

ABC's Digestate Standard Testing & Certification Program

www.DIGESTATE.org

ABC UW-OshKosh Operator Training
2019
OshKosh, WI
June 10-14

Bernie Sheff, PE



**AMERICAN
BIOGAS
COUNCIL**

CERTIFIED DIGESTATE
GENERALLY UNRESTRICTED



**AMERICAN
BIOGAS
COUNCIL**

CERTIFIED DIGESTATE
RESTRICTED

Typical Digestate Uses



S/L

Separation



Field Application



Municipal Treatment



Compost/Soil

Why Certify



- Proof of meeting local, farm, soil regulatory requirements (i.e. pathogens, odor, contaminants, nutrient loading, consistency, metals, etc.).



- Determination of range of COD/BOD, metal loading, particular constituents so that pricing/contracts can be realized.

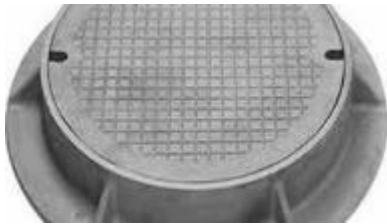


- Proof of pathogens, nutrient profile, contaminants so that certification as well as wholesale/retail sales can be realized.

Why Important to Show Proof



- Secure agricultural field contracts in competitive market; added value; written record in case of regulatory audits/annual reporting.



- Reduce costs charged by WWTF, as competitive pricing given with reduced loads and consistency of delivered material.



- Secure wholesale and even retail sales in competitive market or achieve higher price points with consistent/tested product delivered.

A Little Goes a Long Way

Typically digestate is often a loss item on the business books—no price point given or even a charged fee, as well as storage/transportation costs.

Positive Scenarios—Allow not just added revenues/reduced costs but more favorable financier investment

- No price received, but no fee, and a stable outlet or even contract;
- Competitive market, more likely to secure outlet;
- Turn regulators/neighbors into friends
- Even with small price (\$1/ton), significant offset of costs or transportation

Annual Digestate Production (Tons/year)	\$ 1.00	\$ 3.00	\$ 5.00	\$ 10.00	\$ 20.00
5,000	\$ 5,000	\$ 15,000	\$ 25,000	\$ 50,000	\$ 100,000
50,000	\$ 50,000	\$ 150,000	\$ 250,000	\$ 500,000	\$ 1,000,000
100,000	\$ 100,000	\$ 300,000	\$ 500,000	\$ 1,000,000	\$ 2,000,000
250,000	\$ 250,000	\$ 750,000	\$ 1,250,000	\$ 2,500,000	\$ 5,000,000
500,000	\$ 500,000	\$ 1,500,000	\$ 2,500,000	\$ 5,000,000	\$ 10,000,000
1,000,000	\$ 1,000,000	\$ 3,000,000	\$ 5,000,000	\$ 10,000,000	\$ 20,000,000

- 100,000 GPD dairy digester is 150,000 wet tons/year on scale
- College campus food digester is 10,000 wet tons/year on scale

A New Standard

Presently, no such 'digestate standard' exists in the US, the ABC has stepped into the void with encouragement from regulatory agencies to develop a robust, sound independent standard.

Generally Unrestricted Category

- Higher standard for those eyeing higher value sales
- Robust standard similar to EPA 503



Generally Restricted Category

- Lower standard, ideal for land-application scenarios



Overview of ABC Standard

Required Testing: Two Categories

Table 1: Required testing for Digestate End Use Classifications

These tests provide the minimum information required to determine appropriate use. Digestate users may require additional testing parameters prior to acceptance.

Possible Digestate End Use	Generally Unrestricted Bulk Sales or Land Application	Restricted Land Application
Fecal Coliform or Salmonella	X	X
Total N, P, K	X	X
Organic Ammonia and Nitrate Forms	X	X
Secondary and Micro-Nutrient Assay	X	
pH	X	
Total Solids and Moisture Content	X	X
Volatile Solids	X	
Metals	X	X
Physical contamination	X	X
Soluble Salts	X	
Stability (VFA or CO ₂ Respiration)	X	X

