

# IDENTIFYING BENEFICIAL INSECTS

KEV PAUB TXOG COV KAB ZOO



How to identify predators and parasitoids that can help control insect and mite pests

COV KAB ZOO UAS NOJ LWM YAM KAB  
TXOV TEJ QOOB THIAB COV UAS NWS  
PLEV COV KAB PHEM YUAV PAB TAU YUS  
TSWJ KOM TSIS MUAJ KAB PHEM THIAB  
TEJ HMOB LIAB LOS TSIS MUAJ

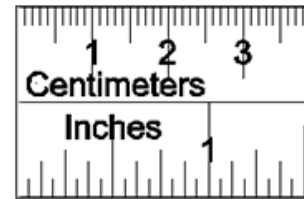
# IDENTIFYING BENEFICIAL INSECTS

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### Green and Brown Lacewings



- Light brown or green bodies with see-through wings
- Adults and larvae feed on mealybugs, psyllids, thrips, mites, whiteflies, aphids, caterpillars, leafhoppers, and insect eggs
- Xim ntsuab, los yog lub cev ntsuab nrog cov tis pom tshab
- Nws noj cov mealybugs, cov kab psyllids, thrips, hmob liab, hmob dawb, hmob ntsuab, menyuum kab nyuum dev, leafhoppers thiab kab phem tej qe

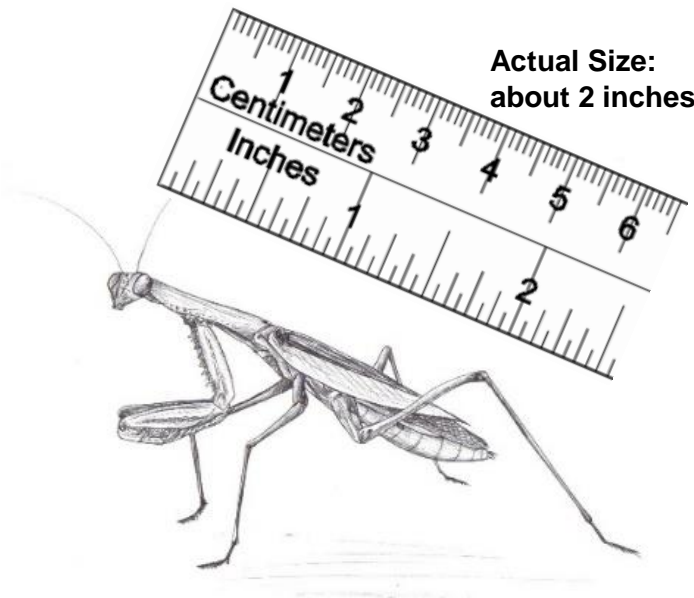


Actual Size: ½ inch

### Praying Mantis



- Yellowish, green or brown long bodied insects with grasping forelegs
- Feed on pests and other beneficials
- Tus Ntsuas nws xim ntsuab los yog tsaus tsawv, lub duav ntev ntev tes taw ntev nte



Actual Size:  
about 2 inches

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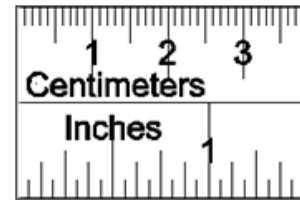
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### Predatory Flies:

#### Flower Flies (Hover Flies, Syrphid Flies)



Actual Size:  $\frac{1}{3}$  - 1 inch



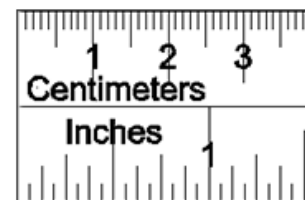
- Black and yellow bands on abdomen look like honeybees, but smooth and shiny with only two wings
- Larvae feed on aphids and other small, soft-bodied insects
- Nws dub thiab muaj tej kab daj nyob ntawm phab tav muaj ntsis zoo li mov, tiamsis nws muaj ob daim tis ci ci ntaug lees



