



Kikuyugrass: Insect and arthropod pests

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Insect and Arthropod Pests

- White grubs
- Billbugs
- Mites (???)

White grubs

- Japanese beetle, *Popillia*
- Masked chafers, *Cyclocephala*
- Asiatic beetle, *Maladera*
- Oriental beetle, *Anomala*
- Green June beetle, *Cotinus*



White grubs

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- Masked chafers, *Cyclocephala*
- Asiatic beetle, *Maladera*
- Oriental beetle, *Anomala*
- Green June beetle, *Cotinus*



White grubs

1. The larva (grub) is the damaging stage

It is most susceptible to control when newly hatched



**White
grub
damage**



White grub damage



**White
grubs &
vertebrates**



**White
grubs &
vertebrates**



White grubs

2. Adults are scarab beetles that don't feed on turf



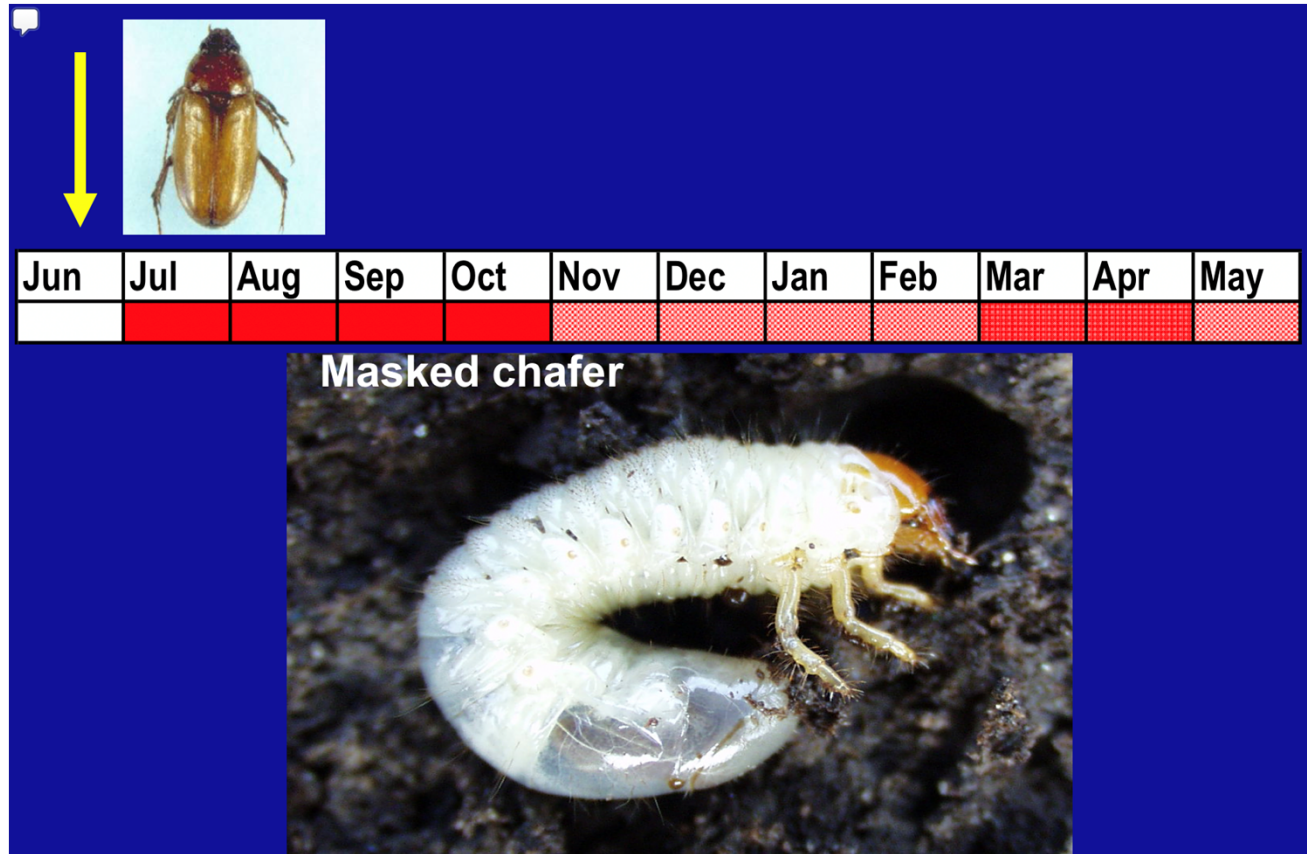
White grubs

2. Adults don't feed on turf

But pay attention to when they first appear

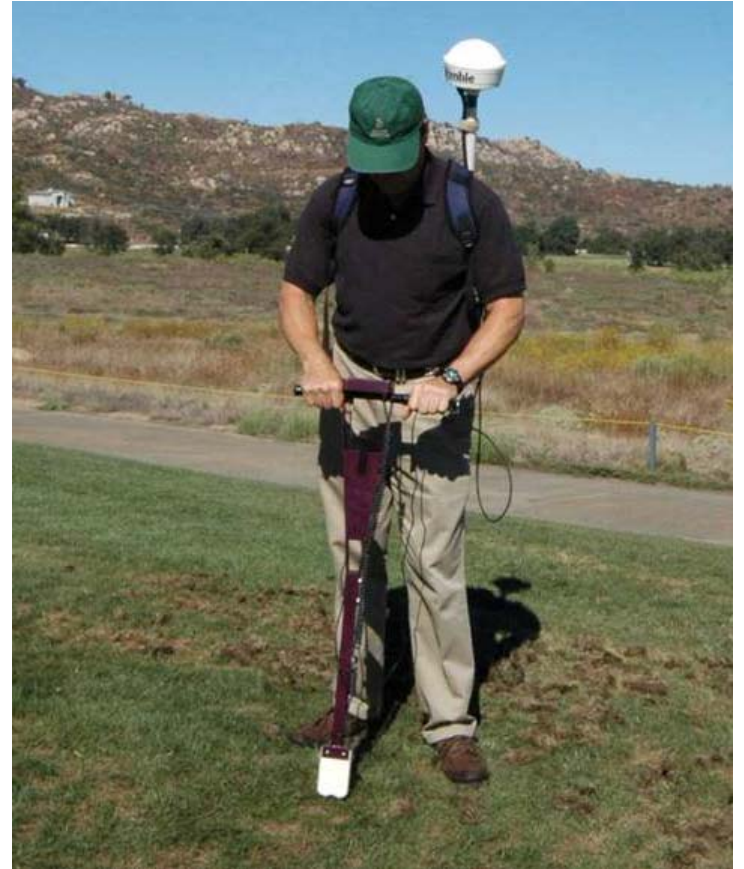


1 preventive application



White grubs

3. Eggs are laid in areas with higher soil moisture

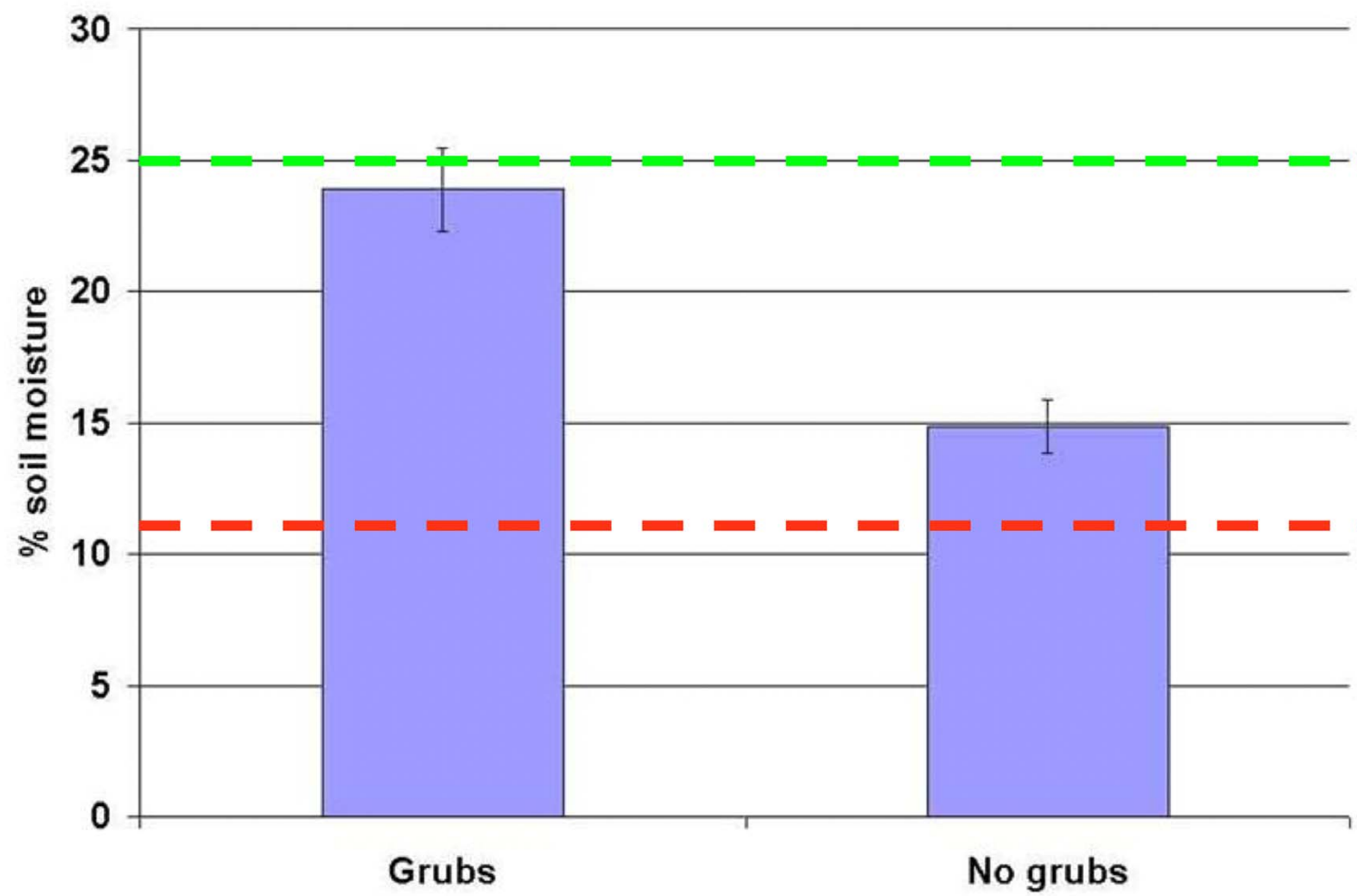


Soil moisture sampling: TDR 300 soil moisture meter & Trimble Ag GPS 132





Soil moisture determined in 95 areas that showed signs of grub damage



Soil moisture management

- Monitor
- As low as reasonable
- Keep on top of irrigation distribution



White grubs

4. Preventive control targeted as small larvae provides best results

Curative control of large grubs is feasible, but difficult



White grub control

AI	Product	Preventive	Curative
chlorantraniliprole	Acelepryn	***	*
clothianidin	Arena	***	**
cyantraniliprole	Ference	***	*
imidacloprid	Merit	***	*
thiamethoxam	Meridian	***	**

White grubs

1. The larva (grub) is the damaging stage
2. Adults are scarab beetles that don't feed on turf
3. Eggs are laid in areas with higher soil moisture
4. Preventive control of small larvae provides best results

