

Apache Arrowleaf Clover

Healthy stands of arrowleaf clover can provide high quality cool-season grazing for beef and dairy cattle all across the southeastern U.S. Arrowleaf clover was introduced into southern pasture systems in the mid 1960's and probably peaked in use in the late 1970's. This clover can be a wonderful component of cool-season pastures in combination with ryegrass, rye and crimson clover. Arrowleaf is one of our most productive annual clovers and can be managed for reliable reseeding. However, maintaining healthy arrowleaf clover has been an increasing problem for the last 20 to 25 years.

Virus diseases and fungal root and crown rots cause severe damage on the older varieties (Yuchi, Meechee, and Amclo) of arrowleaf clover. The most visible and obvious disease symptom is early death of arrowleaf due to infection with multiple pathogens. Arrowleaf should be very productive through at least late May and often into early June. When diseases hit these susceptible varieties, the result is no regrowth after the first grazing in March or April.

Apache arrowleaf clover was developed at the Texas A&M University Agricultural Research and Extension Center at Overton in response to the need for disease resistance in this important clover. Apache was released by the Texas Agricultural

Experiment Station as a new cultivar in 2001. An exclusive license for marketing Apache was granted to East Texas Seed Co., Tyler, TX (903 597-6637)

Important points about Apache arrowleaf:

1. Apache is resistant to bean yellow mosaic virus (BYMV) lethal wilt. Apache has a less severe response (tolerance) to other symptoms of BYMV such as stunting, yellowing and leaf deformation.
2. Apache has not shown the early death syndrome that is common with Yuchi and other cultivars.
3. Apache is earlier in production and flowering compared to Yuchi. Early spring forage production is higher for Apache compared to Yuchi.
4. Apache seed are larger than seed of other arrowleaf cultivars and young Apache seedlings are also larger and more vigorous compared to Yuchi.
5. Apache is not resistant to all arrowleaf clover diseases. There are viruses other than BYMV that can cause problems. Research continues in the TAES Clover Breeding Program to improve disease resistance in arrowleaf clover.
6. Apache will be easier to manage due to earlier forage production and less late spring competition with warm season perennial grasses.
7. Apache is a better choice than Yuchi because the disease resistance and tolerance of Apache improves the reliability of full season forage production.

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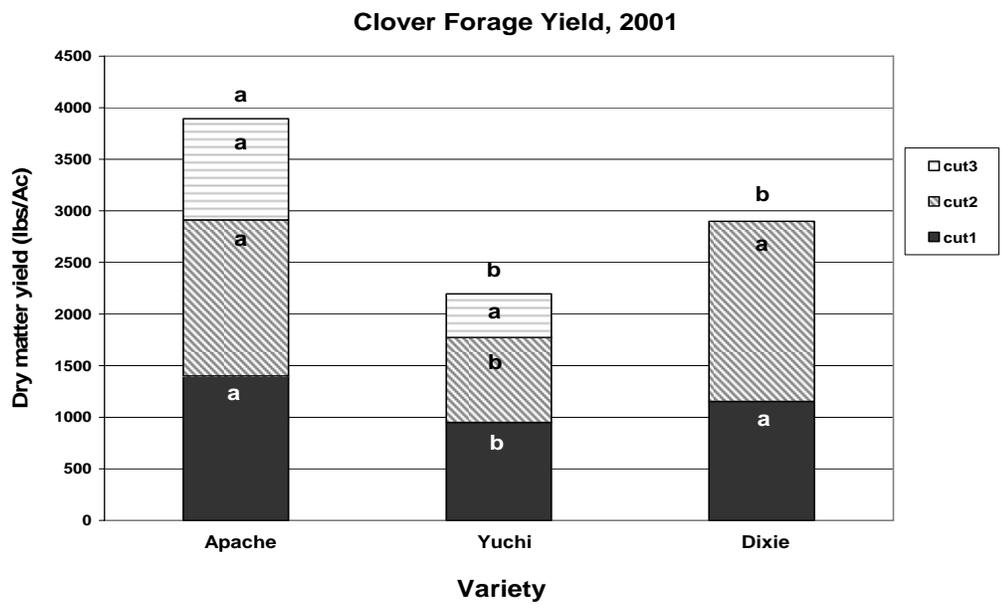


Figure 1. Forage production of Apache and Yuchi arrowleaf clover and Dixie crimson clover at Overton, Texas. Cut1, cut2 and cut3 refer to harvest dates of March 13, April 9 and May 21, 2001. Varieties are different ($P < 0.05$) in total season forage production if different letters are shown above the bars. Varieties are different ($P < 0.05$) in forage production at a specific harvest if different letters are shown in the shaded portions of the bar.