#### Tachinid Flies



Actual Size:  $< \frac{1}{2}$  inch



- Dark, hairy flies that look like houseflies
- Parasitoid life cycle where the larvae burrow into other insects' bodies and eat them from within, including beetle larvae, caterpillars, earwigs, grasshoppers, and true bugs
- Tus yooov no nws xim dub, zoo nkaus li tus yooov hauv tej vaj tse
- Tus no nws nteg qe rau cov kab phem tej nrog cev, nws noj tej kab phem lub nrog cev tuaj, cov kab phem xws li beetle larvae, kab nyuam dev, kab tais qjav, kooj, thiab kab tuaj tis



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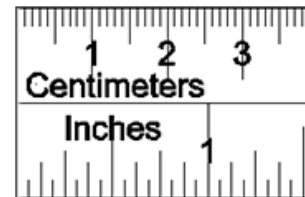
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### Parasitoid Wasps:



Actual Size:

0.02 – 1 inch



- Small wasps that are often very tiny and hard to see without magnification
- Female parasitoid wasps lay their eggs inside other insects such as aphid, whiteflies, caterpillars, and many others
- Tus ntseeb no me heev yog tsis ua zoo saib yuav tsis pom nws, yog tsis siv lub tsom iav saib
- Tus maub ntseeb nteg qe rau cov kab phem xws li cov hmob ntsuab, hmob dawb, kab nyuam dev, thiab lwm yam kab



- Parasitoid wasp larvae eat their insect host from the inside, then emerge through a hole as an adult
- Aphids that have been parasitized change color and harden, and are called “mummies”
- Cov kav zoo xws li ntseeb nws nteg qe rau lwm yam kab, tus nyuam kab yug tawm hauv cov kab nws nteg qe rau, nws noj sab hauv tawm tuaj ces nws yog tus ntseeb.
- Cov hmob ntsuab raug plev los ntawm cov ntseeb nws cov xim hloov lawm thiab khov lawm, nws cia li ua “mummies” lawm

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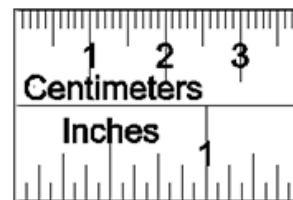
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### Predatory Beetles:

#### Common Orange and Black Ladybird Beetles (*Harmonia*, *Coccinella*, and *Hippodamia*)



Actual Size:  $\frac{1}{3}$  –  $\frac{1}{2}$  inch

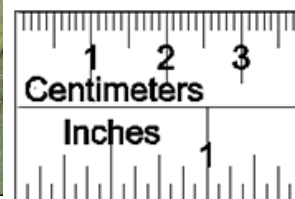


- Orange to red front wings with black spots, and larvae are long and blackish with orange bands or spots
- Larvae and adults eat whiteflies, aphids, soft-bodied insects, and insect eggs
- Nws daj liab tseb muaj tej tee dub dub. Tus menyuam duav ntev ntev, txajj daj dub
- Nws noj hmob dawb, hmob ntsuab, tej kab phem uas lub cev muag muag, thiab tej kab phem cov qe

#### Vedalia Beetle



Actual Size:  
<  $\frac{1}{4}$  inch



- Red and black covered with fine hairs that give a grey appearance
- Larvae are red when small and later turn grey
- Adults and larvae feed only on cottony cushion scale
- Tus kab no nws liab thiab dub sib xyaws thiab muaj ntsis txajj txho tsaww
- Tus menyuam nws yog xim liab thaum tseem meme, thaum nws laus lawm nws ua xim txho tshauv lawm los yog xim grey
- Tus kab no thiab nws cov menyuam tsuas noj cov kab phem hu ua cottony cushion scale xwb

