

Second Edition

Field Guide to **Stink Bugs**

of **Agricultural Importance**
in the **United States**



VIRGINIA
IPM

Integrated Pest
Management



Field Guide to Stink Bugs of Agricultural Importance in the United States

Authors:

D. Ames Herbert Jr., Virginia Tech

Katherine Kamminga, Virginia Tech

Sean Malone, Virginia Tech

Thomas P. Kuhar, Virginia Tech

Eric Day, Virginia Tech

Jeremy Greene, Clemson University

C. Scott Bundy, New Mexico State University

Lydia Brown, University of Arizona

Peter Ellsworth, University of Arizona

Produced by:

Thea Glidden, Director, Communications and Marketing,
College of Agriculture and Life Sciences, Virginia Tech

Lori Greiner, Communications Manager, Virginia Cooperative
Extension, Virginia Tech

Tim FisherPoff, Art Director, Communications and Marketing,
College of Agriculture and Life Sciences, Virginia Tech

Bobbi A. Hoffman, Copy Editor, Communications and
Marketing, College of Agriculture and Life Sciences,
Virginia Tech

Supported by:

Virginia Integrated Pest Management Program

Virginia Cooperative Extension

Virginia Tech and Virginia State University

StopBMSB.org

USDA-NIFA: Regional IPM Centers

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Field Guide to Stink Bugs of Agricultural Importance in the United States

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Joseph Berger, Bugwood.org

Lydia Brown, University of
Arizona

Mark Brown, USDA, ARS

Margarethe Brummermann

Valeria Bugh

C. Scott Bundy, New Mexico
State University

Byrain, Bugguide.net

Jack Kelly Clark, courtesy
University of California
Statewide IPM Program

Patrick Coin

Stephen Cresswell

H. Doughty, Virginia Tech

Susan Ellis, Bugwood.org

Tim FisherPoff, Virginia Tech

Jim Gilbert (front cover)

Jeremy Greene, Clemson
University

Joyce Gross

Henry Hogmire, West Virginia
University

Katherine Kamminga, Virginia
Tech (back cover)

