

1993 Kentucky Red Clover Variety Test Report

L.M. Lauriault, J.C. Henning, N.L. Taylor, G.D. Lacefield, and W.T. Edmondson

Introduction

Red clover is a high quality, short-lived, perennial legume that is used in mixed or pure stands for pasture, hay, silage, green chop and soil improvement. This species is adapted to a wide range of climatic and soil conditions and therefore is very versatile as a forage crop. Stands are generally productive for two or three years with the highest yields occurring in the year following establishment. Red clover is used primarily as a renovation legume for grass pastures. It is a dominant forage legume in Kentucky because it is relatively easy to establish and has high forage quality, yield, and animal acceptance.

Yield and persistence of red clover varieties are dependent on environment and pressure from diseases and insects. The most common red clover diseases in Kentucky are southern anthracnose, powdery mildew, sclerotinia crown rot and root rots. High yields and persistence (as measured by ground cover) are two indications that a red clover variety is resistant to or tolerant of these diseases when grown in Kentucky.

This report provides current yield data on red clover varieties included in yield trials in Kentucky as well as guidelines for selecting red clover varieties.

Important Considerations in Selecting a Red Clover Variety

Local Adaptation and Persistence. The variety should be adapted to Kentucky as indicated by superior performance across years and locations in replicated yield trials such as those reported in this publication. High yielding varieties are generally also those varieties that are the most persistent. Some varieties of red clover lose their stand after the end of first year and must be reseeded more often than more persistent varieties. This increases seed and establishment costs.

Seed Quality. Buy high quality, certified seed that has high germination and few other crop and weed seed. This information is shown on the label. The test date, which indicates when the germination was last tested, must be within the previous nine months. The use of certified seed assures that the genetics and performance you are paying for are in the bag. Look for the blue tag, which must be attached to all bags of certified seed. Order seed well in advance of planting time to assure that it is available when needed.

Description of the Tests

Five studies are included in this report. One is part of the Kentucky Red Clover Breeding Program and the other four are part of the Kentucky Forage Variety Testing Program. Procedures will be discussed for each type of test.

Breeding Program Test: This study was planted at Lexington in 1992 with a corrugated roller seeder in 3 x 13 feet plots arranged in a randomized complete block design with four replications at a seeding rate of 7 pounds per acre. An oat companion crop was sown concurrently. The seedbed was a lightly disked small grain cover crop that had been planted the previous fall. Harvests were taken at 10-25% bloom using a flail-type forage plot harvester with the forage of the whole plot collected and oven dried.

Breeding Program Test include experimental red clover lines from Kentucky and other states that may become certified varieties in the future. In addition, these plots contain some commercially available lines for comparison.

Variety Performance Tests: Red clover variety tests were established at Lexington (1991 & 1992) and Princeton (1991 & 1993). The Variety Performance Tests include several improved varieties (presently marketed or that will be marketed in the near future), several white clover varieties, and selected "common" red clovers. Common red clover, generally sold as "medium red clover variety unknown," is unimproved red clover with an unknown performance record. Altaswede, a mammoth or "single-cut" red clover developed in Canada, and 'Rhizo' Kura clover were included for comparison.

Plots were 4 x 15 feet and were arranged in a randomized complete block design with four replications. Seedings were made at 16 pounds (2 lb for white clover) of seed per acre into a prepared seedbed using a disk drill (no oat companion crop). Plots were harvested with a sickle-type forage plot harvester. First cuttings in the seedling year were delayed to allow the red clover to completely reach maturity as indicated by full bloom, which generally occurs about 60-90 days after seeding. Otherwise, harvests were taken when the red clover was in the bud to early-flower stage. Fresh weights were measured in the field and occasional subsamples were taken and weighed and oven dried and reweighed to determine percent dry matter.

The soils at both locations were well-drained silt loams (Maury at Lexington and Crider at Princeton) and well-suited to red clover production. Management of all tests was according to University of Kentucky Cooperative Extension recommendations.

