

# CELLULOSE ETHANOL

## Study Questions

Study questions are designed to reinforce your understanding of the lesson material. Please create a Microsoft Word document and submit your completed study questions to the instructor via email ([info@technologyed.com](mailto:info@technologyed.com)) .

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### **Study Questions- Lesson 1**

1. What is gasoline?
  2. Why is it believed that European drivers pay more for gasoline than US drivers?
  3. Why is gasoline in Nigeria cheaper than gasoline in the US?
  4. What is biofuel?
  5. What is biomass?
  6. What is cellulose?
  7. Provide three examples of biomass
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### **Study Questions- Lesson 2**

1. What are the advantages of biodiesel?
2. What are some challenges associated with biodiesel?
3. What is E85?
4. How much ethanol is produced in the US?
5. Which fuel yields the highest energy content?

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### **Study Questions- Lesson 3**

1. Describe the process used to make bio diesel
  2. Describe the process used to make bio ethanol
  3. What is the purpose of pretreatment?
  4. What is the purpose of enzymatic hydrolysis?
  5. What is the purpose of fermentation?
  6. What is the purpose of distillation?
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### **Study Questions- Lesson 4**

1. What are three examples of starch biomass?
  2. How much corn ethanol is produced in the US?
  3. Why are food prices rising in the US?
  4. How much corn ethanol can be yielded from 1 million bushels of corn?
  5. What is the estimated gallon per ton for corn, sweet potatoes, and wheat?
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### **Study Questions- Lesson 5**

1. What are agricultural wastes?
2. List 5 agricultural wastes that could be used for biofuel conversion
3. How much ethanol can be yielded from each waste material?
4. What is the estimated price for corn stover?
5. What is the estimated price for sugar beet?

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**Study Questions- Lesson 6**

1. What are perennial grasses?
2. List 2 types of perennial grasses?
3. What is the advantage of using perennial grasses over starch based crops?
4. What is the estimated price for switchgrass?
5. Provide 2 examples of processing residues?