Influence of Pasture Planting Method on Annual Cool Season Pasture Forage Availability for Grazing by Growing Beef Cattle – a Four Year Summary

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Cool season annual pastures:

(Coastal Plain Region, S.E. USA)

- Planted in fall.
- Grazed late fall to mid to late spring.
- Cool season annuals (annual ryegrass, rye, oats, wheat).
- Very high quality nutrition.

Factors that can affect grazing season lenght and amount of pasture forage:

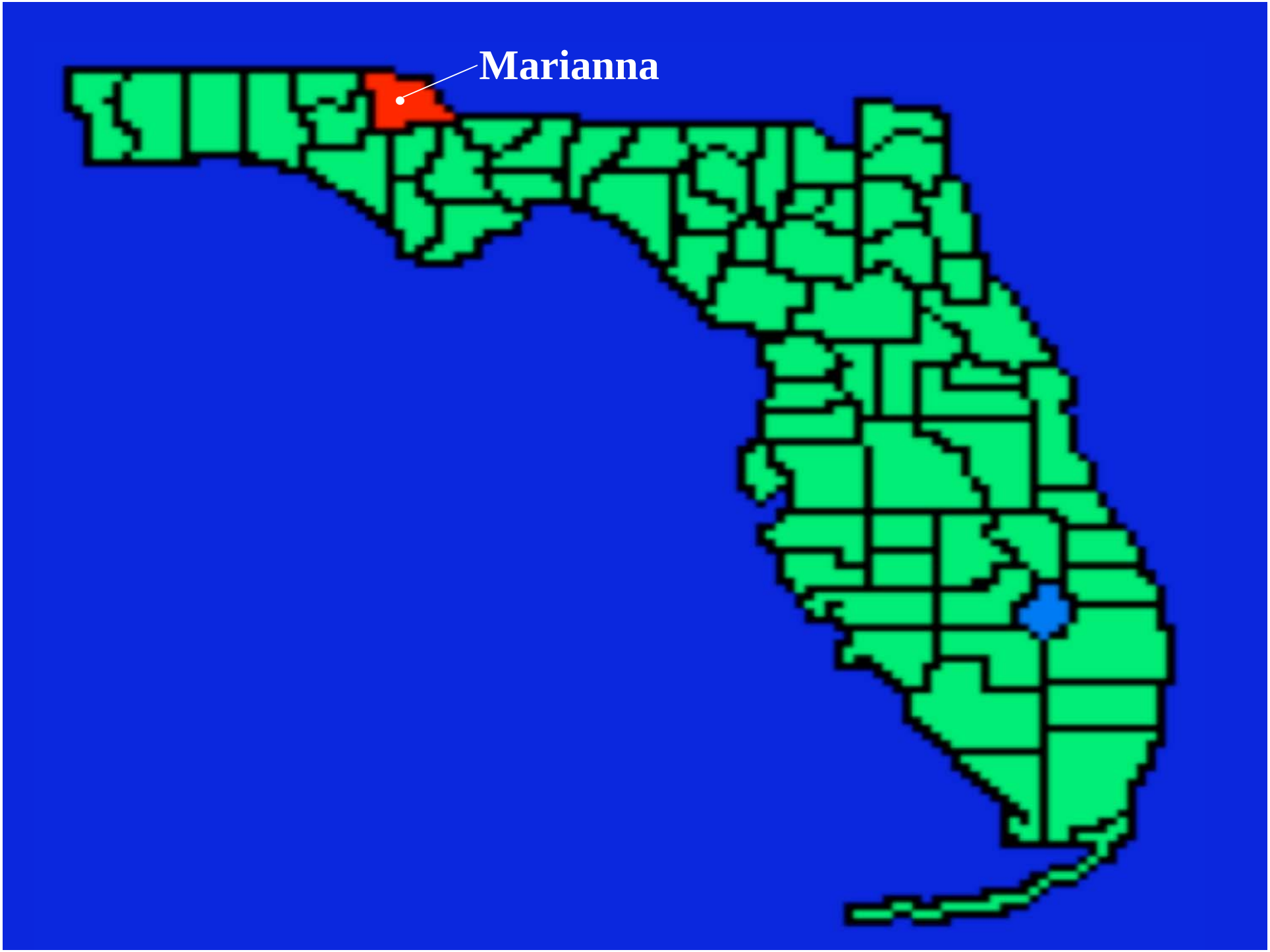
- forage species
- forage variety within species
- mono-crop vs blend
- type of blend
- pasture cultivation/planting method
- planting date
- soil fertility
- dryland or irrigation

Forage blend (mono-crop vs. blend).