Results and Discussion

Weather data for Lexington and Princeton are presented in Table 1. Spring and fall were slightly cooler than normal, while July and August were warmer. Precipitation was below average for most of the growing season. In months with a surplus, rain tended to come in events of greater than 1". Therefore yields are somewhat lower than what these levels of rainfall would support under more ideal conditions.

Yield data (on an oven dry basis) and percent stand for all tests are presented in Tables 2-6. Statistical analyses were performed on all red clover data to determine if the apparent differences are truly due to variety or just due to chance. The highest yielding variety in each column is marked with two asterisks (**). Those varieties not significantly different from the highest yielding variety are marked with one asterisk (*). To determine if two varieties are truly different, compare the difference between the two varieties with the Least Significant Difference (L.S.D.) at the bottom of the column. If the difference is equal to or greater than the L.S.D., the varieties are truly different when grown under the conditions at a given location. The Coefficient of Variation (C.V.), which is a measure of the variability of the data, is included for each column of means. Low variability is desirable and increased variability within a study results in higher C.V.'s and larger L.S.D.'s.

Percent stand, a visual estimate of ground cover, reflects the cultivar's seedling vigor, ability to compete with weeds, resistance to disease, and stand persistence. In general, the highest yielding varieties in any test were also the most persistent as determined by percent stand.

Red clover yields across Kentucky in 1993 were very similar to those of 1992 for stands of comparable age. As expected with red clover, stands of most varieties in both of the 1991 seedings were gone by the end of the 1993 growing season. Some varieties in the 1991 Lexington test still had decent stands (Table 2); however, yields of even those cultivars were not measurable after September 14. All varieties in the Princeton test (1991) (Table 5) were completely out of stand after the July 15 harvest. The 1992 seedings at Lexington (a variety test and a breeding test) (Tables 3 & 4) both continued to produce high yields but some of the commons and other varieties that are not very locally adapted did begin to decline in stand.

The 1993 planting at Princeton (Table 6) did not produce as well as expected, probably due to limited moisture throughout the growing season. Remember to look at data from several years and locations when choosing a variety of red clover rather than results from one test year as is reported in Table 6.

Table 7 summarizes information about proprietors, distributors and yield performance across years and locations for all the varieties currently included in tests discussed in this report. In Table 7, shaded areas indicate that the variety was not in that particular test (labelled at the top of the column) while clear blocks mean that the variety was in the test. Some varieties, such as Acclaim, Kenstar, and Marathon have been sown in every test; others, however, such as Cherokee, Fus, and Redman have been included in only one test. A double Asterisk (**) indicates that the variety was the highest yielding variety in the test for that year. A single asterisk (*) means that the variety was not significantly different from the highest yielding variety.

Summary

Proper management, beginning with land preparation and continuing throughout the life of the stand, is necessary for even the highest yielding, most pest-resistant variety to be productive. Maintaining soil fertility at recommended levels based on soil tests and controlling weeds are a must. Harvesting at the appropriate stage of maturity will produce 3 cuttings in the seeding year and four to five cuttings every year thereafter before mid-September in Kentucky. Other College of Agriculture publications related to the establishment, management and harvesting of red clover that are available from the local county extension office are listed in Table 8.

TABLE 1. TEMPERATURE AND RAINFALL IN
LEXINGTON
AND PRINCETON DURING 1993.

LEXINGTON						
PRINCETON						
TEMPERATURE		RAINFALL		TEMPERATURE		
MONTH	F	DEP.	INCHES	DEP.	F	DEP.
	INCHES	DEP.				
JAN	38	7	2.95	-0.62	39	5
	4.75	0.22				
FEB	33	-2	4.04	0.78	37	-1
	3.75	-0.16				
MAR	41	-3	4.15	-0.68	46	-1
	4.35	-0.70				
APR	53	-2	3.26	-0.75	57	-2
	4.66	0.05				
MAY	65	1	2.48	-1.75	66	-1
	5.09	0.84				
JUN	72	0	6.48	2.23	75	0
	4.54	1.16				
JUL	79	3	3.17	-1.78	83	5
	2.22	-1.68				
AUG	76	1	4.65	0.69	80	3
	1.71	-1.89				
SEP	66	-2	3.72	0.44	69	-2
	4.53	1.23				
OCT	54	-2	4.08	1.82	58	-2
	3.72	0.40				

TEMPERATURES ARE IN DEGREES FAHRENHEIT.

