CLOVER SPECIES SELECTION AND ESTABLISHMENT COSTS

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Background. Clovers are important components of forage-livestock production systems in northeast Texas. Annual clovers such as crimson or arrowleaf are often overseeded on warm-season perennial grass pastures to provide high quality cool-season grazing when the perennial grasses are dormant. White clover is often planted in bottomlands in northeast Texas and can reseed like an annual plant in dry summers or live through the summer as a perennial when summer rainfall is adequate. Other annual clovers generally available include rose and ball. Rose clover is an excellent reseeding annual but should not be planted on poorly drained soils or on sites where creeks overflow or where water stands. Overton R18 rose clover was developed at Overton and is the only rose clover recommended for northeast Texas. Ball clover is a very reliable reseeding plant with excellent late forage production. Early forage production of ball clover is very dependent on winter and early spring temperatures. Red clover is a short-lived perennial that acts as an annual under Texas environmental conditions. These clovers all have unique traits and combinations of traits related to forage production patterns, reseeding ability and geographic adaptation (Table 1).

Application. Another factor that impacts choice of clover species is cost of establishment. We have made some estimates of establishment costs per acre for six clover species in Table 2. The relative establishment cost for each clover species can be used in combination with adaptation and production information to make a choice of which clover species to plant.

Table 1. Clover adaptation and characteristics[1]

Clover Species	Preferred Soil Characteristics		Plant Characteristics		
	pH	Drainage	Maturity	Reseeding	Early forage production
Arrowleaf	6.0-7.0	good	late	high	medium
Ball	6.5-8.5	fair	late	high	low
Crimson	6.0-7.0	good	early	low	high
Rose[2]	6.0-8.0	good[4]	late	high	low
Red	6.5-8.0	good	late	low	low
White[3]	6.0-7.5	poor	late	high	low

[1]Table adapted from Evers and Smith, Overton Research Center Technical Report No. 98-3.
[2]Overton R18 rose clover
[3]Louisiana S-1 white clover
[4]Rose clover is very intolerant of poor soil drainage and wet soil conditions.

Table 2. Clover establishment costs.

Species	Planting rate	Seed[1] cost	Seed cost	Inoculant cost	Fertilizer[2] & lime cost	Land[3] prep & planting	Total[4] cost
	lb/ac	$/lb	$/ac	$/ac	$/ac	$/ac	$/ac
Arrowleaf	10	1.35	13.50	2.20	variable	15.00	30.70
Ball	3	4.00	12.00	0.75	variable	15.00	27.75
Crimson	20	1.00	20.00	4.50	variable	15.00	39.50
Rose	16	2.40	38.40	3.50	variable	15.00	56.90
Red	12	2.00	24.00	2.75	variable	15.00	41.75
White	4	2.60	10.40	0.75	variable	15.00	26.15

[1]Seed costs as of Oct. 1999
[2]Fertilizer and lime costs will vary according to soil test recommendations. The cost for 60 lb/ac each of P_2O_5 and K_2O and for 0.3 ton/ac ECCE 100 lime is $31.60/ac.
[3]Includes one light disking operation and custom planting.