

Forages in Beef Production Systems

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Considerations

- Time of year
- Ability
- Goals for production

- Forage species
- Grazing management



Factors affecting cattle gains

- Forage species

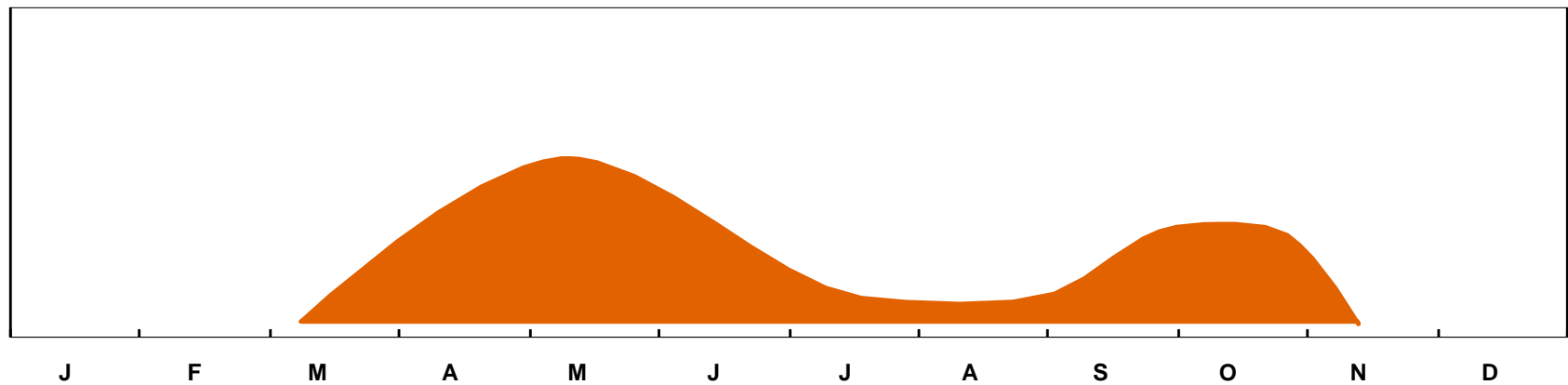


Forage species

- Cool-season vs warm-season
- Grass vs legume
- Annual vs perennial



Yield of tall fescue



Ball and co-workers. 1996. Southern Forages



Tall Fescue

- found on Kentucky farm in 1931
- released as KY 31 cultivar in early 1940's
- adapted and persistent



**A major difficulty ... is its
apparent lack of palatability.... Its
agronomic characteristics are
excellent, but it is often rejected
by livestock.**

