

# HEMP NEWSLETTER

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SOUTHERN OREGON RESEARCH AND EXTENSION CENTER (SOREC)

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## Corn Earworm Monitoring Program Started in Southern Oregon

If you are a hemp grower and had corn earworm larval damage concerns in previous years, it is not too late to prepare your pest monitoring kit for this season. To monitor your pest problem, you only need two things, these are a *Heliothis* trap and corn earworm pheromone lures. Please watch this short video by Ohio State University for instructions on setting the trap ([www.youtube.com/watch?v=W6b7OtUOo8Y](http://www.youtube.com/watch?v=W6b7OtUOo8Y)).

The OSU Hemp Extension Service team started the corn earworm monitoring program the 2<sup>nd</sup> week of July using pheromone lures on several hemp farms across Southern Oregon (Fig. 1), to complete the first two weeks of samplings. In the first sampling, two corn earworm adults were found at just one of the four hemp farms; with the second sampling, adults were found in all monitored traps. The adult numbers varied from one to four per monitoring site (Fig. 2). Although adult numbers are very low and do not correspond with crop susceptible stage, these findings indicate that growers should be proactive in their fields for timely management of pests this season.

The OSU Hemp Extension Service team will continue to monitor corn earworm adults throughout the growing season; results will be shared in this newsletter. We recommend hemp growers monitor pest activity on their own hemp fields, since several factors may influence the

timing of pest pressure on each field. Pest activity will be influenced by proximity to another hemp and/or corn field, geographical location, and environmental conditions.



Figure 1. A *Heliothis* corn earworm trap on hemp field. Photo Credit: Govinda Shrestha

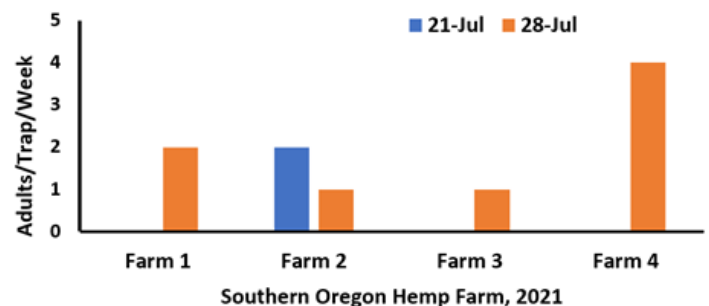


Figure 2. Corn earworm adult counts on hemp fields.

Growers should keep in mind that corn earworm traps may capture both the corn earworm and the false corn earworm male adults. However, the false corn earworm has not been documented as a hemp pest even though it is a closely related Lepidopteran species to corn earworm. False corn earworm adults can be distinguished from corn earworm by their smaller size and a dark spot and dark margins on the hind wing (Fig. 3).



Figure 3. Corn earworms (left) and false corn earworms (right). Photo Credit: ext.wsu.edu

## Pythium Root and Crown Rot Disease in Hemp: Symptoms and Management Strategies

Achala N. KC, OSU-Central Point, Plant Pathologist

This is the second year in a row that Pythium root and crown rot disease problems have been observed in Southern Oregon hemp fields. Pythium root and crown rot in industrial hemp is caused by oomycetes fungus-like organisms. Several *Pythium* spp. are known to cause root and crown rot, but it is still unknown which species is most common in Oregon hemp fields. In other hemp growing regions of the US, *Pythium aphanidermatum*, *P. ultimum*, *P. dissotocum*, and *P. myriotylum* have been commonly reported to cause crown and root rot.

The infection by *Pythium* spp. can start at any stage of crop development. The infection of seed or seedling results in pre- and post-emergence damping-off like symptoms. Infection at the later crop development stages result in crown and root rot symptoms. When infection results in root rot, the outer cortex of root bark slips off easily to expose the white core.