Thomas Kuhar, Virginia Tech

David R. Lance, USDA, APHIS
PPQ, www.insectimages.org

Deepak Matadha

Ron Melder

Graham Montgomery

Kim Moore, kimssight.zenfolio.com

Russ Ottens

David Owens, Virginia Tech

Herbert A. "Joe" Pase III,
Bugwood.org

Naomi Pier, University of Arizona

Herb Pilcher, USDA, ARS,
Bugwood.org

Robert Pitman, Virginia Tech

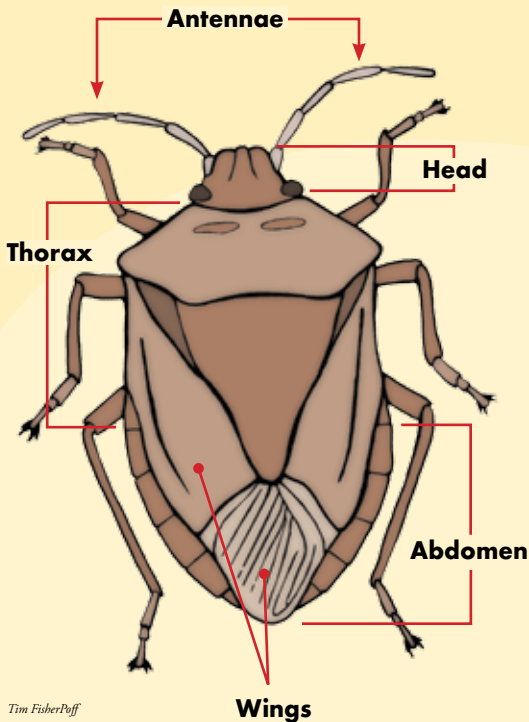
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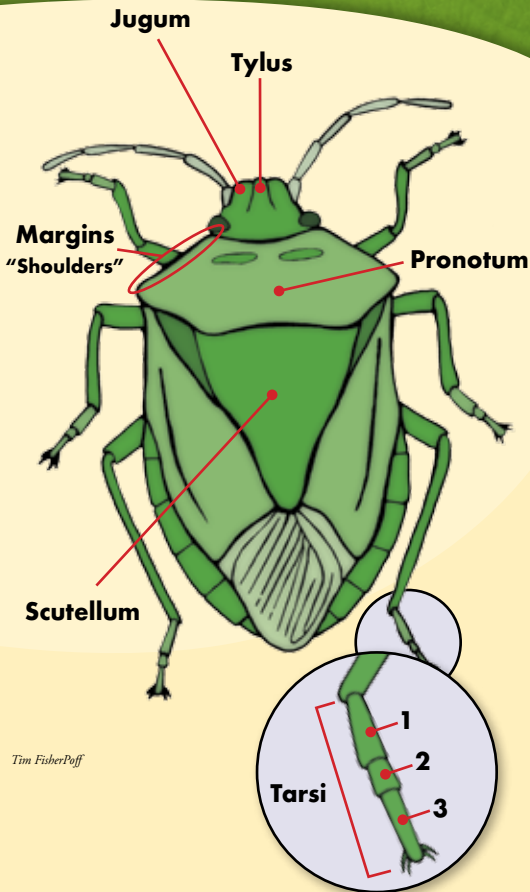
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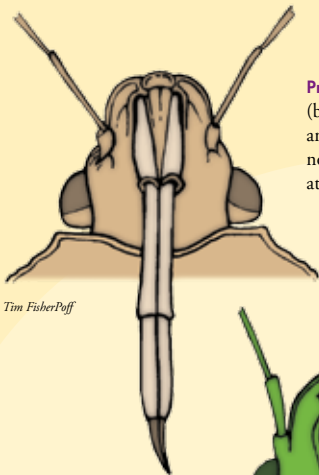
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Stink Bug Diagram



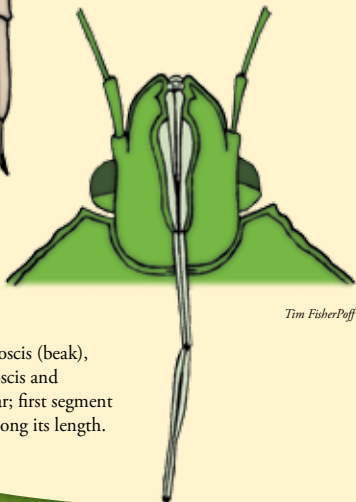


Beaks of Predators versus Pests



Tim FisherPoff

Predator: Broad proboscis (beak) twice the width of the antennae; first segment is not attached to head except at base.



Tim FisherPoff

Pest: Narrow proboscis (beak), width of the proboscis and antennae are similar; first segment attached to head along its length.

Green stink bug, *Acrosternum hilare* (Say)

ADULT SIZE



Unhatched

Eggs: One of the largest stink bug eggs. Deposited in clusters of approximately 20-50. Micropylar

processes (little nubs at the crown of the egg) are numerous and bend distinctly at the end; distinctively pure white until ready to hatch; egg shell is smooth.



Hatched

Nymphs: Early instars are mostly black with orange markings. Later

instars have a mostly black or green head and thorax; abdomen is mostly green with dark spots down the center. Darker color forms are common.

Adults: Green with black bands on antennae; pointed spine on the underside of the abdomen between where the hind legs attach to the body.



Katherine Kamminga



Katherine Kamminga



Katherine Kamminga

Southern green stink bug, *Nezara viridula* (L.)

