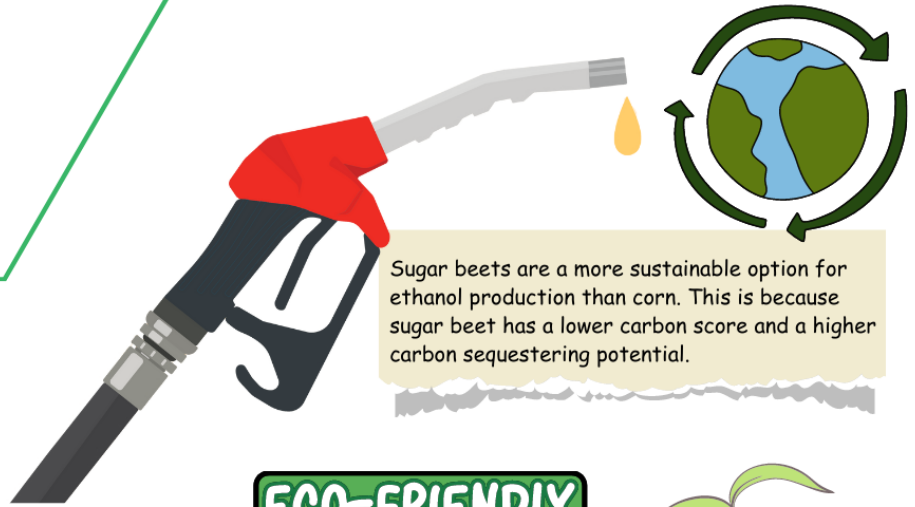


CARBON SCORE & SEQUESTERING POTENTIAL



Sugar beets are a more sustainable option for ethanol production than corn. This is because sugar beet has a lower carbon score and a higher carbon sequestering potential.

ECO-FRIENDLY



Sugar beets has the potential to sequester carbon in two ways:

1

Through the growth of the crop itself. Sugar beets are a C₄ plant, which means they are more efficient at photosynthesis than C₃ plants, such as wheat or corn. This means that they take up more carbon dioxide from the atmosphere and store it in their biomass.

2

Through the improvement of soil organic matter. Sugar beet roots release exudates that stimulate the growth of soil microbes. These microbes can then help to break down organic matter in the soil, releasing carbon dioxide into the atmosphere. However, if the sugar beet crop is rotated with other crops that do not release exudates, the carbon dioxide can be captured by the new crop and stored in the soil.

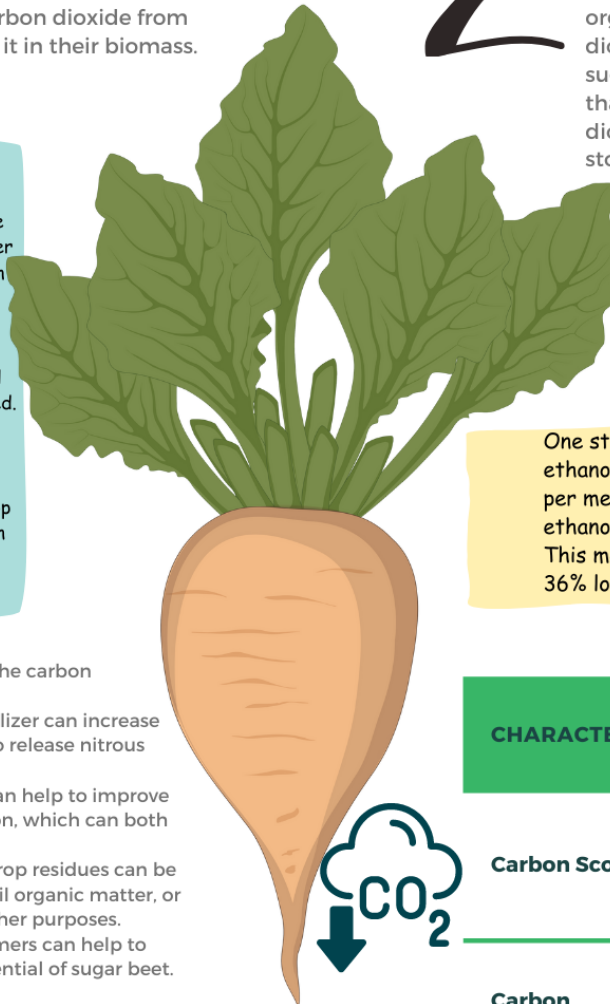
In one study, it was found that sugar beet had the potential to sequester up to 1.3 tonnes of carbon per hectare per year. This is comparable to the carbon sequestration potential of some tree species. However, it is important to note that the carbon sequestration potential of sugar beet will vary depending on a number of factors, such as the soil type, the climate, and the agricultural practices used.

Overall, sugar beet has the potential to be a significant contributor to carbon sequestration. However, more research is needed to fully understand the potential of this crop and to develop agricultural practices that can maximize its carbon sequestration potential.

Some additional factors that can affect the carbon sequestration potential of sugar beet:

- The amount of fertilizer applied. Fertilizer can increase the growth of the crop, but it can also release nitrous oxide, a potent greenhouse gas.
- The use of cover crops. Cover crops can help to improve soil organic matter and reduce erosion, which can both contribute to carbon sequestration.
- The management of crop residues. Crop residues can be left on the field to help to improve soil organic matter, or they can be removed and used for other purposes.

By taking these factors into account, farmers can help to maximize the carbon sequestration potential of sugar beet.



V S



One study found that the carbon score for ethanol from sugar beet was 28.5 grams of CO₂e per megajoule (MJ), while the carbon score for ethanol from corn was 44 grams of CO₂e per MJ. This means that ethanol from sugar beet has a 36% lower carbon score than ethanol from corn.

CHARACTERISTIC	CORN	SUGAR BEET
Carbon Score	44 grams of CO ₂ e per MJ	28.5 grams of CO ₂ e per MJ
Carbon Sequestering Potential	0.9 tonnes of carbon per hectare per year	1.3 tonnes of carbon per hectare per year

Source:
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