



..... THIS MONTH
WE'RE HARVESTING

Asparagus!

In This Issue



AND MORE!



Farmer Spotlight

NEILL CALLIS - TURLOCK FRUIT COMPANY
FIREBAUGH, CA

Ten years ago, Neill Callis and his wife were working for NASA and living near San Francisco when his father-in-law invited him to join Turlock Fruit Company, a business the family has held since 1918.



"I quickly realized I was a good fit for operations: understanding what affects the quality of our produce and how we can ensure the highest quality product to our consumers," explained Callis. "We're not launching rockets here, but we do have a responsibility to keep our food supply safe and abundant." Today, Callis works alongside three generations of the Smith family to manage the fruit company, where they farm 5,000 acres—primarily melons, but also almonds, cherries, and 300 acres of asparagus.

Asparagus is a permanent crop and once planted can be in production for ten years. Callis' asparagus starts at the nursery where seeds are planted and cared for over the course of a year before the root systems, called crowns, are dug up and transported to the field. They are hand-planted on peaked beds. "Asparagus requires some patience. The plants only reach full production after three years of growth," said Callis.

In mid-February, the crowns develop buds that push up through soil as asparagus spears. By late March, the spears are ready to harvest. Each spear is hand-cut with a 30-inch knife featuring a v-shaped blade. "Spears are growing continuously and can grow up to two inches each day in optimal conditions. Once a spear measures 10-11 inches long, it is harvested. The next day another spear from the same crown may be ready to harvest. We harvest the same 300 acres every day for 50-60 days," explained Callis. As the spears get thinner and yields decrease, it signals to the grower that the season has come to an end.

Each day harvested spears are placed in bins and brought into the packing shed on pallets, where they are processed by a semi-automated optical sorting machine that takes a photo of each spear before sorting and packing the asparagus into tight 1-pound bunches. The bunches are packed into cartons and hydro-cooled, a process of bathing fresh produce in chilled water to remove heat and reduce the presence of microorganisms, which is important for food safety. "After the hydro-cooler, it goes to the cold room and is shipped out within 48 hours." Callis' asparagus, both green and purple varieties, can be found in California supermarkets from late March to early May.

FOOD for FUEL

HERE ARE SOME OF THE
HEALTH BENEFITS OF INCLUDING ASPARAGUS IN YOUR DIET:



Asparagus provides unique health benefits. It is full of essential vitamins and a natural source of beneficial antioxidants.

Mood BOOST

Asparagus contains high levels of tryptophan, an amino acid that has been linked to improved mood. Additionally, asparagus is full of folate, a B vitamin that can help ward off irritability.

CELL Development

The folate found in asparagus is important in red blood cell formation and for healthy cell growth and function. This nutrient is crucial during early pregnancy to reduce the risk of birth defects of the brain and spine.

Happy GUT

The fiber content of asparagus makes it a good supplement for a healthy digestive tract. Just half a cup of asparagus contains 1.8 grams of fiber, which is 7% of your daily needs.



ASPARAGUS RAFTS

In this recipe, young chefs use toothpicks to build edible asparagus rafts. Skewering the asparagus spears together makes them easier to flip and cook evenly, plus it doubles as a great conversation starter. Where would you sail on your raft? What would you pack? Who would go with you? Enjoy making these rafts while dreaming of sailing away on an adventure! Makes approximately 10 rafts.



Ingredients:

- Two bunches thick asparagus spears
- 20 toothpicks or skewers
- ¼ cup olive oil
- Salt

Plus: Butter knife, baking sheet, oven

Directions:

1. Preheat the oven to 350°F. Wash asparagus under running water.
2. Snap off the ends of the asparagus where they break easily. Cut asparagus into approximately 4-inch long segments.
3. Place four spears side by side, and thread two toothpicks through the aligned spears to hold them all together like a raft. Repeat with the remaining spears and toothpicks.
4. Place the “rafts” on a rimmed baking sheet. Drizzle the rafts with the olive oil and season with salt.
5. Place the baking sheet in the oven and roast the rafts for 10 minutes. Turn the rafts over and roast for another 10 minutes or until crisp-tender.
6. Allow rafts to cool slightly, and enjoy!

CLASSROOM ★ Connection ★

Yield in the Field

weighs 28 pounds, since 28 one-pound bunches of asparagus fit inside. In this lesson, students will calculate yields and determine which field is producing the most asparagus.

