



3 Park Place, Suite 307  
Annapolis, MD 21401-3722 USA

Phone: 301-731-4535  
Fax: 301-731-4538

esa@entsoc.org  
www.entsoc.org

## Entomological Society of America Proposal Form for New Common Name or Change of ESA-Approved Common Name

**Complete this form and e-mail to [pubs@entsoc.org](mailto:pubs@entsoc.org).**

*Submissions will not be considered unless this form is filled out completely.*

The proposer is expected to be familiar with the rules, recommendations, and procedures outlined in the "Use and Submission of Common Names" on the ESA website at <https://www.entsoc.org/pubs/use-and-submission-common-names>.

**1. Proposed new common name:** Eurasian hemp borer

**2. Previously approved common name (if any):** None

**3. Scientific name (genus, species, author):** *Grapholita delineana* (Walker)

Order: Lepidoptera

Family: Tortricidae

### ***Supporting Information***

**4. Please provide a clear and convincing explanation for why a common name is needed, possibly including but not limited to the taxon's economic, ecological, or medical importance, striking appearance, abundance, or conservation status:** Production of crops derived from the plant *Cannabis sativa* has a long, and complicated, history in North America. It was grown extensively by the English colonies and later culture extended nearly a century and a half following the establishment of the United States of America, primarily for fiber production. However, because of the use of certain cultivars for production of marijuana, highly restrictive drug laws enacted in the 1930s subsequently prohibited any legal production of *Cannabis sativa*, except for a brief period during World War II as hemp\* grown for fiber. This situation has changed dramatically in recent years since language in the 2014 Farm Bill enabled production under certain regulated conditions and it is presently being legally grown on tens of thousands of acres across the Continental U.S.

The entomology and pest management of insects associated with hemp in the U.S. was very little studied until the past 3 years, when entomology studies in several states have focused on arthropods associated with the crop. Several arthropods have been identified as having potential to seriously damage the crop. In Colorado, where there has been the most extensive work on hemp insect pest management, key pests of the crop include *Helicoverpa zea* (corn earworm), *Tetranychus urticae* (twospotted spider mite), *Aculops cannibicola* (hemp russet mite), (*Phorodon cannabis* (cannabis) and *Grapholita delineana*.

Of these only *Grapholita delineana* does not have a presently formalized common name, and the name Eurasian hemp borer is being proposed herein for this insect.

*Grapholita delineana* is known to have potential to damage stems/stalks and developing seeds in European and Asia. In the brief period of legal U.S. hemp cultivation it has also been observed to develop rapidly into a pest species of considerable damage potential in eastern Colorado. In

particular it has been noted to extensively damage developing buds of cultivars being grown for production of the pharmaceutical cannabinoid CBD, which involves growing plants that produce large, unfertilized buds on female plants. Large numbers sometimes have been noted in stalks, which likely have indirect effects on yield suppression.

This insect is known to occur widely over much of eastern North America, east of the Rocky Mountains. Incidence of damage to hemp crops can be expected to increase with the continued cultivation of this crop.

Discussion of this species, to provide consistency in providing information to growers directly and for use in refereed journal publications, requires a formalized common name. Presently two non-formalized names are in general use, "Eurasian hemp moth" and "hemp borer". This proposal seeks to provide a formalized name that merges these two names.

---

\* The legal definition of hemp in the United States is based on the concentration of the psychoactive compound THC. *Cannabis sativa* with a THC content of less than 0.3% (dry weight) is defined as hemp, and may have several purposes for culture (e.g., seed, fiber, non-psychoactive compounds such as CBD). *Cannabis sativa* that has concentrations of THC exceeding 0.3% THC is classified as marijuana.

**5. Stage or characteristic to which the proposed common name refers.** The proposed common name is a merger of the two informal names that have been applied to this species: "Eurasian hemp moth" and "hemp borer". This is mentioned in more detail in Point 9.