Pasture planting/cultivation method.

Objective:

Determine the influence of pasture planting/cultivation method and different combinations of cool season annual forages on pasture forage yield and quality, and on weight gain and total grazing days of grazing growing beef cattle over the late fall-winter-spring (November to May) grazing season.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Procedures:

2, two year, 2 x 2 trials (experiments):

- Pasture planting/cultivation method: Prepared seedbed (PS) vs. sod seeding (SS) – both trials.

- Pasture forage treatment: (mono-crop vs. blend)

  Exp. 1 – RO vs. RORg

  Exp. 2 – Rg vs. ORg.

Procedures:

- 8, 3.2 ac pastures per year (2 reps/yr).
  4 clean tilled (PS)
  4 bahiagrass (SS)
- PS pastures planted Oct. and SS pastures planted Nov.
- Grazing started when forage 8 to 12”.
- Top dress 2 x with N.
- Dryland conditions.

Planting/cultivation method:

- **PS – planted using grain drill into prepared seedbed.**
- **SS – planted using no-till seed drill into dormant bahiagrass.**

Procedures:

- Each year, 32 growing cattle (550-630 lb avg BW).
- 4 “tester” cattle/pasture/yr with “put and take” cattle as needed.
- Cattle weights taken at start and end, and every 28 days.

Procedures:

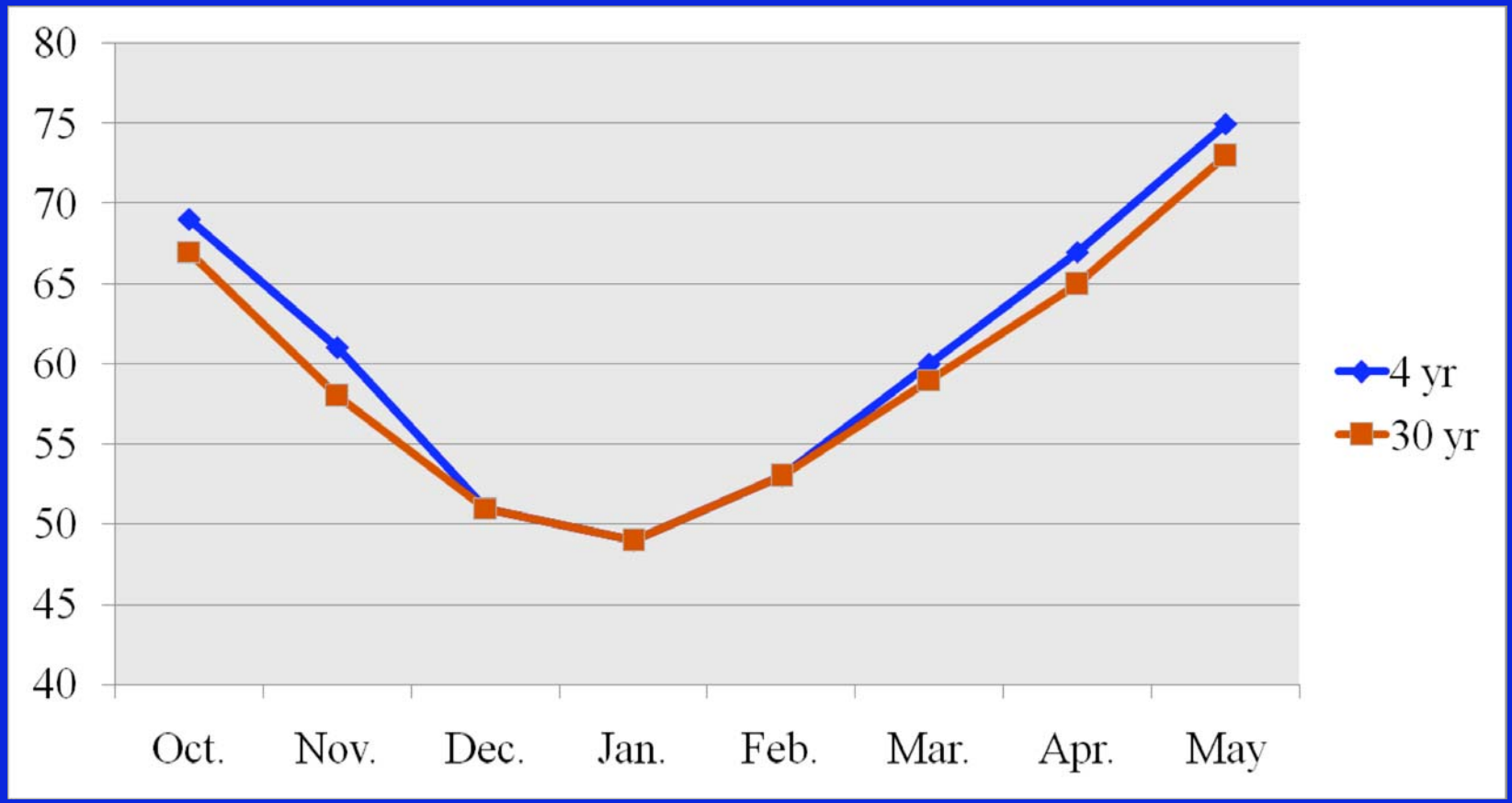
- Three exclusion cages/pasture/yr for forage sampling (2 x mo).
- DM, CP, and IVOMD were determined.

