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UNIVERSITY OF KENTUCKY COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT, LEXINGTON, KY, 40546

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2015 Red and White Clover Report

G.L. Olson and S.R. Smith, Plant and Soil Sciences, and D.C. Ditsch, Robinson Center for Appalachian Resource Sustainability

Introduction

Red clover *(Trifolium pratense L.)* is a high-quality, short-lived, perennial legume used in mixed or pure stands for pasture, hay, silage, green chop, soil improvement, and wildlife habitat. This species is adapted to a wide range of climatic and soil conditions. Stands of improved varieties generally are productive for 2½ to 3 years, with the highest yields occurring in the year following establishment. Red clover is used primarily as a renovation legume for grass pastures and hay fields. It is a dominant forage legume in Kentucky because it is relatively easy to establish and has high forage quality, yield, and animal acceptance.

White clover *(Trifolium repens L.)* is a low-growing, perennial pasture legume with white flowers. It differs from red clover in that the stems (stolons) grow along the surface of the soil and can form adventitious roots that may lead to the development of new plants. Three types of white clover grow in Kentucky: Dutch, intermediate, and ladino. Dutch white clover, sometimes called "common," naturally occurs in many Kentucky pastures and even lawns. It is generally long lived and reseeds readily, but its small leaves and low growth habit result in low forage yield. The intermediate type is a cross between ladino and Dutch white clover and has been developed to give higher yields than the Dutch type and to persist better than the ladino type under pasture or continuous grazing conditions. Ladino white clover has larger leaves and taller growth than the intermediate and Dutch types and is the highest yielding of the three white clover types. Information on the grazing tolerance of white clover varieties can be found in the 2015 Red and White Clover Grazing Tolerance Report (PR-701).

Yield and persistence of red and white 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. For white clover, the most common pests are stolon rots, root rots, and potato leafhoppers. High yield and persistence (as measured by percent stand) are two indications that a specific red or white clover variety is resistant to or tolerant of these pests when grown in Kentucky.

This report provides current yield data on red and white clover varieties included in yield trials in Kentucky as well as guidelines for selecting clover varieties. Tables 11 and 12 show a summary of all clover varieties tested in Kentucky for the past 14 years. The UK Forage Extension website at www.uky.edu/Ag/Forage contains electronic versions of all forage variety testing reports from Kentucky and surrounding states and a large number of other forage publications.

Table 1. Temperature and rainfall at Lexington, Kentucky in 2013, 2014, and 2015.

	2013				2014				2015[2]			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	38	+7	4.50	+1.64	25	-6	2.28	-.58	32	+1	2.17	-0.69
FEB	36	+1	1.78	-1.43	30	-5	5.47	+2.26	26	14	3.08	-0.13
MAR	39	-5	5.47	+1.07	39	-5	3.08	-1.32	45	+1	7.34	+2.94
APR	55	0	4.46	+0.58	58	+3	5.27	-1.89	57	+2	13.19	+9.31
MAY	65	+1	5.23	+.076	66	+2	5.72	+1.25	69	+5	3.02	-1.45
JUN	72	0	7.32	+3.66	75	+3	2.93	-0.73	75	+3	8.20	+4.54
JUL	72	-4	9.33	+4.33	74	-2	3.18	-1.82	77	+1	10.22	+5.22
AUG	72	-3	3.68	-0.25	76	+1	6.53	+2.60	74	-1	3.49	-0.44
SEP	67	-1	2.21	-0.99	69	+1	3.63	+.43	72	+4	3.49	+0.29
OCT	55	-2	7.02	+4.45	57	0	5.55	+2.98	59	+2	2.78	+0.21
NOV	41	-4	3.06	-0.33	41	-4	2.79	-0.60				
DEC	36	0	4.19	+0.21	40	+4	2.47	-1.51				
Total							49.4	+4.85			56.98	+19.80

[1] DEP is departure from the long-term average.
[2] 2015 data is for ten months through October.

Table 2. Temperature and rainfall at Princeton, Kentucky, in 2013, 2014, and 2015.