DEP. IS DEPARTURE FROM THE 30-YEAR AVERAGE FOR THAT LOCATION.

TABLE 2. DRY MATTER YIELDS (TONS/ACRE) AND PERCENT STAND RATINGS OF RED CLOVER VARIETIES
SOWN 11 APR 1991 AT LEXINGTON, KENTUCKY.

VARIETY	1993 % STAND		1991 TOTAL	1992 TOTAL	1993 HARVESTS				1993 TOTAL	3-YR TOTAL
	APR29	SEP13			MAY07	JUN07	JUL12	SEP14		
MARATHON	93.75**	21.25	2.99*	5.64*	1.49*	0.36**	1.27**	1.67**	4.78**	13.41**
VS638	87.50*	28.75	3.28*	5.85**	1.37*	0.26*	1.25*	1.40*	4.28*	13.40*
KENSTAR-II-SYN-I	86.25*	41.25**	2.94*	5.68*	1.50**	0.34*	1.26*	1.45*	4.55*	13.17*
RENEGADE	73.75*	8.75	3.63*	5.50*	1.04*	0.16	0.95*	1.35*	3.49	12.63*
REDLAND-III-BRAND/CONCOR DE	86.25*	28.75	2.89**	5.46*	1.24*	0.27*	1.25*	1.49*	4.25*	12.61*
CINNAMON	83.75*	28.75	3.00*	5.46*	1.37*	0.24	1.06*	1.32*	3.99*	12.45*
KENSTAR	82.50*	20.00	3.13*	5.29*	1.39*	0.19	1.10*	1.28*	3.97*	12.39*
ACCLAIM	92.50*	23.75	2.49	5.67*	1.26*	0.23	1.17*	1.44*	4.09*	12.25*
ARLINGTON	76.25*	6.25	2.94*	5.39*	1.36*	0.21	1.11*	1.14	3.82*	12.15*
COMMON-C	62.50	6.25	2.82	4.45	1.39*	0.13	0.90	1.42*	3.84*	11.11
KENLAND, CERT	57.50	1.25	2.71	4.85	1.18*	0.10	0.72	0.00	2.00	9.55
COMMON-D	47.50	0.00	2.69	4.71	1.05*	0.10	0.74	0.00	1.88	9.29
COMMON-B	37.50	1.25	2.50	4.10	0.84	0.11	0.74	0.00	1.69	8.29
ALTASWEDE	7.50	0.00	2.08	3.61	0.74	0.06	0.57	0.00	1.37	7.06
COMMON-A	12.50	0.00	1.81	3.86	0.72	0.05	0.47	0.00	1.25	6.91
MEAN	65.83	14.42	2.79	5.04	1.20	0.19	0.97	1.36	3.71	11.54
C.V., %	21.84	82.60	19.74	10.99	29.13	46.21	23.78	20.43	19.63	11.79
L.S.D., 0.05	20.52	11.81	0.79	0.79	0.50	0.12	0.33	0.40	1.04	1.94

1991 TOTAL INCLUDES 4 HARVESTS DATED JUN27, JUL31, SEP03, AND OCT31.

1992 TOTAL INCLUDES 5 HARVESTS DATED MAY15, JUN16, JUL14, AUG13, AND SEP17.

**HIGHEST NUMERICAL YIELD IN THE COLUMN.

*NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST NUMERICAL YIELD IN THE COLUMN BASED ON THE L.S.D.

