INTERSEEDING / GRAZING ANNUALS FOR PASTURE

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PLANTING INTO AN OLD/DAMAGED SOD

- Many are not as damaged as you might think
  - A little TLC in the form of good grazing management, adding legumes, and tending fertility needs can do wonders
- Lots of seeds planted; few success stories

Many Seeding Methods Available

NO-TILL

- Able to keep existing sod
- Conserves moisture
- Sod competes against weeds
- Less cost and erosion than conventional tillage
- Don’t plant too deep

ALTERNATIVE SEEDING OPTIONS

CHALLENGES TO ADDING ANNUALS

- Competition from existing sod can be fierce
  - Erratic and/or poor stands common
- Competition from annual can destroy a good sod
  - Careful for what you ask

CONTROLLING COMPETITION

Grazing can be useful or detrimental depending on timing and severity

Light tillage an option

Burning a good option if fuel is available

Burn-down herbicide helps

CAUTION
HERBICIDES USED BEFORE OR AFTER ESTABLISHMENT

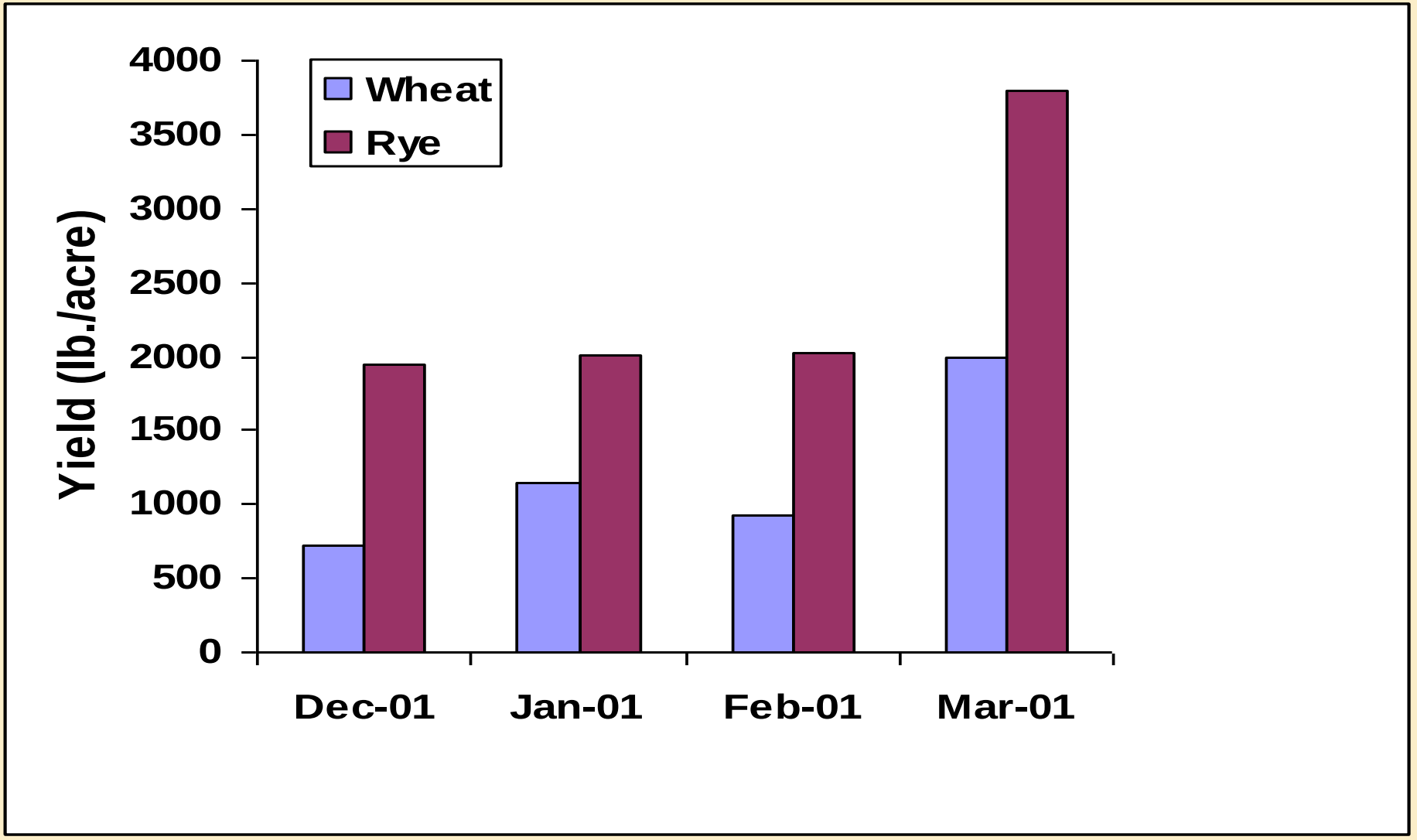
- **Before Establishment – Beware of pasture herbicide residual**
  - ***Burndown herbicide options – Glyphosate, Gramoxone, 2,4-D***
  - ***Residual of Grazon, Grazonnext, 2,4-D can kill new stands of grass and legumes***
- **After Establishment – Grasses should be well tillered and established before using common pasture herbicides**