	2013				2014				2015[2]			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	38	+4	6.31	+2.51	30	-4	1.70	-2.10	34	0	1.51	-2.29
FEB	39	+1	3.09	-1.34	32	-6	4.75	+0.32	28	-10	4.16	-0.27
MAR	42	-5	4.34	-0.60	43	-4	7.43	-0.51	46	-1	6.83	+1.89
APR	57	-2	5.72	+0.92	59	0	8.5	+3.70	60	+1	7.38	+2.58
MAY	66	-1	4.26	-0.70	68	+1	1.96	-3.00	68	+1	3.52	-1.44
JUN	74	-1	7.55	+3.70	76	+1	3.25	-0.60	76	+1	2.85	-1.00
JUL	75	-3	4.44	+0.15	73	-5	1.56	-2.73	79	+1	8.83	+4.54
AUG	75	-2	5.59	+1.58	78	0	9.33	+5.32	73	-4	2.90	-1.11
SEP	71	0	5.37	+2.04	69	-2	0.97	-2.36	71	0	0.82	-2.51
OCT	59	0	4.04	+0.99	59	0	4.36	+1.31	60	+1	4.15	+1.10
NOV	44	-3	1.37	-3.26	41	-6	2.02	-2.61				
DEC	38	-1	5.41	+0.37	40	+1	1.84	-3.20				
Total			57.49	+6.36			44.67	-6.46			42.95	+1.49

[1] DEP is departure from the long-term average.
[2] 2015 data is for ten months through October.

Important Selection Considerations

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. Improved red clover generally produces measurable yields for 2½ to 3 years, with the year of establishment considered as the first year. The highest yields occur in the year following establishment. White clover may persist longer than red clover, particularly in wet seasons, and has the ability to reseed even under grazing.

Seed quality. Buy premium-quality seed that is high in germination and purity and free from weed seed. Buy certified seed or proprietary seed of an improved variety. An improved variety is one that has performed well in independent trials, such as those reported in this publication. Other information on the label will include the test date (which must be within the previous nine months), the level of germination, and percentage of other crop and weed seed. Order seed well in advance of planting time to assure that it will be available when needed.

Description of the Tests

This report summarizes studies at Lexington (two in 2013 and 2015 and one in 2014) and Princeton (2013). The soils at Princeton (Crider) and Lexington (Maury) are well-drained silt loams. All are well-suited to clover production. Plots were 5 feet by 20 feet in a randomized complete block design with four replications with a harvested plot area of 5 feet by 15 feet.

Seedings were made at 12 pounds of seed per acre for red clover and 3 pounds of seed per acre for white clover into a prepared seedbed using a disk drill. The first cutting in the seeding year was delayed to allow the clover to completely reach maturity as indicated by full bloom, which generally occurs about 60 to 90 days after seeding. Otherwise, harvests were taken when the clover was in the bud to early flower stage using a sickle-type forage plot harvester. Fresh weight samples were taken at each harvest to calculate percent dry matter production. All tests for establishment, fertility (P, K and lime based on regular soil tests), and harvest management were managed according to University of Kentucky Cooperative Extension Service recommendations. Weeds were controlled to avoid limiting production and persistence.

Table 3. Dry-matter yields, seedling vigor, and stand persistence of red clover varieties sown August 21, 2013, at Lexington, Kentucky.

		Percent Stand					Yield (tons/acre)					
	Seedling Vigor[1]	2013	2014		2015		2014	2015				2-year
Variety	Sep 26, 2013	Sep 26	Apr 1	Oct 6	Apr 6	Oct 15	Total	May 8	Jun 11	Jul 17	Total	Total
Commercial Varieties-Available for Farm Use												
Kenland (certified)	4.1	100	100	100	97	81	7.70	1.50	0.84	0.95	3.29	10.99*
FSG 402	4.4	100	100	100	98	93	7.04	1.49	0.82	1.23	3.54	10.59*
Cinnamon Plus	4.4	100	100	100	95	81	7.26	1.40	0.73	1.10	3.24	10.50*
Freedom!	4.1	98	100	98	84	39	7.50	1.19	0.86	0.86	2.92	10.42*
Gallant	3.4	100	100	100	94	89	7.02	1.37	0.71	1.31	3.39	10.41*
Common O	4.6	100	100	98	89	4	7.39	1.14	0.71	0.32	2.17	9.56
Experimental Varieties												
RC 0401	4.1	100	100	100	89	61	7.55	1.33	0.77	1.31	3.41	10.96*
AMP-RC0501	4.1	98	99	99	95	70	7.10	1.42	0.93	0.82	3.17	10.28*
B-12.2689	3.4	93	97	96	83	18	7.29	1.29	0.88	0.75	2.91	10.20*
GA-Bulldog-S	4.0	100	100	98	93	43	6.97	1.31	0.80	0.87	2.99	9.96*
B-12.2688	3.6	96	100	100	95	55	6.95	1.39	0.76	0.85	2.99	9.94*
GA 9908	4.4	98	99	98	90	35	6.62	1.29	0.86	1.04	3.19	9.81
B-12.3051	3.3	99	99	98	91	55	6.68	1.16	0.72	1.13	3.00	9.69
GA-Bull-AST	3.4	100	100	99	90	40	6.54	1.31	0.73	0.86	2.90	9.43
Mean	3.9	99	100	99	91	55	7.12	1.33	0.79	0.96	3.08	10.19
CV,%	17.9	2	1	2	9	31	8.85	16.90	12.29	26.97	10.79	7.71
LSD,0.05	1.0	3	1	3	12	24	0.90	0.32	0.14	0.37	0.48	1.12

