

Planting winter annual clovers

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Winter annual clovers are planted on prepared land with rye or annual ryegrass or on dormant bermudagrass or bahia-grass sods, mainly in central and southern Georgia. They furnish high quality forage and also extend the grazing season on grass sods. There are a large number of different winter annual clover species. Some low-yielding annual clovers, such as hop and rabbit foot clovers, reseed naturally and occur all over the state. Annual clovers include arrowleaf, ball, berseem, crimson, rose and subterranean.

Clover yield trials. Forage yield trial results on prepared land indicate something about potential adaptation and seasonal productivity, but do not tell much about performance in grass sods under grazing. Annual clovers were tested on prepared land near Athens during the 1992-93 and 1993-94 winter-spring seasons. The spring drought severely reduced the yields of clovers with potential for growth in late spring, so only two harvests were obtained. The two-year average yields are shown below.

Clover	Dry forage (lb/acre)
Bigbee berseem	3740
Overton R18 rose clover	3210
Yuchi arrowleaf	3200
Tibbee crimson	2460
Hykon rose	2180
Flame crimson	1920
Meteora subterranean	1110
Mt. Barker subterranean	960

Yield trials were also planted on prepared land near Athens and Fort Valley during the 1998-99 and 1999-2000 winter-spring seasons. The spring droughts greatly reduced yields, especially for arrowleaf clover, which has the potential for excellent late spring growth. The two-year average yields are shown below.

Clover	Dry forage, lb/acre	
	Athens	Fort Valley
Overton R18 rose	3450	2660
Dixie crimson	3390	3280
AU Robin crimson	3300	3260
Sunrise crimson	3500	2660
Yuchi arrowleaf	3260	2730
Segrest ball	2140	2610
Total season yields in these trials are		

similar except for the lower yields of Hykon rose, subterranean and ball clovers. In addition to total yields, other information is summarized below.

Arrowleaf clover. It is best adapted for the well-drained sandy soils of the Coastal Plain with a pH of 6 and is fairly drought-tolerant. It is generally bloat-free for cattle because of tannins, which cause horses to avoid it. The Yuchi variety matures later than any other annual clover, resulting in forage growth to mid-June or later if rainfall is adequate. Arrowleaf seed has a very hard coat (90% hard seed), which results in excellent long-term natural reseeding with proper management; however, the seed to be planted must be scarified or a very poor stand will result. Commercial seed is normally scarified. Several soil-borne diseases can reduce stands and productivity, especially on loam and clay soils, when it is grown in the same fields year after year. No effective fungicides are available to eliminate this problem.

Ball clover. It is a sort-season clover that makes a large amount of growth in early spring. It is tolerant of wet soils and is excellent in natural reseeding even under close heavy grazing pressure. It is not drought tolerant. It has profuse small white flower heads with heavy nectar production, making it an excellent honey plant.

Berseem clover. It is an erect-growing annual clover that resembles alfalfa except for white flower heads. Berseem is tolerant of wet soils, but requires a soil pH of 6. It grows best on clay and loam soils. High yield potential if soil fertility is adequate. Rarely causes bloat in cattle. Can produce grazing in November and December, but makes most of its growth from March until mid-May. Bigbee is the most cold hardy variety, but can winterkill some years north of the Coastal Plain. Few hard seed and does not naturally reseed.

Crimson clover. Normally, with its brilliant colored flower heads, it makes more autumn, winter and early-spring growth than other annual clovers, but it

matures early. AU Sunrise and AU Robin make more winter production than other varieties, but also mature earlier in spring, making them useful as green manure for row crops as well as grazing. Crimson has excellent seedling vigor and tolerates soil acidity, but is not adapted on poorly drained soils. Crimson clover has a low percentage of hard seed and is not a dependable natural reseeder.

Rose clover. Rose clover is a productive new clover with gray-green fuzzy leaves and a rose-colored flower heads that may be useful because of its good natural reseeding and tolerance to drought and grazing. It requires well-drained soil and a pH of 6. Overton R18 is the best variety because it has later maturity and a longer growing season than other rose clover varieties.

Subterranean clover. It produces its seed at the soil surface or imbedded in surface residue, somewhat like peanuts. Its hard seed content is not high, so natural reseeding in Georgia is not always dependable. Subterranean clover is tolerant of poor drainage and has excellent grazing tolerance. Although its seedling vigor is good, its growing season is often short and yields are lower than other annual clovers. The most common available variety is Mt. Barker.

Planting annual clovers. Success with winter annual clovers depends on good planting preparation. Test the soil to be sure of the proper pH and fertility to grow the clover you have chosen. Prior to planting, close graze or mow to reduce old grass residue. If the seed is not already pre-inoculated, apply it to seed with a commercial sticker, syrup or Coca Cola. Ball, berseem and crimson use the same inoculum as white or red clover. Special inoculum strains are used for arrowleaf, rose and subterranean. Plant the seed at the correct depth. When clovers are planted in grass sods, check seedlings for insect damage.