**G.H. Ahlgren
Forage Crops, 1956**

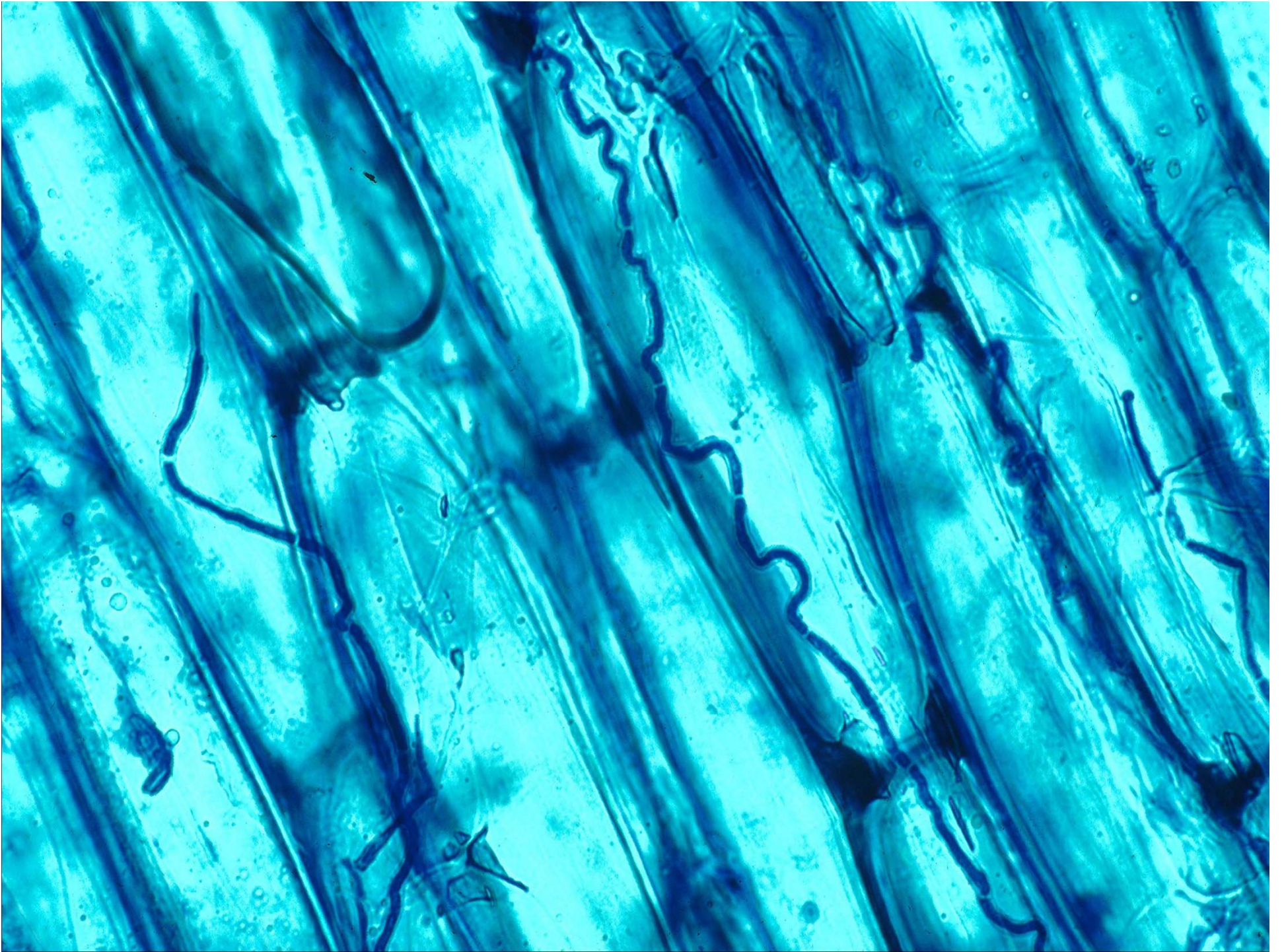


Tall Fescue

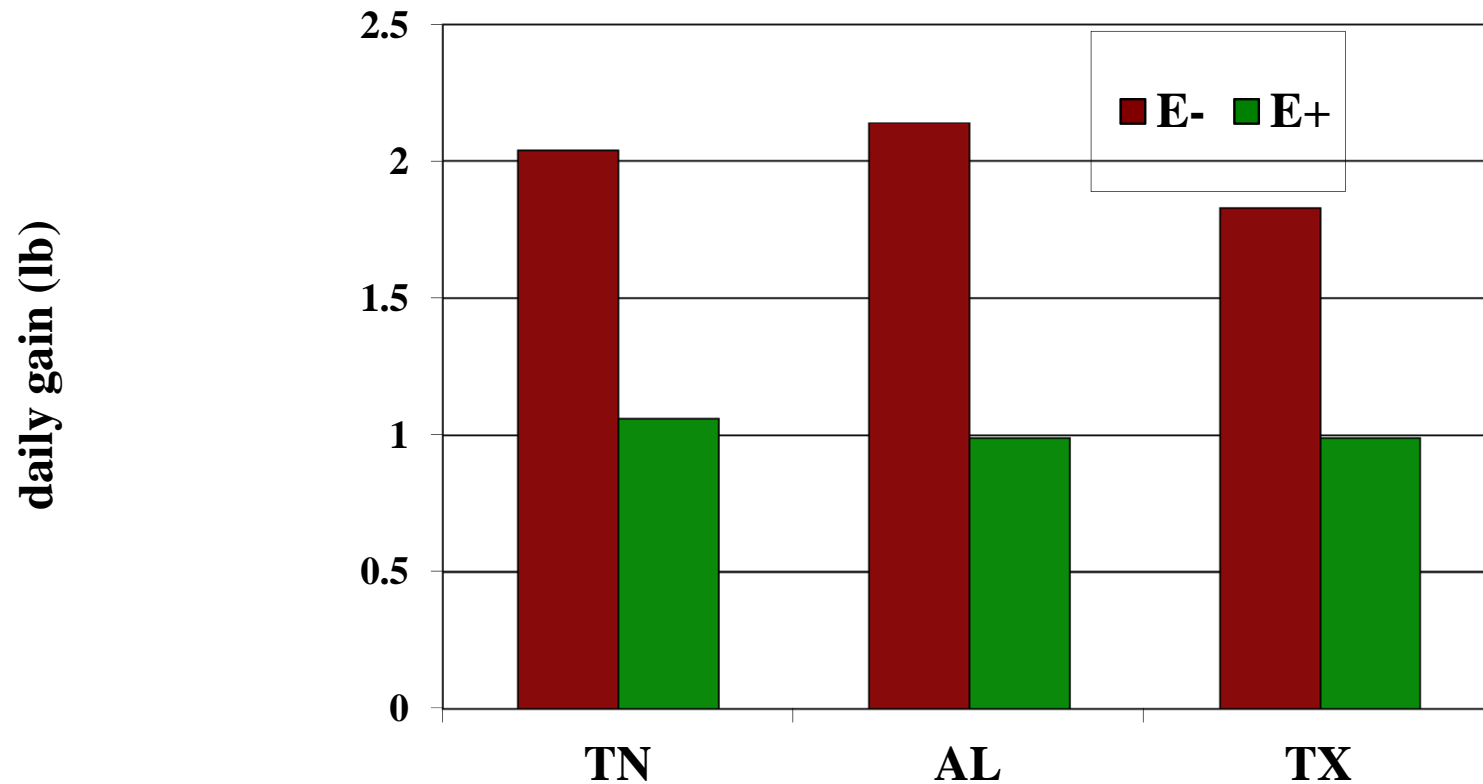
Neotyphodium coenophialum

- endophyte
- fungus
- fescue fungus





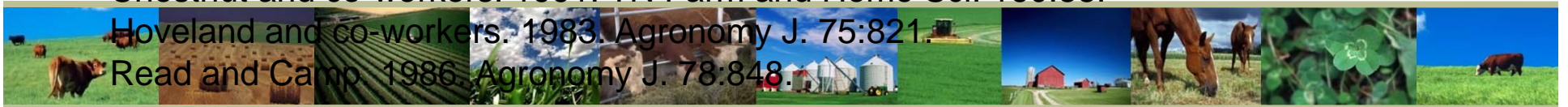
Endophyte effect on steer gain



Chestnut and co-workers. 1991. TN Farm and Home Sci. 160:38.


Hoveland and co-workers. 1983. Agronomy J. 75:821.

Read and Camp. 1986. Agronomy J. 78:848.



