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# Establishing Vegetation and Warm Season Grasses

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East National Technology Support Center



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## Establish

## Persist



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## Each disturbed site is unique and our planting plan should reflect the sites:

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- **climate**
- **soils**
- **environmental setting**
- **proposed land use**
- **the desired plant community**



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## Good Seed

- **Adequate Germination**
- **Clean**
- **Adapted**



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## Pure Live Seed

**PLS = Pure Live Seed**

$$\text{PLS} = \frac{\% \text{ Germination} + \% \text{ Purity}}{100}$$



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$$\text{PLS} = \frac{\% \text{ Germination} + \% \text{ Purity}}{100}$$

|                               |                    |
|-------------------------------|--------------------|
| Americus Indiangrass          |                    |
| Lot # GAPMC2010-F23           |                    |
| 83.29% PURE BEED              | GERMINATION: 73%   |
| 00.00% OTHER CROP SEED        | ORIGIN: GEORGIA    |
| 16.71% INERT MATTER           | TEST DATE: 11/10   |
| 00.00% WEED SEED              | NET WEIGHT: 10 LBS |
| NOXIOUS WEED SEED: NONE FOUND |                    |

$$\frac{73\% \text{ Germination} + 83\% \text{ Purity}}{100} = 61\% \text{ PLS}$$



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# Does it Really Matter?

**Bulk Seed at 10 lbs/acre**

**PLS Seed at 10 lbs/acre**

**10 lbs**  
**6 lbs of seed**  
**175,000 seed/lb**  
**1,050,000 seed/acre**  
**24 seed/ft<sup>2</sup>**

**16 lbs**  
**10 lbs of seed**  
**175,000 seed/lb**  
**1,750,000 seed/acre**  
**40 seed/ft<sup>2</sup>**



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**CERTIFIED SEED**

Seed in this container are from a lot of seed which was produced, stored and processed in accordance with the regulations of the North Carolina Crop Improvement Association and is the Class of Seed listed on this label. The producer or vendor whose name and lot/certificate number appears on this label is solely responsible for the identification listed for the proper use of the label.

|                               |                                      |                |
|-------------------------------|--------------------------------------|----------------|
| Kind: Tall Fescue             | Variety: Kentucky 31                 | Origin: Oregon |
| Lot Number: 81888             | Vendor and address: XYZ Seed Company |                |
| Net Weight (lb): 55           | Pure Seed (%): 88%                   |                |
| Germination (%): 90           | Inert Matter (%): 0.8%               |                |
| Hard Seed (%): 0              | Weed Seed (%): 0.8%                  |                |
| Test Date: 12/1/00            | Other Crop Seed (%): 0.5%            |                |
| Noxious Weeds: 18 Curley Dock |                                      |                |

MEMBER OF ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

XYZ INC., 1101 S. 9TH STREET, CLEVELAND, OH 44114  
**Producers' PROOFBOOK SEE OUR SEED HISTORY**  
 LOT: 800004 - 11/22/10 - 1-4/11  
 CDM: 007970

| QTY   | DESCRIPTION               | Q SEED | WEIGHT |
|-------|---------------------------|--------|--------|
| 2979  | WAVY TALL FESCUE          | 93     | 98     |
| 29.81 | WAGLEAF TALL FESCUE       | 99     | 98     |
| 29.85 | FAIRIE TALL FESCUE        | 93     | 98     |
| 9.81  | SHAWNEE FESCUE BLUE-GRASS | 84     | 98     |

OTHER INFORMATION  
 OTHER CROP SEED 1.12  
 DIRT MATTER 1.12  
 WEED SEED 0.52

DATE TESTED: 01/01  
 BY: CARY/MSD/PA/NO. SELL. BY:  
 MPT. RECEIVED FROM:  
 MPT. TO: XYZ INC.

WAVY TALL FESCUE



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## Certified Seed

|             | Germination<br>(minimum) | Weed Seed<br>(maximum) | Inert Matter<br>(maximum) |
|-------------|--------------------------|------------------------|---------------------------|
| Bahiagrass  | 70                       | 1                      | 35                        |
| Tall Fescue | 80                       | 0.5                    | 5                         |
| Switchgrass | 60                       | 1.5                    | 10                        |



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## Pure Live Seed:

**All seed has the potential to germinate**

Hedge your bets:

Small seeded grasses and forbs have emergence of

~52% if germination is greater than 80%

~33% if germination is between 60 and 80%

*Munshower, Frank F. 1994. Practical Handbook of Disturbed Land Revegetation.  
CRC Press, Boca Raton, FL*



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# Seeding



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## Seeding Methods





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## Native Grass Drills

- Chaffy seed box, small grain box, small seed box
- Seed agitator and picker wheel in chaffy seed box
- Straight drop from chaffy seed box to row openers
- Double disc row openers with adjustable depth bands for depth control
- Sturdy and heavy frame



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## Broadcast Seeding

- Divide seed in half and apply in two passes in perpendicular directions
- Small or light seeded species may require a filler for even distribution
- Incorporate seed by raking, dragging, cultipacking, or tracking with a bull dozer
- When broadcasting onto rough sites increase seeding rates by 25% because of seeding depth variability
- With no seed bed prep and no tracking increase seeding rate by 50 to 75%, to compensate for inability of seed to germinate and loss to predators





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## Hydroseeding

- Suited for steep slopes and inaccessible areas
- Reseeding is often necessary

## Hydroseeding Warm Season Grasses

- Apply seed, soil amendments and 5 to 10% of total fiber mulch in the 1<sup>st</sup> pass
- Incorporate seeded area with cultipacker, roller, or dozer cleats
- Apply the balance of mulch plus tackifier or bonded fiber matrixes in the last pass



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## Mulching

- Provides temporary erosion control
- Conserves moisture, aiding germination and survival
- Reduces surface compaction or crusting and improves infiltration
- Reduces weed pressure
- Moderates temperature fluctuations
- Adds organic matter
- Protects broadcast seed from predators



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## Warm vs. Cool Season Grasses



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## Erosion Control and Water Quality

### Warm Season

- Long term benefits for erosion control and sediment trapping
- More overall biomass
- Nutrient uptake in summer

### Cool Season

- Short and long term benefits for erosion control and sediment trapping
- Nutrient uptake in early spring and late fall



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## Establishment

### Warm Season

- Usually need specialized seed drill to plant
- Seed may be more expensive and less available
- Slow to germinate and need 2 to 3 years for establishment
- Can only be planted in the spring
- Weed competition may be a problem
- Tolerate poor soils
- Seedlings and established stands are drought tolerant

### Cool Season

- Plant with a conventional drill
- Relatively inexpensive and readily available
- Seeds germinate quickly and well established in 1 to 2 years
- Can be seeded in spring or late summer
- Weed competition is less during establishment because of quick growth
- Higher seedling mortality and thinning of stands during drought periods



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## Maintenance

### Warm Season

- Maintained by prescribed burning or mowing to 6 inches removing residue ever 3 to 4 years
- Long lived and usually do not require reseeding
- Hayed or grazed with careful management
- Selective herbicides available for weed control

### Cool Season

- Maintained by mowing on 2 to 3 year rotation
- Mature stands may thin and need reseeding
- Easier to maintain manage grazing and haying
- Selective herbicides available for weed control



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## Other

### Warm Season

- Most species grow tall (5 to 8 feet)
- Can block views
- Can be fire hazard on overwintered standing grass

### Cool Season

- Low growing
- Some may be invasive or compete with native flora



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# Thank You

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