

"Golden Tortoise Beetles"/Argus Tortoise Beetle

Some of the more strikingly colored insects that may be found around hemp fields are the "golden tortoise beetles". A "gold bug" or "golden lady bug" are common descriptions of someone first seeing one of the golden colored tortoise beetles. They have a generally rounded body form and a similar size to some common lady beetles (about 5-6 mm length). Their body is domed, with somewhat flatter areas along the edges, somewhat resembling a safari hat. When disturbed they can press themselves close to the leaf surface with all appendages safely protected underneath, somewhat in the manner a tortoise can withdraw into its shell.

Despite their resemblance to a lady beetle, tortoise beetles have very different habits and feed on leaves of plants. Those most commonly found feed on field bindweed and other plants in the morning glory family. Their presence in a hemp field results from the presence of field bindweed or other host plants; these insects do not feed on hemp.



Adult of the mottled tortoise beetle



**Adult of the golden tortoise beetle.
Photograph courtesy of Clemson University
and Bugwood.org**



**Leaf chewing injuries to field bindweed
produced by tortoise beetles**

Evidence of these insects is the appearance of small, roundish holes in the interior of the leaves of bindweed. These are chewing injuries that are produced by both adult and larval stages. The larvae of field bindweed are much less commonly noticed than are the adults, being slow moving and occurring on the underside of leaves. A distinctive feature of the larvae is that they often carry a covering of old feces and discarded skins, which is attached at the end of the body and provides a shield over the back.

Three species of tortoise beetles occur in Colorado on field bindweed. Among those with shiny golden coloration, the **mottled tortoise beetle** (*Deloyala guttata*) is most common; the **golden tortoise beetle** (*Charidotella sexpunctata*) is also present.

A somewhat larger species of tortoise beetle, also associated with bindweed and morning glory, is the **Argus tortoise beetle** (*Chelymorpha cassidea*). This is orange with dark spotting and somewhat resembles a large lady beetle.

Note on color production. The brilliant metallic gold coloration some of these beetles produce fades quickly to a duller reddish brown upon death, and dark markings become evident. This color shift is achieved by introducing, or withdrawing, moisture to the surface of the exoskeleton. When hydrated, a perfect reflecting surface is produced, but in the absence of the moisture the underlying colors become visible.

Coleoptera: Chrysomelidae



Adult Argus tortoise beetle resting on hemp.



Larva of a mottled tortoise beetle (top) and Argus tortoise beetle (bottom), with fecal shield.



Late stage larva (left) and pupae of Argus tortoise beetle on a hemp leaf. This insect develops on bindweed but may migrate to nearby plants, such as this hemp plant, when the insect is ready to pupate. Photograph by Andrew Miller.