ANNUAL FORAGE OPTIONS

SMALL GRAINS

- Oats most common for spring. Can also be used for early winter
- Rye, triticale and wheat best for autumn
- Vegetative growth excellent quality feed

RYE AND WHEAT COMPARISON



NUTRITIVE VALUE OF OAT FORAGE

Stage	Yield	CP	TDN
	t/a	-------- % --------	
Vegetative	0.6	24	72
Boot	1.0	22	70
Heading	1.4	18	66
Milk	2.1	15	62
Late Dough	3.2	11	53

WHEN SHOULD GRAZING BEGIN?

- Grazing should start when forage reaches 8 inches

WHEN SHOULD GRAZING STOP?

- Livestock should be rotated when forage ht. is less than 3 inches
- Regrowth much slower when over grazed

SMALL GRAINS RECOMMENDATIONS

- Oats planted from end of Feb through March or in Sept at 80 to 100 lb./acre
- Wheat and rye can be planted at same time but at 100 to 130 lb/acre
- 40 to 60 lb./acre N at planting
- Do not graze to a height of less than 3 inches
- Yields of 1.5 to 3.0 tons acre common

ANNUAL RYEGRASS

- A good fit for thin fescue
- Rapid fall growth
- Retains green tissue nearly all winter
- Remains vegetative through May
- Reproduces by seed
- CAN BECOME INVASIVE!

ANNUAL RYEGRASS CULTIVARS

- Diploid
  - Most common
  - May be more winter-hardy than tetraploids
- Tetraploid
  - Wider leaves, more robust
- Italian
  - Requires chilling to seed
- Westervold
  - Does not require chilling to seed

ANNUAL RYEGRASS CULTIVARS

- Marshall (Westervold Diploid)
- DH3 (Italian Tetraploid)
- Passerel (Westervold Diploid)
- Abundant (Tetraploid)
- Tetrastar (Tetraploid)

BRASSICAS – TURNIPS & RADISHES


Turnips and Rye

BRASSICAS; ADVANTAGES

- Rapid growth; capable of producing 3 tons/acre
- Continue to grow after killing frosts
- Both above and below ground portions can be grazed