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 4. Dry-matter yields, seedling vigor, and stand persistence of red clover varieties sown sown April 10, 2014, at Lexington, Kentucky.

		Percent Stand				Yield (tons/acre)					
	Seedling Vigor[1]	2014		2015		2014	2015				
Variety	May 27, 2014	May 27	Oct 6	Apr 6	Oct 15	Total	May 8	Jun 11	Jul 17	Total	Total
Commercial Varieties-Available for Farm Use											
SS-0303RCG	4.0	91	91	91	64	2.78	1.70	0.92	1.10	3.72	6.50*
Starfire II	3.8	88	88	87	53	2.96	1.68	0.86	0.97	3.51	6.46*
Kenland (certified)	3.9	88	89	88	33	2.79	1.77	1.02	0.87	3.65	6.44*
Freedom!	4.3	90	91	90	36	3.06	1.54	0.99	0.83	3.35	6.42*
Common O	4.8	94	94	93	6	3.29	1.49	1.06	0.40	2.95	6.24*
Cinnamon Plus	4.0	88	89	92	63	2.88	1.41	0.73	0.90	3.04	5.92*
Mean	4.1	90	90	90	42	2.96	1.60	0.93	0.84	3.37	6.33
CV,%	20.0	6	6	6	42	14.07	12.00	7.67	16.84	5.23	8.01
LSD,0.05	1.2	8	8	8	26	0.63	0.29	0.11	0.21	0.27	0.76

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 5. Dry-matter yields and stand persistence of red clover varieties sown March 31, 2015, at Lexington, Kentucky.

	Percent Stand		Yield (tons/acre)		
	2015		2015		
Variety	Jun 12	Oct 15	Jul 17	Aug 14	Total
Commercial Varieties-Available for Farm Use					
Freedom!	100	100	1.12	0.94	2.05*
Kenland (certified)	100	100	0.99	0.87	1.86*
Evolve	100	100	1.18	0.68	1.86*
Gallant	100	100	0.99	0.82	1.81*
Common O	100	98	1.03	0.67	1.70*
SS-0303RCG	100	100	0.69	0.80	1.50*
Experimental Varieties					
KY 2,4-D	100	98	1.01	0.81	1.82*
RC 0702	98	99	1.10	0.60	1.70*
GO-MOB	98	96	1.02	0.46	1.49*
DLFPS-TP-12	99	99	0.85	0.56	1.41*.
Mean	99	99	1.00	0.72	1.72
CV,%	1	2	37.17	33.24	27.52
LSD,0.05	2	3	0.54	0.35	0.69

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 6. Dry-matter yields, seedling vigor, and stand persistence of red clover varieties sown April 9, 2013, at Princeton, Kentucky.