TABLE 3. DRY MATTER YIELDS (TONS/ACRE) AND PERCENT STAND RATINGS OF RED CLOVER VARIETIES SOWN ON 17 APR 1992 AT LEXINGTON, KENTUCKY.

VARIETY	1993 % STAND		1992 TOTAL	1993 HARVESTS						1993 TOTAL	2-YR TOTAL
	APR29	SEP13		MAY07	JUN07	JUL12	AUG09	SEP14	OCT27		
CINNAMON	98.75*	68.75*	3.68**	1.96*	0.29*	1.76**	0.20	1.02*	0.13	5.36*	9.04**
KENSTAR	100.00**	68.75*	3.45*	1.95*	0.35*	1.69*	0.24	0.88	0.13	5.24*	8.69*
KENLAND,CERT	98.75*	73.75*	3.15	1.86*	0.40**	1.66*	0.38**	1.03**	0.21**	5.54**	8.69*
VIRUS-RESISTANT	100.00**	81.25**	3.34*	1.87*	0.26*	1.66*	0.19	0.98*	0.16*	5.12*	8.46*
KENSTAR-II-SYN-I	98.75*	72.50*	3.33*	2.10**	0.33*	1.49	0.22	0.88	0.11	5.13*	8.45*
MARATHON	97.50*	52.50	3.36*	1.79*	0.32*	1.71*	0.20	0.69	0.07	4.78	8.14*
FUS	96.67*	53.33	3.49*	1.75*	0.28*	1.57*	0.13	0.84	0.05	4.61	8.10
ACCLAIM	100.00**	58.75	3.17*	1.84*	0.26*	1.59*	0.16	0.74	0.07	4.65	7.82
WVPB-RC-L	100.00**	46.25	3.13	1.58	0.35*	1.55*	0.22	0.73	0.05	4.48	7.61
ARLINGTON	100.00**	33.33	3.07	1.75*	0.17	1.47	0.17	0.63	0.02	4.21	7.28
COMMON-F	95.00*	0.00	2.71	1.41	0.26*	1.06	0.11	0.00	0.00	2.84	5.55
ALTASWEDE	95.00*	0.00	3.06	1.18	0.30*	0.75	0.09	0.00	0.00	2.32	5.39
COMMON-E	85.00	0.00	2.96	1.18	0.15	0.76	0.17	0.00	0.00	2.26	5.22
REGAL-LADINO	62.50	95.50	3.03	0.15	0.35*	0.65	0.10	0.45	0.20	1.90	4.93
MEAN	94.72	50.59	3.21	1.59	0.29	1.38	0.19	0.74	0.09	4.28	7.48
C.V., %	7.91	19.32	11.52	18.00	38.52	12.74	31.00	13.12	47.18	10.96	8.79
L.S.D., 0.05	10.74	14.00	0.53	0.41	0.16	0.25	0.08	0.14	0.06	0.67	0.94

1992 TOTAL INCLUDES 3 HARVESTS DATED JUL08, AUG13, AND SEP17.

**HIGHEST NUMERICAL YIELD IN THE COLUMN.

*NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST NUMERICAL YIELD IN THE COLUMN BASED ON THE L.S.D.

TABLE 4. DRY MATTER YIELDS (TONS/ACRE) AND PERCENT STAND RATINGS OF RED CLOVER VARIETIES SOWN 17 APR 1992 AT LEXINGTON, KENTUCKY AS PART OF THE UNIVERSITY OF KENTUCKY RED CLOVER BREEDING PROGRAM.