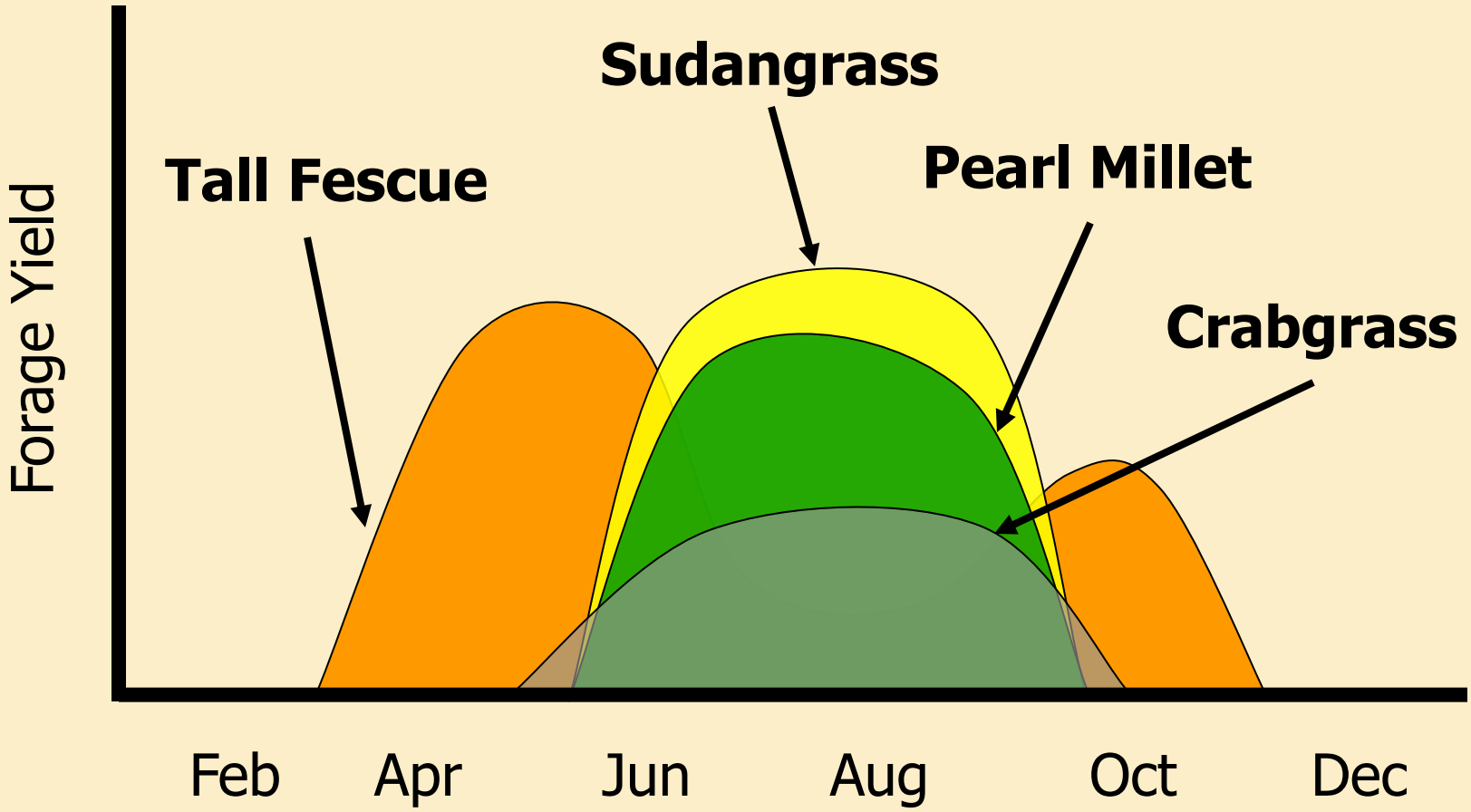
BRASSICAS

- Seeds are small
  - 200,000 per lb
- Existing sod, weeds, etc. compete severely
- A weak seedling for first 21 days or so.

BRASSICAS

- Strip grazing offers best utilization
- Watch for bloat
- Offer some dry roughage for stock

ANNUAL WARM SEASON GRASSES



SUDANGRASS AND PEARL MILLET

- Maximum growth from June through August
- Forage yields of 5 to 7 tons/acre possible
- Drought tolerant
- Nice transitional crops or emergency pastures

OVER MATURE SUDANGRASS

SUDANGRASS READY FOR GRAZING

SUDANGRASS STUBBLE AFTER GRAZING

SUDANGRASS CLIPPED TOO CLOSELY

GRAZING HEIGHT CRITICAL

Stubble height	Yield	Leaf	Stem
inches	-- tons per acre --		
1	5.4	4.3	1.2
6	6.0	4.8	1.2
10	6.7	6.4	0.3

