

LEAVE HUNGRY PESTS BEHIND



INSIDE!

Workshops

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Infotext Articles

Extended Learning for K-12



HUNGRY PESTS IS AN INITIATIVE OF THE U.S. DEPARTMENT OF AGRICULTURE



DEAR EDUCATOR,

Invasive pests threaten our nation's parks, forests, and food supply. But, we can all do simple things to help stop them. The U.S. Department of Agriculture (USDA) created the ***Leave Hungry Pests Behind*** service learning curriculum and the ***Hungry Pests Invade Middle School*** lesson plans to give the youth you work with the opportunity to help stop the spread of these invaders.

Leave Hungry Pests Behind combines **workshops** that will familiarize your students with invasive pests and their impact on our farms and environment with **action projects** to inspire them to share this new knowledge with the larger community. In addition, grade-aligned **informational text articles** provide insight into USDA's role in responding to the threat of hungry pests. These articles also invite students to explore future career opportunities with us.

You'll find even more ***Hungry Pests*** material in ***Hungry Pests Invade Middle School***. This standards-based curriculum for grades 6-8 draws connections among core subjects like science, English Language Arts and Literacy, geography, math, government, and economics. Cross-curricular and project-based lessons and activities can be used in and outside of the classroom.

By using these materials in your classroom, organization, or afterschool program, you'll help to encourage your students to be informed and engaged change agents in the fight to ***Leave Hungry Pests Behind!***

Sincerely,

Abbey Powell

Public Affairs Specialist
Animal and Plant Health Inspection Service
United States Department of Agriculture



LEAVE HUNGRY PESTS BEHIND

Invasive pests threaten our nation's parks, forests, and crops. And it's up to all of us to help stop the spread of these Hungry Pests. The U.S. Department of Agriculture (USDA) created this service learning curriculum to teach youth about Hungry Pests, and inspire them to take action.

WHY A SERVICE LEARNING PROGRAM?

A service learning program creates opportunities for youth leadership and voice. Involving youth in activities that have a positive impact in the community also helps them to develop self-esteem and positive relationships with peers and adults.





CURRICULUM AT A GLANCE



TOTAL TIME:
3 HOURS, 15 MINUTES
(Each workshop is 1 hour, 25 minutes)

WORKSHOP OVERVIEW

Workshop 1: Attack of the Invasive Pests!

Workshop 2: Meet the Pests

Workshop 3: Action Projects

In workshops 1 and 2, all activities build knowledge of and familiarity with invasive pests. In Workshop 3, youth create community campaigns to help stop the spread of Hungry Pests. Each workshop includes a warm-up activity, video, main activity, and journal reflection. These ready-to-use activities offer easy ways to engage youth in various venues.

ACTION PROJECTS

Choose from three action projects available for the following age groups or grade levels:

- **Reader's Theater Performance** (Elementary School)
- **Community Plan Presentation & PowerPoint** (Middle School)
- **Installing Location-Specific Signage** (High School)

PROCESS

Youth should work in small groups of two to four. You can select the action project as well as workshop activities that best suits your group's needs. You may choose to have all groups do the same activity, or invite each group to select its own topic.

MATERIALS

- Creativity
- Imagination
- Pens
- Paper
- Pencils
- Markers
- Poster board
- Other art supplies
- Video projector/flat-screen tv
- Computers

CURRICULAR CONNECTIONS

- English Language Arts
- Geography
- Art
- Science

ONLINE RESOURCES

Download the following online components at <http://www.aphis.usda.gov/hungrypests/educators>

- "A Letter from Vin"
- "A Day in Your Life with Invasive Pests"
- Vin-troduction Video
- Printable Pest Cards
- "See How They Spread" Interactive Web Page
- "Top Ways I Spread"
- "Ways to Leave Pests Behind" Infographic and Video



WORKSHOP 1 ATTACK OF THE INVASIVE PESTS!