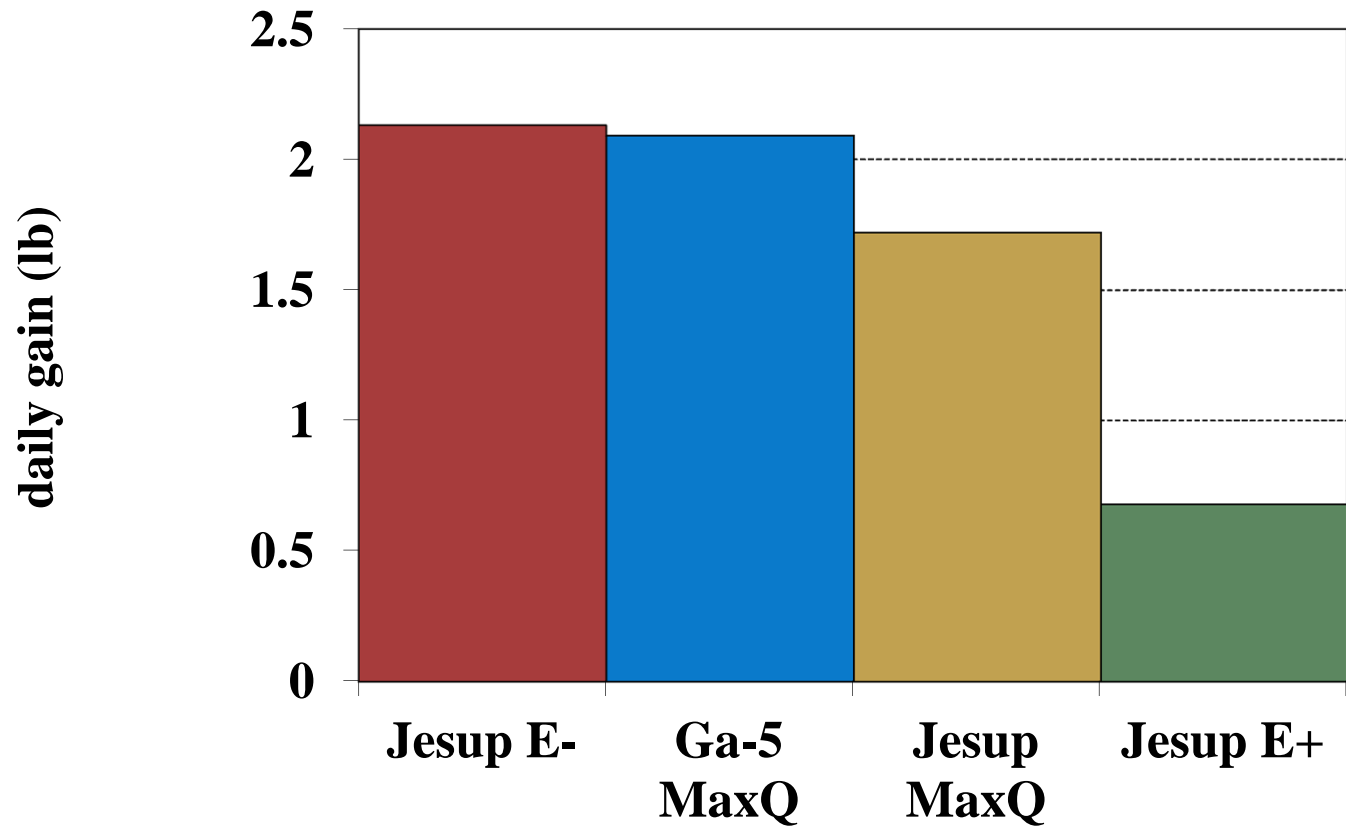
Clover effect on fescue toxicosis

	E+	E+ with white clover
Daily gain (lb)	1.06	1.53
Gain per acre (lb)	374	582

 Hoveland and co-workers. 1981. AL Exp. Stat. Bul. 530



Endophyte effect on steer gain



∞ Parish and co-workers. 2003. J. Animal Science 81:2856



