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### The Curious Life of the Red Flour Beetle...And How to End It!



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### Rollins Urban & Structural Entomology Facility




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### Texas A&M Urban and Structural Entomology Program



Professor and Endowed Chair  
of Urban Entomology



Assistant Professor & Extension  
Entomologist

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### Urban and Structural Pests

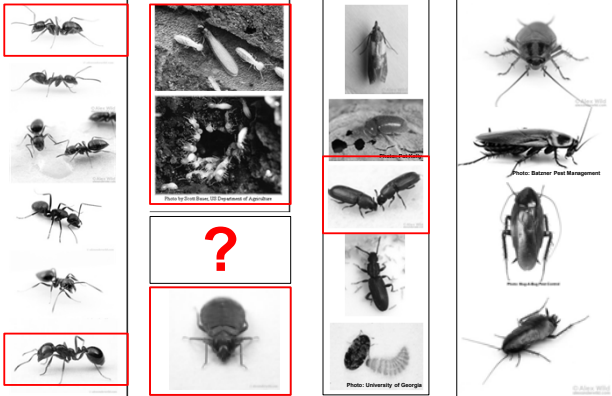


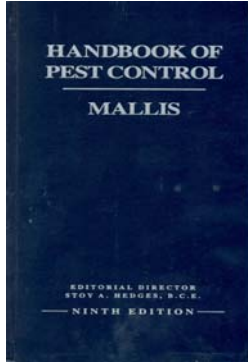
Photo: Entomology Department of Agriculture

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Photo: University of Georgia

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## Introduction: Helpful Literature



Author: Mallis

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## Introduction: Basic Beetle Biology

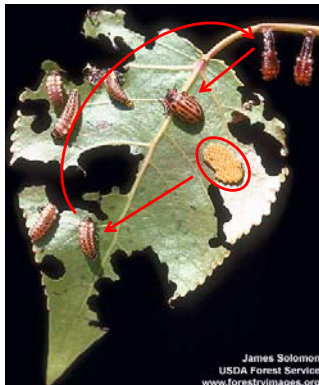


James Solomon  
USDA Forest Service  
www.forestryimages.org

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## Introduction: Basic Beetle Biology

- **Eggs:**
  - Develop in ovaries of females
  - Deposited individually or in masses
- **Larvae:**
  - Distinct head; chewing mouthparts
  - 8-10 abdominal Segments
- **Pupae:**
  - Transformative stage between larval and adult stages
- **Adults:**
  - Relatively short-lived
  - Reproductively active
  - Typically 1 generation/yr



James Solomon  
USDA Forest Service  
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## Red Flour Beetle Biology

- **Eggs:**
  - Deposited directly onto food resources
  - Incubation period of 8-10 days
- **Larvae:**
  - ¼" when mature
  - White to yellowish in color
- **Pupae:**
  - Transformative stage between larval and adult stages
- **Adults:**
  - Live up to 3 years
  - Very active
  - Capable of mating throughout year when indoors



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## RFB Food

- RFB Food (Common)
  - Processed flours



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## RFB Food

- RFB Food (Common)
  - Processed flours
  - Cereals



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## RFB Food

- RFB Food (Common)
  - Processed flours
  - Cereals
  - Dried beans



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## RFB Food

- RFB Food (Common)
  - Processed flours
  - Cereals
  - Dried beans
  - Peas



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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits

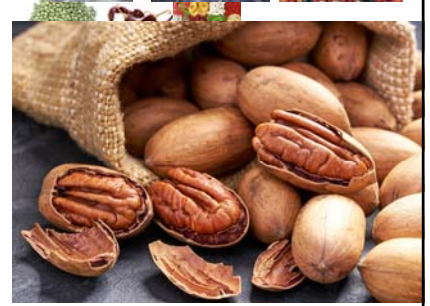


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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits
- Shelled nuts



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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits
- Shelled nuts
- Spices

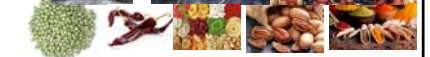


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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits
- Shelled nuts
- Spices
- Chocolates



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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits
- Shelled nuts
- Spices
- Chocolates



- **This is why RFB are referred to as 'Pantry Pests'**
- **However, inspections should not be isolated to pantries**

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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits
- Shelled nuts
- Spices
- Chocolates



- RFB Food (Uncommon)
- Rodent baits

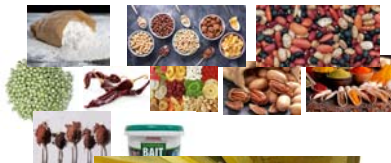


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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits
- Shelled nuts
- Spices
- Chocolates



- RFB Food (Uncommon)

- Rodent baits
- Rodent food caches



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## RFB Food

- RFB Food (Common)

- Processed flours
- Cereals
- Dried beans
- Peas
- Dried peppers/fruits
- Shelled nuts
- Spices
- Chocolates



- RFB Food (Uncommon)

- Rodent baits
- Rodent food caches
- Septic System Treatment Products



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### Pantry Pests



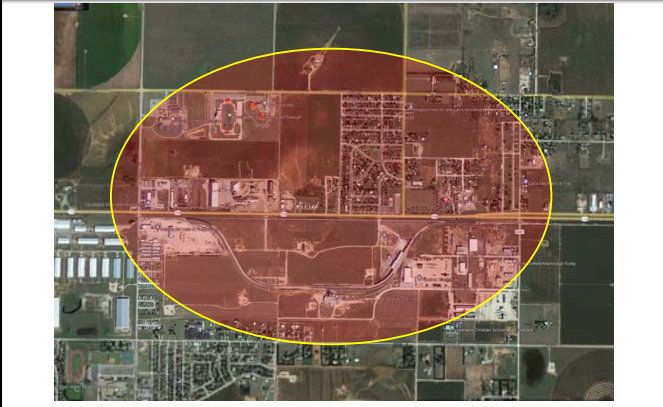
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### Where Do RFB Come From?



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### Where Do RFB Come From?



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### RFB Entry Exclusion

#### Weep Hole Covers



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## RFB Entry Exclusion

Caulk and Seal Windows, Plumbing Penetrations, etc.



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## RFB Entry Exclusion

Fine Screen Over Soffits and Vents



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## Insulation and RFB



**Batt Insulation**

- Fiberglass
- Not palatable



**Spray Foam Insulation**

- Polyurethane & isocyanates
- Not palatable



**Cellulose Insulation**

- Agricultural byproducts
- Palatable
- Boric acid typically added to prevent insect feeding

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## RFB Entry Exclusion

Perimeter Application of Contact Insecticide



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## Indoor RFB Management

### What To Do With Infested Foods?



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## Indoor RFB Management

### Now...clean!!!



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## Indoor RFB Management

### Indoor Pesticide Application

Crack & Crevice Treatment



Baseboard/Corner Treatment



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## Indoor RFB Management

### Monitoring



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PLEASE DO NOT...



Photo: R. Puckett

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PLEASE DO NOT...



Photo: R. Puckett

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# Thank You!

- **Please send specimens to:**  
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Photo: R. Williams

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