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# *Biltothrips minutus* (Bhatti), Thysanoptera: Thripidae Causing Damage to Various Plants in Hawai'i

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# Thrips

Thrips are tiny, slender insects with fringed wings and unique mouthparts. There are over 6,000 species of thrips worldwide, predominantly in the tropics. There are about 200 thrips species recorded from the Hawaiian Islands. Some thrips species can damage plants by puncturing plant cells and sucking the contents.

# Biltothrips minutus (Bhatti)

This species of thrips was first described from West Bengal, India, and has since been reported from Thailand, Malaysia, the Society Islands, and China (Yunnan).

### B. minutus in Hawai'i

In June 2014, blueberry plants grown in a greenhouse in Kainaliu, Kona, exhibited unusual damage, and samples were submitted to the University of Hawai'i Agricultural Diagnostic Service Center for identification. The undersurfaces of affected leaves and their stems had narrow, wiggly scars (Figure 1). Young blueberry canes affected by these scars were stunted compared to undamaged canes. In December 2014, head cabbage in Hilo, Hawai'i, exhibited similar damage (Figure 2). Feeding occurred on the young, succulent foliage. The feeding damage later darkened and became highly visible when these leaves expanded. Both of these crops were being affected by the same species of thrips. The recovered minute white thrips with dark forewings (Figure 3) were identified as Biltothrips minutus by Dr. Laurence Mound (Commonwealth Scientific and Industrial Research Organisation-



Figure 1a and 1b. *B. minutus* damage on blueberry.

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# Importance

In Hawai'i, B. minutus has not yet been observed to cause economically important damage to crops. However, the host list has expanded rapidly, and as always, it is imperative to be vigilant when a new pest species is introduced. In addition to blueberry and cabbage, damage by B. minutus in Hawai'i has subsequently been noted on avocado (Persea americana), cassava (Manihot esculenta), crotalaria (Crotalaria sp.), green-leaved wild poinsettia (Euphorbia heterophylla), jatropha (Jatropha curcas), papaya (Carica papaya), pond apple (Annona glabra), rollinia (Annona deliciosa), soybean (Glycine max), and taro (Colocasia esculenta). See Figures 5 to 11. Thus far, B. minutus has been recorded on 12 species of host plants representing 8 plant families in Hawai'i, and this list is likely to expand. B. minutus has been found in both greenhouse and field conditions.

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Figure 2a and 2b: B. minutus damage on head cabbage.



Figure 3: B. minutus adult (top) and larvae (bottom).



Figure 4: Magnified view of *B. minutus* adult (top) and pupa (bottom) on underside of taro leaf. (Photo credit: Jesse Eiben, UH Hilo)



Figure 5. *B. minutus* damage to papaya.



Figure 6. *B. minutus* damage to avocado.



Figure 7. B. minutus damage to crotalaria.



Figure 8. *B. minutus* damage to green-leaved wild poin-settia.



Figure 9. *B. minutus* damage to soybean leaves.



Figure 10. *B. minutus* damage to rollinia leaves in a greenhouse.



Figure 11. *B. minutus* damage to taro.