Steer ADG on cool-season grass

Alabama

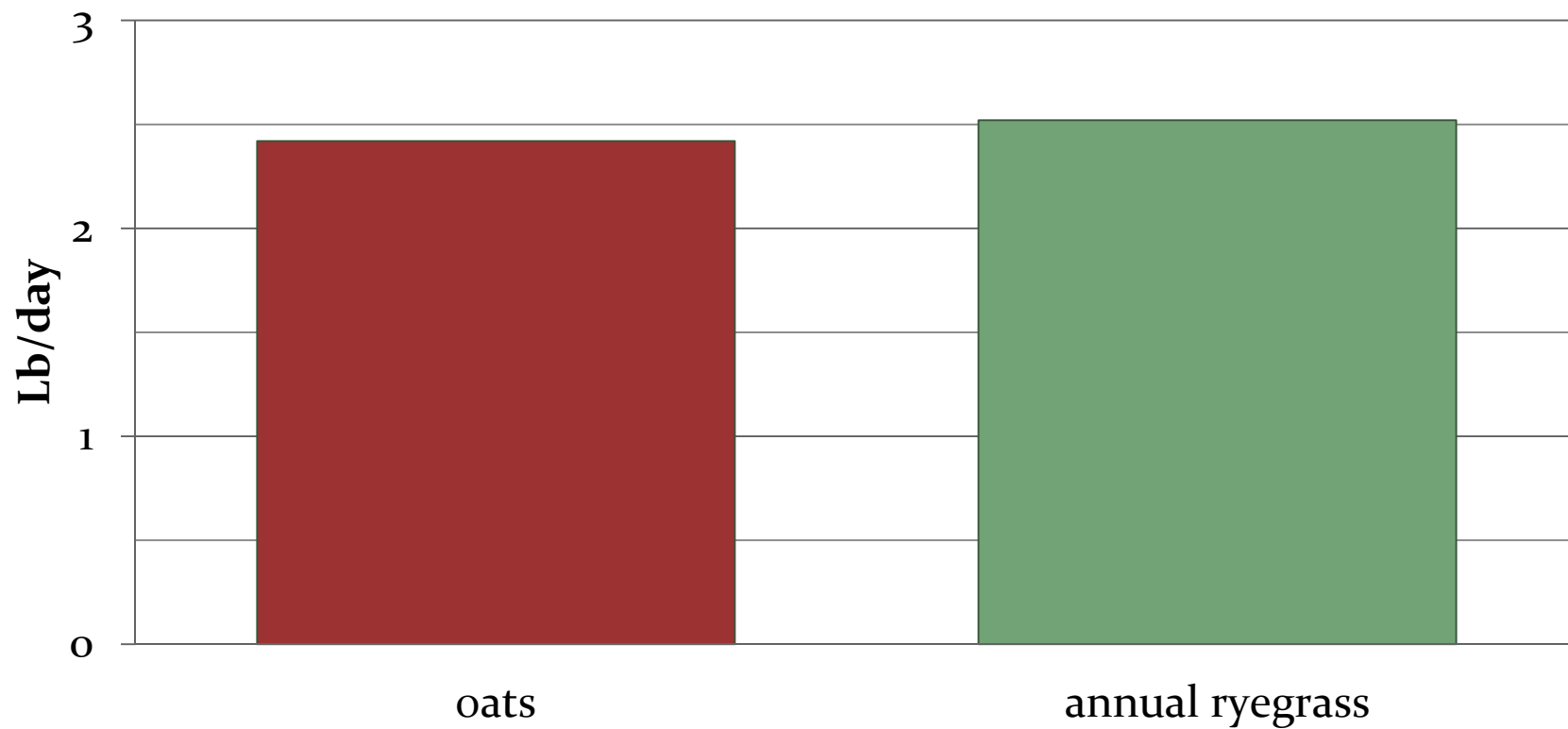


Ball and Prevatt. 2009. AI.Extension ANR 1348.

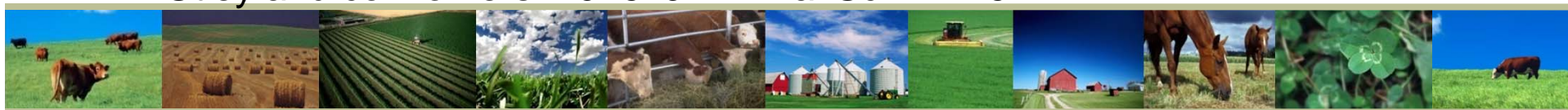


Steer ADG on cool-season grasses

Georgia

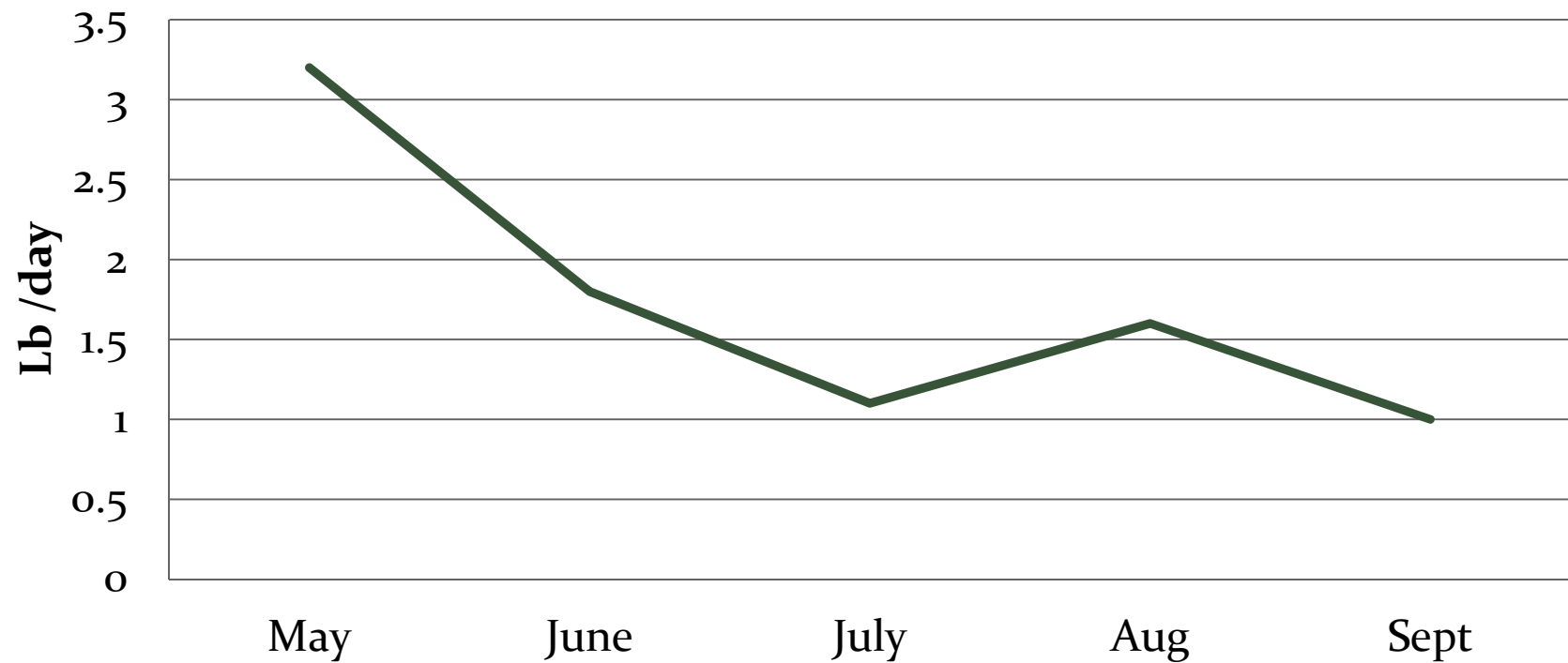


Utley and co-workers. 1976. J. Animal Sci. 42:16.



