

## **Just a minute (or so) about renewable fuels.**

### **Episode 1: Renewable Fuels: What Are They Made From?**

Feedstocks (with hands-on learning activity suggestion)

Hi, I'm Joanne Ivancic with Advanced Biofuels USA and I'd like to spend just a minute or so talking with you about renewable fuels. Today, What Is Used to Make Them?

#### **Slide 2**

What do you think of when you hear the word "biofuel"?

Many people in the US will answer corn ethanol because in the US about 10% of the gasoline is [ethanol](#) molecules that are made from [corn](#).

In the EU, people might say [biodiesel](#) or [renewable diesel](#) and think of used cooking oil, canola or rapeseed used to make it.

In Africa, Asia and Brazil, you might say ethanol from sugar cane or from cassava.

Or maybe you think of [renewable jet fuel](#).

#### **Slide 3**

There are many things you can use to make renewable fuels. Here's a quick scroll through some examples.

#### **Slides 4-23**

Different Kinds of [Sorghum](#)

[Oil seed crops](#) like [Sunflowers](#) or [Jerusalem Artichokes](#)

Tiny oil seed crops like [Canola](#), [Rapeseed](#), [Carinata](#), [Camelina](#) which might be grown as winter crops

Grasses like [Phragmites](#), [Miscanthus](#) or [Arundo](#), [Giant Reed](#)

[Switchgrass](#)

[Corn Stover](#) and [Corn Cobs](#)

Sugar Crops and their residues such as [Sugar Cane Bagasse](#)

[Sugar Beets, Sugar Beet Pulp and Energy Beets](#)

[Cassava](#)

[Jatropha](#), [Moringa](#), [Pongamia \(Pone GAM ia\)](#), [Castor Bean](#), [Jojoba \(Huh HOE buh](#)

[Cashew Apple](#), [Sisal Bole](#), [Agave \(Ah GAH vey\)](#)

[Kenaf \(KEN af\)](#) or [Hemp](#) and [Cannabis Residues](#)

[Nut Shells](#), [Cotton Seed and Hulls](#), [Rice Hulls, Husks](#), [Rice](#) or [Wheat Straw](#);

<https://advancedbiofuelsusa.info/tag/almond-hulls-shells/>

[Woody Biomass](#), [Forest Waste and Residues](#)

Coppiced [Willow](#) and [Poplar](#)

[Algae](#), [Duckweed](#) or [Lemna](#)

[Flue Gas](#), [Industrial Waste Gas](#), [Municipal Solid Waste](#), [Distillers](#) and [Brewers Waste](#)

[Used Cooking Oil](#) and [Grease](#)

[Landfill Gas](#) and [Biogas](#) from food and animal waste

[Water](#) and [Carbon Dioxide](#) with Renewable Energy

## **Slide 24**

And much more.

## **Slide 25**

Here's an activity you might want to try. Have you ever tried to grow something?

Here's a way you can learn on a small scale what farmers need to think about on a larger scale—no matter what the purpose of their crop may be.

You could buy some seeds at the store, lettuce or bean seeds are good for a start; or take a few seeds from a grapefruit or butternut squash or other food. You can grow them in a garden or on a window sill, or balcony in a container, perhaps one you rescue from the trash. Follow the link for some tips:

<https://www.google.com/search?q=Lessons+for+children+growing+beans+at+home&og=Lessons+for+children+growing+beans+at+home&aqs=chrome..69i57.9905j1j7&sourceid=chrome&ie=UTF-8>

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**Intended for educational purposes.**



For more information: Advanced Biofuels USA 301-644-1395 [www.AdvancedBiofuelsUSA.org](http://www.AdvancedBiofuelsUSA.org)