

## Introduction and Purpose

Since legalizing the growth of non-potent (under 0.3% THC concentration) *Cannabis* in 2018, Utah farmers of industrial hemp are in need of state-specific hemp-pest resources. This project aims to create an easy-to-navigate print and online guide of the pests that affect industrial hemp grown in Utah. Little is known about which pests of industrial hemp are actually present in Utah due to the plant's recent legalization, thus the information contained in this guide will consist of the known hemp-pests to exist in Utah and surrounding states. In addition, this guide will contain potential and highly threatening pests to industrial hemp that are not known to occur in Utah but should be identifiable by all growers of industrial hemp. This guide will inform the reader of each pest's biology and management that are important to know when cultivating industrial hemp in Utah.

## Methods

1. A list of pests known to affect industrial hemp was created. Information was acquired from primary, peer-reviewed resources found through the USU library database, Scopus, and Google Scholar. References were maintained in the citation manager Zotero.
2. The pest list was narrowed down to those present in Utah and those that pose a threat to industrial hemp (see fig. 2).

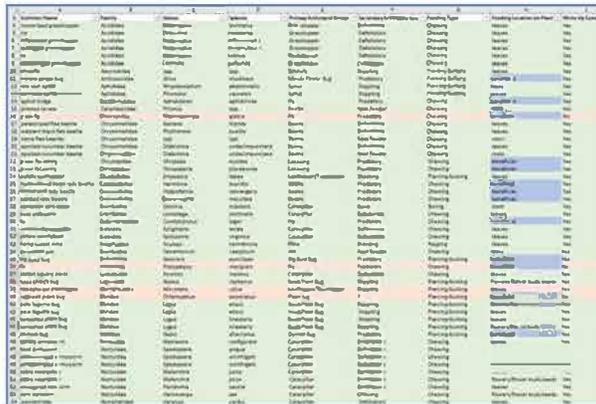


Fig. 2. List of pests that use industrial hemp as a host. List is color coded to indicate which pests are present in Utah and which are not. Red indicates the pest is not present or is not a significant threat to Utah grown industrial hemp.

3. Pest (1) host information, (2) appearance, (3) damage symptoms, (4) damaging life stage(s), (5) life cycle, (6) time for concern, (7) when and where to scout, (8) threat level, (9) top management techniques, (10) when to consider treatment, and (11) look-alikes were

- researched and recorded for each pest and given a page within the guide (see fig. 3). Beneficials/natural enemies to hemp-pests are also be included in the guide.
4. The guide is formatted in an easy-to-navigate manner that will allow the reader to quickly find their desired material. The guide will be available in printed booklets and online at <https://utahpests.usu.edu>.

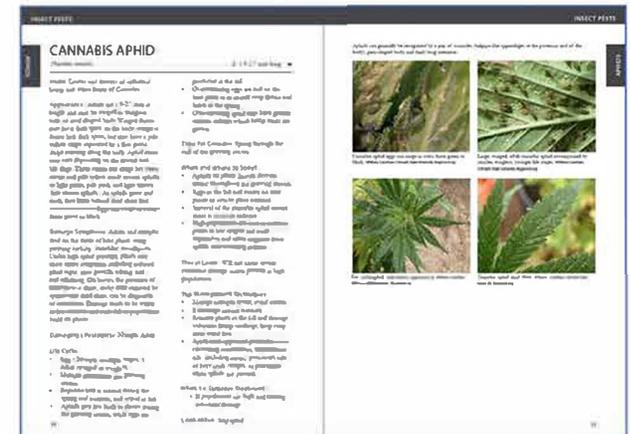


Fig. 3. Cannabis aphid pest information. An example of how the guide is formatted and how each pest's information will be presented.

## Key References

- Cannon, Cami and Marion Murray. Vegetable Pests of Utah. Beneficial Insects of Utah. Logan, UT.
- Cranshaw, Whitney, Melissa Schreiner, Kadic Britt, Thomas Kuhar, John McPartland, and Jerome Grant. August 28th, 2019. "Developing Insect Pest Management Systems for Hemp in the United States: A Work in Progress." Journal of Integrated Pest Management, 10(1).
- J.M. McPartland, R.C. Clarke, and D.P. Watson. Hemp Diseases and Pests: Management and Biological Control. New York, NY. CABI Publishing, 2000.



Fig. 1. Twospotted spider mites (*Tetranychus urticae*) and associated damage symptoms.  
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