LEARNING OBJECTIVES

- Define invasive pests during a group discussion
- Identify ways in which invasive pests can harm the environment and cause problems for people
- Analyze the various ways that invasive pests are a threat

MATERIALS

“A Letter from Vin,” copies of “A Day in Your Life with Invasive Pests,” “Hungry Pests Basics,” “Vin-troduction Video,” chart paper, markers

WARM-UP: BIG WIND BLOWS (10 MINUTES)

This game involves some movement. Arrange chairs in a circle. Have all players sit down facing the middle. An adult will call out “Big wind blows for everyone who...” and complete the phrase with any characteristic that describes the players in the group. For example, “Big wind blows for everyone who plays sports.” All players who play sports must stand and quickly find a new seat at least two chairs away from their own. Play a few rounds. Make sure to read the following prompts in the final rounds of the game:

Big wind blows for everyone who...

- ...likes to be outdoors.
- ...likes to travel.
- ...is afraid of bugs.

Tell youth they will learn about invasive pests—plants, insects, or disease-causing microorganisms that are not native to an ecosystem and can cause harm to the environment, economy, or people. People can accidentally spread them on or in the things they move and pack.

VIDEO: VIN-TRODUCTION (15 MINUTES)

Introduce students to Vin Vasive, the spokesbug for Hungry Pests everywhere. Depending on access to technology, you can either read aloud “**A Letter from Vin**” or play the 60-second Public Service Announcement, “**A Lot of Mouths to Feed**,” on www.aphis.usda.gov/hungrypests/press to

expose students to Vin’s menacing ways. Afterward, have students share their reactions to Vin Vasive and make predictions about the kinds of damage he might bring to agriculture, the environment, and people. Record responses on chart paper.

MAIN ACTIVITY: A DAY IN YOUR LIFE WITH HUNGRY PESTS (45 MINUTES)

1. Have students read independently or you can read aloud for younger students “A Day in Your Life with Invasive Pests.” The article explains how invasive pests can impact our daily lives, from the breakfast table to an afternoon baseball game.
2. Provide copies of “**Hungry Pests Basics**” (p.4) for reference. Then invite youth to work in small groups to make posters or storyboards that explain the following:
 - **Pathways:** How Hungry Pests travel and spread
 - **The Threat:** What damage Hungry Pests cause
 - **The Impact:** How the threat impacts our lives
 - **A Call to Action:** What we can each do to stop Hungry Pests
3. Each group presents their poster or storyboard to the group and summarizes what they learned about invasive pests in one brief statement.

JOURNAL PROMPT (15 MINUTES)

Have youth reflect on what they learned about invasive pests and jot down questions they might have about how invasive pests might be affecting the local community.





HUNGRY PESTS BASICS



HOW HUNGRY PESTS SPREAD



Firewood



**Camping/
outdoor gear**
(boots, tents)



**Recreational
vehicles/trucks**



**Outdoor
furniture**



**Agricultural
materials**
(hay, sod, farm
equipment)



**Luggage holding
plants, fruits, or
vegetables**



**Plants and plant
parts**



**Internet sales
of agricultural
products**



**Household
moves**

WHAT'S AT RISK AND HOW INVASIVE PESTS CAN IMPACT US

CROPS

the cost and availability
of the food we eat

TREES

our use of tree
houses, baseball
bats, maple syrup

NATURAL RESOURCES

our enjoyment of
forests, parks

CALL TO
ACTION #1

**CLEAN
YOUR
BOOTS,
TIRES, AND
TENTS!**

CALL TO
ACTION #2

**THINK
BEFORE YOU
PACK!**

CALL
TO ACTION #3

**DECLARE
THAT
FRUIT...OR
BEWARE!**



WORKSHOP 2 MEET THE PESTS

LEARNING OBJECTIVES

- Identify and describe various invasive pests
- Identify where invasive pests currently exist and where they might pose a threat
- Explain which invasive pests pose a local threat

MATERIALS

“Top Ways I Spread” infographic, scrap paper, colored construction paper, colored pencils/markers/ crayons, string or yarn, tape or glue, scissors, stapler, pipe cleaners, other decorative items.

