

Mycoplasmal conjunctivitis and the feeding behavior of house finches in Atlanta, GA

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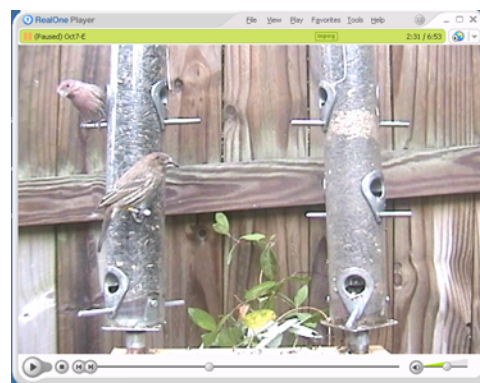
Abstract

A common backyard feeder bird in the United States, the House Finch (*Carpodacus mexicanus*) is susceptible to a new strain of bacteria, *Mycoplasma gallisepticum*, which causes conjunctivitis. In this study we videotaped House Finches at bird feeders and compared aspects of feeding behavior between infected and non-infected House Finches. We observed 105 house finch feeding bouts (41% of these bouts were infected), which accounted for at least 50 individual birds. We found that infected House Finches remained significantly longer at feeders than non-infected birds, and had significantly poorer feeding efficiency (seeds/pecks) and feeding rates (seeds/sec). We also found that infected house finches had much higher rates of aggression than healthy birds. The implications for transmission are significant since the longer feeding bouts and more aggressiveness of infected birds could increase the possibility of infecting other birds with this disease.

Background

- House Finches are susceptible to the bacterium *M. gallisepticum* which causes conjunctivitis around their eyes.
- Regular outbreaks of conjunctivitis have been documented each fall in Atlanta.
- Infected individuals less likely to survive than non-infected.
- Conjunctivitis can impair vision in infected birds leading to difficulty foraging and flying.

Methods



- Finches videotaped while at feeders
- Video played back repeatedly at reduced speed
- For each individual, we recorded
 - Duration of feeding bout (min)
 - Number of other finches present (flock size)
 - Number of pecks at feeder port
 - Number of seeds eaten
 - Number of aggressive encounters towards other finches

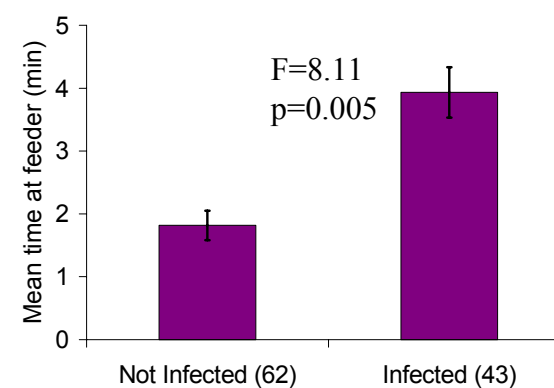


Data Analysis:

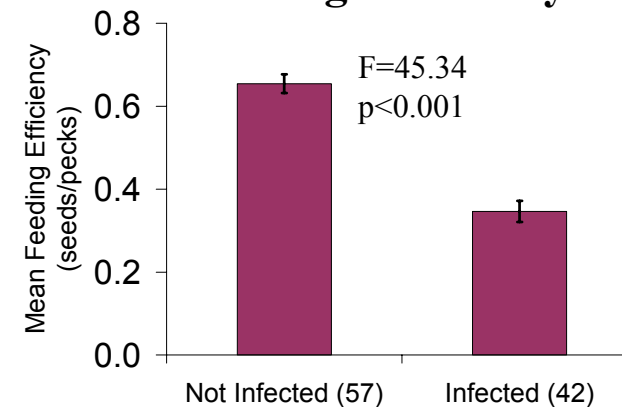
- ANOVA using infection status (yes/no), sex, and mean flock size (covariate) as independent factors.
- Dependent variables: time at feeders, feeding efficiency, number of seeds eaten

Results and Discussion

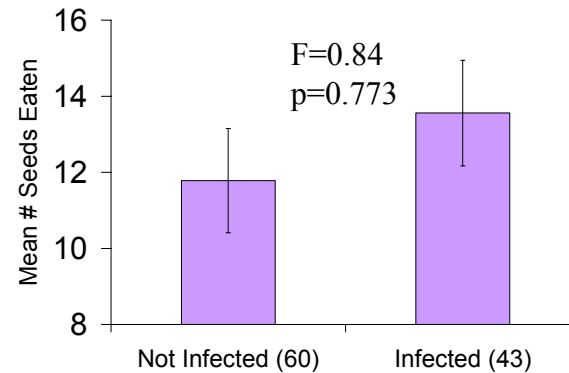
Time at Feeders



Feeding Efficiency



Number of Seeds Eaten

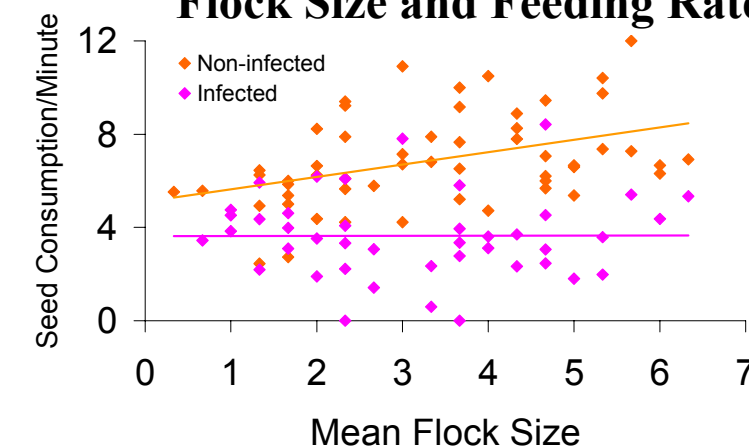


Aggressive Encounters at Feeders

Displaced

Displacer	Displaced		Total
	Non-infected	Infected	
Non-infected	5	0	5
Infected	17	3	20
Total	22	3	25

Flock Size and Feeding Rate



• Feeding bouts of House Finches infected with conjunctivitis were twice as long as those of healthy birds. Infected birds were half as efficient at procuring seeds. Because they stayed longer at feeders, birds with conjunctivitis ate equally as many seeds as non-infected birds per feeding bout.

• Infected House Finches were more aggressive at bird feeders, and were more likely to displace non-infected birds from the perches.

• The longer time spent at feeders by infected birds and greater aggressiveness could result in higher rates of transmission of the bacterium to other house finches.