PRUSSIC ACID POISONING

Caused by cyanide in immature or frost damaged leaves

Avoid grazing until plant reaches 24”

Avoid for 14 days after killing frost

Present only in sorghums - No problem for pearl millet

SUDANGRASS

- Seeding rate: 20 to 30 lb/a drilled
- Seeding date: May
- N fertilization: 40-50 lb/a at planting. 40-50 lb/a/cutting thereafter
- Harvest management: Graze or clip when the forage is 2.5 to 3.5 ft. tall. Leave a 8 to 10 inch stubble.
- DO NOT GRAZE IF LESS THAN 24 INCHES TALL or AFTER FROST

PEARL MILLET

- Seeding rate: 15-20 lb/a drilled
- Seeding date: May
- N fertilization: 40 to 50 lb/a at planting. 40 to 50 lb/a/cutting thereafter
- Harvest management: Graze or clip when the forage is 2.5 to 3.5 ft. tall. Leave a 8 inch stubble.

CRABGRASS

Excellent mid to late summer production

Quality, especially digestibility better than most other warm-season species. Palatability better than most grasses

Must reestablish each year

Harrowing fields in spring helps with establishment

CRABGRASS PLANTING

- Planting dates flexible
- Dedicated stands best, but a lot overseeded into CSG pasture
- Germinates in late April

TILLAGE HELPS CRABGRASS ESTABLISHMENT

Good crabgrass stands start with light tillage in late April or early May

LIVESTOCK GAINS ON CRABGRASS PASTURE

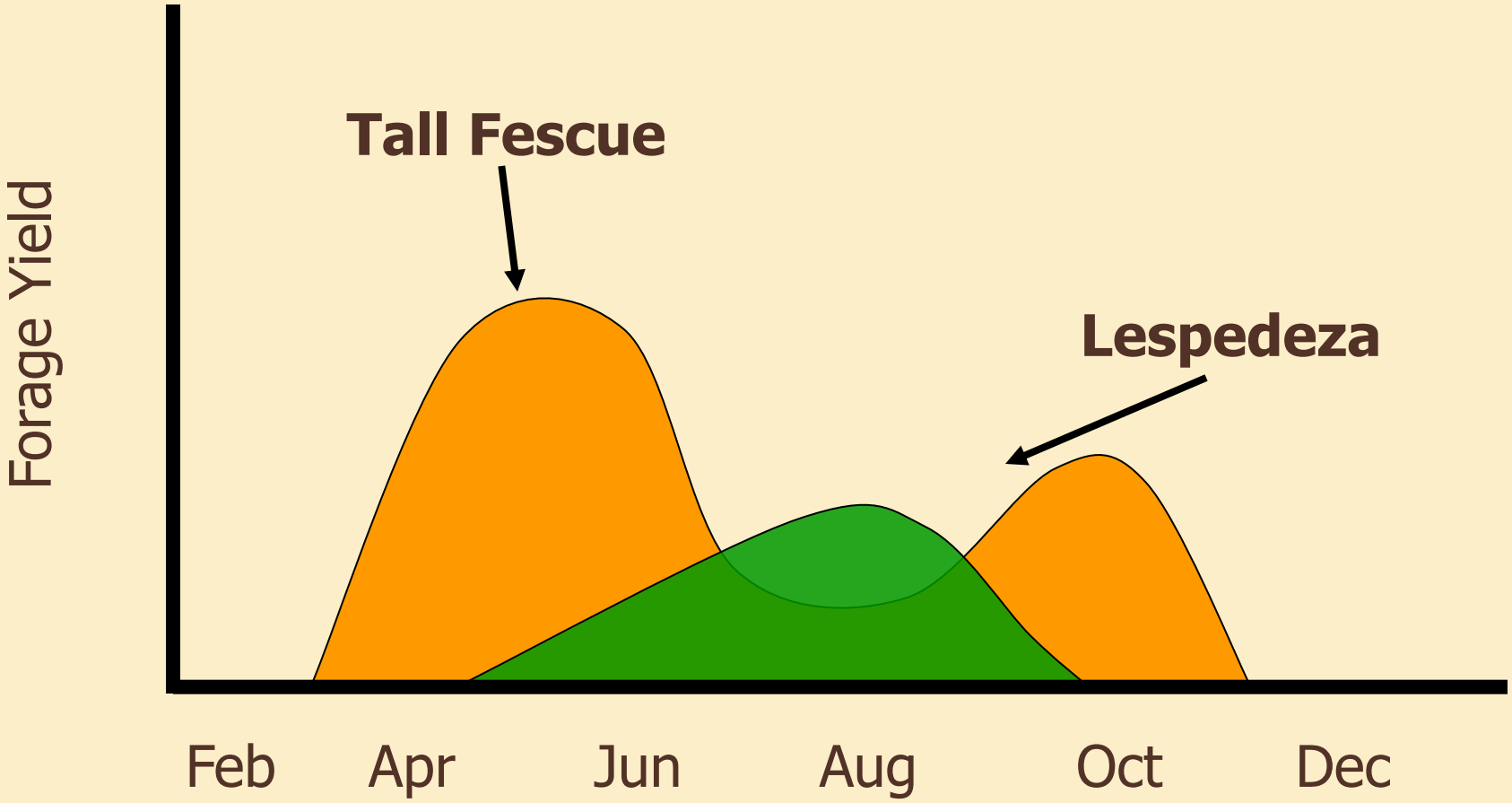
Crop	ADG	Gain
	lb/d	lb/a
Tall Fescue	0.8	76
Crabgrass	1.6	264