PREPARATION

Download and print a variety of pest cards featured on <http://www.aphis.usda.gov/hungrypests/educators>.

WARM-UP: HUNGRY PESTS VS. DEFENDERS (10 MINUTES)

Divide the group into two teams: “Hungry Pests” and “Defenders.” Pairs from the different groups face off in a game of Rock, Paper, Scissors. The person that loses must join the winner’s team and follow the winner to the next game while cheering for the team. The winner then goes off to face another opponent from the opposite team. The game continues until there is a winning team (only players from one team are left) or a winner.

MAIN ACTIVITY: SPOT THE PESTS (45 MINUTES)

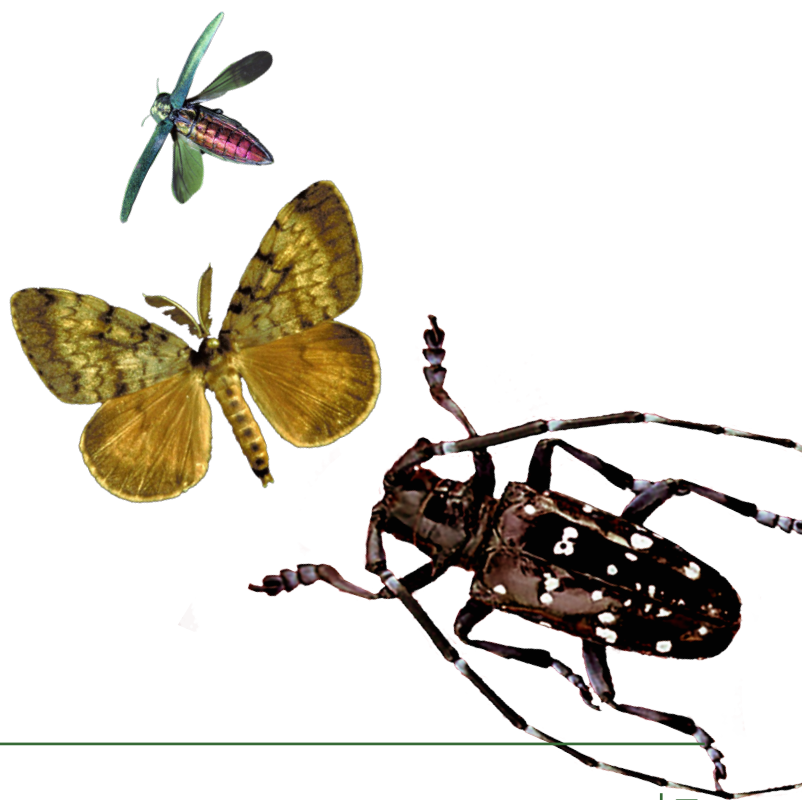
1. In this creative arts activity, youth will build masks of Hungry Pests and learn to identify various invasive pests by what they look like.
2. In addition to masks, youth can partner to create informative “Wanted” posters about various invasive pests. Posters should include the following information: Name of pest, what it looks like, where it poses a threat, what is at risk, pest origin, signs and symptoms of disease, and what you can do to stop the spread. Information for the pest profiles can be found on the Hungry Pests website. Make sure to highlight information for your home state.
3. After students display their work, invite everyone to share one fact they learned about invasive pests.

