Management Options for European Chafer

- Primary cultural practices
- Scouting
- Insecticides
Primary Cultural Practices

- Mowing
- Fertilization
- Irrigation
Primary cultural practices

- **Mowing**
  - 2 to 3 inches
  - 1 x week
  - Returning clippings

- **Fertilization**
  - 4 x year, twice in spring and twice in the fall
  - 1 lb N per 1,000 sq ft per application (4 lbs per 1,000 sq ft annually)

- **Irrigation**
  - 4 x week at ¼ inch per application
  - Memorial Day to Labor Day
Irrigation

- Insect associated with drought conditions...
  - *European chafer*
  - Adults prefer to lay eggs in dry soil
Management Options for European Chafer

- Primary cultural practices
- **Scouting**
- Insecticides
Scouting

- Life cycle...
  - Adult
    - Mid June
  - Egg
    - Mid June to mid July
  - Larvae
    - Mid July to early May
  - Pupae
    - Early May to Mid June
Scouting

- Life cycle...
  - Adult
    - Mid June
  - Egg
    - Mid June to mid July
  - Larvae
    - Mid July to early May
  - Pupae
    - Early May to Mid June
Scouting

- Larvae (3 stages or instars)
  - Mid July to early May

- **First instar**
  - Mid July to late August

- Second instar
  - September

- Third instar
  - October
Scouting

- Soil sampling
Scouting

- Action threshold
  - Low maintenance turf
    - 5 to 10 per sq ft
  - High maintenance turf
    - 15 to 20 per sq ft
Scouting

- Habitat
  - Sunny
  - Little or no irrigation
  - Slopes
  - Animals damage
Management Options for European Chafer

- Primary cultural practices
- Scouting
- Insecticides
Insecticides

- Life cycle...
  - Adult
    - Mid June to early July
  - Egg
    - Mid June to mid July
  - Larvae
    - Mid July to mid May
  - Pupae
    - Mid May to mid June
Insecticides

- Larvae (3 stages or instars)
  - Mid July to early May
- First instar
  - Mid July to late August
- Second instar
  - September
- Third instar
  - October
Insecticides

- Preventative products
  - Early instar
  - Prior to damage
  - Low toxicity (animals)

- Curative products
  - Late instar
  - After damage
  - High toxicity (animals)
Insecticides

- Preventative applications
  - Near egg hatch
    - July and early August
  - First instar (<0.5 inch or 13 mm long)
    - Mid July to late August
Preventative Applications

- Preventative products
  - chlorantraniliprole (Acelepryn)
  - thiamethoxam (Meridian)
  - clothianidin (Arena)
  - imidacloprid (Merit)
  - dinotefuran (Safari)
Preventative Applications

- Preventative products
  - chlorantraniliprole (Acelepryn)
  - thiamethoxam (Meridian)
  - clothianidin (Arena)
  - imidacloprid (Merit)
  - dinotefuran (Safari)

Not Effective on second and third instar grubs (>0.5 inch or 13 mm long)
Late August
Preventative Products

- chlorantraniliprole (Acelepryn)
  - Toxicity to mammals and humans
    - Not acutely toxic
  - Toxicity risk to fish
    - Low
  - Toxicity to bees
    - Low
Preventative Products

- clothianidin (Arena)
  - Toxicity to mammals and humans
    - Moderately toxic
  - Toxicity risk to fish
    - Very low
  - Toxicity to bees
    - High – don’t apply to blooming plants

April to July
Preventative Products

- imidacloprid (Merit)
  - Toxicity to mammals and humans
    - Moderately toxic
  - Toxicity risk to fish
    - Low
  - Toxicity to bees
    - High – don’t apply to blooming plants

April to July
Preventative Products

- Labeled sites
  - chlorantraniliprole (Acelepryn)
    - Lawns, golf courses and recreational turf
  - clothianidin (Arena)
    - industrial, commercial and residential landscapes including, airports, athletic fields, cemeteries, commercial sod farms, golf courses, home lawns, parks and playgrounds
  - imidacloprid (Merit)
    - Residential home lawns, business and office complexes, shopping complexes, multifamily residential complexes, golf courses, airports, cemeteries, parks, playgrounds, athletic fields
Insecticides

- Curative applications
  - Prior to second instar (>0.5 inch or 13 mm long)
    - August
  - Second instar
    - September
  - Third instar
    - October
Curative Applications

- Curative products
  - thiamethoxam (Meridian)
  - trichlorfon (Dylox)
  - carbaryl (Sevin)
Curative Products

- thiamethoxam (Meridian)
  - Toxicity to mammals and humans
    ■ Slightly toxic
  - Toxicity risk to fish
    ■ Low
  - Toxicity to bees
    ■ High – don’t apply to blooming plants
Curative Products

- trichlorfon (Dylox)
  - Toxicity to mammals and humans
    - Moderately toxic
  - Toxicity risk to fish
    - High
  - Toxicity to bees
    - High – don’t apply to blooming plants
Curative Products

- carbaryl (Sevin)
  - Toxicity to mammals and humans
    ■ Moderately toxic
  - Toxicity risk to fish
    ■ Moderate
  - Toxicity to bees
    ■ High – don’t apply to blooming plants
Curative Products

- Labeled sites
  - thiamethoxam (Meridian)
    - Use sites include turfgrass on golf courses, residential lawns, commercial grounds (i.e., office and shopping complexes, airports), parks, playgrounds, athletic fields, and sod farms
  - trichlorfon (Dylox)
    - Recreational Lawns & Turf
      - Do not use this product on turf being grown for sale or other commercial use as sod. Do not use this product on turf being grown for commercial seed production or for research purposes except for research involving use of this product that is consistent with this label.
  - carbaryl (Sevin)
    - golf turf, sports fields, sod farms, domestic and commercial lawns, cemeteries, parks, campsites, recreational areas
Review

- Primary cultural practices...
  - Mowing
    - 2 to 3 inches
    - 1 x week
    - Returning clippings
  - Fertilization
    - 4 x year, twice in spring and twice in the fall
    - 1 lb N per 1,000 sq ft per application (4 lbs per 1,000 sq ft annually)
  - Irrigation
    - 4 x week at ¼ inch per application
    - Memorial Day to Labor Day
    - Adults prefer to lay eggs in dry soil
Review

- Scouting...
  - Soil Sampling
  - Early instar
    - July and August
  - Action threshold
    - High maintenance turf
      - 15 to 20 per sq ft
Review

- Insecticides...
  - Preventative (<0.5 inch grubs)
    - July and early August
  - Curative (>0.5 inch grubs)
    - August
Review

- Insecticides...
  - Preventative (<0.5 inch grubs)
    - July and early August
  - Curative (>0.5 inch grubs)
    - August
Review

■ Insecticides...
  - Preventative products – low toxicity
    ■ chlorantraniliprole (Acelepryn)
    ■ thiamethoxam (Meridian)
    ■ clothianidin (Arena)
    ■ imidacloprid (Merit)
    ■ dinotefuran (Safari)
    ■ clothianidin (Arena)
  - Curative products – high toxicity
    ■ thiamethoxam (Meridian)
    ■ trichlorfon (Dylox)
    ■ carbaryl (Sevin)

April to July