Grazing period from 17 June to 31 August

CRABGRASS

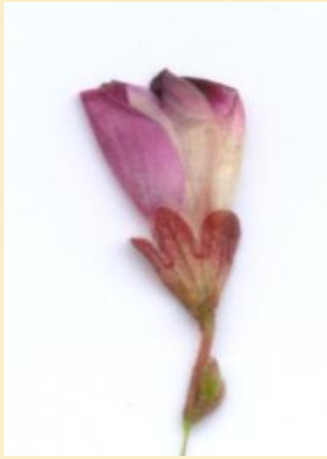
- Capable of producing 3 to 4 tons of feed/acre in mid to late summer
- Seeding rate: 4 lb/a broadcast – 3 lb/a drilled
- Seeding date: Anytime except Aug. to Dec.
- Fertilization: 40 lb/a N at planting followed by 60 lb/a after the first grazing. P and K to test.
- Harvest management: Begin grazing when it reaches 8 to 12 inches in height. Leave a 3 inch stubble for maximum regrowth.
- Remove livestock 3 to 4 weeks before frost to allow reseeding or let first crop go to seed.

ANNUAL LESPEDEZA



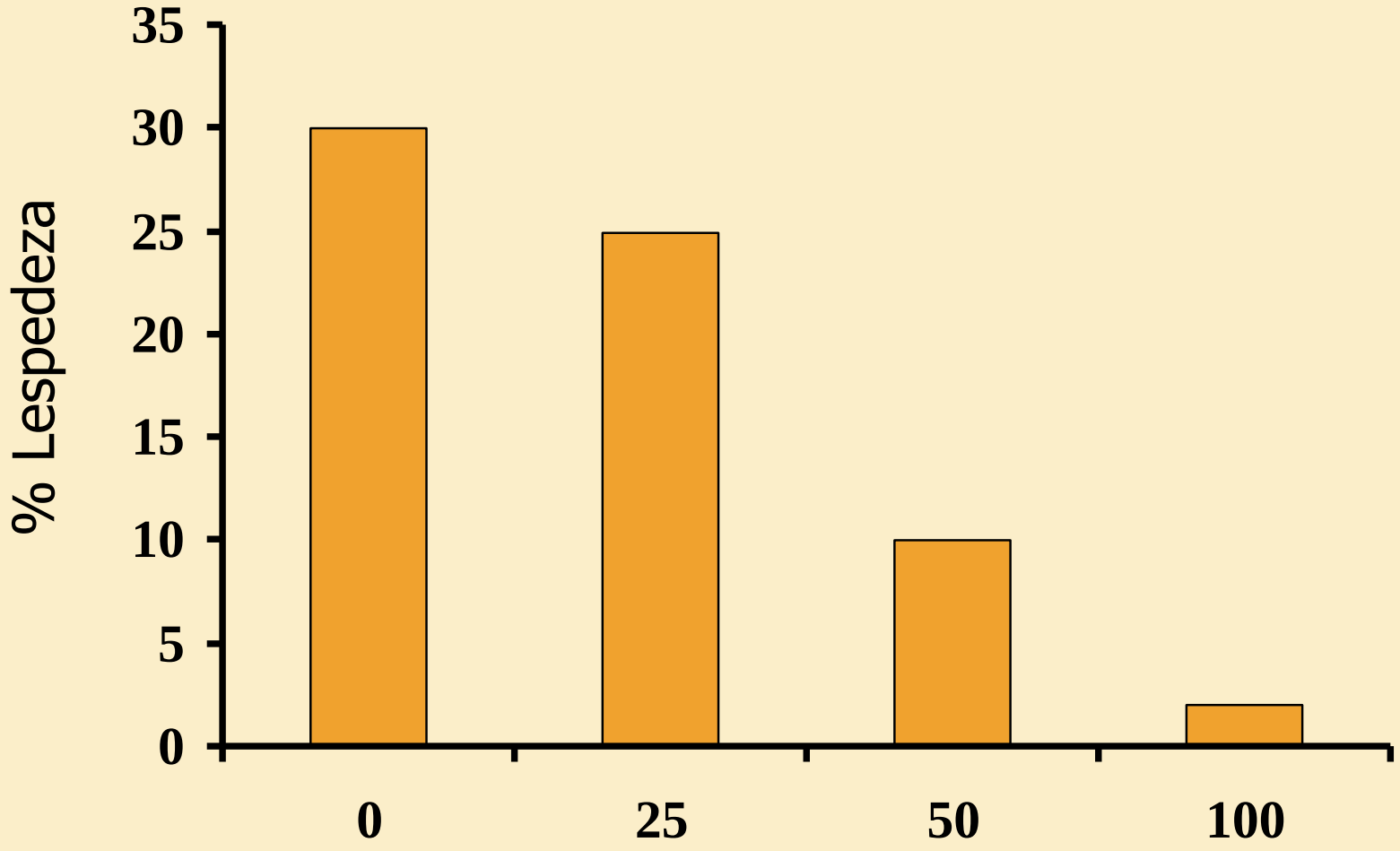
ANNUAL LESPEDEZA

- Medium to low yield potential
- Good persistence if reseeding is managed properly
- Good tolerance to:
  - poor drainage
  - low soil fertility (+)
  - heat stress
  - drought
- Forage quality good to excellent if managed



LESPEDEZA ESTABLISHMENT

NITROGEN FERTILIZATION OF ANNUAL LESPEDEZA/TALL FESCUE MIX



ANNUAL LESPEDEZA

EARLY SEASON GRAZING IMPORTANT

GRAZING HEIGHT MATTERS

Stubble height	Yield
inches	tons/acre
2.5	1.9
5	2.4

ANNUAL LESPEDEZA

- Capable of producing 1.5 to 2.5 tons of feed/a in mid to late summer
- Forage quality 85% of that for alfalfa
- Seeding rate: 15 lb/a broadcast – 10 lb/a drilled
- Seeding date: Late February through March
- Fertilization: P and K to soil test. AVOID NITROGEN
- Harvest management: Graze or clip when the forage is in the early bloom stage. Leave a 3 to 4 inch stubble for best regrowth. Allow to reseed by avoiding use after mid-September.