INFOGRAPHIC/INTERACTIVE (15 MINUTES)

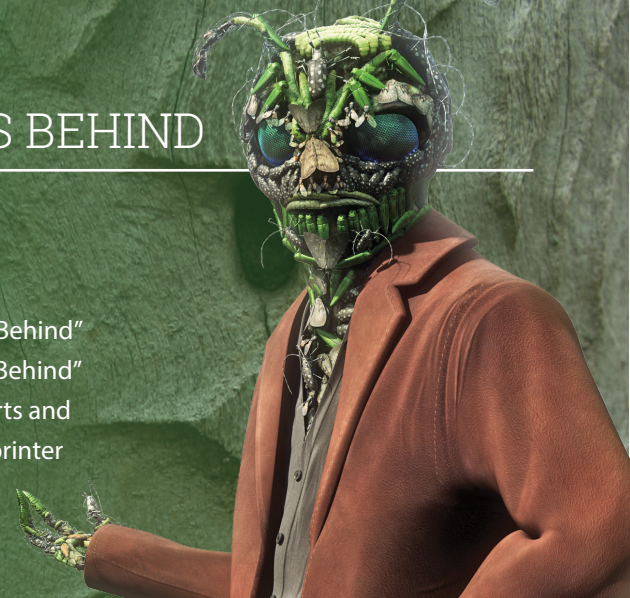
Print the “Top Ways I Spread” infographic and discuss the different pathways. Learn more about each pathway at <https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/How-They-Spread>.

JOURNAL (15 MINUTES)

Have youth describe how invasive pests spread and their impact on the community.



WORKSHOP 3 LEAVING HUNGRY PESTS BEHIND



LEARNING OBJECTIVES

- Understand what actions you can take to stop the spread of invasive pests
- Create a community plan to raise awareness about invasive pests and help prevent their spread

MATERIALS

“Seven Ways to Leave Pests Behind” video, “Ways to Leave Pests Behind” infographic, pencil, paper, arts and crafts materials, computer, printer

WARM-UP: TELEPHONE (10 MINUTES)

Youth will play a few rounds of the game telephone. Begin with a fact about invasive pests and ask youth to pass the message on to the next person. Divide your group into smaller groups and try playing more rounds in order to cover different facts. Segue by explaining that they will learn to communicate effectively in order to inform the community about the threat for their service learning project.

VIDEO: SEVEN WAYS TO LEAVE HUNGRY PESTS BEHIND (15 MINUTES)

In small groups, students will identify what information is important to share with their community. Have copies of the infographic available for reference.

TAKE ACTION: LEAVE PESTS BEHIND (45 MINUTES)

Youth will work in small groups to develop a creative plan to spread awareness about the threat of invasive pests. Each group can choose any pest or region to research and complete one of the following act

Project A – Hungry Pests Theater (Elementary School)

Have youth create cause and effect stories about Hungry Pests and turn them into 2-minute performances complete with scripts, costumes, props, and/or puppets. Each group can perform their skits for the group or take the Hungry

Pests Theater on the road to perform for younger students in their school or community.

Project B – Community Action Plan (Middle School)

Have youth prepare a 10-minute PowerPoint presentation as a group. Each student will present 1-2 slides to an audience from their school or community. The presentation will include a discussion of the threat and persuade attendees to take action to prevent the spread of invasive pests.

Project C – See the Message (High School)

Have youth develop a plan to install location-specific signage that promotes awareness of Hungry Pests. Brainstorm ideas to help groups define their target audience, message, and a call to action. Supply arts and crafts materials or computers to design informative posters or print Hungry Pests posters, flyers, and brochures from the website. Groups display signs in strategic locations such as local fishing, farming, or hiking locations or trails. Social media is also an option to spread the word.

JOURNAL (15 MINUTES)

Have youth reflect on what they learned about the threat of invasive pests in their state and what they believe they accomplished through their projects.



STOP THE HUNGRY PESTS!

It's never too early to think about your future. See how the team at the U.S. Department of Agriculture (USDA) fights back against Hungry Pests. Read this article to learn about this important work.

Something bad might be hiding in our forests, parks, and yards. Hungry Pests are insects and plant diseases that come from far away and hide in nature. Don't confuse Hungry Pests for mice or mosquitoes. Hungry Pests are insects like the Emerald Ash Borer Beetle (EAB) and the gypsy moth. These dangerous pests can kill trees if we don't stop them. Hungry Pests can even destroy some of our favorite foods.