Steer gain on bermudagrass

'94-'98 Georgia

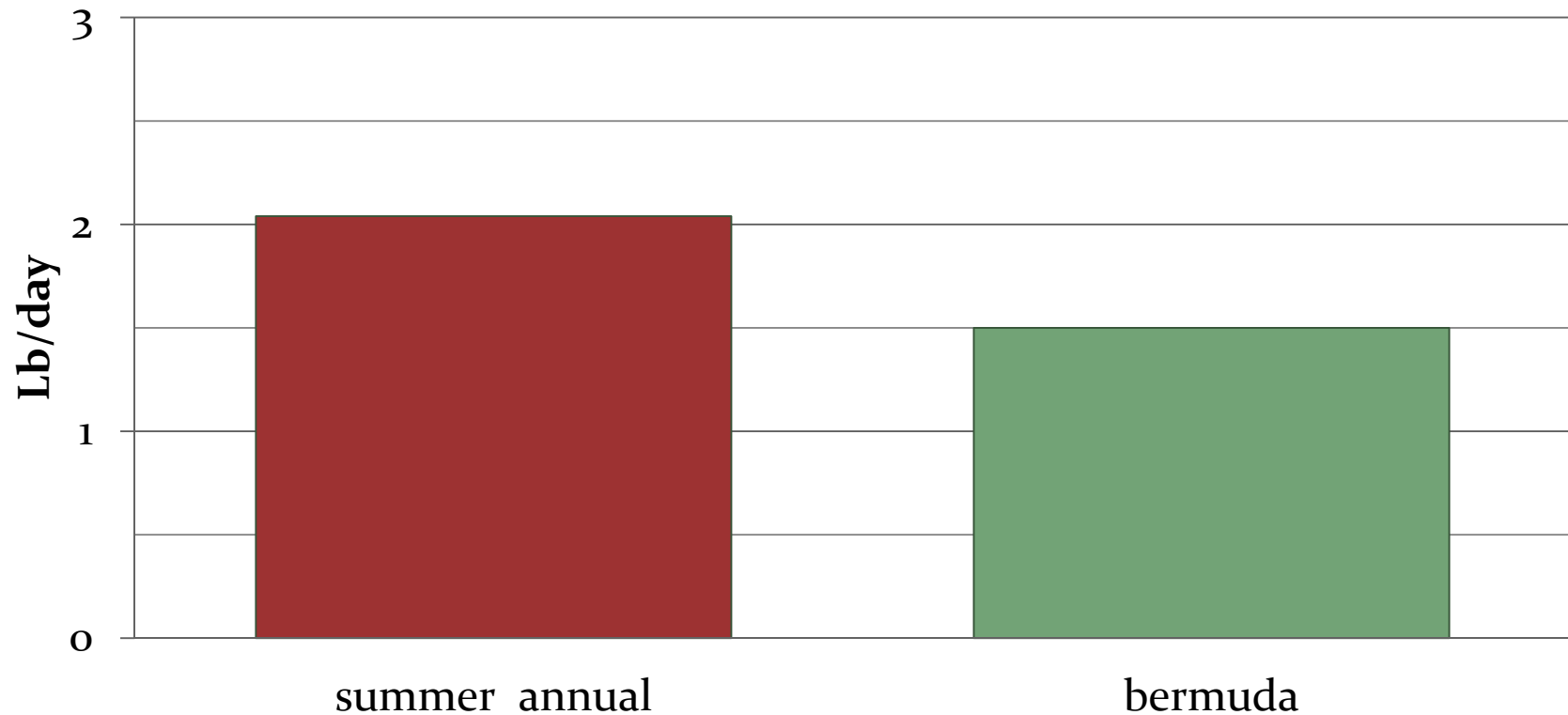


Stuedemann and Franzluebbbers. 2007. J. Anim. Sci. 85:1340.



Steer ADG on warm-season grasses

Georgia



Utley and co-workers. 1976. J. Animal Sci. 42:16.