Procedures:

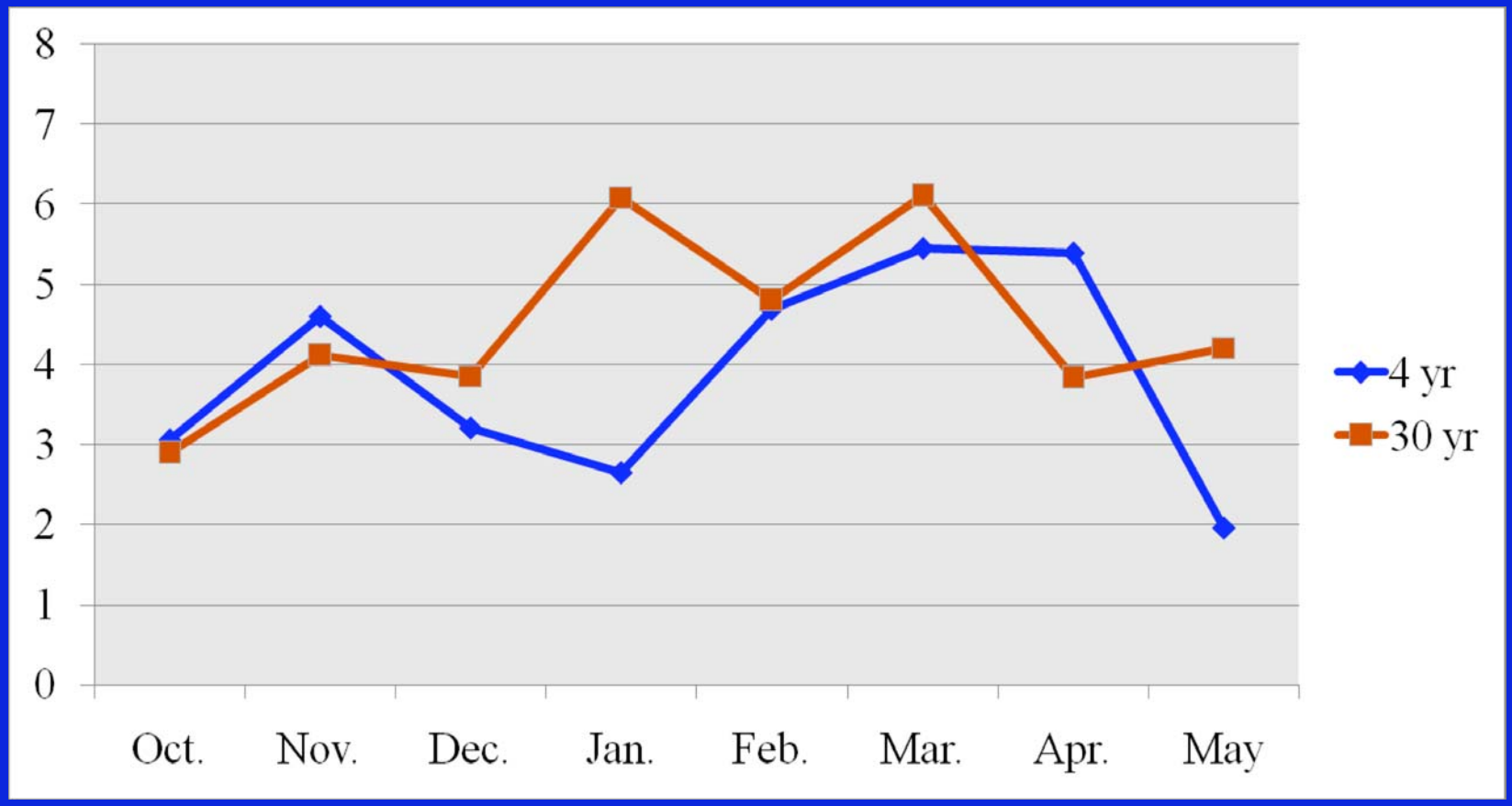
- Data collected:
  - weight gain of “tester” cattle
  - grazing days (“tester” and “put and take”)
  - weight gain per acre
  - DM forage yield (year and by month)
  - Forage CP and IVOMD
- Data analyzed as a 2 x 2 combined over years (each exp. and over all 4 yr).