FIGHTING BACK AGAINST HUNGRY PESTS

The team at USDA's Animal and Plant Health Inspection Service works to keep Hungry Pests out. Pests can sneak into the country inside or on fruits, vegetables, and plants that we buy from other countries or that people bring when they

travel. Pests can also "catch a ride" in a package sent through the mail. When Hungry Pests slip into our country, USDA helps hunt them down.

THE SPREAD

Pests multiply and grow quickly in number. They then spread to other places. Humans help pests move around. For example, when we go camping and get close to nature, it also means nature can get close to us. Pests may try to hitchhike a ride home on our boots, clothes, or other camping gear.

"I'M REALLY NOT THE PUSHY TYPE. PEOPLE HELP ME GET AROUND ON THE THINGS THEY MOVE AND PACK."

-VIN VASIVE



HUNGRY PESTS DETECTIVES: THEIR PROCESS

USDA ACTS FAST TO STOP THE SPREAD.

Did you know? USDA found the Asian Longhorned Beetle (ALB) in Boston with the help of a gardener who saw unusual holes on trees and reported what he saw to USDA. That call made it possible for USDA to act fast and eliminate the dangerous tree-killing insect.



1

SEE

A person (like you or me) notices signs of a Hungry Pest in the garden or at a park, on a walk, or while camping.

2

REPORT

A person calls or emails the local USDA office to report what they see.

3

COLLECT

A USDA official collects a pest sample to figure out what kind of pest has been found.

4

CONFIRM

USDA scientists identify the pest using tests, photos from a microscope, and sometimes DNA analysis.

5

ANNOUNCE

USDA tells local officials and the public that a pest has been found so everyone can help prevent the spread.

HOW YOU CAN HELP

We can all play a role when it comes to preventing the spread of Hungry Pests. USDA teaches people about Hungry Pests. Listen for news about Hungry Pests in your area and spread the word. Learn what you can do to leave Hungry Pests behind.

Learn more about future careers and jobs at USDA by visiting: <https://www.usda.gov/our-agency/careers/usda-pathways-programs>.

A SWEET THANK-YOU

People in Vermont made a special pancake and maple syrup breakfast to thank the people of Massachusetts for fighting back against the **Asian Longhorned Beetle**, or **ALB** for short. ALB threatens to destroy maple trees used to make maple syrup in Vermont.



ON THE LOOKOUT FOR HUNGRY PESTS

It's never too early to begin thinking about your future. There are many opportunities to grow a career at the U.S. Department of Agriculture (USDA). Read on to learn more about this exciting work.



THIS GUY WORKS FOR USDA: YOU CAN TOO!

THE THREAT

Invasive pests threaten to devour our parks, crops, and neighborhood landscapes. These pests are plants, insects, or disease-causing microorganisms that move into a new ecosystem. They can harm the environment and eliminate foods that we eat. They can also destroy trees that give us wood to build homes, and flowers that make our gardens beautiful.

Invasive pests cost our country billions of dollars each year.

THE SPREAD

Invasive pests slip into the country inside or on fruits, vegetables, and plants that we buy from other countries or that people bring when they travel. Pests can also "catch a ride" in a package sent through the mail. When we go camping and get close to nature, it also means nature can get close to us. Pests may try to hitchhike a ride home in our boots, clothes, or other camping gear.