SEEDING RATES AND EXPENSES

Forage	Renovation (lbs PLS / Ac)		Typical Cost / Acre For Interseeding (Jan/Feb, '13)
	Solid Stand Rates No-till Drilled	Interseeding into Thin Grass Pastures	
Fescue	13-15	6-12	$13.00 (12 lb/a-Ky31)
Annual Ryegrass	25	10-15	$8.16 (12 lb/a)
Spring Oats	80-95	40-50	$13.60 (45 lb/a)
Rye or Wheat	110-130	30-60	$12-19 (60 lb/a)
Turnips	2-4	1.5-2	$4.85 (2 lb/a)
White Clover	1.5-2	1	$3.00 (l lb/a)
Lespedeza	15	6-8	$20.75 (6 lb/a)
Crabgrass	3-4	-	$36 (4 lb/a)

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SPRING SEEDING RATES & EXPENSES

Forage	Renovation (lbs PLS / Ac)		Typical Cost / Acre For Interseeding (Feb, '13)
	Solid Stand Rates No-till Drilled	Interseeding into Thin Grass Pastures	
Fescue (K31)	15	6-12	$13.00 (12 lb/a)
Ann. Ryegrass	25	10-15	$8.16 (12 lb/a)
Spring Oats	80-95	40-50	$13.60 (45 lb/a)
Rye or Wheat	110-130	30-60	$12.19 (60 lb/a)
Turnips	2-4	1.5-2	$4.85 (2 lb/a)
White Clover	1.5-2	1	$2.90 (l lb/a)
Lespedeza	15	6-8	$20.75 (6 lb/a)

ANNUAL RYEGRASS CULTIVARS

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- Passerel (Westervold Diploid)
- Abundant (Tetraploid)
- Tetrastar (Tetraploid)

FORAGE ESTABLISHMENT

FALL COOL SEASON GRASS ESTABLISHMENT

- Best time
  - True beginning of the CSG growing season
  - Roots get well established before the dry summer
- Drill late August – early September

SPRING COOL SEASON GRASS ESTABLISHMENT

- Spring is second-best time
  - 5-6 months behind fall seedings
  - Dry season ahead
  - Weed competition is great
- Drill February - early March
  - Avoid tillage
- Can sow with spring oats – Keep rate low!

NO-TILL CAN BE A RELIABLE CHOICE

- Able to keep existing sod
- Conserves moisture
- Sod competes against weeds
- Greater success than broadcasting
- Less cost & erosion than conventional tillage
- Don’t plant too deep

BASIC TIPS FOR NO-TILL SUCCESS 1

- Start with high soil fertility level
  - Soil test & correct nutrient deficiencies well in advance of seeding
- Choose well-drained fields, esp. if planting early
  - Start with non-compacted soils
- Remove plant competition
  - Control weeds; watch out for herbicide residual
  - Use a properly-calibrated sprayer
- Don’t plant until soil crumbles in your hand
- Prepare a smooth, firm seedbed
- Let surface trash dry out before planting so coulters cut it

BASIC TIPS FOR NO-TILL SUCCESS 2

- Use certified seed of recommended varieties
  - Increase seeding rate by 10% unless conditions are ideal
- Add weights to drill as needed to make seed openers work properly
- Don't plant faster than 3½ MPH in sod, moist soils or rough conditions
- Plant forage seeds **¼" to ½"** deep
  - Should see 1/3 of seed on top of ground when done
- Use press wheels that close the seed trench
  - May need to roll bare ground after seeding to get good soil-seed contact
- Be prepared to use post-emergence herbicides
  - Grasses must be well-tillered & established

WHY CALIBRATE?

- **Over-Application**
  - Extra chemical expense
  - Crop damage
  - Environmental risks
- **Under-Application**
  - Expense of second application
  - Weed competition - loss of yield
  - Loss of property use or stored crop

SHORT-TERM DROUGHT RESPONSE

- Plant an emergency crop in the fall
  - Turnips
  - Wheat, Triticale, Rye, Ryegrass
- Plant an emergency crop in th spring
  - Spring Oats
  - Cereal Rye

ANNUAL LESPEDEZA

- Tolerates low pH & drought
- Most growth after late June
- Must reseed itself
- Mixes well with cool season grasses
- Less N fixation than clovers

GRASS ESTABLISHMENT TECHNIQUES

Method 1: overgraze → fertilize without N → seed early → flash graze early grass growth

Method 2: retard or kill pasture growth with chemicals (Gramoxone or glyphosate) → fertilize without N →seed early

CONTROLLING COMPETITION

Grazing can be useful or detrimental

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