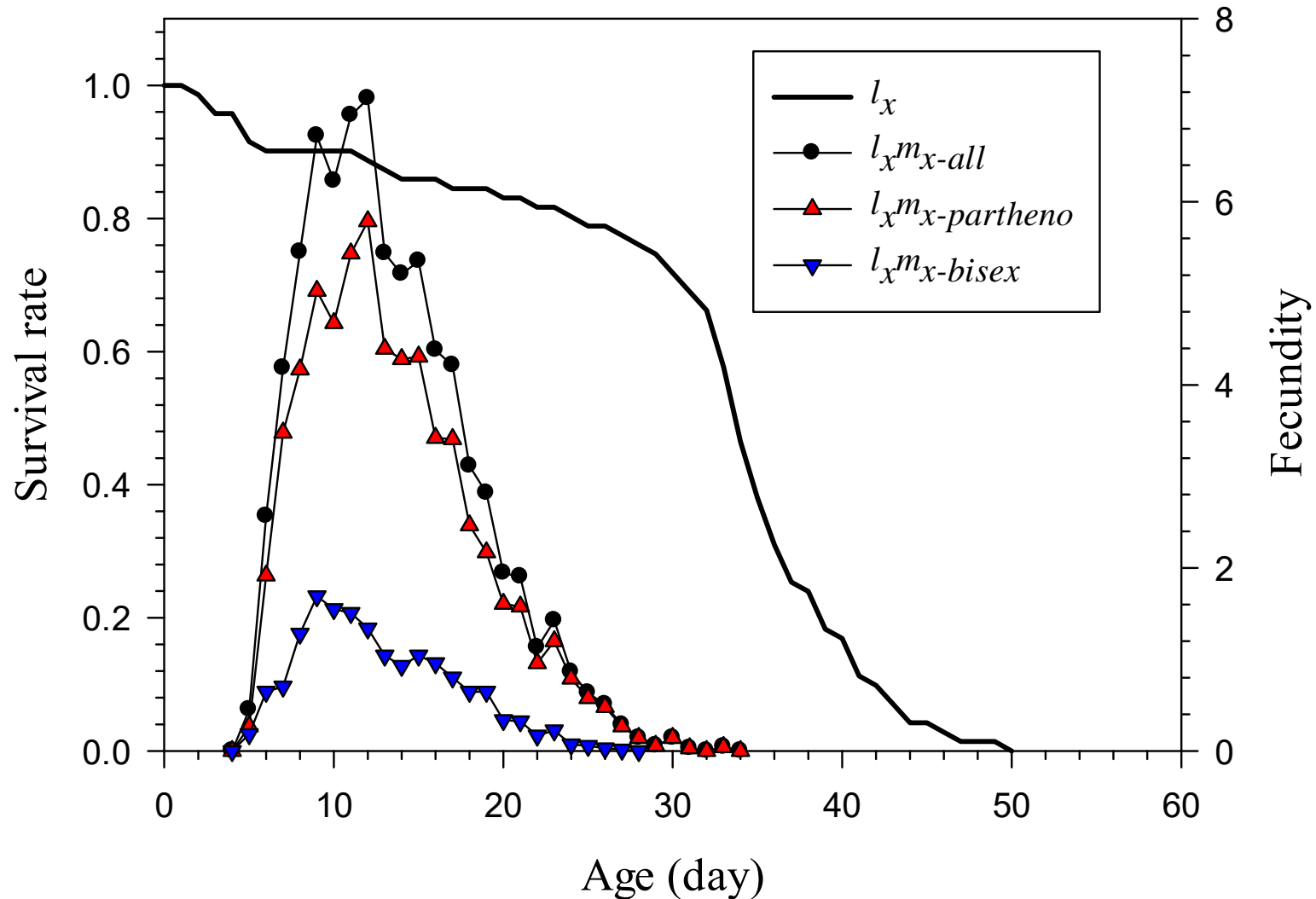


Graph of l_x and m_x



Graph of l_x and $l_x m_x$

The $l_x m_x$ curves show the effect of different proportions

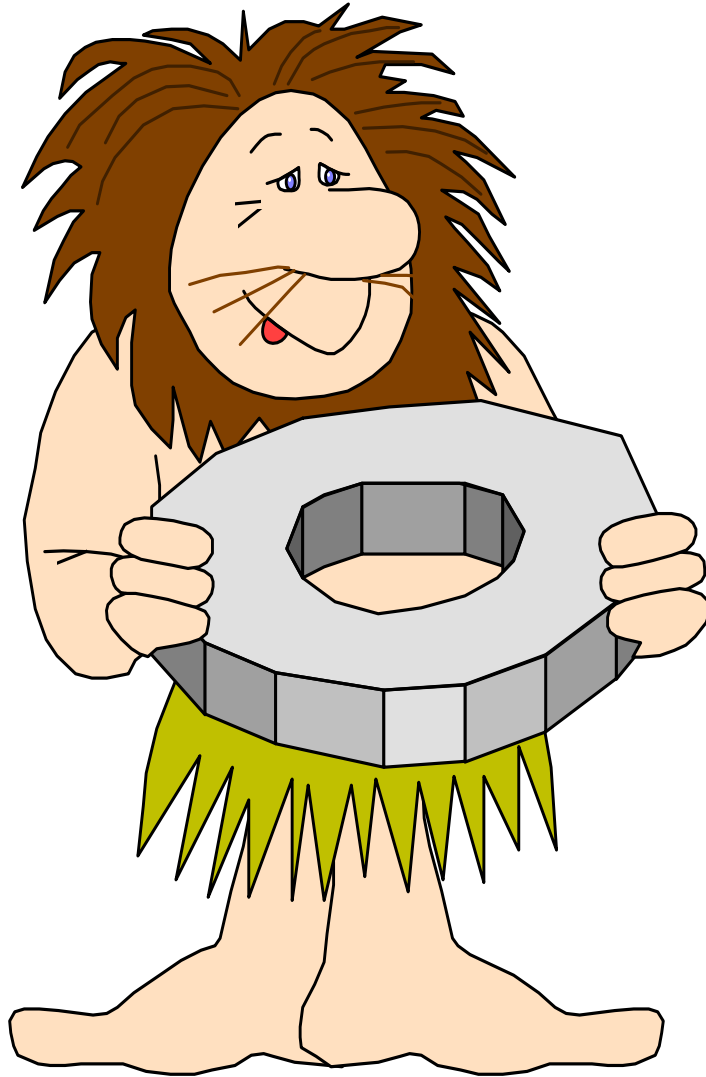


Attention!

- The curves of m_{x-all} , $m_{x-partheno}$, and $m_{x-bisex}$ reveal the difference in mean fecundity between parthenogenetic and bisexual females.
- The curves of $l_x m_{x-all}$, $l_x m_{x-partheno}$, and $l_x m_{x-bisex}$ reveal, however, the differential contribution of parthenogenetic and bisexual females to the mean fecundity by taking their proportion (in survival rate) into consideration.

Note well!

If the proportion of parthenogenetic and bisexual offspring varies with the female age and female type, then you should analyze them separately.



Teşekkür ederim!

سپاسگزارم

謝謝!

Děkuji

Danke!

¡Muchas gracias!

Thank you!

ご清聴ありがとうございます
います!