Overview – why natives, why not natives, establishment challenges

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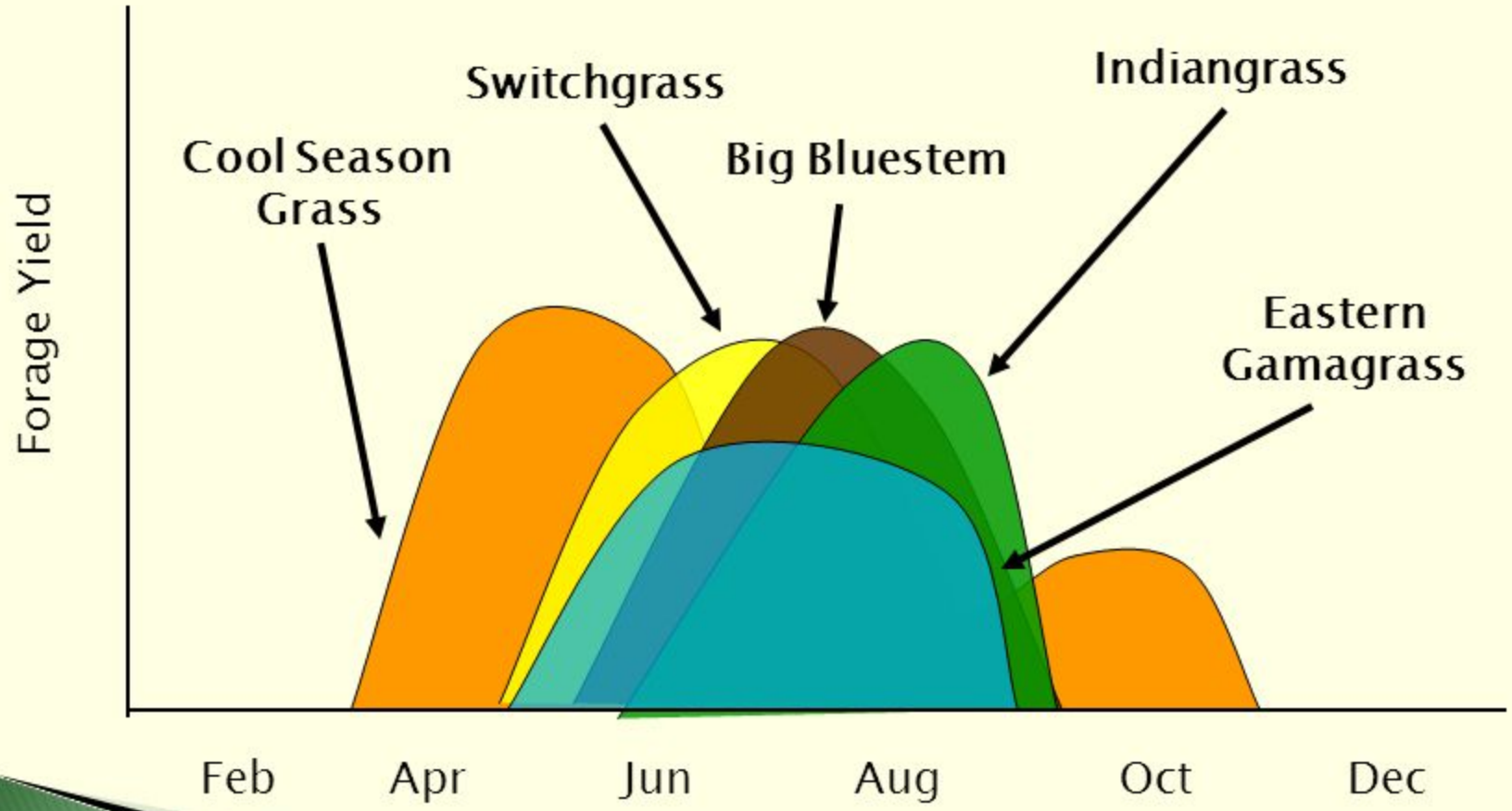
What are Native Warm Season Grasses (NWSG)?

- A group of tall growing bunch grasses that offer the potential for excellent forage production across the Mid-South
- Native to the Mid-South
  - Grew here before human settlement
  - Naturally adapted to soils, climate, and insect pressure
- Vigorous Summer Growth
  - Peak growth of these grasses occur in the summer
  - Break dormancy in late March/early April
  - Grow rapidly from Mid May to Mid-Summer with dormancy occurring in Oct.
- Five Key Species
  - Big Blue Stem; Little Blue Stem; Indiangrass; Switchgrass; Eastern Gamagrass

Why Grow NWSG for Forage?