VARIETY	SEP13	1992	1993 HARVESTS			1993	2-YR
	% STAND	TOTAL	MAY26	JUL19	SEP14	TOTAL	TOTAL
KENLAND	50.00**	1.27*	2.43*	0.85*	0.35**	3.63**	4.90**
REDSTAR	35.00	1.30*	2.51**	0.69*	0.25*	3.45*	4.74*
KENSTAR	46.25*	1.40*	2.07*	0.87*	0.35**	3.29*	4.69*
REDMAN	31.25	1.31*	1.94*	0.80*	0.25*	2.98*	4.29*
REDLAND III BRAND/CONCORDE	37.50*	1.23*	1.89	0.93**	0.23*	3.06*	4.29*
WVPB-90-RC-L	38.75*	1.40*	1.78	0.79*	0.30*	2.87*	4.27*
ACCLAIM	36.25*	1.25*	1.97*	0.84*	0.19	3.00*	4.25*
WVPB-90-RC-T	31.25	1.26*	1.92	0.77*	0.24*	2.93*	4.19*
CHEROKEE	6.75	1.42**	2.09*	0.43	0.05	2.57	3.99
RENEGADE	20.00	1.39*	1.69	0.55	0.17	2.41	3.80
ARLINGTON	21.25	1.37*	1.66	0.52	0.14	2.33	3.70
MARATHON	28.75	1.27*	1.63	0.56	0.18	2.38	3.64
REDDY	35.00	1.07	1.67	0.62	0.24*	2.53	3.60
U.G. TETRAPLOID	23.75	1.25*	1.41	0.61	0.22	2.25	3.49
ATLAS	10.00	1.04	1.71	0.48	0.05	2.24	3.28
VIRUS RESISTANT	40.00*	1.19	0.99	0.65	0.32*	1.96	3.15
TRISTAN	21.75	0.97	1.34	0.48	0.16	1.99	2.95
N ₂ O TETRAPLOID	11.75	1.11	0.86	0.33	0.09	1.28	2.39
PERSIST	9.00	0.90	1.08	0.33	0.06	1.48	2.38
4X-2X TETRAPLOID	6.75	1.18	0.56	0.19	0.05	0.80	1.98
MEAN	27.05	1.23	1.66	0.62	0.20	2.47	3.70
C.V., %	37.48	13.51	25.09	31.47	48.66	24.36	17.29
L.S.D., 0.05	14.36	0.23	0.59	0.27	0.13	0.85	0.91

TOTAL 1992 INCLUDES 1 HARVEST DATED SEP21.

**HIGHEST NUMERICAL YIELD IN THE COLUMN.

*NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST NUMERICAL YIELD IN THE COLUMN BASED ON THE L.S.D.

TABLE 5. DRY MATTER YIELDS (TONS/ACRE) AND PERCENT STAND RATINGS OF RED CLOVER VARIETIES SOWN 23 APR 1991 AT PRINCETON, KENTUCKY.

VARIETY	MAY12	1991	1992	1993 HARVESTS			1993	3-YR
	93	TOTAL	TOTAL	MAY12	JUN10	JUL15	TOTAL	TOTAL
CINNAMON	100.00*	1.66*	5.55**	1.79**	0.83*	1.70*	4.32*	11.53**
KENSTAR-II-SYN-I	98.75*	1.78*	5.27*	1.72*	0.86**	1.82*	4.40**	11.46*
REDLAND-III-BRAND/CONCORDE	75.00	1.98*	5.21*	1.65*	0.72*	1.46	3.83*	11.02*
KENSTAR	90.00*	1.85*	4.99	1.38*	0.81*	1.94**	4.14*	10.97*
WVPB-RC-T	91.25*	2.08*	4.94	1.42*	0.69*	1.58	3.68	10.70*
VS638	95.00*	1.70*	5.11*	1.51*	0.67*	1.50	3.68	10.49*
WVPB-RC-L	90.00*	1.61*	5.05*	1.30	0.80*	1.64	3.73	10.39*
RENEGADE	83.75*	2.14**	4.74	1.19	0.69*	1.25	3.13	10.01
ACCLAIM	92.50*	1.28	5.05*	1.35*	0.65	1.68*	3.67	10.00
ARLINGTON	92.50*	1.25	4.17	1.77*	0.55	1.50	3.82*	9.24
MARATHON	88.33*	1.43	4.30	1.47*	0.59	1.35	3.41	9.14
KENLAND, CERT	91.67*	0.99	3.89	1.22	0.66*	1.12	2.99	7.87
COMMON-B	70.00	1.55*	4.06	0.75	0.56	0.95	2.25	7.86
COMMON-C	53.75	1.29	3.70	0.85	0.62	1.01	2.48	7.47
COMMON-D	57.50	0.87	4.01	0.91	0.64	0.92	2.47	7.36
COMMON-A	45.00	1.07	3.88	0.68	0.68*	0.88	2.25	7.20
ALTASWEDE	20.00	0.78	3.01	0.74	0.66*	0.76	2.16	5.96
MEAN	78.13	1.49	4.54	1.28	0.69	1.36	3.33	9.36
C.V., %	20.66	32.77	8.35	26.43	21.29	15.35	13.25	8.61
L.S.D., 5%	23.00	0.70	0.54	0.48	0.21	0.30	0.63	1.15