ADULT SIZE



Herb Pilcher



Scott Stewart



Jeremy Greene



Scott Stewart

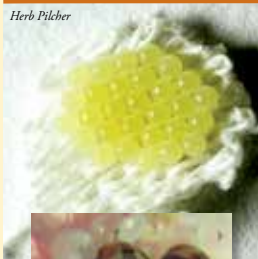
Eggs: White changing to pink as they mature; deposited in hexagon-shaped clusters of rows with approximately 150 eggs per cluster.

Nymphs: Early instar is dark brown. Later instars are green with white spots on the abdomen with pink-red markings around the outer edge.

Adults: Solid mottled brown usually with rounded shoulders. Green with red bands on antennae; rounded spine on the underside of the abdomen between where the hind legs attach to the body.



Jeremy Greene

Brown stink bug, *Euschistus servus* (Say)*Herb Pilcher**Katherine Kamminga**Katherine Kamminga*

Eggs: Manila-colored (less white than green stink bug eggs) and deposited in loosely bound clusters; rough-looking egg shell.

Nymphs: Head and pronotum of early instar is dark brown; abdomen is light brown with slightly darker spots. Later instar is green-brown to yellow-brown with light brown spots down the middle of the abdomen.

Adults: Solid mottled brown usually with rounded shoulders.

*Katherine Kamminga*

ADULT SIZE

Dusky stink bug, *Euschistus tristigmus* (Say)

ADULT SIZE



Herb Pilcher

Eggs and nymphs:

Similar to the brown stink bug.

Adults: Similar to the brown stink bug except with pointed shoulders; underside of the abdomen is light-colored with three spots.



Herb Pilcher



Katherine Kamminga



Patrick Coin

Euschistus quadrator (Rolston)

ADULT SIZE



Eggs and nymphs: Similar to the brown stink bug.

Adults: Similar to the dusky stink bug, but has a convex pronotum (not apparent in image) and lacks abdominal spots.

Herb Pilcher*Herb Pilcher**Herb Pilcher**Herb Pilcher*

Conspense stink bug, *Euschistus conspersus* Uhler

ADULT SIZE



Jack Kelly Clark

Eggs: Similar to the brown stink bug; eggs are pearly white when first laid, and eggs are laid in batches.

Nymphs: Similar to the brown stink bug.

Adults: Similar in general appearance to the brown stink bug, but with much larger black spots on the legs. Other than genitalia, the relative size of leg spots is the best way to separate the consperse stink bug from the brown stink bug.



Jack Kelly Clark



Jack Kelly Clark

Brown marmorated stink bug, *Halyomorpha halys* (Stål)

ADULT SIZE



Deepak Matadha

Eggs: White to pale green and deposited in clusters of approximately 25; appear somewhat shiny.



Deepak Matadha

Nymphs: Early instars have a dark head and pronotum; abdomen is orange and red with black stripes on the outer edges and down the center. Later instars have a mostly black head and pronotum; abdomen is rust-colored with black spots on the outer edges and down the center; antennae and legs have white bands.



Deepak Matadha

Adults: Speckled brown-gray; antennae have alternating dark and white bands; dark and white bands around the outer edges of the abdomen; small round coppery patches on or near the head; the underside is light gray, brown, or tan (not green or yellow).



David R. Lance

Rice stink bug, *Oebalus pugnax* (F.)



C. Scott Bundy

Eggs: Deposited in two rows of up to 45 eggs that change from green to red as they mature.

Nymphs: White to brown head and thorax; light-colored abdomen with red speckles and dark spots in the center.

Adults: Tan, narrow body with forward-pointing spines on the shoulders; scutellum is yellow.



C. Scott Bundy



Patrick Coin

Redshouldered stink bug, *Thyanta custator accerra* McAtee

ADULT SIZE

*C. Scott Bundy*

Eggs: Loosely aligned in large clusters that change from white to green as they mature.

Nymphs: Mostly white with dark red to black spots on the thorax and black and red-orange stripes on the abdomen.

Adults: Green, often with a red-pink stripe across the pronotum; scutellum with a red-pink tip; no spine on the underside of the abdomen between where the hind legs attach to the body.