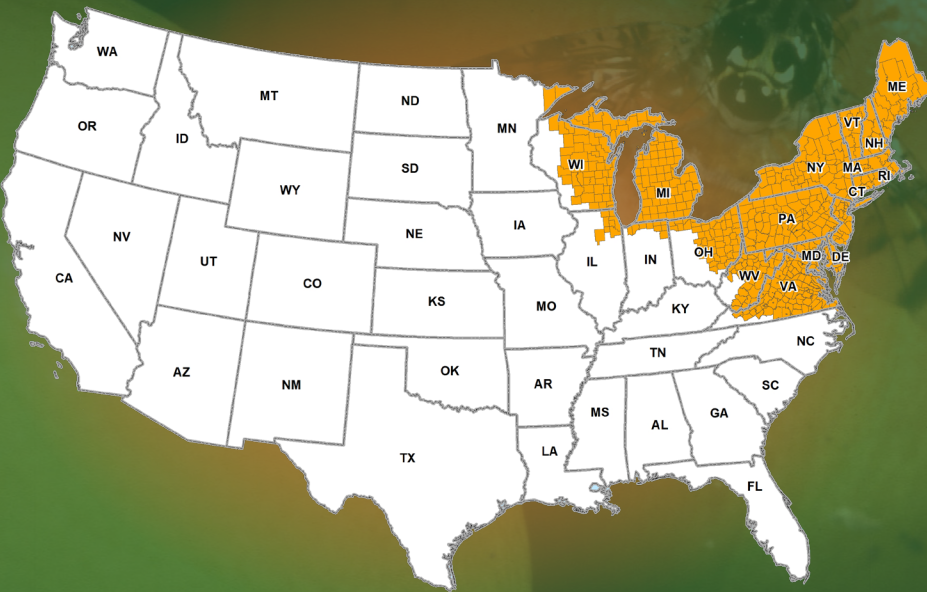
FIGHTING BACK AGAINST HUNGRY PESTS

The team at USDA's Animal and Plant Health Inspection Service (APHIS) defends America's animals and plants from Hungry Pests and diseases. USDA works with partners abroad to keep Hungry Pests far away. USDA tells U.S. Customs and Border Protection what to look for when checking animal and plant products for invasive pests at the border. When pests slip through, USDA finds the pests and spreads the word to make sure everyone is doing their part to stop the Hungry Pests.



THE POWER OF MAPS

USDA uses maps to show the public where invasive pests are, and whether they are in their community. Mapping helps raise awareness. Maps also help predict the areas of the United States where Hungry Pests and disease are likely to go. The climate, including temperature, put certain areas at more risk. USDA maps also show which areas are under federal quarantine in each state. A quarantine is an area where a pest is present and USDA is working to control or eliminate it.



This map shows areas currently quarantined for European gypsy moth.

HUNGRY PEST DETECTIVES: THEIR PROCESS

USDA acts fast to stop pest spread. They follow an important process.

- 1 SEE**
 A person (like you or me) notices signs of an invasive pest in the garden or at a park, on a walk, or while camping.
- 2 REPORT**
 A person calls or emails the local USDA office.
- 3 COLLECT**
 A USDA official collects a pest sample to figure out what kind of pest has been found.
- 4 CONFIRM**
 USDA scientists identify the pest in a lab using tests, photos from a microscope, and sometimes DNA analysis.
- 5 ANNOUNCEMENT**
 USDA tells local officials and the public that a pest has been found so everyone can help prevent the spread.

PROTECTING OUR NATION'S RESOURCES AS A CAREER

Many different careers are important in the fight against Hungry Pests. Plant scientists, geneticists, veterinarians, and data analysts all work for USDA. Their work is actually related to subject areas you study in school. For example, if you have a geography class you may already be familiar with the work of a Geographic Information Systems (GIS) specialist. GIS specialists create maps and study their results. They use advanced mapping software that captures all kinds of geographic information, including pest locations. If you enjoy learning about plants, animals, or technology, then a career at USDA might be right for you.

The U.S. Department of Agriculture (USDA) has opportunities for students interested in learning more about careers in agriculture, science, technology, business, and many other fields.

Learn more: https://www.aphis.usda.gov/aphis/ourfocus/civilrights/agdiscovery/ct_agdiscovery_program



FIGHT BACK AGAINST INVASIVE PESTS

There are many opportunities to grow a career at the U.S. Department of Agriculture (USDA). Read on to learn more about this exciting work.



