

ANNUAL CLOVER RANGE PASTURES FOR FRESNO COUNTY
-Establishment and Management-

Several cattlemen and dryland grain farmers in Madera County have succeeded in increasing their net income per acre in recent years. They have accomplished this by converting dryland grain land and some grass range land into annual clover pastures. Based on the results of field experiments, Walter Emrick, Madera County Farm Advisor, in cooperation with Lester J. Berry and James E. Street, University of California Agricultural Extension Service Range Specialists, has designed a program for establishing annual clovers on marginal land in one year.

The procedures for stand establishment and the clover fertilization program used in Madera County should also be applicable to the marginal crop and range land on the east side of Fresno County. The suggested mixture of legume varieties best suited for Fresno County climatic conditions is somewhat different than those planted in Madera. Our lower rainfall dictates the use of slightly earlier flowering varieties.

CLOVER ESTABLISHMENT PROCEDURE

FIRST YEAR

1. In the fall before rains start, apply 400 to 500 pounds of single superphosphate per acre on dryland grain stubble (the year it comes out of grain) or on native range grassland.
2. Disk very lightly with open disk (make cuts in soil not over $1\frac{1}{2}$ inch deep). Do not turn under the native vegetation or stubble.
3. Inoculate legume seeds prior to planting.
4. Plant seed just after the first rain (between October 15 and November 15). If freezing temperatures persist between October 15 and November 15, you should plan to wait until the following year to plant. Broadcast or fly on a mixture of 10 to 12 pounds of annual clover seed per acre. Use inoculated seed.

SUGGESTED MIXTURE BELOW 1,500 FT. ELEVATION-(for nearly continuous grazing)

Mix #1	1 lb. Geraldton Sub. Clover
	1 lb. Dwalganup Sub. Clover
	2 lbs. Dinninup Sub. Clover
	2 lbs. Howard Sub. Clover
	1 lb. Yarloop Sub. Clover
	2 lbs. Sirint Rose Clover
	<u>1 lb.</u> Dixie Crimson Clover
	10 lbs. of seed per acre

SUGGESTED MIXES FOR EARLY SPRING & LATE SUMMER TO FALL GRAZING

For use when seeding into native range grasses. Allow for reseeding without grazing from about March 10 until seed heads are dry (about June 15). Graze heavily after seed has matured.

Mix #2	4 lbs. Sirint Rose Clover
	2 lbs. Dixie Crimson Clover
	<u>4 lbs.</u> Lana Vetch
	10 lbs. of seed per acre

(or)

Mix #3	10 to 12 lbs. of Lana Vetch per acre.
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5. Cover legume seed by running over field with a heavy spike tooth ring roller. If it rains long and hard enough immediately after seeding, the seed may be adequately covered without ring rolling.

6. GRAZE EARLY when possible during winter when the field is dry enough. Don't graze Mixture #1 from March 10 to about June 1 during the first year. Sirint Rose and Dixie Crimson Clover seed heads must mature before turning cattle back into the field. Graze heavily after seed has matured to scatter seed and remove dry feed when you need it.

SECOND YEAR

1. Graze subclover pastures (Mixture #1) early and continuously until just before the last rain. Allow Sirint Rose and Crimson Clover to reseed by reducing the stocking rate about April 1. Subclovers will

reseed adequately under continuous grazing. Mixes #2 and #3 must be allowed to reseed each year without grazing pressure from about March 10 until seed is mature.

2. Graze clover fields heavily in the summer and fall after seed is mature. Cattle will scatter seed. You can't overgraze these clover pastures after the seed has matured.

MANAGEMENT COMMENTS FOR ANNUAL DRYLAND CLOVER PASTURES

Clovers require high amounts of phosphorus and sulfur for good forage yields. Single superphosphate supplies both of these elements. The initial 400-500 lbs. application of single superphosphate will be used up in two to three years under normal productivity and grazing. About 200 lbs. of single superphosphate will be required every other year to keep the clover growing abundantly.

After the first year clover fields must be grazed heavily during the summer and early fall months. The old growth must be removed to avoid interfering with the establishment of the small clover seedlings after the first fall rains. The clover seedlings will not emerge through a lot of old growth and trash.

Heavy grazing of established clover pastures during the fall and winter months is important too. A good stand of inoculated clover will supply some nitrogen for additional grass growth. These stimulated grass plants will crowd out the clover if they are not eaten off by livestock. By grazing the grasses until about March 10, the clovers are given a chance to emerge and grow as soil temperatures increase. Cattle should be moved from the field at about this time to allow the clovers a chance to set a good seed crop.

Don't be afraid of overgrazing the dry clover pastures after seed is set. The clovers must be grazed close to the ground. If dry litter is left the clover stand will be greatly reduced the next year.