RESULTS

Four year avg. temperature, ° F:



Four year avg. rainfall, in:



Avg. planting date:

PS	10 Oct
SS	19 Nov

Avg. grazing start:

PS	12 Dec
SS	8 Feb

Avg. grazing end:

SSPS	3 May
	10 May

Forage DM yield, lb/ac:

Exp. 1	OR vs ORRg	4240	4351	NS
Exp. 2	Rg vs ORg	2807	3285	+
Exp. 1	PS vs SS	5060	3476	*
Exp. 2	PS vs SS	3402	2690	*

SEM (n = 8): Exp. 1 = 366; Exp 2 = 165.

Cattle grazing days/ac:

Exp. 1	OR vs ORRg	174	170	NS
Exp. 2	Rg vs ORg	136	163	+
Exp. 1	PS vs SS	221	124	**
Exp. 2	PS vs SS	170	129	**

SEM (n = 8): Exp. I = 5, Exp. 2 = 9.

Estimated cattle weight gain, lb/ac:

Exp. 1	OR vs ORRg	399	374	NS
Exp. 2	Rg vs ORg	326	356	NS
Exp. 1	PS vs SS	526	248	**
Exp. 2	PS vs SS	399	283	**

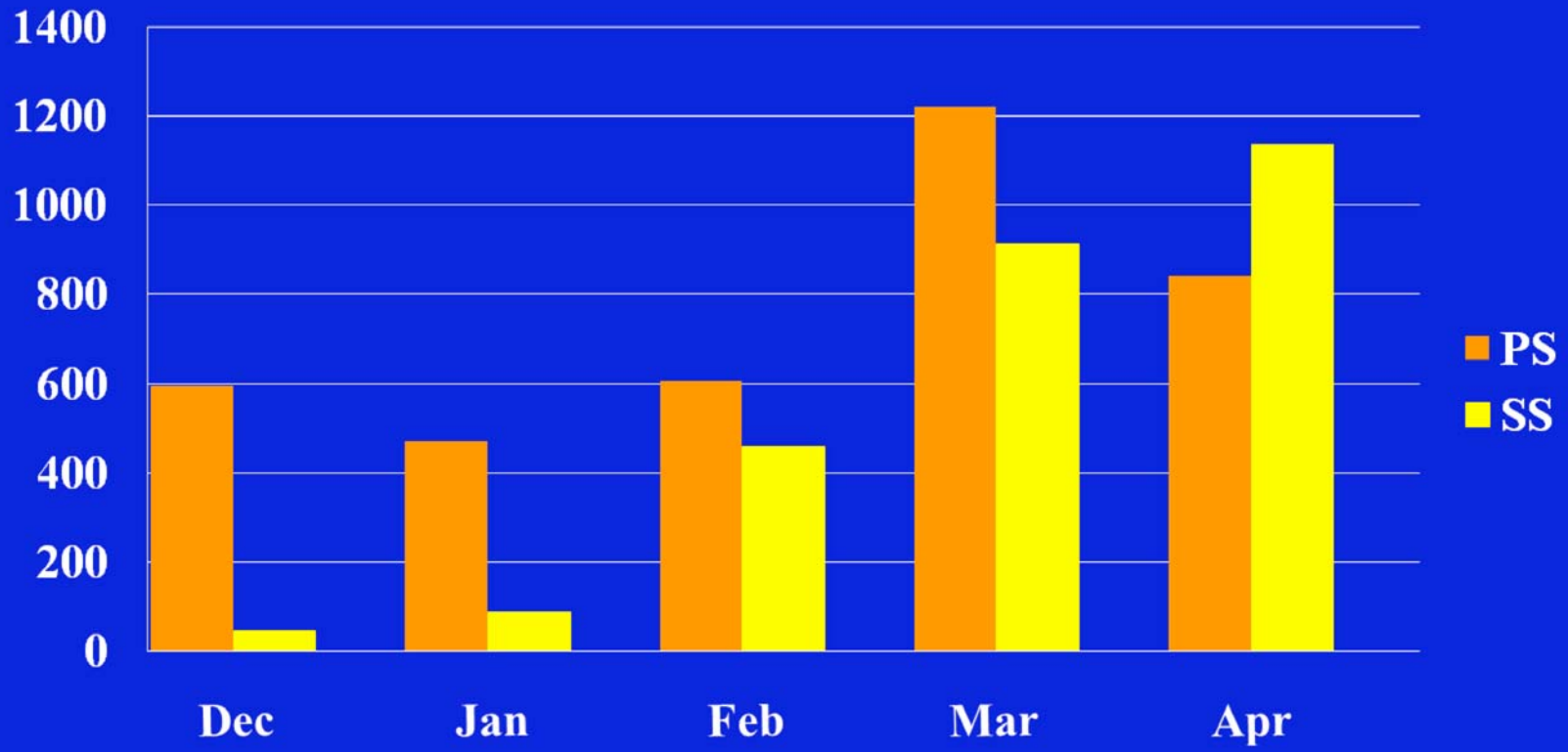
SEM (n = 8): Exp. 1 = 20, Exp. 2 = 24.

Effect of planting/cultivation method - four year average:

	PS	SS	SEM[a]	P
Grazing days/ac	196	126	5	**
Forage DM yield, lb/ac	4232	3083	201	**
Cattle wt gain, lb/ac	462	266	16	**