Billbugs



Phoenician
billbug
Sphenophorus
phoeniciensis



Billbugs

1. The larva is the damaging stage.

It's most susceptible to control when it is newly hatched

**Billbug
damage**



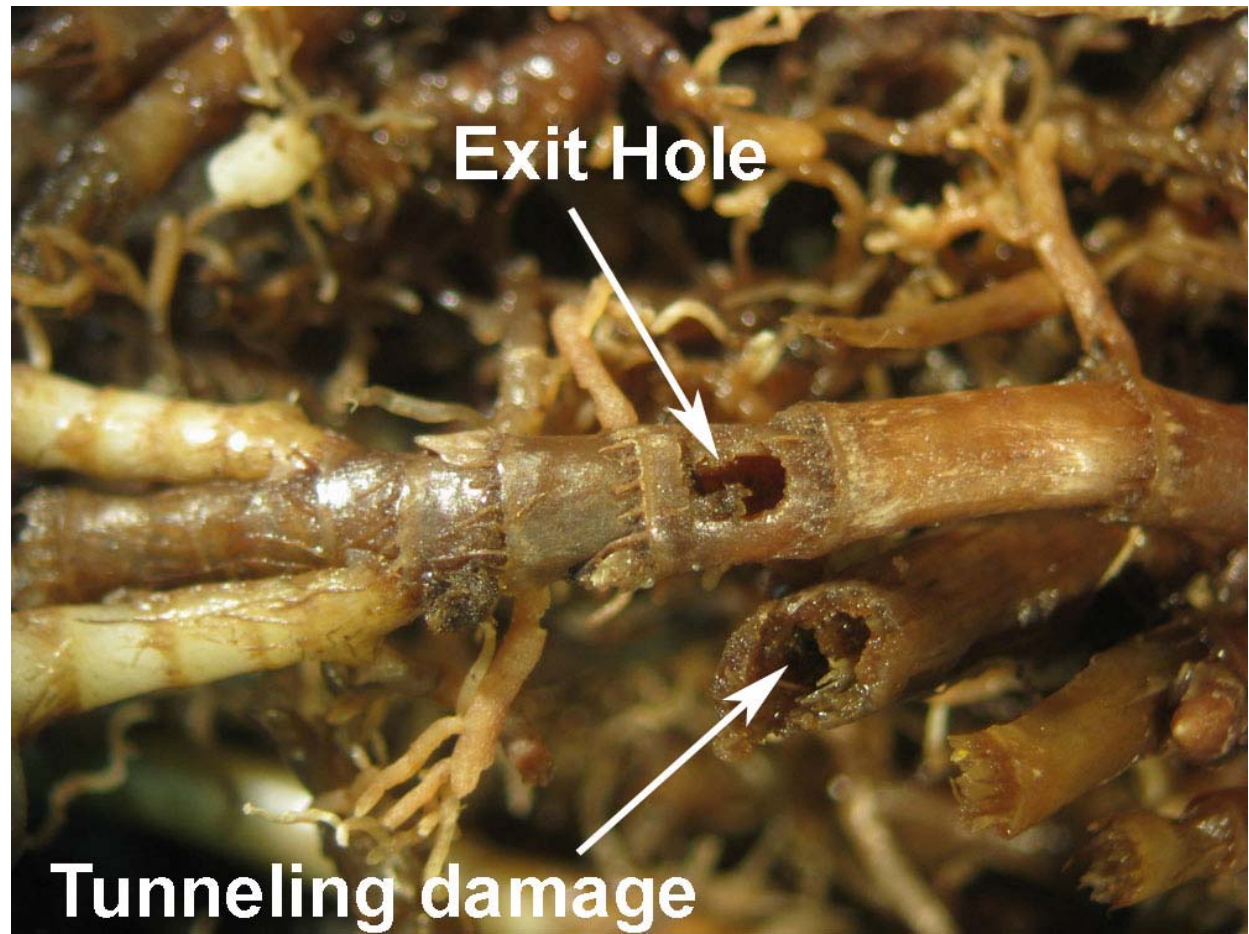
**Billbug
damage**



**Billbug
damage**



**Billbug
damage**



**Billbug
damage**



Billbugs

1. The larva is the damaging stage

But detection is difficult

Billbugs

2. Look for 1st symptoms at spring green-up

Symptoms mimic dollar spot, spring dead spot,
delayed green-up, drought stress

The “tug test”





Billbugs

3. Can be a year-round pest with multiple generations, so multiple applications may be needed

Billbugs

4. Preventive applications against larvae are most effective.
 - If you've had previous problems with billbugs, consider preventive applications at green-up.
 - A 2nd application may be necessary ~3 months later