- Great forage production during the summer
  - Rest cool season grass pastures
  - Reduce effects of E+ tall fescue
  - Excellent drought tolerance
  - Generally low fertility requirements
- Good to excellent summer stocker/finishing gains
- High hay yields on small acres in fewer cuttings

Native Warm-Season Grasses



Filling the Gap

Source: University of Missouri Extension

Characteristics of the major NWSGs: Forage value

Attribute	Switchgrass	Big bluestem	Little bluestem	Indiangrass	Eastern gamagrass
Yield	Very high	High	Moderate	High	Very high
Wet Site Tolerance	High	Moderate	Low	Moderate - Low	High
Dry Site Tolerance	Moderate	Moderate	High	Moderate - High	Low
Maturity	Early	Medium	Late	Late	Earliest
Palatability	Moderate	Highest	High	High	Moderate
Establishment	Most difficult	Moderate - easy	Easiest	Easiest	Moderate
Management	More difficult	Easier	Easier	Easier	Moderate

Source: Keyser et al. 2015 (UT Extension)

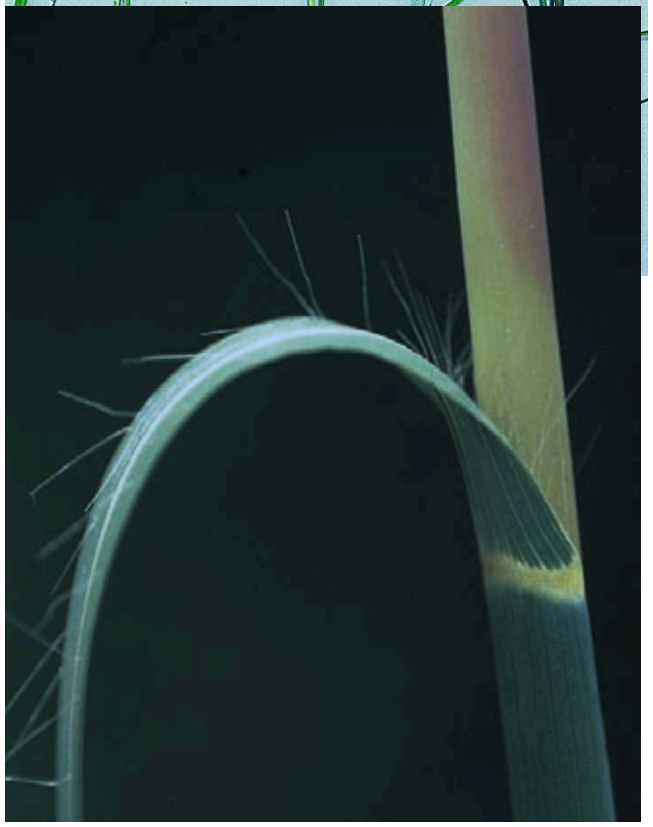
Blends of Big bluestem (potentially little bluestem) and indiangrass are excellent because they complement each other well. But, others offer no complementary growth with each other and may compete.

Big Bluestem

Andropogon geradii

Characteristics	Tall-growing (3-7 ft tall). Leaves have fine hairs close to stem. Most tolerant of all NWSG to poor growing conditions and drought. Consistent growth curve, Does not tolerate wet sites.
Maturity	Mid-maturity
Uses	Wildlife, pasture, hay
Challenges	Slower and more expensive to establish than other NWSG. ”Fluffy” seed.
Varieties	OZ-70, Rountree, Hampton*

* Improved variety but limited availability.