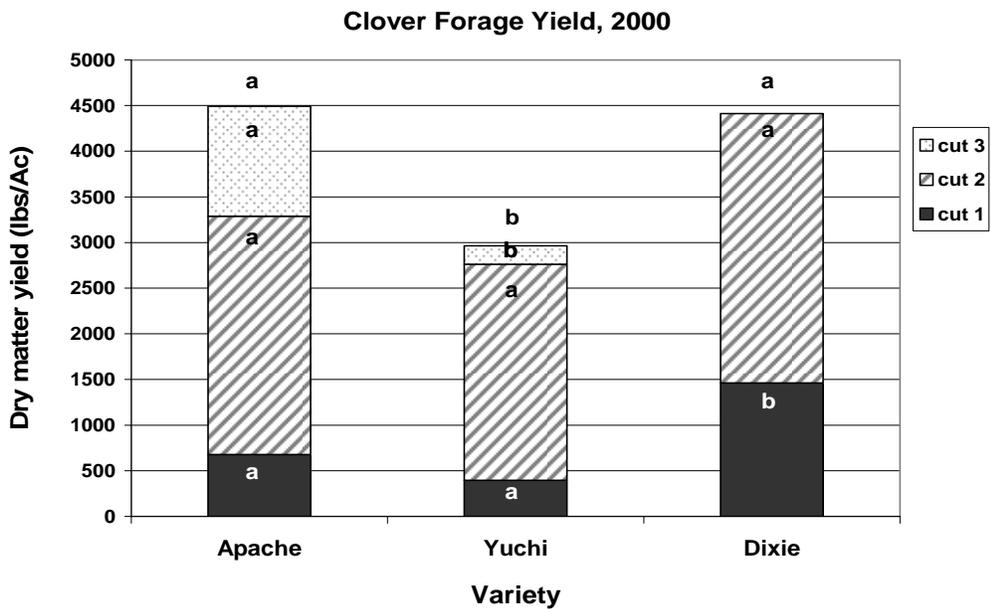


Figure 2. Forage production of Apache and Yuchi arrowleaf clover and Dixie crimson clover at Overton, Texas. Cut1, cut2 and cut3 refer to harvest dates of March 7, April 4 and May 30, 2000. Varieties are different ($P < 0.05$) in total season forage production if different letters are shown above the bars. Varieties are different ($P < 0.05$) in forage production at a specific harvest if different letters are shown in the shaded portions of the bar.