SUPPORTING USDA EFFORTS

Invasive species threaten to devour our parks, forests, crops, and neighborhood landscapes. These destructive pests are plants, insects, or disease-causing microorganisms that move into a new ecosystem. They can harm the environment and eliminate our favorite foods. They can also destroy the trees that provide wood for building homes, and flowers that make our gardens beautiful. Invasive pests cost our nation billions of dollars each year.

Thankfully, the team at USDA's Animal and Plant Health Inspection Service defends our animal and plant resources from invasive pests and diseases. USDA works with many partners to stop the spread of Hungry Pests.

PROTECTING OUR NATION'S RESOURCES

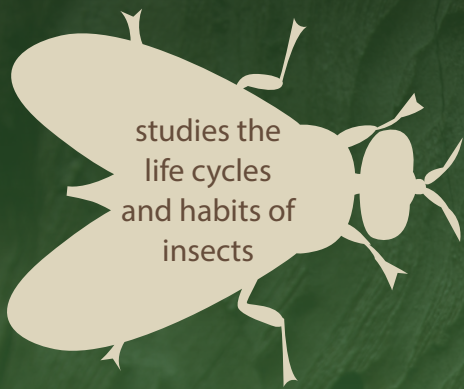
Fighting Hungry Pests is an enormous challenge. USDA takes the fight to Hungry Pests on three fronts: abroad-at the source, at the border-before they get in, and across the country-fighting back against the pests that have slipped in.

To take on this challenge, USDA assembles teams of people from different backgrounds and fields. Many of the federal government's plant scientists, microbiologists, veterinarians, and economists work for USDA. They are at the cutting edge of research and technology.

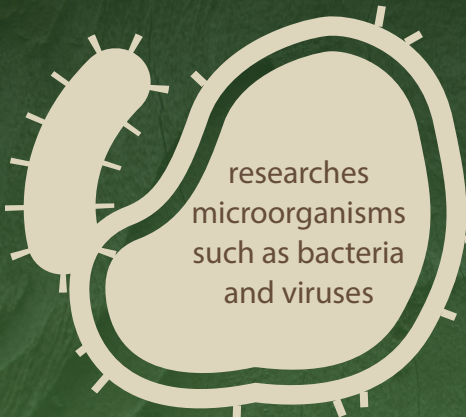


CAREERS IN AGRICULTURAL SCIENCE

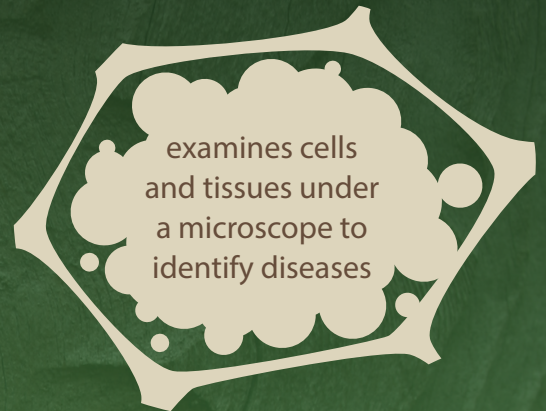
There are many job opportunities for anyone interested in joining the ongoing fight against Hungry Pests. In college, a major in entomology, veterinary science, biotechnology, food science, or agribusiness can prepare students for their first job in the field.



ENTOMOLOGIST



MICROBIOLOGIST



PLANT PATHOLOGIST



VETERINARIAN

What are your interests? If you find plants, animals, or technology exciting then these careers could be right for you!



AGRICULTURAL ECONOMIST



BOTANIST



DATA ANALYST

LEARN MORE:

Visit us at <https://www.usda.gov/our-agency/careers/usda-pathways-programs> for information about summer programs, internships, and jobs at USDA.

