mBioExtruder

Unlock The Biogas **Potential Of Straw**

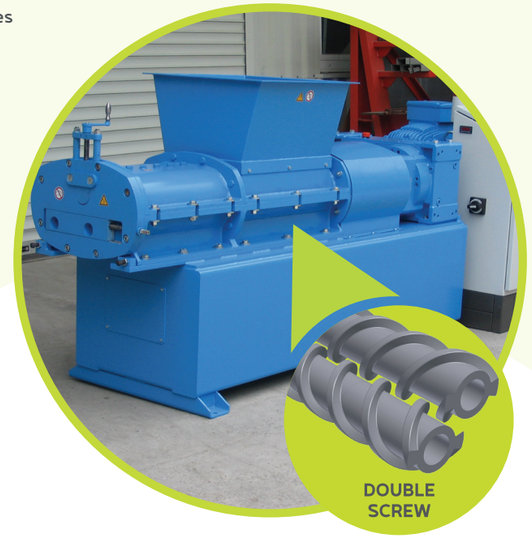
Distributed in UK by Rika Biofuels
Integrated Biogas Solutions

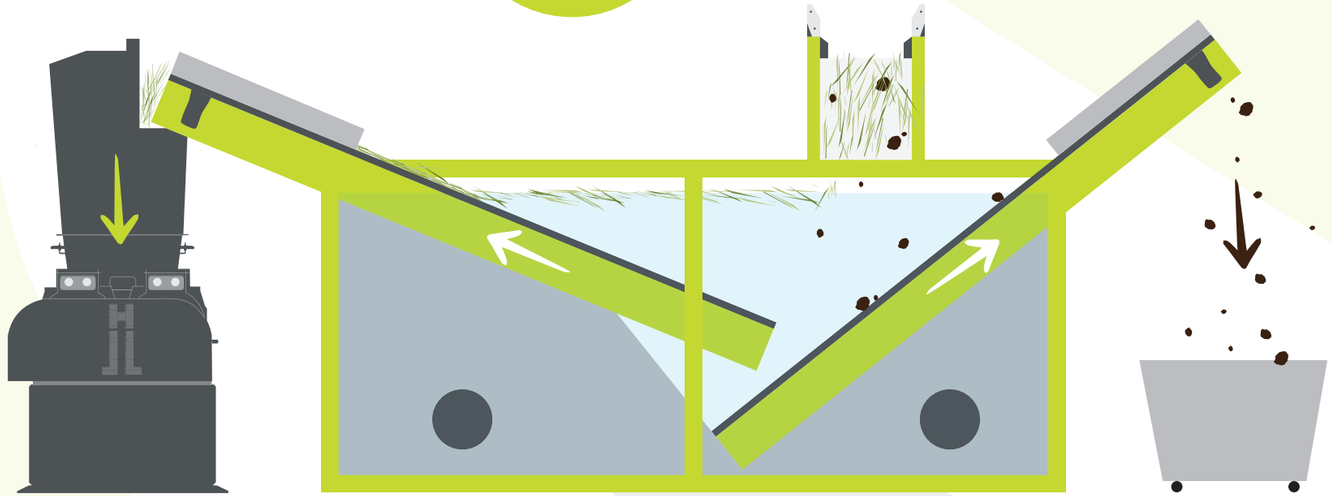
Designed & Engineered by LEHMANN UMT

What is the Bio**Extruder?**

The BioExtruder opens up new opportunities to substitute energy crops with other more sustainable feedstocks.

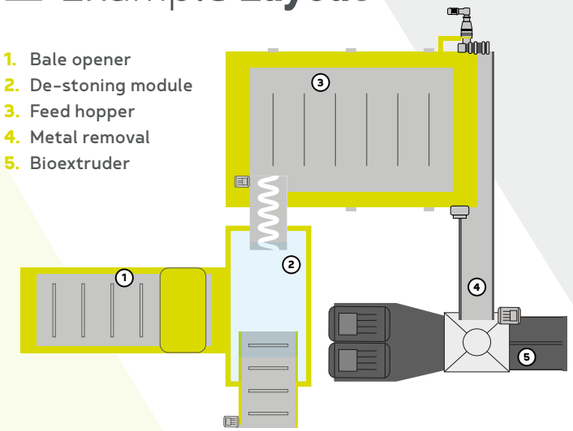
- Reduce your feedstock bill.
- Create new feedstock sources such as straw and low quality grass.
- Recycle separated digestate for up to 100m ^{3}/t of biogas.
- Get 350 - 450m ^{3}/t of biogas from straw.





Example **Layout**

1. Bale opener
2. De-stoning module
3. Feed hopper
4. Metal removal
5. Bioextruder



How BioExtrusion Works

- Thermo-mechanical disintegration of cell structures
- Increases available organic material
- Accelerates hydrolysis and biogas formation

Business **Models**

Buy

- Design and installation
- Plus maintenance support

Partnership Model

- Extruder equipment supplied at no cost
- Customer operates equipment
- We provide maintenance support
- Feedstock savings shared

Feedstock Options

- Straw
- Landscape/roadside grass
- Digestate
- Surplus Hay

Benefits

- Low energy consumption
- Low maintenance cost
- Small footprint
- Planning not required
- Typical payback 2-4 years

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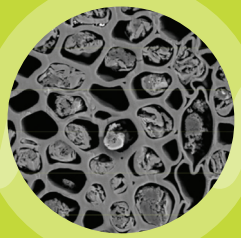
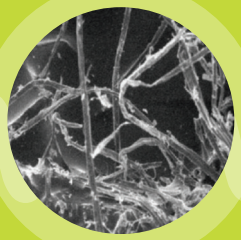
Extruder **Process**

Dry straw after BioExtrusion

Wet straw after BioExtrusion



Cell structure, not treated



Cell structure after BioExtrusion

Extruder **Series**

Model	Motor Spec	Dimension	Weight (t)
		L x Wx H (m)	
MSZ B 44e	2 x 22kw	3.9 x 1.1 x 1.2	3.1
MSZ B 60e	2 x 30kw	4.5 x 1.0 x 1.3	3.8
MSZ B 74e	2 x 37kw	4.1 x 1.2 x 1.3	4.1
MSZ B 110e	2 x 55kw	4.9 x 1.4 x 1.3	6.2

Throughput **Rates**

		B 44e	B 60e	B74e	B 110e	Average Energy Consumption Kwh/t
	DM Content	t/h	t/h	t/h	t/h	
Maize/grass silage	30%	1.5-3.2	2.0-3.5	4.5-7.0	5.2-8.5	6.0-14.0
Green waste/solid manure	30%	1.4-3.2	1.8-4.0	3.5-6.5	4.5-8.0	2.5-12.5
Wilted grass silage	25%	1.8-3.2	2.5-3.5	3.5-6.0	4.5-8.0	5.0-12.5
Straw	70%	0.5-0.8	0.6-1.0	1.2-3.0	1.6-4.0	30-45
Straw	85%	0.3-0.5	0.3-0.5	0.7-0.9	1.0-1.8	55-75
Mixture inc. straw	30-35%	2.2-3.4	2.5-3.5	3.0-6.5	4.5-8.0	8.0-18

* Throughputs depend on material and humidity * Other materials at request