

Meet Jim.

He produces a massive 450 tonnes of tomatoes, both big and small, which make their way to Morrisons, Asda and the Co-op, as well as local shops in the Borders.

He grows four acres (2.5 football pitches) of tomatoes under glass.



The tomato plants grow in rockwool rather than in soil. They are planted in January and picking begins in March and finishes in mid November.

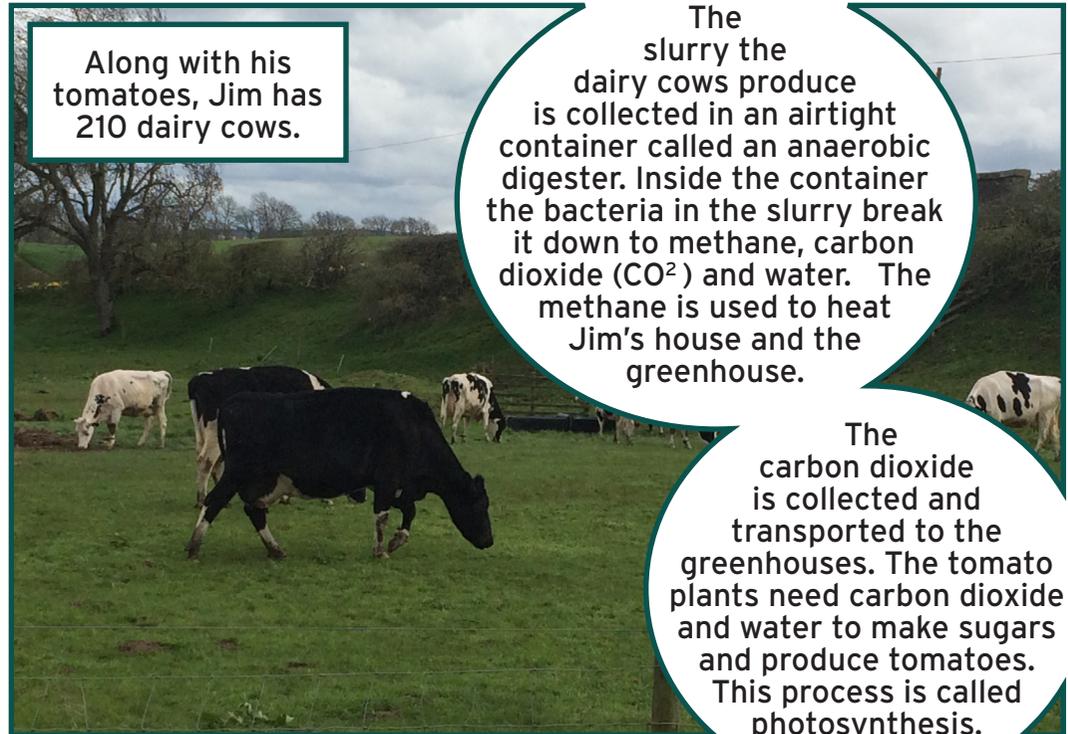


These bees arrive in boxes and live inside the glasshouse pollinating the tomato flowers to make sure they produce fruits.

Jim ties his tomato plants to vertical string supports which are moved to a more horizontal angle as the plants grow. With so many tomatoes, a lot of bees are needed to help with the pollination.



Along with his tomatoes, Jim has 210 dairy cows.



The slurry the dairy cows produce is collected in an airtight container called an anaerobic digester. Inside the container the bacteria in the slurry break it down to methane, carbon dioxide (CO<sup>2</sup>) and water. The methane is used to heat Jim's house and the greenhouse.

The carbon dioxide is collected and transported to the greenhouses. The tomato plants need carbon dioxide and water to make sugars and produce tomatoes. This process is called photosynthesis.

# QUESTION TIME!

Read about Jim and how he grows tomatoes with the help of bees and cows then have a go at answering the following questions:

- 1. If 150 tonnes of total yield of tomatoes are small cherry tomatoes, what % is this of the total crop?**
- 2. Draw a diagram to show the journey of the cow poo to heat in the greenhouse:**
- 3. Based on what you know, how would you explain why Jim keeps cows?**
- 4. Why do you think the tomatoes grow in rockwool and not soil?**
- 5. What do you think the result would be if Jim did not have bees in his greenhouse?**
- 6. For what % of the year can we be eating tomatoes grown by Jim?**