



Fairer

Flowers



Meet the farmers protecting the environment while growing millions of flowers for bouquets

Before you buy flowers this Mother's Day, take a moment to consider the story behind your bouquet. Those stems probably grew on fertile savannas or in lush greenhouses as far away as Africa, Asia, and even Australia! They then traveled thousands of miles in refrigerated planes and trucks to reach your doorstep.

Every year, the U.S. imports billions of dollars' worth of roses, carnations, tulips, and other cut flowers from all over the world. Most come from South America. "Ecuador and Colombia supply about 80 percent of the flowers sold in the U.S.," says Robert McLaughlin, CEO

of Organic Bouquet, an online flower shop based in Florida.

But not every flower farm is equal. Organic Bouquet buys only from growers certified as sustainable. That means they treat workers well and use eco-friendly farming practices. "Uncertified farms don't have to pay workers a fair living wage, and they can use harsh chemicals," explains McLaughlin. Those chemicals can poison wildlife as well as workers.

Sustainable farms, on the other hand, use natural means to combat pests. For example, planting herbs like mint and chamomile outside greenhouses scares off hungry critters. Similarly, spraying fields with foul-tasting seasonings such as tobacco, garlic, and pepper keeps some birds away.

Researchers at LatinFlor, a sustainable farm in Ecuador, found a clever way to kill an insect called a leaf miner, which chews through plants, leaving ugly brown tracks. Workers release tiny wasps that prey on the leaf miners. Any miners the wasps don't find get sucked up with giant vacuums. "We fight bad bugs with good bugs," says Ramiro Peñaherrera, who owns LatinFlor.

In addition to its organic farming, LatinFlor also cares for its workers.

The farm provides transportation, two meals a day, an on-call doctor, and a retirement plan. "I want my workers to live good lives," says Peñaherrera.

So how do you know if your bouquet came from a sustainable farm? Look for a certification seal such as VeriFlora, Rainforest Alliance, or Fair Trade, says McLaughlin. "It tells you your flowers were grown to the highest ethical standards."

—Ariel Bleicher



\$2.38
BILLION
spent on
Mother's
Day flowers
in 2016



Countries around the world export billions of dollars' worth of cut flowers every year. You can visualize this information with a treemap, which uses proportional rectangles to show relationships between data.

EXAMPLE: What percent of cut-flower exports, by dollar value, came from South America? Find the proportion of the treemap that best represents this value. Color that rectangle in the treemap blue.

Step 1 Write a proportion to set up the problem. $\frac{\text{Part}}{\text{Whole}} = \frac{\text{Percent}}{100}$ unknown variable you are solving for

Step 2 Fill in the known quantities. $\frac{\text{Part} \rightarrow \$2,130 \text{ (South America in millions)}}{\text{Whole} \rightarrow \$8,765 \text{ (World Total in millions)}} = \frac{\text{Percent}}{100}$ ←

Step 3 Cross multiply to solve the proportion and find the percent. $8,765 \times \text{Percent} = 2,130 \times 100$
 $8,765 \times \text{Percent} = 213,000$
 $\text{Percent} = \frac{213,000}{8,765} = 24.301\dots$ rounded to 24%

Step 4 Estimate the closest benchmark fraction. $24\% = \frac{24}{100} = \text{about } \frac{1}{4}$

→ So 24% of the dollar value of cut flowers came from South America. That's about $\frac{1}{4}$ of the total.



Use this information to answer the questions that follow.

Round percents to the nearest whole number.

1 Complete the chart to the right to determine the percent of dollar value of cut flowers that came from each region. Then estimate the nearest benchmark fraction.

2 Use the benchmark fractions that you estimated in the chart to label the treemap to the right with the region and shade in the following colors: green for Asia, orange for Africa, purple for Europe, and yellow for North America and Oceania, and blue for South America.

3 What are some advantages and disadvantages to displaying data in a treemap? Write your answer on a separate sheet of paper.

REGION	VALUE	%	FRACTION
Asia	\$563		
Africa	\$1,280		
Europe	\$4,640		
North America & Oceania	\$152		
South America	\$2,130	24%	$\frac{1}{4}$
World Total	\$8,765		

Source: Observatory of Economic Complexity