*Jeremy Greene**Jeremy Greene*

Thyanta custator custator (F.)

ADULT SIZE



Herb Pilcher

Nymphs: Dark red to black thorax with an outer white margin; abdomen is white with black stripes.

Adults: Green, often with a broad single red-pink stripe across the pronotum; black markings along the outer edge of the pronotum.



Herb Pilcher



Herb Pilcher

Redbanded stink bug, *Piezodorus guildinii* (Westwood)

ADULT SIZE

C. Scott Bundy

Eggs: Usually dark red to brown with a white band around the outer edge and deposited in two rows with approximately 30 eggs.

Nymphs: Later instars are mostly green and have brown to red stripes on the sides and top of the abdomen.

Adults: Shiny green to yellow-green with two stripes across the pronotum (the front is yellow and the back is dark red); long spine on the underside of the abdomen between where the hind legs attach to the body (circled).

Russ Ottens*Russ Ottens**Ralph Bagwell*

Harlequin bug, *Murgantia histrionica* (Hahn)

ADULT SIZE



Thomas Kuhar

Eggs: White with a small black stripe at the base, a larger black stripe near the top, and a black crescent on the top. Deposited in small clusters of two rows.

Nymphs: Shiny, mostly black with orange-red markings on the pronotum and outlining the middle of the abdomen; abdomen also has white stripes.

Adults: Black with distinct orange or red markings; head slopes downward.



Thomas Kuhar



Thomas Kuhar

Painted bug (bagrada bug), *Bagrada hilaris* (Burmeister)

ADULT SIZE



C. Scott Bundy

Eggs: White when deposited, turning pink as they mature; typically deposited singly beneath the soil, occasionally deposited in small clusters on or near the host plant.

Nymphs: First four instars with head, thorax, and legs reddish-brown; abdomen red with reddish-brown plates. Fifth instar typically with white markings on thorax and abdomen.

Adults: Body black with white and orange markings on head, thorax, and abdomen; head strongly angled downward (ventrally). This invasive species looks somewhat similar to the harlequin bug, but is significantly smaller.

Note: This invasive Old World pest first was detected in California in 2008 and has since spread eastward to Texas.



C. Scott Bundy



C. Scott Bundy

Say stink bug, *Chlorochroa sayi* (Stål) and **Conchuela**, *Chlorochroa ligata* (Say)

ADULT SIZE



Lydia Brown

Because they are similar in appearance, descriptions of Say stink bug and Conchuela are combined.

Eggs: Cream-colored with two tan rings dorsally with a central cream (*C. ligata*) or tan (*C. sayi*) spot. Eggs are deposited in clusters of 20-50 in multiple rows.

Nymphs: Head and thorax usually black in early instars, turning dark green (or remaining black) in late instars; margins of thorax (and often abdomen) tinged white, yellow, or orange. Abdomen black to violet, often turning dark green in late instars.

continued on page 15



Naomi Pier

Say stink bug color variants



Lydia Brown

Photos on this page are of Say stink bug.

Say stink bug, *Chlorochroa sayi* (Stål)
and **Conchuela**, *Chlorochroa ligata* (Say)

ADULT SIZE



Valerie Bugh

continued from page 14

Adults: Body green or black* with orange or white margins on the thorax and abdomen and orange markings on head, thorax, and abdomen. Scutellum with a white or red spot at the tip, often with three white spots along upper margin (*C. sayi*).

***Note:** In much of the Southwest (western Texas, New Mexico, Arizona, and California) adults of *C. ligata* are present in their black form and are easily distinguished from *C. sayi*, which are usually green. Even with dark variants of *C. sayi*, the adults still are shades of green rather than black seen in *C. ligata*. In other regions, adults of both species may be green and require examination of other features to separate species.



Kim Moore



Joyce Gross

Photos on this page are of the Conchuela

Less Common Species

Edessa bifida (Say)

Ron Melder



Ron Melder



Adults: Large, oval, green-brown with a broad convex pronotum; scutellum with a white tip.