Steer gains on Switchgrass

Spring Hill, TN

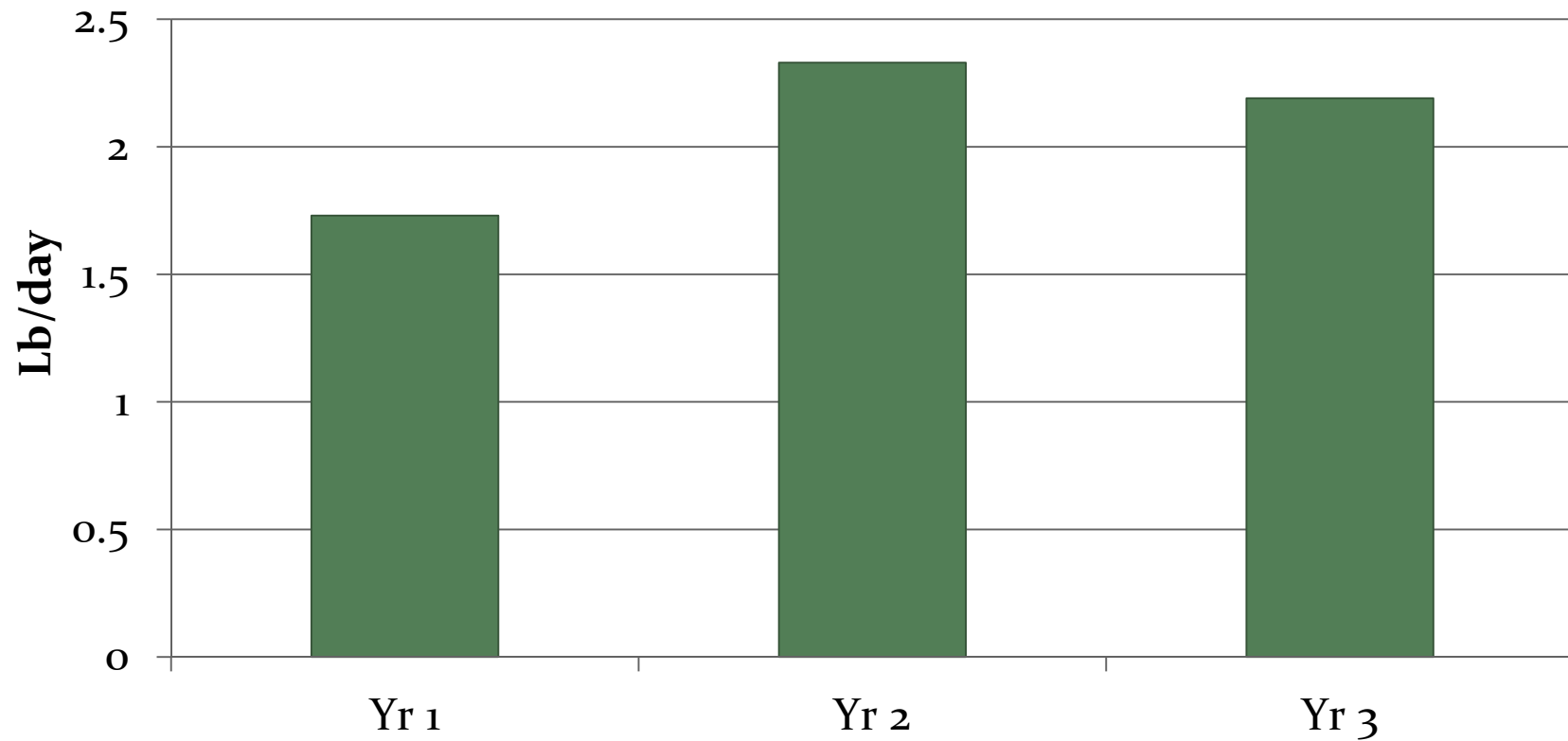
Forage Treatment	ADG lb	Steer days/acre	Total Gain lb/acre
SG	2.09^a	131	274
BB/IG	2.33^a	84	195

∞ May 29 to August 3, 2009 grazing season



Steer gain on alfalfa

Georgia



Bates and co-workers. 1996. J. Prod. Agric. 9:418.



Conclusion about species

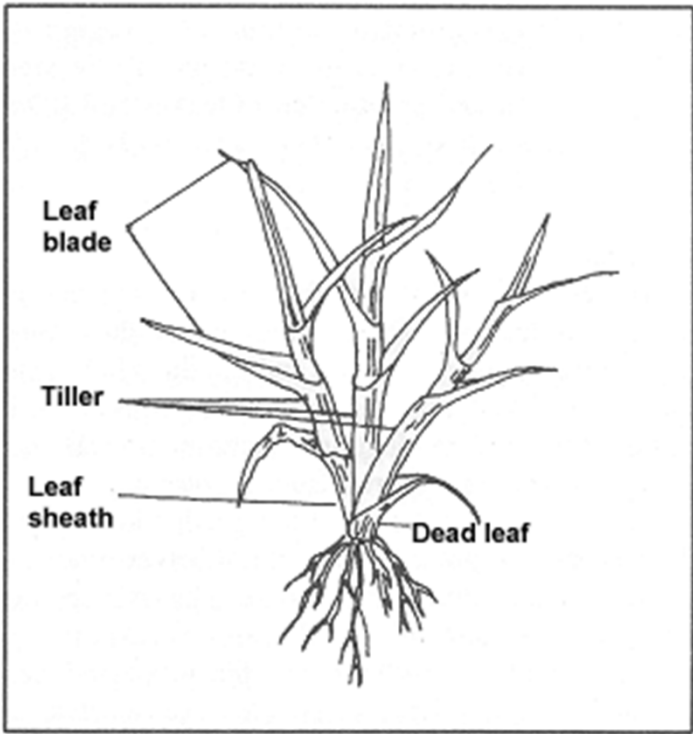
- Most species can support 2 lb/day gain
- Late summer gains difficult to achieve
- Species adaptation/production becomes primary issue
 - Use perennials as base forage
 - Interseed legumes
 - Use annuals to supplement