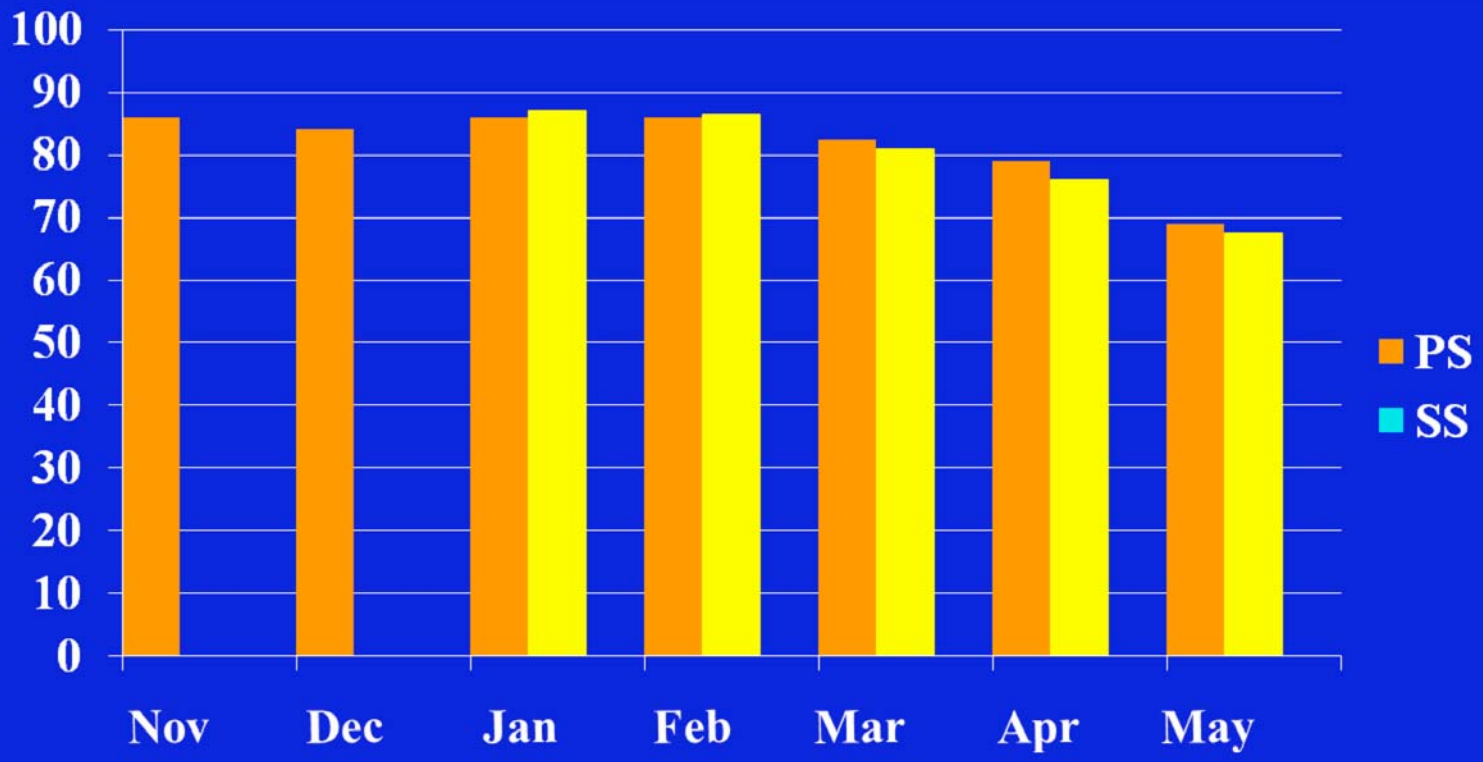
[a]n = 16

Pasture forage DM yield, lb/ac:



Effect of month, P < 0.01; SEM = 49.

Pasture forage IVOMD, % DM:



Effect of month, P < 0.01; SEM = 1.

Pasture forage CP, %DM:

Effect of month, P < 0.01; SEM = 1.

Large year to year variation!!

Grazing days **

(280 to 460 d/ac)

(2843 to 5010 lb/ac)

Forage DM yield **

(343 to 450 lb/ac)

Cattle weight gain **

Possible reasons for better performance of PS vs. SS:

- Longer grazing season (earlier planting).
- Competetive effect of bahiagrass.


ELECTRIC FENCE

Summary:

- **Small effect of using a blend of forage species.**
- **Large effect of pasture planting/cultivation method.**

Conclusion:

The planting of cool season annuals into a prepared seedbed resulted in increased pasture productivity during the late fall-winter-spring grazing season than planting (sod-seeding) into dormant warm season bahiagrass.

- **Results go against the philosophy of reduced tillage.**

- **Cover crops and cool season grazing.**

Questions ?