The crown rot symptoms include discoloration of the bark tissues and shriveling of the crown near the soil line (Fig. 4A and B). When peeling off the bark at the infected crown, necrotic brown streaks are observed that extend two to three

inches upwards (Fig. 4C-E). When infections are accompanied with high stress conditions such as extreme heat, under- developed root systems, and poor drainage, it results in sudden collapse of a mature plant (Fig. 4 A). Under severe conditions, nearly 25% crop loss has been reported due to this disease.



Figure 4. Pythium crown rot symptoms. A) and B): Severely wilted matured plant with shriveled crown tissue at the base of the plant. C) and D): Internal browning of the tissues beneath the bark that extended upwards 2 to 3 inches. E): Cross section of shriveled part of crown with browning of the stem core. Photo Credit: Govinda Shrestha (Fig. 4 A) and Achala N. KC (Fig. 4 B-E)

While *Pythium* spp. can be the primary cause of root and crown rot diseases in hemp, other pathogens may also have similar symptoms. We have isolated a few different *Fusarium* species from symptomatic plants. We recommend that you submit symptomatic parts to a plant health clinic like the OSU Plant Clinic (<https://bpp.oregonstate.edu/plant-clinic>) in order to obtain a confirmative diagnosis.

Currently, there are no registered fungicides for *Pythium* management in hemp. However, preventative cultural practices can minimize disease introduction and spread in a field. It is always recommended to be vigilant (as explained below) about planting materials, as we have limited information on sources of primary infection or introduction to a field.

Understanding the seedlings origin and sanitation status before transplanting in a field and avoiding unhealthy seedlings can prevent the pathogens introduction in fields where *Pythium* was not present.

If you are producing your own seedlings, we recommend using sterilized potting mix, sanitizing planting containers and surrounding space to minimize disease problems. *Pythium* species are also called “water mold” since they need free moisture for transport and infection. Therefore, another strategy to prevent infections in the field would be to plant in well-drained soil avoiding clay or compacted soils, or avoiding water-logged conditions.

## Detour to Southern Oregon Horn Creek Hemp Farm on OSU-SOREC Pear Field Day

It is unusual when contrasting crop producers have an opportunity to interact with each other on a crop-specific field day. However, this happened at the OSU-Southern Oregon Research and Extension Center Pear Field Day on July 15th, when pear orchard growers interacted with a hemp grower and associated partners. The field day organizers, Achala N. KC (OSU-Plant Pathologist) and Rick Hilton (OSU-Entomologist), made a detour to Horn Creek Hemp Farm during the pear field day excursion to exchange crop production knowledge. Paul Murdoch (Horn Creek Farm) and other members of the hemp industry shared their hemp growing knowledge and experience, and discussed the opportunities and challenges that the Oregon hemp industry is facing. If you want to know more about the Horn Creek Hemp Farm, visit their website: (<https://www.horncreekhemp.com/>). More than thirty participants attended this event including pear growers, crop consultants, industry representatives, and OSU Research and Extension Faculty.



*Figure 5. Paul Murdoch (pictured on left) discussing hemp production with tour participants. Photo Credit: Govinda Shrestha*



*Figure 6. Paul Murdoch showing his hemp product with tour participants. Photo Credit: Govinda Shrestha*

## News and Updates

- **Southern Oregon Hemp Growers Forum**

The monthly Southern Oregon Hemp Growers Forum took place via Zoom on Tuesday, August 3rd. The program included presentations on corn earworm and pest management, pollination issues in hemp, and a review of the results of the 2020 hemp irrigation trial at the Southern Oregon Research and Extension Center (SOREC). You can watch the recording of the meeting here: <https://extension.oregonstate.edu/crop-production/hemp/recordings-southern-oregon-hemp-growers-forum>

**Save the date for the next Hemp Growers Forum** on Tuesday September 7<sup>th</sup> at 5:30 pm. There will be presentations on the fall weather outlook, ODA pre-harvest testing requirements, and the results of a SOREC study on hemp maturation and cannabinoid content. Register here: [bit.ly/JacksonExtAgriculture](https://bit.ly/JacksonExtAgriculture)