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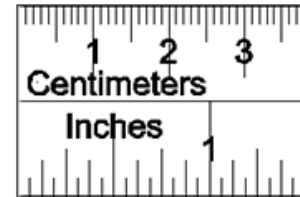
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### Predatory Beetles:

#### Mealybug Destroyer



Actual Size:  
 $< \frac{1}{4}$  inch (adult)  
 $\frac{1}{2}$  inch (larva)

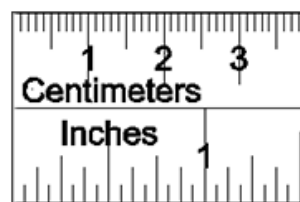


- Adults are dark brown or black with orange head
- Larvae are covered in waxy white curls and look like their mealybug prey
- Both adults and larvae feed on mealybugs and other small, soft-bodied insects
- Tus kab no nws tsaus tsawv los yog xim dub daj lis ntawm lub taub hau
- Tus menyuam dawb paug qhwv cov kab sab zoo li tus kab mealybug prey
- Tus kab ntawm no thiab tus menyuam tsuas noj cov mealybugs thiab lwm yam kab uas lub cev zoj xwb

#### Twicestabbed Beetle



Actual Size:  $< \frac{1}{4}$  inch



- Shiny black with two red spots and reddish underside
- Larvae are grey to black and have distinct spines
- Larvae and adults feed on many species of scale insects
- Tus no lub cev xim dub muaj ob tee liab thiab sab qab plab liab
- Tus menyuam kab no lub cev dub txho tsawv thiab phab nraub qaum tuaj pos tsawv
- Tus menyuam kab thiab tus maum laus noj cov kab phem uas yog scale thiab lwm yam kab

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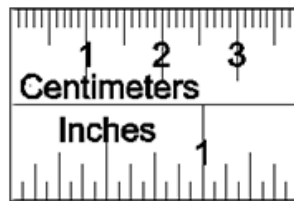
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### Predatory Beetles:

#### Soldier Beetles



Actual Size: 0.3 – 0.6 inches

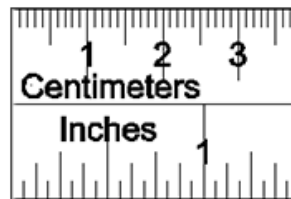


- Long red, orange or yellow heads with black wing covers
- Feed on aphids, pollen or nectar
- Tus ntev ntev liab tseb, lub taub hau xim daj nrog rau phab tis dub
- Nws noj cov hmob ntsuab, nws haus paj los yog haus zib paj

#### Predaceous Ground Beetles



Actual Size:  $\frac{1}{3}$  to  $\frac{2}{3}$  inches



- Adults are often black or dark red, with long antennae and long legs
- Adults and larvae feed on insects living in the soil
- Tus kab no yog xim dub los yog liab dub nrog rau ob tug kub nws txhais ceg ntev ntev
- Tus kab no tus maum laus thiab tus menyuam noj tej kab phem lij tej yam nyob hauv av

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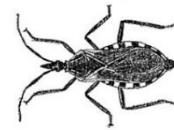
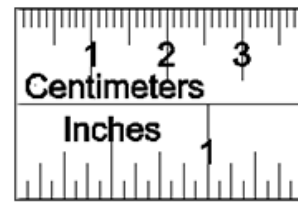
### Predatory True Bugs:

The following predatory insects all belong to the order of true bugs (Hemiptera or Heteroptera), and can be recognized by the “X” pattern on their backs. This order also contains many pest species, but the insects shown here are all predators and eat other insects as their prey.