1991 TOTAL INCLUDES 2 HARVESTS DATED JUL10 AND AUG14.

1992 TOTAL INCLUDES 5 HARVESTS DATED MAY14, JUN18, JUL16, AUG12, AND SEP10.

**HIGHEST NUMERICAL YIELD IN THE COLUMN.

*NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST NUMERICAL YIELD IN THE COLUMN BASED ON THE 5%

L.S.D.

TABLE 6. DRY MATTER YIELDS (TONS/ACRE) AND PERCENT STAND RATINGS OF RED AND WHITE CLOVER VARIETIES SOWN ON 23 APR 1993 AT PRINCETON, KENTUCKY.

VARIETY	OCT18	1993 HARVESTS			1993
	93	JUL15	SEP15	OCT26	TOTAL
CINNAMON	98.75**	1.00**	0.17**	0.36**	1.53**
COMMON-I,RC	87.50*	0.85*	0.12*	0.32*	1.28*
KENLAND,CERT	91.25*	0.82*	0.14*	0.30*	1.26*
VIRUS-RESISTANT	96.25*	0.82*	0.15*	0.28*	1.25*
POP-H	83.75*	0.76*	0.14*	0.24*	1.14
WVPB-RC-91-100	85.00*	0.75*	0.13*	0.25*	1.13
KENSTAR	87.50*	0.76*	0.11	0.19*	1.05
ACCLAIM	78.75*	0.64	0.09	0.21*	0.95
KENLAND,UNCERT	72.50	0.65	0.10	0.18	0.94
COMMON-H,RC	66.25	0.64	0.11*	0.18	0.93
ARLINGTON	67.50	0.61	0.12*	0.18	0.92
WVPB-RC-91-200	70.00	0.53	0.08	0.14	0.75
WVPB-RC-91-300	57.50	0.47	0.09	0.13	0.68
REDLAND-III-BRAND/CONCOR DE	70.00	0.46	0.06	0.12	0.64
COMMON-G,RC	41.25	0.23	0.06	0.25*	0.54
COMMON-J,RC	17.75	0.11	0.01	0.03	0.16
REGAL,WC	45.00	0.00	0.00	0.13	0.13
ALTASWEDE	41.25	0.06	0.01	0.05	0.12
COMMON,WC	25.25	0.02	0.00	0.08	0.10
CALIFORNIA,WC	27.50	0.00	0.00	0.08	0.08
RHIZO,KURA	0.75	0.00	0.00	0.00	0.00
MEAN	62.44	0.48	0.08	0.18	0.74
C.V., %	25.77	43.91	57.82	46.70	36.91
L.S.D., 0.05	22.76	0.30	0.07	0.12	0.39

**HIGHEST YIELDING VARIETY IN THE COLUMN.

*NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST YIELDING VARIETY

IN THE COLUMN BASED ON THE L.S.D.

