

**(Danielle) Intro (shot 1):** Dairy is not perfectly sustainable, yet farmers are constantly working to make dairy production more efficient. Currently, dairy accounts for only 2% of US Greenhouse Gas Emissions, and 1 gallon of milk uses 90% less land, 65% less water, and has a 63% smaller carbon footprint than 1944.

**Laura: Overview of dairy farming (shot 2):** Dairy farming mainly involves the production of milk from dairy cows, but it is more than just milking cows. There are many inputs that go into dairy farming, such as growing crops, feeding the cows, and much more. In 2019, there were 9.34 million cows and 34,187 dairy farms in the United States, 98% of which are family owned and operated. This video will teach you about some sustainable practices on these farms.

**(Danielle) Manure Spreading (shot 3):** Farmers don't waste anything because cow manure is very important on dairy farms. Cows are large animals that consume a lot of feed, and therefore produce a lot of manure. This waste has important components, such as nitrogen, phosphorus, potassium, and organic material, making it a great natural fertilizer.

**Laura: Manure digester (shot 4):** Some dairy farmers have a manure digesting system, which collects and pumps manure into a machine that captures biogas produced by microorganisms. The energy in this gas can be converted to heat and electricity for everyday use. We talked to Jim Harbach from Schrack farms in Pennsylvania about their manure digester:

**(farmer)Interview with manure digester farmer (shot 5):**

**(Danielle) Most farmers produce their own feed (shot 6):** Dairy cattle need around 115 pounds of feed per day for milk production and maintenance. The farmers produce around half of the feed that their animals require, meaning they have to take good care of their cropland, which they do by adopting practices such as injecting manure, no-till cropping, and crop rotations.

**Laura: No-till crops (shot 7):** No till cropping is a great way to be sustainable, and many dairy farmers use this practice. Some benefits include decreasing soil erosion, increasing water infiltration into the soil, retention of organic matter, and nutrient cycling. It also reduces the amount of fuel and labor that goes into field maintenance, saving money and the environment.

**(Danielle) Byproducts (shot 8):** A portion of the dairy cow diet comes from the leftover products of some sort of manufacturing. Some examples include beet pulp and cottonseed hulls. We talked to Dr. Mike VanAmburg from Cornell University about the importance of using byproduct feeds.

**Interview with VA (shot 9):**

**(Danielle) Seaweed (shot 11):** Going forwards, a study at the University of California has found that feeding dairy cattle a 1% seaweed diet produced 67% less methane. Though this is one

study, and seaweed is not yet an economical option, this research is a promising step towards more sustainable practices.

**Laura: Summary 14 seconds (shot 12):** As you can see, dairy farming today is very sustainable, and very environmentally friendly. Next time you have a glass of milk, take the time to appreciate all of the hard work that went into making that product.

Sources:

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- [https://en.wikipedia.org/wiki/No-till\\_farming](https://en.wikipedia.org/wiki/No-till_farming)
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