



Solving Your Biomass Feedstock Issues

P.O. BOX 366
Clinton, Indiana 47842
Phone: 765-828-3000
www.whitetechnologyllc.com





- Leader in micropropagation and production of cellulosic energy crops
- Non-food based, high-yield, high-energy, high-cellulose sustainable biomass
- Arundo Donax (Giant Reed) and Miscanthus giganteus are perennial rhizomatic, sterile grasses that are ideal for the petro chemical and power generation industry.



Production Lab Cayce, South Carolina

- Largest energy crop production facility capable of mass producing large quantities of energy crop plants
- Upon leaving the laboratory, bare root plantlets are sent to a nursery for acclimatization, finishing and shipment
- Computerized plant strain tracking system





Nursery

- Greenhouse facility located in Wewahitchka, FL
- Approximately 100 square feet of nursery space required to mature one acre of plants



Nursery

- Activities performed at the nursery include:
 - Inserting plantlets into nursery flats
 - Addition of soil to roots
 - Watering/misting
 - Hardening of plantlets
 - Acclimatization to geographic region
 - Computerized plant strain tracking system





Energy Crop Characteristics

- Giant Reed and Miscanthus are both sterile, perennial fast growing grasses that produce no viable seed or pollen
- Adapts to a wide range of soils, including saline soils. Should be grown on marginal lands.
- Exceptional soil carbon sequestration in rhizomes
- Low fertilizer requirement





Energy Crop Characteristics

- Prefers well drained soils
- Life expectancy of crop exceeds 20 years
- Can be controlled with Roundup (Glyphosate)
- First harvest 18-24 months after planting, typically yearly thereafter. Multiple harvests may be possible in some southern climates.





Energy Crop Characteristics

- Giant Reed yields between 12-25 dry tons per acre depending on location, soil and climate
- Miscanthus yields between 8-15 dry tons per acre depending on location, soil and climate
- Energy content of Giant Reed is approximately 8400 Btu per dry pound, 7800 Btu per dry pound for Miscanthus





Chemical Analysis

- Giant Reed Ash content, dry is 3.91; Miscanthus is 4.19 (% by weight)
- Ash fusion temperatures range is 2140 for Giant Reed; 2215 for Miscanthus (°F)
- Giant Reed Heat of Combustion, MAF (moisture and ash free) is 8765 BTU/Lb; Miscanthus is 8374 BTU/Lb



Chemical Analysis

- Giant Reed Sulfur is 0.34 lbs/mmBTU;
Miscanthus is 0.14 lbs/mmBTU
- Giant Reed Carbon fixed, dry is 19.53;
Miscanthus is 18.95 (% by weight)
- Giant Reed Volatiles, dry is 76.56;
Miscanthus is 76.86 (%by weight)



Farming

- Planting approximately 5000 Giant Reed plants per acre; 7000 for Miscanthus
- Typically, 1 meter square planting density
- Initial fertilizer application may be necessary (soil testing recommended)





- Buffer zone maintained around planted field
- Should not plant either crop in riparian areas
- Harvested with silage chopper, may be baled, pelletized, briquetted, or hauled in bulk quantities





Invasiveness

- Invasivity is an extremely poorly defined science, in fact it's not really a science at all.
- No standards for the definition of invasive
- Invasivity is site dependent
- Almost any plant could be invasive when planted in riparian areas (adjacent to stream and rivers that are prone to flooding)



Invasiveness

- Giant Reed does not produce a viable seed so it cannot be any more invasive than Miscanthus or energy cane
- It has become invasive along the Rio Grande in Texas as well as near Los Angeles in southern California - - - largely due to mis-management and mis-application
- When grown in non-riparian areas there is no evidence of invasivity
- Can be controlled by best management practices

Giant Reed Uses

- Presently used for musical instrument reeds
- Pulp and paper
- Rayon
- Bio fuels
- Bio power
- Composite boards like particle board or OSB
- Industrial chemicals
- pharmaceuticals





Test Plot –Wewahitchka, FL

- Multi – year lease with landowner
- Two – acre test plot of Giant Reed located within a 90-acre plot of timberland
- First Biomass Planting Permit issued by Florida Department of Agriculture
- Additional 80 acres of Giant Reed to be planted in spring of 2011
- Additional 240 acres located for Giant Reed
- Permit pending with Florida Department of Agriculture



Test Plot – Clinton, IN

- Two-acre test plot
- Land owned by White Construction
- Used to establish numerous energy crops
- Giant Reed (two varieties)
- Miscanthus
- Willow
- Switchgrass



Test Plot – Cayce, SC

- 4 acre plot
- Planting technique comparison
- Tissue culture vs. Rhizomatic



Thank You



Contact Us

Kenn Davis

President

Email: kdavis@whitetechnologyllc.com

Phone: (765) 828-3000

Cell: (812) 264-5401

Fax: (765) 832-1860

Website: www.whitetechnologyllc.com