Native warm-season grasses for bioenergy and forage
Steps for Success

1. Planning
2. Weed management
3. Planting
4. Cutting or grazing management
Planning

1. New ground
2. Cropland
3. Hayland/pasture
4. Bermudagrass fields

Keyser et al., 2011b
Weed management
Weed management
No-till Planting
Big bluestem  Little bluestem  Indiangrass

Switchgrass  Eastern gamagrass
Management
Grazing

**Switch/Gama:**
*May – Late June*
1600-2000 lbs/acre

*Late June – Early Aug.*
1400-1600 lbs/acre

**BB/Indian:**
*May – Late June*
1200-1400 lbs/acre

*Late June – Early Aug.*
900-1200 lbs/acre

Keyser et al., 2011c
Hay Production
Cutting/Grazing Height

12” height → 99%
8” height → 51%

Trócsányi et al., 2009
Virginia
Upland ecotype
Leafiness (%) at 12” height

Trócsányi et al., 2009
Biofuel production

- Biochemical conversion
- Thermochemical conversion
Cellulosic Ethanol Conversion

Biomass

Pretreatment

C5 sugars

Enzymatic Hydrolysis

C6 sugars

Fermentation

Fermentation

Distillation

Ethanol
Thermochemical Conversion

- Excess air: Combustion → Heat
- Partial air: Gasification → Gases
- No air: Pyrolysis → Liquids
Fike et al., 2006
Lowland ecotype

Jackson, TN

Yield (tons/acre)

Late June
Oct/Nov
Total
One-cut

73%
27%
Program Assistance

• Environmental Quality Incentives Program
  – Through NRCS
  – Pay a portion of the average cost associated with the developed conservation plans

• Farm Wildlife Habitat Program
  – Through TWRA
  – Provides 75% reimbursement (up to $2,000 per contract per year) to improve wildlife habitat
Program Assistance

• Biomass Crop Assistance Program (BCAP)
  • Supports the establishment and production of crops within project areas for conversion to bioenergy

• Project areas and producers are approved through an application process

• Producers within project areas may receive
  – Cost share payments for establishment
  – Annual rental payments
  – Payments for harvest
Further information

Jason de Koff
jdekoff@tnstate.edu
615-963-4929
Twitter: @TSUBioenergy

http://www.extension.org/