



Glycerol and Its Uses

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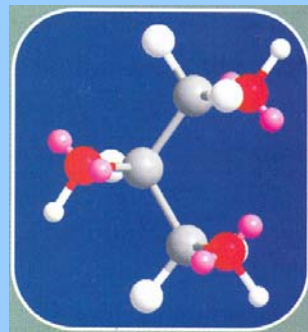
Orange County Public Schools

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Glycerin

- **Glycerin is a carbohydrate molecule that makes up 10 to 12 percent of the triglyceride molecule of fats and oils.**
- **Synthetic glycerin is produced from petroleum, while natural glycerin is obtained from fats and plant oils.**



Glycerin

- Glycerin is a neutral, colorless, sweet-tasting liquid with a wide range of food, pharmaceutical and industrial applications.
- Valued as a skin moisturizer in soaps and lotions, and a softening agent in candy and baked goods.





Combating the Glycerin Glut

The biodiesel industry continues to make an impact on the liquid fuels industry—but its by-product is having just as much of an effect. Producers and consumers alike are struggling with business plans influenced by an expanding flood of crude glycerin.

By Dave Nilles

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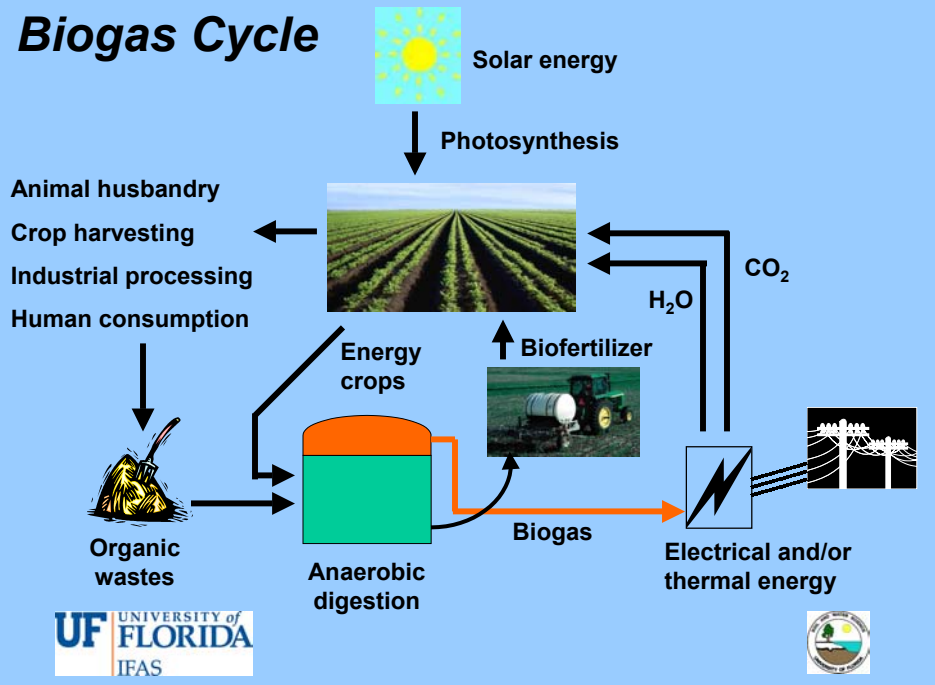


UF – IFAS

- Biogas energy
- Animal feed



Biogas Cycle



Biodiesel By-products

- **Crude bottoms**
 - Crude glycerol
- **Washwater**
- **Anaerobic digestion offers a sustainable solution**
 - In-house energy / export
 - Reduced process complexity
 - Capital cost savings
 - Avoid non-energy markets



GatorGas

**UF-IFAS
Anaerobic
Digester**

(80-90% CH₄)



**Water
heater at
UF-IFAS
Dairy
powered
by
manure
biogas**



Co-Digestion Opportunities

- **Municipal sludge**
- **Food waste**



For more information ...

- **<http://biogas.ifas.ufl.edu>**



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