

MEET THE CUCUMBER FAMILY

Cucumbers are grown all over the world. There are hundreds of varieties, and each country has its favourites. There are two types of cucumber: slicing and pickling. Both types are grown by BC farmers in fields during the summer. BC greenhouse farmers grow two kinds of **slicing** cucumbers year-round: mini cucumbers and English (seedless) cucumbers.

Mini cucumbers are a special, tender-skinned, juicy variety grown for their small size and easy eating.

English cucumbers are the most common **variety**. These mild-tasting cukes grow on vines and are almost seedless, have thin skins, and can grow as long as your arm!

Field cucumbers are a seeded, tougher-skinned variety grown in fields.

As you might guess, **pickling** cucumbers are varieties that are grown to be processed into pickles. What's a pickle? When a cucumber goes through a process of pickling using vinegar, water, and salt, it's called a **pickle**. Many foods can be pickled, but they're not called pickles!



**BC GREENHOUSE GROWERS PRODUCE MORE THAN 53 MILLION CUCUMBERS IN ONE YEAR.
THAT'S ENOUGH FOR MORE THAN 10 CUCUMBERS FOR EVERY PERSON IN BC.**

WORKING WITH NATURE TO PROTECT CROPS

Many insects attack cucumber plants. Greenhouse-grown cucumbers are better protected from pests than field-grown cucumbers. Still, small flying bugs sneak in through the greenhouse vents or catch a ride in on greenhouse workers. These tiny invaders cause damage by sucking sap from cucumber leaves and stems. How do BC's greenhouse growers tackle these unwanted pests? Each grower uses a unique set of [Integrated Pest Management \(IPM\)](#) tools: a combination of techniques that work with nature.

Greenhouse farmers follow these steps to protect their crops:



Step 1: Keeping a Healthy Crop

In nature, predators attack the weak. A healthy plant is a farmer's best defence against pests and disease. Farmers make sure their cucumber plants have just the right amount of food, water, light, heat, and ventilation.



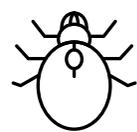
Step 2: Scouting – Looking for Trouble

Scouting is: checking plants regularly so that pests can be stopped as soon as they appear. Farmers hang sticky cards around the greenhouse to catch bugs to identify "pest hot spots." Then, they use a map of the greenhouse to record their findings.



Step 3: Removing Trouble Spots

Farmers clip off leaves that have pests and carefully remove them from the greenhouse.



Step 4: Bringing in the Good Bugs – Biological Control

Farmers depend on pest hunters – ladybugs, tiny mites, and predator wasps – that seek out and eat insect pests. Growers buy these bugs by the thousands from businesses called insectaries that grow them for just that purpose – they're like bug nurseries! Beneficial bugs do such a good job that greenhouse farmers can use little to no chemical pesticides on their crops.

**WHAT'S ON THE MENU FOR PEST HUNTERS IN THE GREENHOUSE?
GNATS, APHIDS, WHITEFLIES, AND THRIPS – DELICIOUS!**

LANGUAGE ARTS ACTIVITY: A BUG'S DAY IN THE GREENHOUSE

Curriculum Connection: Language Arts - grades 4 to 7: Questioning what we hear, read, and view contributes to our ability to be educated and engaged citizens. First Peoples Principles of Learning: Learning involves patience and time.

Have students imagine that they are bugs in a BC greenhouse. They are surrounded by cucumber plants. What kind of bugs are they? A good bug, like a ladybug, mite, or wasp? Or a bad bug, like an aphid, two-spotted spider mite, or thrip?

Ask students to create a comic strip or story about their day as a bug in the greenhouse. What do they see? Who do they hide from? Where do they find food? Where do they sleep? What problems do they face? Is life good in the greenhouse? How long do they think they will survive?

Teachers: If you're in the Lower Mainland, did you know that you can visit a greenhouse with your class in celebration of BC Greenhouse Veggie Days? For more information, see www.bcgreenhouse.ca/bc-veggie-day/ag-in-the-classroom

SCIENCE ACTIVITY: INTEGRATED PEST MANAGEMENT AND LIFE CYCLES

Curriculum Connection: Science - grade 4: All living things sense and respond to their environment. Grade 5: The nature of sustainable practices around BC's resources. Grades 6 to 7: Consider social, ethical, and environmental implications of the findings from their own and others' investigations. First Peoples Principles of Learning: Learning involves recognizing the consequences of one's actions.

BC greenhouse farmers pride themselves on growing safe and healthy food, and whenever possible, they use [Integrated Pest Management \(IPM\)](#) as an alternative to chemical pesticides to combat crop-damaging bugs. IPM includes an important technique called scouting to monitor plants regularly, including hanging sticky cards around the greenhouse to catch and identify pests as soon as they appear. Once growers determine that they need to take action to stop unwanted pests, they choose a method like biological pest control, which is also a key part of any IPM program. Biological pest control, used by nearly 100 percent of BC greenhouse growers, introduces good bugs – like ladybugs, mites, and wasps – into a greenhouse to hunt and eat the bad bugs.

Read the following scenario to your class, then have students use online resources to answer the research questions.

Oh No! A BC Greenhouse Farmer Has a Problem

A farmer has found aphids on the sticky cards placed by some of the greenhouse cucumber plants. Now the farmer must decide what good bug to release to battle these aphids, which will destroy the crop quickly. Help the farmer decide which all-natural pest hunter is best for eating aphids.

Research Questions:

1. What kind of damage can aphids do to a plant? Why would a farmer consider an aphid a bad bug?
2. What are some bugs that eat aphids?
3. Which of these insects eat the most aphids? (ladybugs)
4. At what point in the ladybug's life cycle does it start to feast on aphids?
5. How long does an adult ladybug live? Do you think a ladybug would have a long life in a BC greenhouse?
6. How many ladybugs do you think the farmer should purchase? Hundreds, thousands, or millions?

MATH QUESTIONS

Curriculum Connection: Mathematics - grades 4 to 5: Monetary calculations, including making change with amounts to \$100 and making simple financial decisions. Grades 6 to 7: Simple budgeting and consumer math and financial percentage. First Peoples Principles of Learning: Learning is holistic, reflexive, reflective, experiential, and relational.

Grades 4 to 5

A package of 6 mini cucumbers costs \$3.98. How much does each mini cucumber cost? (\$0.66)

If a classroom has 24 students in it, how much would it cost the teacher to give one cucumber to each student? (\$15.84)

If the teacher paid with a \$100 dollar bill, what would his/her change be? (\$84.16)

A school has 26 divisions (with 24 students in each). How much would it cost to purchase a mini cucumber for each student? (\$411.84)

Grades 6 to 7

If a school has 26 divisions (with 24 students in each), what is the population of the school? (624)

Today, 5% of the school's students are absent. How many students are at school today? (593)

If there are 593 students at school, how many packages of mini cucumbers will the school need? (99)