Within the proposed common name the words "hemp borer" refers to the habit of this insect to almost always be found developing within stems and stalks of the plant. Eggs are laid on the exterior of the plant and the earliest larval stage feeds briefly on leaves as a skeletonizer but moves into stems in the second instar. There are also reports that the larvae may feed within clusters of developing seeds. However, tunneling of the stems/stalks is the habit that will normally be observed by producers and thus it is thought critical to a good common name that this aspect of its activity be incorporated into the common name.

The term "Eurasian" applies to its area of origin and establishment prior to its introduction into North America. This also can distinguish this species from other stem/stalk boring species of the crop that are native to North America.

Images of this insect and associated damage can be observed at IPMImages.org <https://www.ipmimages.org/search/action.cfm?q=grapholita+delineana> (Additional images of injury, including bud tunneling, have been submitted but may not yet be viewable.)

**6. Distribution (include references):** This insect is a South-Palearctic species that initially comprised West-Palearctic and East-Asian populations, penetrating into the Oriental Realm. It now inhabits Middle and Southern Europe, Asia Minor, Iran, North India, East China (from Heilongjiang to Sichuan), Korea, Japan; North America (invasive since 1943). [http://www.agroatlas.ru/en/content/pests/Grapholita\\_delineana/](http://www.agroatlas.ru/en/content/pests/Grapholita_delineana/)

The original North American record is: *Grapholita delineana* (Walker), a Eurasian Hemp Moth, Discovered in North America. 1982. W.E. Miller. Ann. Entomol. Soc. Am. 75 (2): 184-186. <https://doi.org/10.1093/aesa/75.2.184> At that time it was reported present in at least seven states (Minnesota, Iowa, Missouri, Wisconsin, Illinois, Kentucky, and New York). Submissions to BugGuide (<https://bugguide.net/node/view/393718/data>) indicate it to be present in Tennessee, Georgia, Pennsylvania and Massachusetts and those with the [Moth Photographers Group](#) also record it from Indiana (<http://mothphotographersgroup.msstate.edu/species.php?hodges=3443.1>).

In 2017 it was confirmed from Colorado and in 2018 was found to be widespread in hemp growing counties east of the Continental Divide (personal observations (identifications confirmed by Todd Gilligan). Likely it may be found presently in most every state east of the Continental Divide in association with its host plants. As this insect has been noted to be moved in cuttings and in seed, it is possible that it has already been introduced into more western areas as well.

**7. Principal hosts (include references):** Hemp (*Cannabis sativa*) is the most commonly reported host, and is mentioned in all references for *Grapholita delineana*

Additional reported hosts include common hop (*Humulus lupulus*), Japanese hop (*H. japonicas*) and knotweed (*Polygonum* spp.) ([TortAI Tortricids of Agricultural Importance](#))

Observations made in 2018 in eastern Colorado strongly suggest that there are wild hosts present that sustain this insect in the absence of hemp; hemp grown at some areas with no previous history of this crop were infested from sources originating outside the crop. Alternative hosts in North America are presently undescribed.

**8. Please provide multiple references indicating clearly that the proposed name is already established and ideally widespread in use. If the name has been newly coined for purposes of this application, please state so:**

Because the culture of hemp in the United States has only a brief recent history, and *Grapholita delineana* was not reported established in North America during the early period of legal production of hemp (prior to 1930s) there is no widespread use of this name.

This name is being used presently through the [Hemp Insect Website](#), which is a very heavily used source of information on NA hemp insects that has been accessed by individuals from all 50 states since its establishment in June 2017. The name is also being used for publically available images of this species through IPM Images/BugWood. The name has also been used in about one half dozen presentations to grower/public groups made during the past 18 months, following the establishment of this species as one of significant potential to damage hemp in Colorado.

**9. Please identify any common names in use (include references) that have been applied to this taxon other than the one herein proposed. Please justify why each alternate name is inadequate:** Two common names have been applied to this insect, **Eurasian hemp moth** and **hemp borer**.

