
BioEnergy Testing and Analysis Laboratory (Beta Lab)

Biological and Agricultural Engineering Department (BAEN)

AgriLife Research, Texas A&M University

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<https://betalab.tamu.edu>

(Note: Please fill up last page of this fee schedules for all analytical requests needed.)

Price (per run or test)

Biomass Feedstock Analysis

<input type="checkbox"/> Sample Preparation/Grinding	\$25
<input type="checkbox"/> Ultimate Analysis (C, H, N, S and O by difference)	\$110
<input type="checkbox"/> Proximate Analysis (Moisture, Volatile Matter, Fixed Carbon and Ash)	\$100
<input type="checkbox"/> Moisture Analysis (ASTM E 871 - 82- Standards)	\$20
<input type="checkbox"/> Fixed Carbon (by difference after ASTM E871, E872 and D 1102)	\$20
<input type="checkbox"/> Ash Analysis (ASTM D1102-84 Reapproved 2007)	\$20
<input type="checkbox"/> Volatile Matter (ASTM E872-82 Reapproved 2006)	\$40
<input type="checkbox"/> Eutectic Point Analysis (by compressive strength)	\$320
<input type="checkbox"/> Acid Soluble Lignin Concentration (NREL Procedure)	\$320
<input type="checkbox"/> Structural Carbohydrates and Lignin in Biomass (NREL Procedure)	\$320
<input type="checkbox"/> Gross Calorific Value via Bomb Calorimeter (ASTM E711-87)	\$50

Seed Oil Extraction Tests

<input type="checkbox"/> Mechanical Oil Seed Press (5 kg/hr)	\$350/day
<input type="checkbox"/> Solvent Extraction (8-hour runs)	\$250/day
<input type="checkbox"/> Ultra-sonication/Cell Lysis Algae Oil Extraction/Solvent Extraction	\$350/day

Vegetable & Animal Fats Oil Refining Tests

<input type="checkbox"/> Degumming	\$100/day
<input type="checkbox"/> Neutralization	\$100/day
<input type="checkbox"/> Dewaxing	\$100/day
<input type="checkbox"/> Bleaching	\$100/day
<input type="checkbox"/> Deodorization	\$100/day
<input type="checkbox"/> Phosphorus	\$50/day

Biodiesel ASTM D6751 Tests

<input type="checkbox"/> Kinematic Viscosity of Transparent and Opaque Liquids (ASTM D445)	\$50
<input type="checkbox"/> Acid Number of Petroleum Product by Potentiometric Titration (ASTM D 664)	\$30
<input type="checkbox"/> Sulfur in Petroleum Product by Potentiometric Titration (ASTM D644)	\$55
<input type="checkbox"/> Distillation of Petroleum Products (ASTM D 1266)	\$55
<input type="checkbox"/> Flash Point by Pensky-Martens Closed Cup Tester (ASTM D93)	\$40
<input type="checkbox"/> Sulfate Ash from Lubricated Oils Additives (ASTM D 874)	\$55
<input type="checkbox"/> Cloud Point of Petroleum Products (ASTM D 5773)	\$30
<input type="checkbox"/> Water and Sediment (ASTM D 2709)	\$30

Biodiesel Transesterification Experiments

<input type="checkbox"/> 30-gallon Batch Reactor (maximum)	\$1000
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Engine Dynamometer Testing

<input type="checkbox"/> Engine Performance Testing	\$1000/day
<input type="checkbox"/> Engine Exhaust Emissions Testing	\$1000/day

Fluidized Bed Gasification/Pyrolysis Testing

<input type="checkbox"/> Fluidized bed gasification runs	.....	\$2500/day
<input type="checkbox"/> Fluidized bed pyrolysis runs	.....	\$2500/day

Fluidized Bed Gasification Demonstration (Mobile System)

<input type="checkbox"/> Full-day fluidized bed gasification demonstration	\$5000/day
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Synthesis Gas/Greenhouse Gas Analysis

<input type="checkbox"/> Complete syngas analysis using gas chromatograph	\$250
<input type="checkbox"/> Complete greenhouse gas analysis (CO ₂ , CH ₄ and N ₂ O)	.....	\$250

Biooil Analysis

<input type="checkbox"/> Biooil Sample Preparation (depending upon extent of dissolution/ solvent extraction)	.....	\$250
<input type="checkbox"/> GC/MS Analysis (for sample injection-ready solvent extracted compounds only, per run)	.....	\$350
<input type="checkbox"/> Hydrogenation Experiments (moderate pressure and temperature, per run)	.....	\$350
<input type="checkbox"/> Hydrogenation Experiments (high pressure and high temperature, per run)	.....	\$550
<input type="checkbox"/> Deoxygenation Experiments (using Micro-Berty Catalytic Reactor, per run)	.....	\$550

Biochar Analysis

<input type="checkbox"/> BET Surface Area/Pore Volume Analysis	.....	\$250
<input type="checkbox"/> Adsorption/Absorption Isotherm Experiments	.....	\$250

Fermentation Tests

<input type="checkbox"/> Complete Sugar Analysis (Using HPLC)	.....	\$60
<input type="checkbox"/> Complete Fermentation Experiments (5-day experimental runs)	.....	\$2500/run

Air Quality PM Measurements

<input type="checkbox"/> FRM PM ₁₀ Measurements (per day)	.....	\$500
<input type="checkbox"/> FRM PM _{2.5} Measurements (per day)	.....	\$500

Animal Manure Management Analysis

<input type="checkbox"/> Bacteria indicators Total Coliform Bacteria & E-Coli (water)	.....	\$40
<input type="checkbox"/> Bacteria indicators Total Coliform Bacteria & E-Coli (Manure effluent/slurry)	.....	\$45
<input type="checkbox"/> Bacteria indicators Total Coliform Bacteria & E-Coli (Manure solids)	.....	\$50
<input type="checkbox"/> Manure nutrient analysis	.....	\$30
<input type="checkbox"/> Manure BOD/COD analysis	.....	\$30
<input type="checkbox"/> Wastewater BOD/COD Analysis	.....	\$30
<input type="checkbox"/> Onsite air quality general analysis	.....	\$20
<input type="checkbox"/> Odor and Total Volatile Organic Compounds	.....	\$400
<input type="checkbox"/> Onsite gas detection and measurement (bundle*)	.....	\$275
<input type="checkbox"/> Onsite gas detection and measurement (selected item*)	.....	\$25-\$75

(*One of the hydrogen sulfide, ammonia, carbon dioxide, hydrogen sulfide, sulfur dioxide, nitrous gases, and ozone measurement. Please contact for specific sample analysis information.

Request for Analysis General Information Name: _____ Email Address: _____ Street Address: _____ City: _____ Account/PO #: _____	Date: _____ Tel. No. _____ Cell Phone: _____ State: _____ Zip Code: _____
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Request for Analysis Code: _____	Date Sample Received: _____		
List All Analysis to be Made	# of Samples	Cost/Sample	Total Cost
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
		Sub-total	_____
Other Special Experiments Required:			
1. Gasification Runs Pilot Testing	_____	_____	_____
2. Pyrolysis Runs Pilot Testing			
3. Biodiesel Production			
4. Fermentation Tests			
Other Tests: (Please Specify)			
1. _____		_____	_____
2. _____		_____	_____
3. _____		_____	_____
		Sub-total	_____
		Total	_____

For check payments, please pay to:
 AgriLife Research (Attn: Cheryl Yeager)
 Note: To establish easy payment, we may
 require clients to fill up W9 form.