Twice-stabbed stink bug, *Cosmopepla lintneriana* Kirkaldy

Adults: Small and black with a red stripe across the pronotum and along the outer edge of the pronotum and abdomen; scutellum with two red spots at the tip.



Thomas Bentley



Scott Stewart

Less Common Species

Menecles insertus (Say)*Patrick Coin*

Adults: Large, oval, brown and appears flattened; pronotum is broad and protrudes forward almost level with the eyes; a thin white stripe cuts the pronotum lengthwise.

Proxys punctulatus (Palisot de Beauvois)

Adults: Black with sharp shoulders; scutellum with a white spot at the tip; legs are ivory-colored near the body, changing to black.

*David Owens*

Jade stink bug, *Banasa euchlora* (Say)



Adults: Small and green with white to yellow markings at the three corners of the scutellum.

Patrick Coin

Banasa dimidiata (Say)

Adults: Small, green-brown; front portion of the pronotum is green and back portion is red-brown; scutellum may be either green-brown or red-brown.



Patrick Coin

***Mormidea lugens* (F.)**

ADULT SIZE

*Thomas Bentley*

Adults: Small and black-brown; scutellum and pronotum with white to yellow outer edges. Antennae are black with white bands.

ADULT SIZE

**Rough stink bug,
Brochymena quadripustulata (F.)**

Adults: Large and brown with small orange spots; pronotum toothed on the outer edge; legs have white bands.

*Patrick Coin*

Onespotted stink bug, *Euschistus variolarius* (Palisot de Beauvois)



Graham Montgomery

Eggs and nymphs (not shown): Similar to brown stink bug.

Adults: Similar to brown stink bug but has one spot on the underside of the abdomen. Similar to spined soldier bug but lacks pointed shoulders and pointed abdominal spine.



Graham Montgomery

Spined soldier bug, *Podisus maculiventris* (Say)

ADULT SIZE

Eggs: Silvery to metallic-looking with spiny nubs and deposited in loose clusters.

Nymphs: Early instars are dark red with black heads and black spots on the top side of the abdomen. Later instars are tan to orange with red and white stripes on the abdomen.

Adults: Brown with pointed shoulders; underside of the abdomen is light with a single black spot in the center toward the rear and a long, pointed abdominal spine.

*Jeremy Greene**Katherine Kamminga**Katherine Kamminga**Katherine Kamminga*

Florida predatory stink bug, *Euthyrhynchus floridanus* (L.)

ADULT SIZE



Adults: Mostly black with red, yellow, or orange spots at each corner of the scutellum; however, spots can merge; shoulders pointed.

Patrick Coin

Perillus strigipes (Herrich-Schäffer)

Adults: Black with an orange-red-shaped V-pattern and rounded shoulders.



Ron Melder

Anchor stink bug, *Stiretrus anchorago* (F.)

ADULT SIZE



Patrick Coin

Adults: Unusual in that they can be all black, black and orange, or black and white with different color patterns. Body is convex with a large scutellum.



Patrick Coin



Ron Melder



Stephen Cresswell

Twospotted stink bug, *Perillus bioculatus* (F.)

ADULT SIZE



Adults: Mostly black; pronotum red- or ivory-colored with two black spots; red- or ivory-colored triangle on the scutellum.

Margarethe Brummerman



Bob Barber

Squash bug, *Anasa tristis* (De Geer)

ADULT SIZE

*James Wilson*

Eggs: Newly laid eggs are typically light in color and become coppery, then dark maroon as they develop. Eggs are laid in masses often in a diamond-shaped pattern along leaf veins.

Nymphs: Are light green upon hatching and light to dark gray with each successive molt. All nymphs have black legs and antennae.

Adults: Are cryptic and like to hide in ground litter. They range from $\frac{2}{5}$ – $1\frac{1}{5}$ inches long and are dark gray, brown, or black in color with orange or brown markings on the sides of the abdomen.