FORAGE RANGE LEGUME VARIETY NOTES FOR FRESNO COUNTY

(A) Subteranian Clovers-

1. Geraldton - Earliest flowering variety. Provides early winter feed. Small leaf and prostrate growth habit. Needs water until about April 10. Does not produce as much total forage as later flowering varieties. Good to include in mix to assure reseeding in short rainfall years.
2. Dwalganup - Second earliest flowering variety. Provides early winter feed. Needs water until about April 12. Slightly better forage yields than Geraldton, but not as high yielding as Howard or Dinninup. Starts blooming earlier than Howard and Dinninup. Good variety for Fresno County ranges.
3. Howard - Early flowering variety. Needs water until about April 14. Large leaf size and very good forage production. Appears to be an excellent variety for Fresno County ranges.
4. Dinninup - Early flowering variety. Needs water until about April 14. Medium to large leaf size. Good forage yields. Very good variety for Fresno County ranges.
5. Yarloop - Mid-season flowering variety. Needs water until about April 20. Very productive forage yields with adequate water. Yarloop will tolerate moist soil conditions better than other subclover varieties. Large leaf size and upright stems.
6. Woogenellup - Mid-season flowering variety. Needs water until about April 20. Very good forage yields if properly inoculated and adequate water is furnished.
7. Clare - Mid-season flowering variety. Needs water until about April 20. Similar to Woogenellup in yield. Large leaf size with a definite water mark on leaflets. On neutral ph soil with adequate water, Clare performs better than other subclover varieties. On low ph soils, Clare has no specific advantage over other varieties of mid-season and early maturity ranges.
8. Mt. Barker - Late season flowering variety. Needs water until about May 5. Can be used above 1,000 feet elevation if adequate moisture is available. Medium yields. Too late flowering for low elevations of Fresno County.

(B) Rose Clovers - Allow for reseeding without grazing from about March 10 until heads are dry. Should be heavily grazed in spring until March and grazed again after the seed is mature in summer and during the fall.

1. Sirint - Early flowering variety. Needs water until about April 15. Excellent forage yields and reseeding if given a chance to reseed without grazing. Can be grazed in early spring and during the late summer or fall. Most adaptable rose clover variety for Fresno County due to early seed development.
2. Kondinon - Mid-season flowering variety. Needs water until about April 25. Does not reseed as well as Sirint in dry years.
3. Wilton - Late season flowering variety. Needs water until about May 1. Used at elevations between 1,000 feet and 2,500 feet. Good forage yields if water is adequate.

(C) Crimson Clover - Allow for reseeding without grazing from about March 1 until seed is mature (about June 15).

1. Dixie Crimson - Mid to late season flowering variety. Needs water until about April 25. Produces high forage yields for the first 2-3 years. Will go out of a field quickly if grazed during bloom period before seed set. Cattle must be removed before bloom or they will nip off blooms and no reseeding will take place. Very pretty bloom.

(D) Lana Woollypod Vetch - Can be used for late summer or fall grazing. Germinates later than most legumes. Produces high forage yields, but must be allowed to bloom and set seed without grazing from about March 1 to June 15. Will climb upright plants in contact with it.

(E) Bur Clover - Produces very high forage and seed yields on slightly basic soils with adequate moisture. Needs good moisture to produce high yields of forage. Blooms over a long period of time ranging from early to late season (April 1 - May 15) when given water for that long a period. Adaptable to heavy moist soils.

RANGE OBSERVATION PLOTS
Established: 11/17/69

Bonner Sample Ranch
Tollhouse Road (South side and west of Academy Avenue)

Plot Size: 1/20 of an acre per plot, 10' x 200'
Fertilizer: 400 lbs. of single superphosphate per acre,
except for check
Seeding Rate: 30 lbs. per acre

1. Crimson Clover (closest to road) 10 ft. x 200 ft. plots
2. Hykon Rose
3. Dinninup Subclover
4. Sirint Rose 2,000 sq. ft./plot = 1/20 acre approximately
5. Yarloop Subclover
6. Check (no fertilizer)
7. Woogenellup Subclover
8. Regar bromegrass 80# N/acre
9. Howard Subclover

Sheesley Plots
6137 E. Clinton

Plot Size: 6' x 30'
Fertilizer: 400 lbs. of single superphosphate per acre
Seeding Rate: 30 lbs. per acre

- next to Clinton Ave.
1. Mixture - (Yarloop, Howard, Woogenellup)
 2. Crimson
 3. Yarloop
 4. Sirint Rose
 5. Howard Subclover
 6. Dinninup Subclover
 7. Hykon Rose
 8. Woogenellup
 9. Mixture - (Sirint Rose, Dinninup, Yarloop)
 10. Dwalganup
 11. Lana vetch

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