References for the name **Eurasian hemp moth** include:  
BugGuide <http://bugguide.net/node/view/393718>

Moth Photographers Group  
<http://mothphotographersgroup.msstate.edu/species.php?hodges=3443.1>

AgroAtlas Interactive Agricultural Atlas of Russia and Neighboring Countries  
[http://www.agroatlas.ru/en/content/pests/Grapholita\\_delineana/](http://www.agroatlas.ru/en/content/pests/Grapholita_delineana/)

References for the name **hemp borer** include:  
PlantWise Knowledge Bank  
<http://www.plantwise.org/KnowledgeBank/Datasheet.aspx?dsid=25948>

McPartland, J.M. 2001. Epidemiology of the hemp borer, *Grapholita delineana* Walker (Lepidoptera: Oleuthreutidae), a pest of *Cannabis sativa* L. *Journal of Industrial Hemp* 7(1): 25-42.

McPartland, J.M. 1996. *Cannabis* pests. *Journal of the International Hemp Association* 3(2): 49, 52-55

The proposed name is a merger of the two names presently in use.

There is no use of the term Eurasian hemp moth in any refereed literature; apparently the use of this term in part is related to the use of this name in the 1982 paper by Miller reporting its North American occurrence with reference to "a Eurasian hemp moth".

The two above papers by McPartland do use the term "hemp borer" to refer to *Grapholita delineana*, although other "hemp borers" are also mentioned. Neither of the references appear in entomology-related journals and the original articles are difficult to locate, appearing in hemp-centric journals that only briefly appeared in print.

**10. Please identify any other organisms to which your proposed common name *could* apply, giving careful consideration to closely related taxa. Please justify why the proposed common name is (i) unsuitable for each of those taxa and/or (ii) better suited for the proposed taxon:** In a review of worldwide literature [McPartland \(1996\)](#) states "other *Cannabis* caterpillars feed as stem borers (e.g., *Cossus cossus*, *Zeuzera multistrigata*, *Papaipema nebris*, *P. cataphracta*, and *Endoclyta excrescens*)." Later the comment is made "other insects may also bore into stems." Examples include the grubs of flea beetles (*Phyllotreta nemorum*), tumbling flower beetles (*Mordellistena micans* and *M. parvula*), longhorn beetles (*Thyestes gebleri*), weevils (*Ceutorhynchus rapae* and *Rhinocus pericarpus*), and the maggots of gall midges (*Melanogromyza urticivora*)."

In addition, the European corn borer (*Ostrinia nubilalis*) has been reported to develop in stems of hemp in North America. However, as the as the entomology of insects associated with hemp in North America is nascent it is still unclear which species will be reported as stem/stalk borers in North America. To this point in time (2018) only European corn borer and *Grapholita delineana* are the only species observed to cause serious damage as stalk boring species.

**11. Please document your efforts to consult with entomologists (including taxonomic specialists), colleagues, or other professionals who work with the taxon as to the suitability and need for the proposed common name. Please note that this is an important element of your proposal; proposals that do not document these steps are less likely to be successful.** On May 19, 2017 I wrote to three lepidopterists about the proposal to formalize a common name of Eurasian hemp borer for *Grapholita delineana*:

Dr., Paul Opler. A well-known lepidopterist, formerly with the USGS (retired) and author of several popular field guides;

Dr. Todd Gilligan. A taxonomist and torticid specialist with the USDA-APHIS that has developed diagnostic materials related to identification of native and exotic lepidopterans through the Identification Technology Program;

Dr. Mark Epstein. Senior Insect Biosystematist with the California Department of Food and Agriculture.

All are in agreement with the proposal of Eurasian hemp borer to be associated with the species *Grapholita delineana*.

**Proposed by:** Whitney Cranshaw

**Address:** Department of Bioagricultural Sciences and Pest Management, Colorado State University, Fort Collins, CO 80521

**E-mail:** whitney.cranshaw@colostate.edu

**Phone:** 970-491-6781

**Date submitted:** October 8, 2018