Table 7. Characterization and performance across years and locations of red and white clover varieties
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		Lexington						Princeton				
		1991 ^{1,2}			1992 ²		1992 ³		1991 ²			1993 ²
		91 ⁴	92	93	92	93	92	93	91	92	93	93
Variety	Proprietor/KY Distributor											
4x - 2x Tetraploid	KY Agric. Exp. Sta./Experimental ⁵											
Acclaim	Allied Seed Coop./Scott Seed		*	*	*		*	*		*		
Altaswede	Farmer ecotype, Canada/Public											
Arlington	WI Agric. Exp. Sta./Public	*	*	*	*		*				*	
Atlas	Northrup King											
California White Clover	Public											
Cherokee	FL Agric. Exp. Sta./Public						**					
Cinnamon	FFR/Southern States	*	*	*	**	*			*	**	*	**
Common A	Farmer ecotype/Public											
Common B	Farmer ecotype/Public								*			
Common C	Farmer ecotype/Public			*								
Common D	Farmer ecotype/Public											
Common E	Farmer ecotype/Public											
Common F	Farmer ecotype/Public											
Common G	Farmer ecotype/Public											
Common H	Farmer ecotype/Public											
Common I	Farmer ecotype/Public											*
Common J	Farmer ecotype/Public											
Common White Clover	Farmer ecotype/Public											
Fus	International Seeds/Experimental				*							
Kenland, certified seed	KY Agric. Exp. Sta./Public					**	*	**				*
Kenland, uncertified seed	Public											
Kenstar	KY Agric. Exp. Sta./Public	*	*	*	*	*	*	*	*	*	*	*
Kenstar II Syn I	KY Agric. Exp. Sta. Experimental		*	*	*	*			*	*	**	
Marathon	WI Agric. Exp. Sta./Public	*	*	**	*		*					
N ₂ 0 Tetraploid	KY Agric. Exp. Sta./Experimental											
Persist	Northrup King											
Pop H	Genesis Turf and Forage/Green Seed											
Reddy	FFR/Southern States											
Redland III Brand/Concorde	ABI	*	*	*			*	*	*	*	*	
Redman	FFR/Southern States						*	*				
RedStar	Vista Seeds						*	*				
Regal White Clover	Auburn Univ. Agric. Exp. Sta./Public											
Renegade	International Seeds/Green Seed	**	*				*		**			

Rhizo Kura Clover	SCS/ KY Agric. Exp. Sta.											
Root Rot Selection	KY Agric. Exp. Sta./Experimental											
Tristan	Northrup King											
U.G. Tetraploid	KY Agric. Exp. Sta./Experimental						*					
Virus Resistant	KY Agric. Exp. Sta./Experimental				*	*						*
VS638	Scott Seed/Experimental	*	**	*					*	*		
WVPB-RC-91-100	Willamette Valley Plant Breeders											
WVPB-RC-91-200	Willamette Valley Plant Breeders											
WVPB-RC-91-300	Willamette Valley Plant Breeders											
WVPB-RC-L	Olsen-Fennell Seeds/Experimental						*	*	*	*		
WVPB-RC-T	Willamette Valley/Experimental						*	*	*	*		

¹ Establishment year

² Tests sown as part of the Kentucky Forage Variety Testing Program

³ Tests sown as part of the Kentucky Red Clover Breeding Program

⁴ Harvest year

Table 8. University of Kentucky agricultural extension publications related to red clover management.

<u>Publication</u>	<u>Title</u>
AGR-33	Growing red clover in Kentucky
AGR-2	Producing red clover seed in Kentucky
AGR-24	Kenstar red clover
AGR-64	Establishing forage crops
-----	Seed tags: What they reveal
AGR-26	Renovating hay and pasture fields
AGR-90	Inoculation of forage legumes
AGR-18	Grain and forage crop guide for Kentucky
AGR-1	Lime and fertilizer recommendations
AGR-148	Weed control strategies for alfalfa and other forage legume crops
PPA-10d	Kentucky plant disease management guide for forage legumes
ENT-17	Insecticide recommendations for alfalfa <u>and clover</u>

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