#### Assassin Bugs



Actual size: 0.2 to 1.6 inches

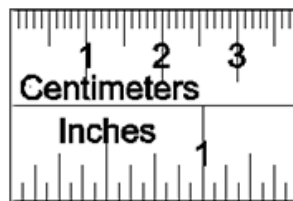


- Slender, often black, brown, or red
- Eats caterpillars, leafhoppers, aphids, and other true bugs
- Tus duav ntev tsawv, ntau zaus nws dub, tsaus, los yog liab
- Noj cov kab nyuam dev, cov leafhoppers, cov hmob ntsuab thiab lwm yam kab

#### Damsel Bugs



Actual Size: ½ inch



- Yellow, gray and light brown, long head with long antennae
- Adults and larvae feed on thrips, mites, aphids, other bugs, small caterpillars, and leafhoppers
- Tus daj daj, xim txho thiab tsaus tsawv, muaj ntsis ntev tsawv tuaj kub
- Nws noj cov thrips, cov hmob liab, cov hmob ntsuab, lwm yam kab, cov kab nyuam dev me, thiab cov leafhoppers

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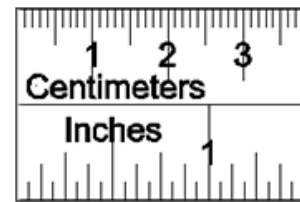
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### Predatory True Bugs:

#### Bigeyed Bugs



Actual size: 4 mm

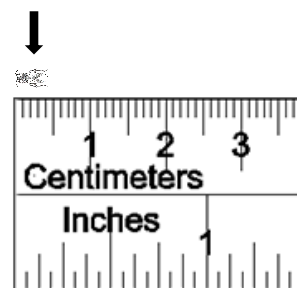


- Oval, brown or yellow, wide head with large bulging eyes
- Eats eggs, caterpillars, flea beetles, small bugs and mites
- Cev pob taub, tsaus tsawv los yog xim daj, qhov muag kheej loj loj
- Noj cov qe, noj kab nyuam dev, cov hmob flea beetles, lwm yam kab meme thiab noj cov hmob liab

#### Minute Pirate Bugs



Actual size: 3 mm



- Very small, with purplish black and white checkered pattern
- Adults and nymphs feed on insect eggs and small insects such as psyllids, thrips, mites, aphids, whiteflies, and small caterpillars
- Nws me heev, xim dub mus rau xiav lis nrog ib kab dawb ua peb fab ntawm daim tis
- Tus maum laus thiab tus menyuam nws noj kab tej qe thiab cov kab phem xws li cov psyllids, thrips, hmob liab, hmob ntsuab, hmob dawb thiab kab nyuam dev me

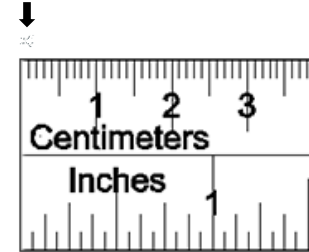
# IDENTIFYING BENEFICIAL INSECTS

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### Predatory Mites



Actual Size: 0.5 mm



- Cream to red colored, with 8 legs like spiders and ticks
- Too tiny to see without magnification
- Feed on other mites, eggs, and pollen
- Nws me me xim liab tseb, nws lub cev ci ci thiab nws zooj zooj
- Tus hmob no me heev nws ci ci mus rau xim liab nws muaj yim txhais ceg zoo li kab laug sab
- Nws me heev li saib yeej tsis pom yog tsis muaj daim tsom iav magnify lens los tsom
- Nws noj cov hmob liab, thiab tej qe hmob liab thiab nws haus zib paj xwb

Protecting beneficial insects that eat pests (natural enemies, or predators and parasitoids) is part of integrated pest management. For more information on how to conserve beneficial insects on your farm, contact the University of California Cooperative Extension in Fresno County at 559-241-7513.

Yuav tau tiv thaiv tej kab zoo uas noj cov kab phem (cov natural enemies, los yog cov predators thiab cov parasitoids) qhov no yog yam uas nyob hauv integrated pest management, kev tswj txog tej kab. Yog xav paub ntau txog kev yuav tau txuag cov kab zoo hauv koj thaj teb, hu rau University of California Cooperative Extension hauv Fresno County ntawm 559-241-7513.