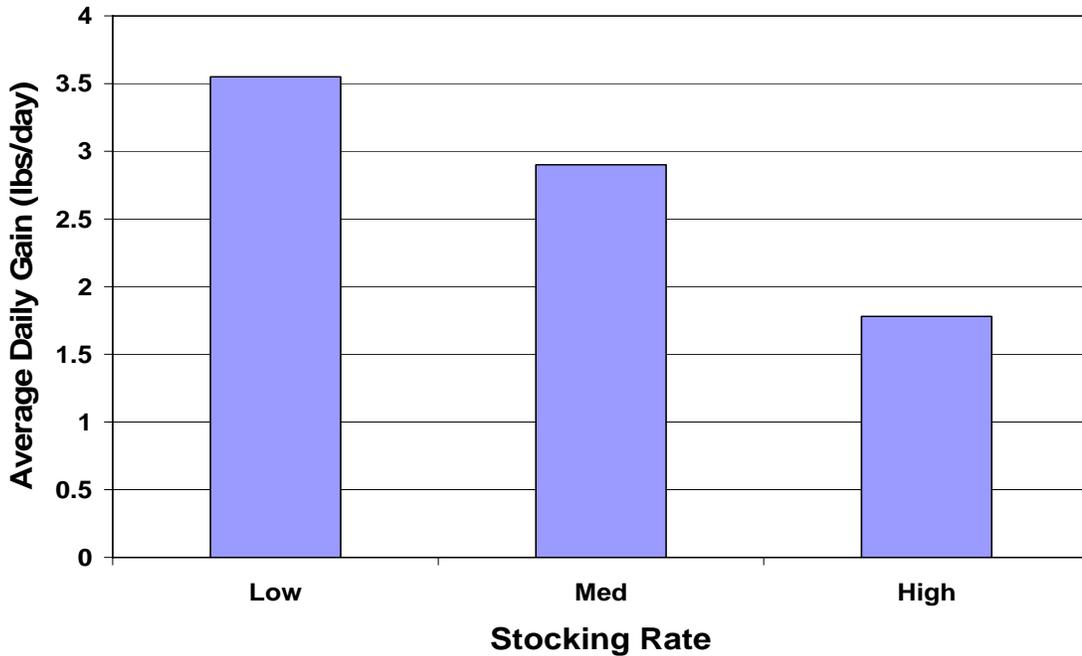


Figure 3. Average Daily Gain of suckling steers and heifers on Apache arrowleaf clover at Overton, TX from March 6 to June 13, 2003. Low, med and high stocking rates refer to initial stocking rates of 1.2, 2.0, and 2.8 animal units (AU = 1000 lbs) per acre, respectively. Apache arrowleaf was overseeded at 10 lbs/acre on bermudagrass pastures on Oct. 15, 2002.

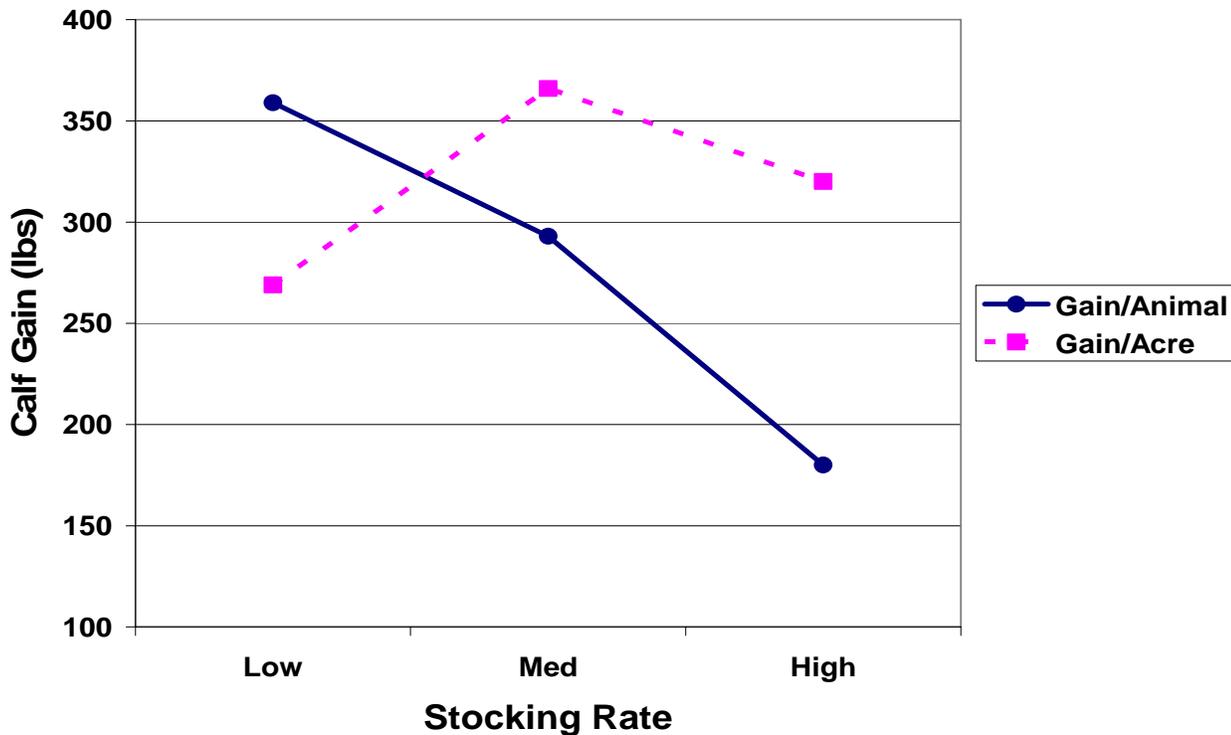


Figure 4. Suckling steer and heifer gain on Apache arrowleaf clover at Overton, TX from March 6 to June 13, 2003. Low, med and high stocking rates refer to initial stocking rates of 1.2, 2.0, and 2.8 animal units (AU = 1000 lbs) per acre, respectively. Apache arrowleaf was overseeded at 10 lbs/acre on bermudagrass pastures on Oct. 15, 2002.