Materials: Two bunches of asparagus, a scale, worksheet (page 3)

Procedure:

1. Show students a bunch of asparagus. Ask them, “Have you ever wondered how asparagus goes from the field to a tidy bunch in the grocery store?” Explain that harvesting and packing asparagus is extremely labor intensive. You may wish to read the farmer profile (page 1) to students for additional context.
2. Open both bunches of asparagus. Share that agricultural workers bundle the asparagus in 1-pound bunches and, with some experience, are able to do it successfully without a scale. Invite a student volunteer to make a 1-pound bunch. Check their work with a scale. Have several volunteers attempt to make an accurate bunch. Discuss the necessary skills and experience needed for agricultural workers to do their job successfully.
3. Explain that after the asparagus is packaged into 1-pound bunches, the bunches are stacked neatly in a crate. Twenty-eight bunches fill one crate. At optimal production, an acre of planted asparagus will yield 275 crates of asparagus during a 60 day season. Tell students that in today’s activity, they will take on the role of farmer. They will complete some realistic calculations to determine the yield from each field and identify the top producing fields on the farm. Show students how to make calculations using an example similar to those on the worksheet.
4. After students complete the worksheet, invite students to share their calculations with the class. Discuss how accurate calculations help an asparagus farmer identify positive management practices as well as problems with his or her crop.

Objectives

Students will multiply multi-digit numbers to calculate the yield of asparagus fields. Students will compare the yield of each field by using $>$, $=$, and $<$ symbols. Advanced students will find the rate of crates per acre.

Standards: CC Math: 4.NBT.A.2, 4.NBT.B.5, 5.NBT.B.5, 6.RP.A.3, 6.NS.B.2, 7.NS.A.3

Yield in the Field

Calculate the yield for each field below.
Each crate contains 28 one-pound bunches of asparagus.

Field A

Acreage: 12
Crates: 3,000
Total Pounds: _____

Field B

Acreage: 18
Crates: 3,150
Total Pounds: _____

Field C

Acreage: 15
Crates: 4,125
Total Pounds: _____

Field D

Acreage: 9
Crates: 4,000
Total Pounds: _____

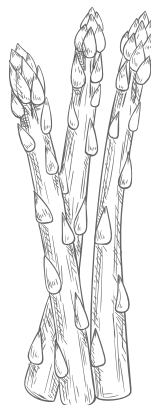
Compare the yield of each by using $>$, $=$, and $<$ symbols.

Field C _____ Field B

Field A _____ Field D

Field A _____ Field B

Field C _____ Field D



California asparagus
producers grew
18 million pounds of
asparagus in 2019.

EXTRA CHALLENGE: Find the total crates per acre for each field and place a star on the fields that have reached optimal field production (275 crates/acre).

virtual



This video, produced by True Food TV, takes viewers to Sheppard Farms where they produce 840,000 pounds of asparagus annually. Discover why asparagus is considered the “king of vegetables” in this fascinating documentary that follows asparagus as it’s planted, harvested, packed, and sold.



DIG DEEPER

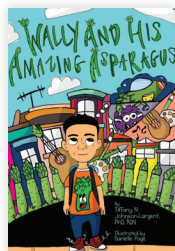
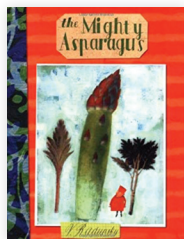
These books, websites, and other resources will help you and your students learn more about asparagus.

BOOKS

The Mighty Asparagus

by Vladimir Radunsky

With illustrations inspired by Renaissance art, this book features an egotistical king that goes head to head with an asparagus stalk growing in the center of the kingdom. Can the smallest creature in the land restore peace in the kingdom?



Wally & His Amazing Asparagus

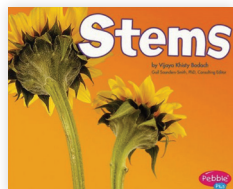
written by Tiffany N. Johnson-Largent, PhD, RDN, and illustrated by Danielle Page

Written by a registered dietician, this book aims to inspire positive eating habits in children. Wally has an extraordinary imagination, and with the help of his amazing asparagus, he experiences countless adventures.

Stems

by Vijaya Bodach

This nonfiction book uses simple text and photographs to introduce information about how stems grow, along with their uses. It features several pages on edible stems, including asparagus. Also available in Spanish.



WEBSITES

learnaboutag.org

The California Foundation for Agriculture in the Classroom provides free resources to teachers. The resources highlight many of California’s 400 agricultural commodities, including asparagus.

calasparagus.org

The California Asparagus Commission’s website features recipes, nutrition information, facts, and videos about asparagus. Although the commission is no longer active, the information on the website is timeless.

RESOURCES

Lesson Plan: Creating Asparagus Ads (Grades 3-5)

By Center for Ecoliteracy

In this lesson, students conduct a taste test of fresh and cooked asparagus, then develop advertisements to promote the benefits of asparagus and entice other children to try it.

Activity: Asparagus Ag-Bite (Grades 4-6)

By California Foundation for Agriculture in the Classroom

This resource features a “bite-sized” activity about asparagus. Students will practice measurement skills as they use metric and customary systems to accurately measure and sort asparagus by size.

Article: A Wee Fact about Asparagus (Grades 3-8)

By National Geographic Kids

This article examines the scientific explanation behind why asparagus makes your urine smell, and why some people (depending on where they live in the world) can’t detect the smell at all! This kid-friendly article is sure to generate a lively discussion in the classroom.

