

# Digester Type Performance Comparison

	Two-Stage Linear Vortex™	Complete Mix	Covered Lagoon
<b>More biogas means more D3-RIN revenues per cow</b> Biogas output per milking cow (avg ft <sup>3</sup> /day)	115	80	50
<b>Design generation</b> Assumes all designs are periodically updated	3rd	2nd	1st
<b>Plant longevity (avg years)</b> Steel tanks and flexible membranes degrade faster than concrete	30+	15-30	5-10
<b>Lowest cost per MMBtus output/time</b> A key indicator reflecting a positive ROI	Best	Poor	Poor
<b>Can process 100% of food/organic waste</b> Covered lagoon systems MUST bypass solids (this is not a "feature")	Best	Best	Poor
<b>Performance is not "seasonal"</b> Covered lagoon performance varies widely and is dependent upon the weather	Best	Best	Poor
<b>No composting of solids needed</b> Bypassed solids from covered lagoons and complete mix must be separately composted	Best	Poor	Poor
<b>Pathogen destruction (e-coli, salmonella, etc.)</b> Harmful bacteria that causes problems for humans	Best	Okay	Poor
<b>Odor and weed-seed destruction</b> Complete digestion means more effective odor, vector and weed seed control	Best	Okay	Poor
<b>Green House Gas (GHG) impacts avoided</b> Composting emits some methane and also creates nitrous oxide (310x worse than CO <sub>2</sub> )	Best	Okay	Poor
<b>Renewable power generated per ton of waste</b> More biogas per ton means more power generated per ton too	Best	Okay	Poor
<b>Positive carbon footprint</b> Higher operating efficiency/kW generated, longevity and thorough digestion	Best	Okay	Poor
<b>Suitable for co-generation (e.g., food waste and manure)</b> Active mixing is required for most offsite organics	Best	Okay	Poor