*H. Doughty**H. Doughty*

Leaffooted bug, *Leptoglossus phyllopus* (L.) and *L. oppositus* (Say)

Leaffooted bugs are distinguished by the unusual flattening of the hind tibia that resembles a leaf, hence the common name. There are two common species of agricultural importance.

Eggs: The eggs are brown and are laid in a single row along a stem or leaf midrib. They are somewhat cylindrical, flattened on the undersides and at the ends, and are laid closely, end to end.

Nymphs: The nymphs have black legs while their bodies range in color from orange to reddish brown. The leaf-like flattening on the hind tibia does not appear until later instars.

Adults: The adults of both species have a flat, dark brown body with gray to medium brown sides. The body is V-shaped in cross section. *L. phyllopus* has a white to pale yellow straight, broad band across the wing covers.

While *L. oppositus* lacks the band, small white spots may appear on some individuals.

Thomas Kuhar



H. Dougherty

Thomas Kuhar



Adult *L. oppositus*

H. Dougherty



Adult *L. phyllopus*

Kudzu bug, *Megacopta cribraria* (F.)

ADULT SIZE



Jeremy Greene

The species has a preference for leguminous hosts, such as kudzu, wisteria, soybeans, and others, but it has been reported on fruit trees and various other hosts. Loss of soybean yield can result from extended exposure to these insects.

Eggs: Eggs are light tan and laid in a slanting position in two-row masses about $\frac{3}{8}$ inch long.



Jeremy Greene

Nymphs: Young nymphs are small and orange, and older nymphs are very hairy but resemble adults in body shape. When disturbed, the insects produce a foul odor similar to that produced by stink bugs.

Adults: Adults are about $\frac{1}{5}$ inch long, olive-green colored with dark brown speckles, and are almost square-shaped but taper near the head region.



Jeremy Greene



Jeremy Greene

Wheel bug, *Arilus cristatus* (L.)

ADULT SIZE

Eggs: Eggs are laid tightly in large clusters of 50–182 eggs. Individual eggs resemble small brown bottles with white stoppers.

Nymphs: Nymphs are bright red with black marks that become darker and more gray with each molt.

Adults: This large dark gray assassin bug ranges from 1–1¼ inches long with long legs and antennae, a stout beak, large eyes on a small head, and has a prominent dorsal semicircular crest shaped like a cogwheel on its thorax.

Joseph Burger



Nymphs emerging from egg mass



Susan Ellis



Herbert A. 'Joe' Pase III

Injury to cotton



Phillip Roberts

External boll injury is characterized by small, round, shallow purple-black depressions, usually $\frac{1}{32}$ – $\frac{1}{16}$ inch in diameter. These spots tend to be larger than the tiny spots usually seen on maturing bolls.



Phillip Roberts



Phillip Roberts

Injured bolls will have yellow-, tan-, or brown-stained lint in the seed areas, often, but not always, under the external feeding spots. Other injury symptoms include small wart-like growths and/or dark “pin prick” spots on the inside of the boll wall. Internal boll injury may be present without obvious external evidence.

Injury to cabbage



Thomas Kuhar

The harlequin bug sucks sap from the cabbage plant, causing yellow or white blotches to appear on leaves. This feeding can cause plants to wilt, turn brown, or die and affects commercial value.

Injury to corn



John Van Duyn

Stink bug feeding on ears results in loss of kernels and cob deformation.



John Van Duyn



John Van Duyn

Feeding on stalks appears as brown spots and may include a white stylet sheath in the center of the feeding spot.



David Owens

Injury to peaches

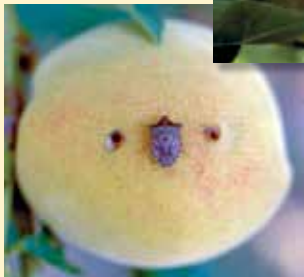


Henry Hogmire

The most common form of injury is the characteristic “catfacing.” The fruit growth stage determines the severity of the damage.