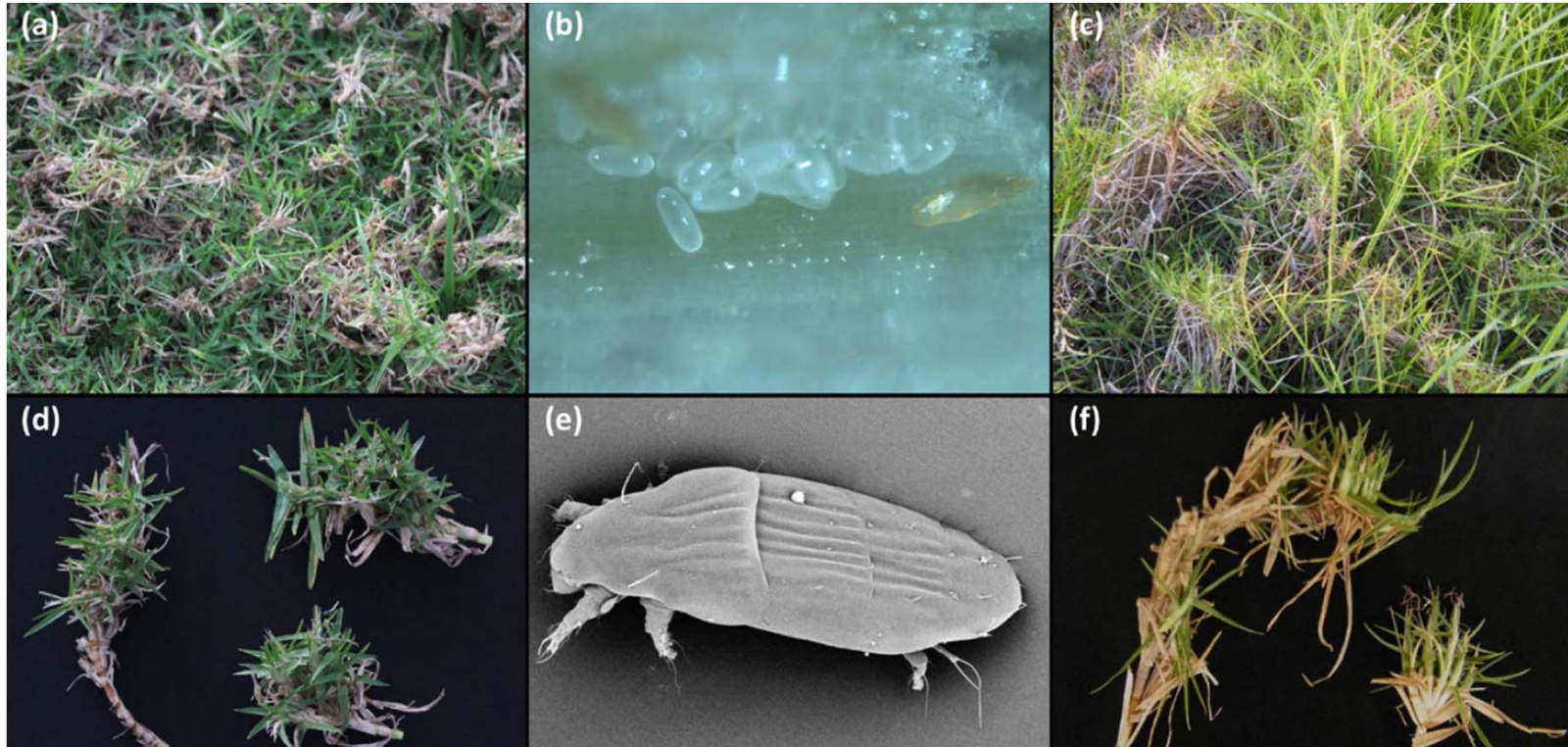
Billbug larval control

AI	Product	Preventive
chlorantraniliprole	Acelepryn	***
clothianidin	Arena	***
cyantraniliprole	Ference	***
dinotefuran	Zylam	**
imidacloprid	Merit	**
thiamethoxam	Meridian	***

Billbugs

1. The larva is the damaging stage
2. Look for 1st symptoms at spring green-up
3. Can be a year-round pest with multiple generations, so multiple applications may be needed
4. Preventive applications against larvae are most effective.

Mites



Steneotarsonemus hippodromus damage to kikuyugrass in Australia

DS Loch et. al., Int. Turfgrass Soc. Res. J. 13:502-511 (2017)

Mites

- No data on control of *Steneotarsonemus*
- Cultural practices:
 - Low mowing/scalping + clipping removal
 - Frequent irrigation
 - Avoid excessive N
- Chemical control: Divanem (abamectin) for bermudagrass mite