Factors affecting ADG

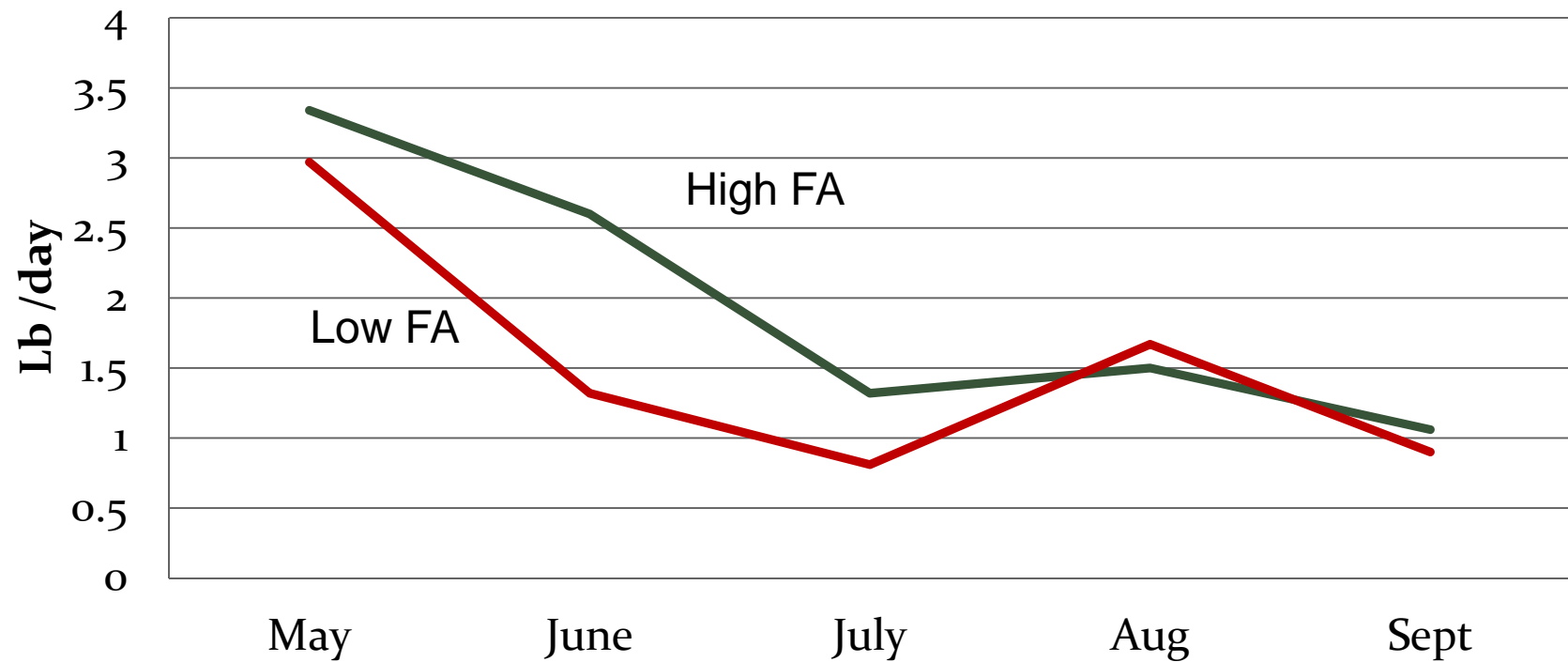
- Forage species
- Grazing management





Steer gain on bermudagrass

'94-'98 Georgia

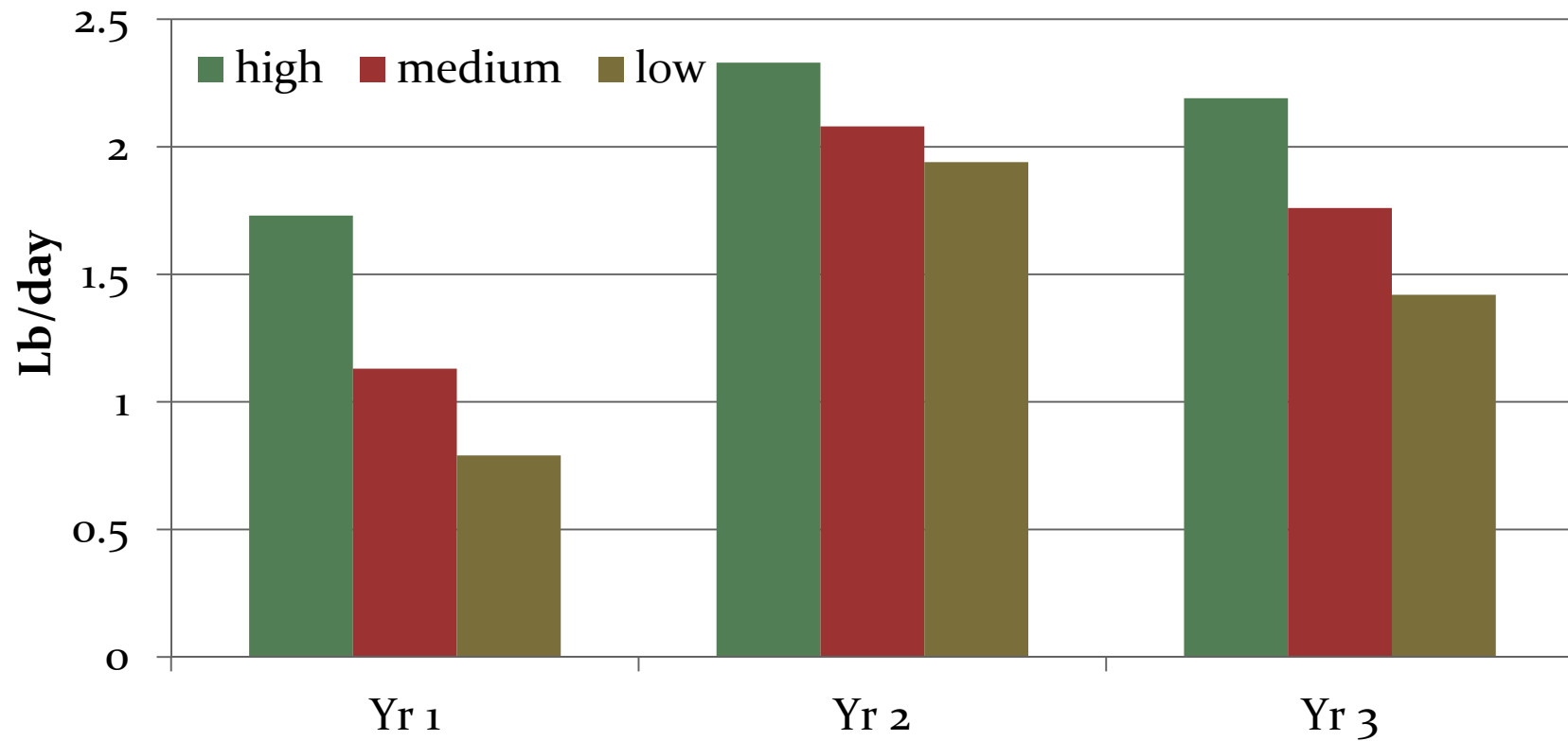


Stuedemann and Franzluebbbers. 2007. J. Anim. Sci. 85:1340.

Target: low – 3300 lb/acre; high – 6600 lb/acre



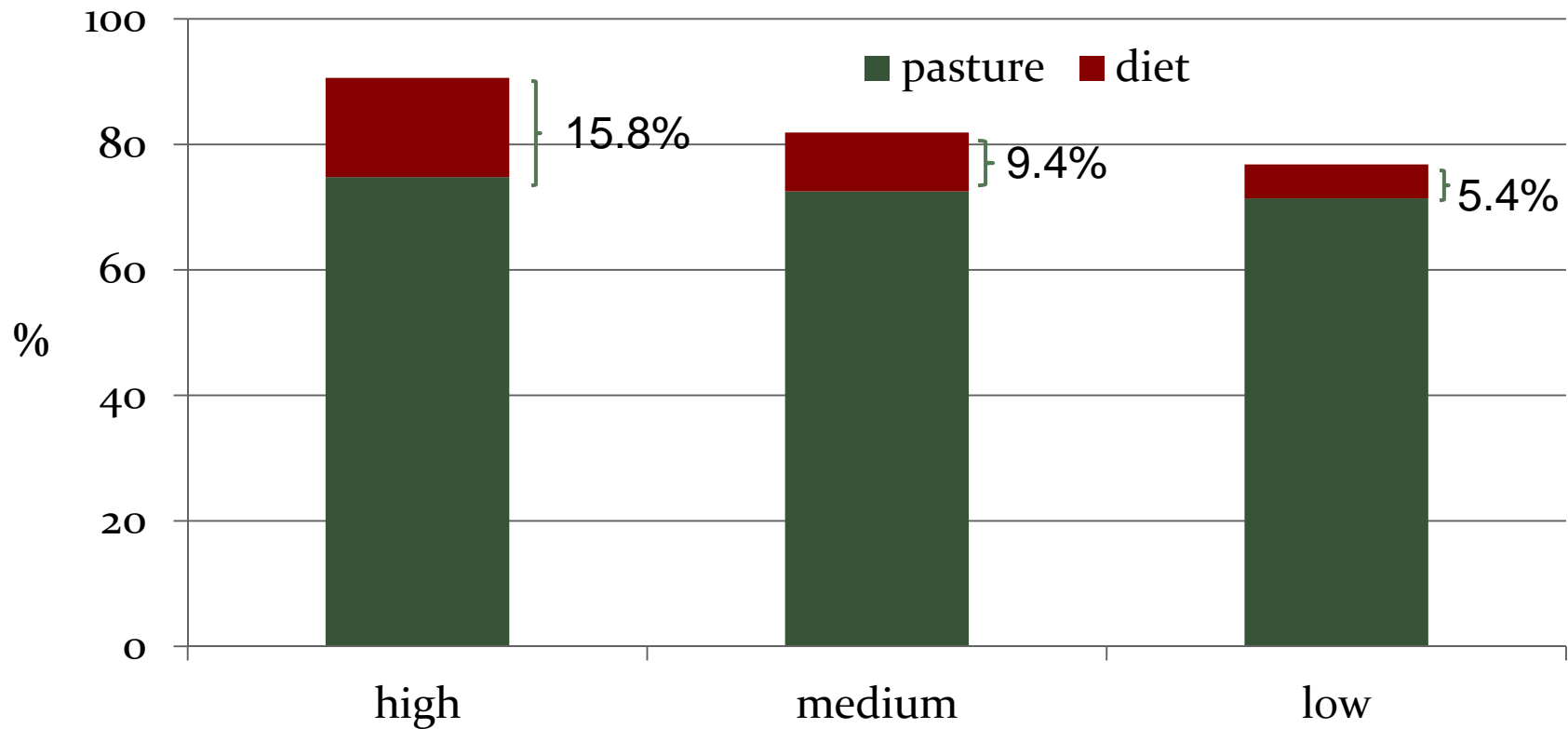
Steer gain on alfalfa with forage allowance -Georgia



Bates and co-workers. 1996. J. Prod. Agric. 9:418.



Organic matter digestibility from steers grazing alfalfa under 3 forage allowances -Georgia



Bates. 1993. Ph.D dissertation



Diet of steers grazing alfalfa

	Forage Allowance		
	High	Medium	Low
Grazing times (hrs/day)	6.5	8.3	9.5
Intake (lb dm/day)	54	42	39
Intake (% of BW)	4.1	3.2	3.0



Bates. 1993. Ph.D dissertation



Conclusions about grazing management

- Forage availability controls weight gain
- Allow for animal selectivity
- Higher daily gains = less forage utilized



Designing a forage program

- Focus on forage availability
 - Use cool and warm-season species
 - Tall fescue – Sept to Nov, March to June
 - Summer forages – May to Sept
 - Interseed with legumes as much as possible



Double-cropping forage