Henry Hogmire



Henry Hogmire

Injury to apples



Mark Brown

Early season feeding results in dimples or depressed areas.

Mark Brown



Internal injury appears as white, pithy areas that turn brown.

Injury to tomatoes



Feeding on tomatoes results in minute puncture marks on the fruit surrounded by a yellow halo.

Katherine Kamminga



Injury to ripe tomatoes appears as a pithy or white to yellow corky area.

Katherine Kamminga

Injury to soybean



Feeding punctures appear as small brown or black spots on seed and result in deformed, undersized, discolored, or shriveled seeds.

Scott Stewart



Feeding can result in flattened pods.

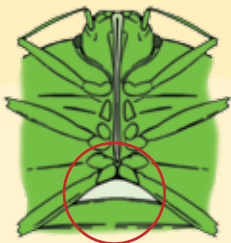
Robert Pitman

Helpful Identification Features

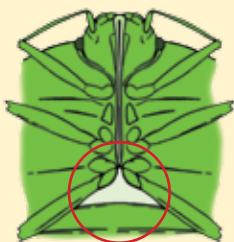
Features of green-colored stink bugs



Southern green stink bug has a rounded spine (called the abdominal spine) on the underside of the abdomen between where the legs attach to the body, and antennae have red bands.



Green stink bug has a pointed abdominal spine, and antennae have black bands.



Features of green-colored stink bugs cont.

Say stink bug



Lydia Brown

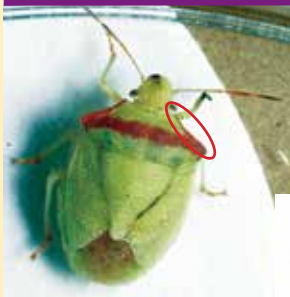
Say stink bug and Conchuela can vary from black to green, but always have orange or white margins on the thorax and abdomen

Conchuela



Joyce Gross

Features of small, green-colored stink bugs



Herb Pilcher

Redshouldered stink bug lacks the black markings on the outer edge of the pronotum.



Jeremy Greene

Redbanded stink bug has a long abdominal spine.



Russ Ottens



Ralph Bagwell

Features of brown-colored stink bugs



Brown stink bug usually has rounded shoulders and lacks an abdominal spine.

Katherine Kamminga

Dusky stink bug has pointed shoulders, lacks an abdominal spine, and has three black spots on the underside of the abdomen.



Katherine Kamminga



Patrick Coin

Spined soldier bug has pointed shoulders, a long abdominal spine, and a black spot on the underside of the abdomen. Differs from other brown species by having predaceous mouth-parts (see figures, p. vi).



Katherine Kamminga



Katherine Kamminga

Euschistus quadrator has pointed shoulders, lacks an abdominal spine, and lacks abdominal spots.



Herb Pilcher

Features of brown-colored stink bugs cont.

Byrain



Conspere stink bug looks similar to brown stink bug, but with large brown spots on legs.



Graham Montgomery



Graham Montgomery

Onespotted stink bug looks similar to the spined soldier bug but lacks pointed shoulders, and similar to the brown stink bug but has a single spot on the underside of the abdomen.



Rough stink bug, *Brochymena quadripustulata*, has a pronotum that is toothed on the outer edge.

Patrick Coin



David R. Lance

Brown marmorated stink bug, *Halyomorpha halys*, has a pronotum that is smooth on the outer edge; antennae have alternating dark and white bands.

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*Not approved Entomological Society of America common name.

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*Not approved Entomological Society of America common name.



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Visit StopBMSB.org to learn more about the biology, ecology, and management of brown marmorated stink bug in specialty crops.

This guide is supported by SCRI Coordinated Agricultural Project grant
#2011-51181-30937.

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Support comes from USDA-NIFA:
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VT/0914/444356/ENTO-68