Producer Perspective

- **Step 1:** Achieve steady-state digester operation.
- **Step 2:** Sign up, pay fee (\$0.06-\$0.004/ton), access to Program details, choose certified lab.
- **Step 3:** Test digestate, lab determines pass/fail
- **Step 4:** If Pass? Follow instructions for logo use and marketing for your product's applied use:
 - Generally Unrestricted
 - Restricted



www.Digestate.org

Partnering Lab Perspective

- **Step 1:** Sign up, pay annual fee (\$1,300)
- **Step 2:** Third Party Verifier validates registration and responds to lab and Administrator if form and QAQC procedures approved
- **Step 3:** Program Administrator adds your laboratory to the list of certified labs on this site
- **Step 4:** Follow Program instructions
- **Step 5:** Inter-lab validation to be completed in the next 12 months.



www.Digestate.org

What is Inter-Lab Validation

- **Step 1:** Validation happens once every 12 months, run by Third Party Verifier contracted with ABC.
- **Step 2:** One common sample sent to all partnering labs with instructions on tests to perform or intended end use classification.
- **Step 3:** Lab completes testing and sends results to Third Party Verifier.
- **Step 4:** Third Party verifies tests results and communicates a pass or fail to each lab and ABC.



www.Digestate.org

Benefits

SUBGROUP	BENEFITS
Project Developers	<ul style="list-style-type: none">• Establishes best practices/legitimacy for integration into project design, operation and permitting.• Enables more detailed discussion with potential off-takers.• Provides way to communicate with neighboring properties, stakeholders.
AD plant owners/operators	<ul style="list-style-type: none">• Establishes best practices/legitimacy for training and operations.• Provides standardized, credible documentation for negotiating offtake agreements and ongoing regulatory compliance.• Increases differentiation, value perception in marketplace.• Provides way to communicate with neighboring properties, stakeholders.
Regulators	<ul style="list-style-type: none">• Provides rationale for regulatory differentiation of inputs (e.g. solid waste) from outputs (digestate) and incorporating this into either voluntary compliance standards or compulsory regulations.• Provides industry-accepted protocol for testing, characterization for incorporation into permitting process.• Provides ongoing source of data for ensuring permit compliance.

Benefits

SUBGROUP	BENEFITS
Digestate Recipients	<ul style="list-style-type: none">• Provides standardized, credible documentation for negotiating offtake agreements and ongoing regulatory compliance.• Provides accurate, credible material characterization to determine and monitor digestate composition to ensure highest and best use.
Testing Laboratories	<ul style="list-style-type: none">• Provides industry-accepted, standardized array of tests.• Provides source of new business.
Certification Body	<ul style="list-style-type: none">• Provides source of new business.
ABC	<ul style="list-style-type: none">• Provides increased value to existing members and source of new members.
Neighbors	<ul style="list-style-type: none">• Source of credible information while plant is operating.