Eastern Gamagrass

Tripsacum dactyloides

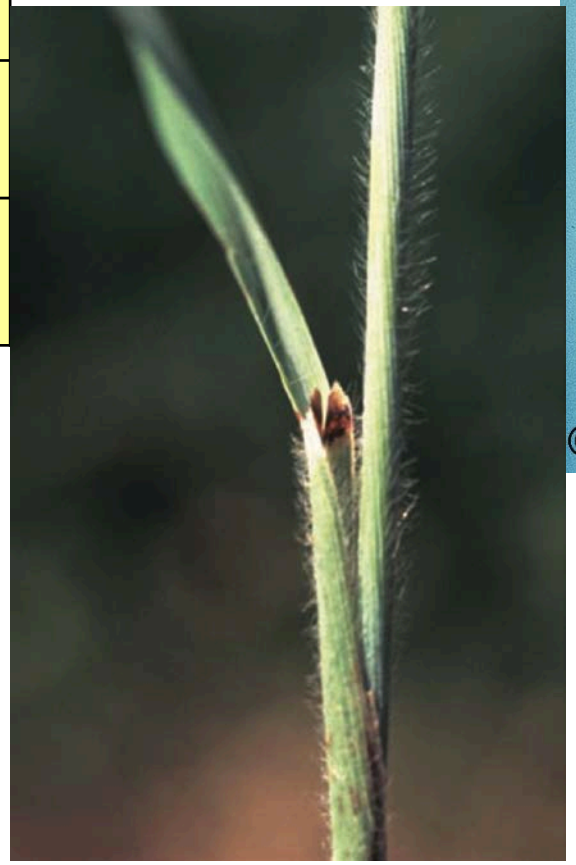
Characteristics	Tall-growing (4-6 ft tall) and coarse leaves. High yields and highly palatable. Tolerates wet sites. Large, slick seed.
Maturity	Mid- to late-maturity
Uses	Pasture, hay, wildlife
Challenges	Low to medium animal performance. High seed dormancy.
Varieties	Pete, Highlander, Bumpers*

* Improved variety but limited availability.

Indiangrass

Sorghastrum nutans

Characteristics	Tall-growing (3-6 ft tall) and coarse leaves.
Maturity	Late-maturity
Uses	Wildlife, pasture, hay
Challenges	Slow to establish. ”Fluffy” seed.
Varieties	Cheyenne, Rumsey, Osage, Americus



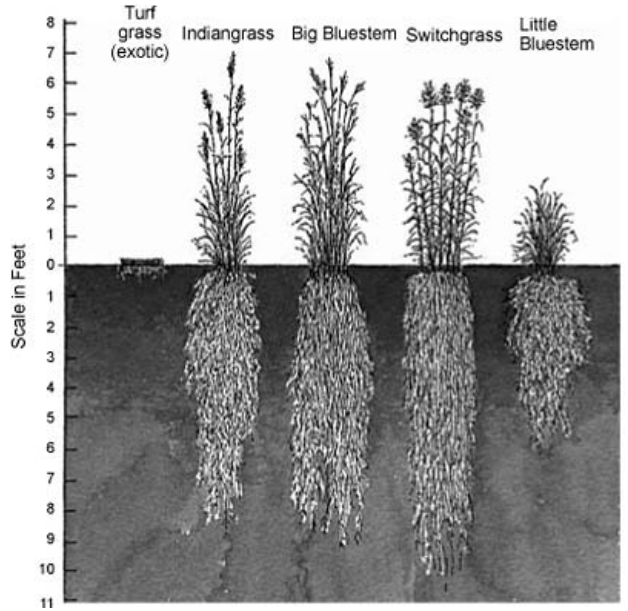
Switchgrass

Panicum virgatum

Characteristics	Tall-growing (4-6 ft tall). High yields but less palatable. Some varieties tolerate wet sites. Small, slick seed.
Maturity	Early maturing
Uses	Hay, biomass, pasture, wildlife
Challenges	Very clumpy growth habit. Short growing season. Overlaps with cool season forages.
Varieties	Alamo, Kanlow, EG1101*

* Improved variety but limited availability.

Advantages of NWSG



Source NBCI National Bobwhite Conservation Initiative

- Complement cool season forage production
- Perennial
  - Can last 15-20 years with proper management
  - Savings in yearly seed, fertilizer, herbicides and labor compared to annuals
- Widely adapted
  - Will grow in poorer soils, ridge-tops, and poorly drained bottoms
- Drought Tolerance
  - Metabolic pathway efficient in water use (C-4)
  - Deep root systems (up to 12 feet)

Advantages of NWSG

- Reduced fertilizer inputs
  - Less Fertility needed
  - Can grow with lower pH
- High Yields
  - NWSG can yield 4-5 tons/acre when harvested for hay
  - Stocking rates can be 1,400 – 2,000 pounds/acre
- High Quality Forage
  - Hay harvested in boot stage will garner 10% crude protein (Bypass Proteins)
- Few Pests
  - Only known pest is leaf rust
- Wildlife Friendly
  - Cover for wildlife

Graham Farm and Nature Center, AL project site

Disadvantages of NWSG

- Establishment
  - Will cover in depth
- More management
  - Timing is everything
  - Can get too tall and stemmy
  - Overgrazing
- Understanding the management
  - Not familiar with these grasses
  - Cutting higher
  - Having a grazing plan and rotation ability are critical