GENERAL INFORMATION

AMERICA GROWS ENERGY INDEPENDENCE.

Each month, America consumes nearly $30 billion fossil fuels, most of which are imported. As the importance for American-produced sources of energy continues to grow, our nation's farmers and landowners have a unique opportunity to grow the energy that will change how we all live.

IT'S MORE THAN A GIANT GRASS. IT'S A GIANT OPPORTUNITY.

FREEDOM™ giant miscanthus can be the energy cash crop of our nation's future. This tall, perennial, non-invasive grass grows particularly well in temperate climates. It was developed through more than a decade of research by Mississippi State University to thrive in the climate of the Southeastern United States.

FREEDOM outperforms other "energy grasses" with harvested yields of up to 25 tons per acre. FREEDOM allows farmers to grow energy at a fraction of the cost of other renewable energy crops with exceptional output per acre from low annual inputs, all while being grown on marginal land.

FREEDOM GIANT MISCANTHUS AS AN ENERGY SOURCE:

FREEDOM giant miscanthus is an "Energy Grass." As a renewable energy feedstock, it produces more fuel per acre than corn, wood or switchgrass. When burned or converted into biofuels, the resulting CO^2 emissions are from the CO^2 that was mitigated during the prior year's growing season. In addition, the plant develops an extensive below-ground mass of rhizomes and roots which sequester a significant percent of CO^2 permanetly in the soil, making it a carbon-negative energy source.

QUICK FACTS

- Herbaceous - grass crop with an annual harvest (not woody)
- Deciduous - goes dormant at end of growing season
- Perennial - grows back yearly
- C4 grass - highly efficient photosynthesis process
- Grows 12-feet high or more
- Produces, at full maturity, harvested yields of up to 25 tons per acre
- Moisture content at harvest of 10-15%
- Input requirements – low compared to other energy crops
- Re-growth - Stands re-grow each year and last 15+ years once established
- Non-invasive - Propagated vegetatively, by planting rhizomes which grow into new plants

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REPREVERenewables.com

Freedom™
Giant Miscanthus

GENERAL INFORMATION²

"We see a lot of potential in FREEDOM — it's the most promising of the hundreds of miscanthus cultivars we've evaluated over the years, and it's light years ahead of any of the other grasses." –Energy crop scientist Dr. Brian Baldwin, Professor of Plant & Soil Sciences, Mississippi State University.

FROM THE GROUND UP, IT JUST MAKES SENSE.

FREEDOM is a superior energy crop because of the process of senescence. This process sends minerals, nutrients, and moisture into the soil for storage over the winter to help with re-growth in the Spring.

- It re-grows in subsequent years without the need for additional nutrients.
- Harvested at relatively low moisture content, which means less moisture needs to be removed from the crop during processing.
- Minerals valuable to plant re-growth are stored underground rather than harvested, resulting in a clean, consistent feedstock.
- As the plant senesces, FREEDOM giant miscanthus returns carbon and nitrogen to soil.
- The energy grass builds organic matter in the soil, providing less compaction and erosion.
- Once established, FREEDOM requires little to no fertilizer or weed control.
- Giant miscanthus is highly efficient at carbon storage, requires very little water to grow and its low ash and nutrient content make it a very clean burning feedstock.

FREEDOM™ ADVANTAGES

- High yields means less land produces more energy
- Perennial grass that does not need to be replanted annually, eliminating the cost and environmental impact of annual re-planting.
- Harvesting methodology adds significant organic matter to the soil.
- No tillage means less soil compaction & erosion and supports carbon sequestration.
- Low input requirements, as it recycles nutrients back to its roots at the end of the growing season significantly reducing the need for fertilizer or weed control.
- Adaptable to marginal lands and often rehabilitates sub-par soils
- Rapid growth in Spring out-competes weeds even without herbicides
- No known pests or diseases
- Highly efficient at carbon storage
- High water-use efficiency
- Low ash content & nutrient content—very clean burning

BIOMASS YIELD COMPARISON

Feedstock	Yield tons/acre per year*	Moisture Content at harvest	BTU Value/lb *(dry matter basis)*
FREEDOM Giant Miscanthus	20-25	10-15%	7,800 - 8,200
Giant Miscanthus (public variety)	10-15	10-15%	7,800 - 8,200
Switchgrass	4-10	10-15%	7,800 - 8,200
Wood (in 24 year rotation)	4-8	40-55%	3,000 - 4,800

**Yield information based on public data*

REPREVE Renewables℠ is the exclusive supplier of FREEDOM giant miscanthus. Get in touch with us to talk about a grower option that suits your biomass needs.