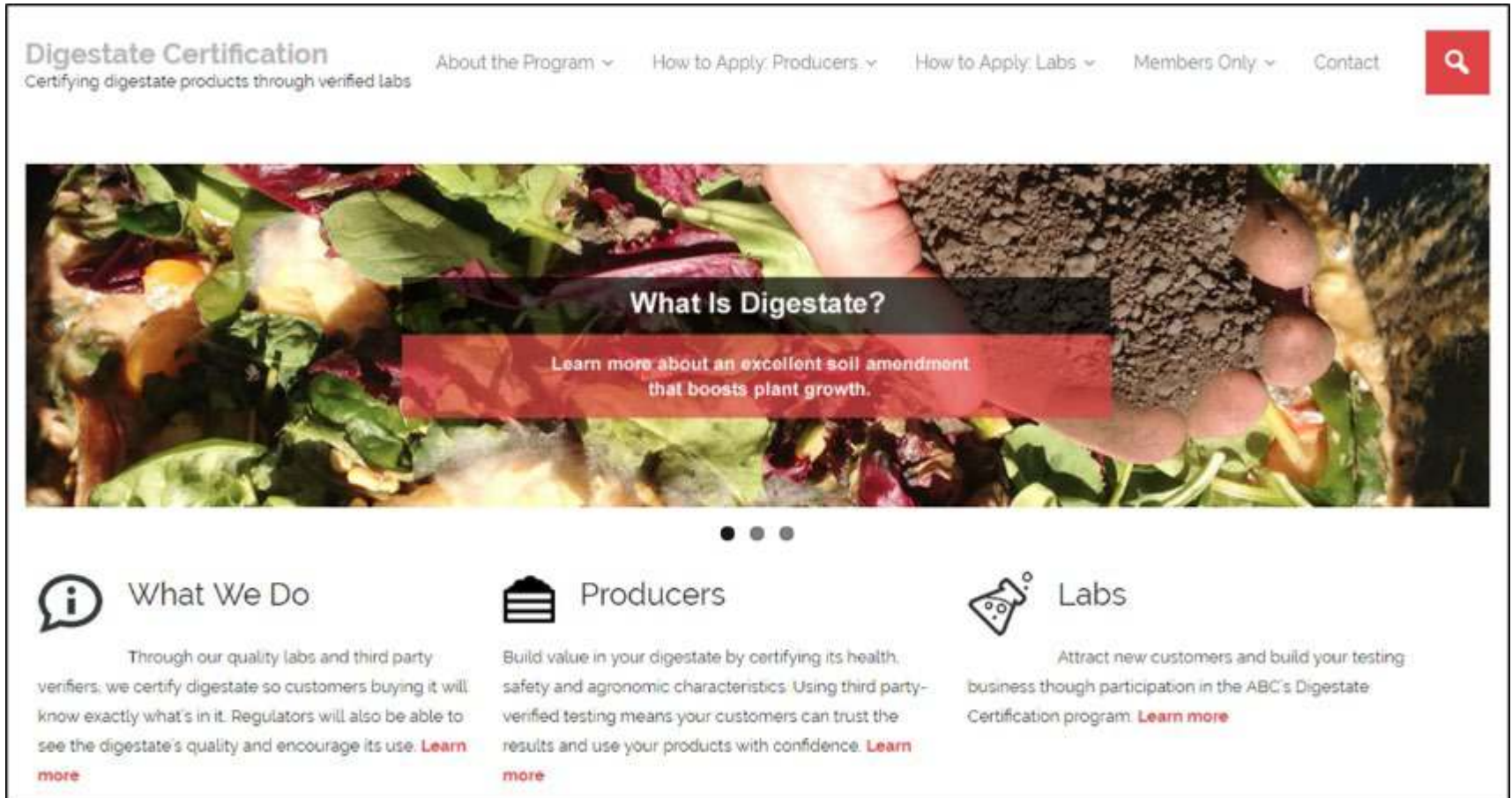
Cost Discussion

ABC has worked hard to keep costs to producers at low and reasonable rates. The table below details approximate annual fees per scale of project—clearly the annual fees are quite reasonable, considering the work done and value presented.

Annual Whole Digestate Production (Tons/year)	ABC Member	Member Fee (in \$/Ton)*	Non-Member	Member Fee (in \$/Ton)*
50,000	\$600	600 - 0.012	\$850	850 - 0.017
50,001-250,000	\$875	0.017 - 0.004	\$1,250	0.025 - 0.005
251,000-500,000	\$1,750	0.007 - 0.004	\$2,500	0.01 - 0.005
501,000-750,000	\$2,625	0.005 - 0.004	\$3,750	0.007 - 0.005
751,000-1,000,000	\$3,500	0.005 - 0.004	\$5,000	0.007 - 0.005

**For reference only*

Sign Up Now



The screenshot shows the homepage of the Digestate Certification website. At the top left, the logo reads "Digestate Certification" with the tagline "Certifying digestate products through verified labs". The navigation menu includes "About the Program", "How to Apply: Producers", "How to Apply: Labs", "Members Only", and "Contact". A search icon is located in the top right corner. The main banner features a background image of a hand holding a carrot over soil, with a text overlay that says "What Is Digestate?" and "Learn more about an excellent soil amendment that boosts plant growth." Below the banner are three columns of content: "What We Do" (with an information icon), "Producers" (with a factory icon), and "Labs" (with a flask icon). Each column contains a brief description and a "Learn more" link.

Digestate Certification
Certifying digestate products through verified labs

About the Program ▾ How to Apply: Producers ▾ How to Apply: Labs ▾ Members Only ▾ Contact

What Is Digestate?

Learn more about an excellent soil amendment that boosts plant growth.

What We Do

Through our quality labs and third party verifiers, we certify digestate so customers buying it will know exactly what's in it. Regulators will also be able to see the digestate's quality and encourage its use. [Learn more](#)

Producers

Build value in your digestate by certifying its health, safety and agronomic characteristics. Using third party-verified testing means your customers can trust the results and use your products with confidence. [Learn more](#)

Labs

Attract new customers and build your testing business through participation in the ABC's Digestate Certification program. [Learn more](#)

www.Digestate.org