Variety	Seedling Vigor[1] May 15, 2013	Percent Stand 2013 May 15	2013 Oct 8	2014 Apr 4	2014 Oct 22	2015 Apr 14	2015 Oct[2]	Yield (tons/acre) 2013 Total	2014 Total	2015 May 7	2015 Jun 10	2015 Jul 15	2015 Total	3-year Total
Commercial Varieties-Available for Farm Use														
Kenland (certified)	3.5	98	96	96	81	83	–	3.13	4.93	1.92	1.30	0.70	3.93	11.98*
FSG 402	4.4	100	100	100	95	95	–	3.25	4.52	2.10	1.07	0.93	4.10	11.87*
Gallant	4.3	98	98	96	93	93	–	3.14	4.68	1.80	1.05	0.53	3.38	11.20*
Freedom!	3.8	98	97	95	81	80	–	3.07	4.72	1.59	1.22	0.60	3.40	11.19*
SS-0303RCG	4.8	100	99	97	76	74	–	3.20	4.47	1.44	1.03	0.65	3.13	10.79*
Cinnamon Plus	4.3	99	98	96	90	93	–	2.96	4.15	1.71	1.05	0.58	3.34	10.45*
LS 9703	2.5	84	85	80	66	55	–	2.58	3.58	1.19	0.92	0.72	2.83	9.00
Common O	4.8	100	89	83	19	19	–	2.71	2.99	0.46	0.61	0.19	1.27	6.97
Experimental Varieties														
RC 0401	4.5	99	99	99	96	95	–	3.21	4.98	1.89	1.08	0.82	3.79	11.97*
GA 9908	4.1	100	98	96	79	80	–	2.96	4.57	1.85	1.06	0.53	3.44	10.97*
GA-Bulldog-S	4.3	99	96	95	64	71	–	3.18	4.37	1.77	1.07	0.53	3.37	10.93*
AMP-RC0501	4.3	99	97	97	75	74	–	2.97	4.34	1.56	1.09	0.68	3.34	10.64*
CW 0702	4.9	100	98	97	74	75	–	3.07	4.33	1.18	0.96	0.66	2.80	10.20*
XLF-RC1	3.8	98	97	96	83	83	–	2.90	4.13	1.48	0.96	0.72	3.16	10.19*
RC 9806	3.0	97	94	91	65	66	–	2.94	3.88	1.43	1.01	0.82	3.26	10.09*
IS-TP-12	2.8	96	91	86	56	56	–	2.64	3.97	1.43	1.01	0.69	3.12	9.74
GA-Bull-AST	4.3	98	97	94	40	39	–	2.86	4.03	1.03	0.73	0.50	2.26	9.15
B-12-2689	2.5	86	81	71	38	43	–	2.84	3.34	1.36	0.97	0.51	2.84	9.02
B-12.3051	2.8	95	80	66	60	59	–	2.84	2.96	1.49	0.88	0.58	2.95	8.75
B-12.2688	3.1	97	93	92	65	66	–	2.25	3.18	1.40	0.93	0.49	2.82	8.26
Mean	3.8	97	94	91	70	70	–	2.94	4.11	1.50	1.00	0.62	3.13	10.17
CV,%	16.0	3	6	9	24	20	–	20.93	18.09	24.07	20.62	33.49	18.19	15.35
LSD,0.05	0.9	5	8	12	24	23	–	0.87	1.05	0.51	0.29	0.29	0.81	2.21

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2] Stands at the end of the season showed very low stand percentages and were highly variable (0-25%) therefore the values are not listed.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Results and Discussion

Weather data for Lexington and Princeton are presented in tables 1 and 2.

Yield data (on a dry matter basis) are presented in tables 3 through 8. Yields are given by cutting date for 2015 and as total annual production. Varieties are listed in order from highest to lowest total production (for the life of the test). Experimental varieties are listed separately at the bottom of the tables and are not available commercially.

Statistical analyses were performed on all clover data (including experimental varieties) to determine whether the apparent differences are truly due to variety. Varieties not significantly different from the top variety within a column 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 (LSD) at the bottom of the column. If the difference is equal to or greater than the LSD, the varieties are truly different when grown under the conditions at a given location. The Coefficient of Variation (CV), which is a measure of the variability of the data, is included for each column of means.

Table 7. Dry-matter yields, seedling vigor, and stand persistence of white clover varieties sown August 21, 2013, at Lexington, Kentucky.
See Table 10 for designation of ladino, intermediate, or dutch type varieties.

Variety	Seedling Vigor[1] Oct 3, 2013	Percent Stand 2013 Oct 3	2014 Apr 1	2014 Oct 6	2015 Apr 6	2015 Oct 15	Yield (tons/acre) 2014 Total	2015 May 14	2015 Jun 11	2015 Jul 20	2015 Total	2-year Total
Commercial Varieties-Available for Farm Use												
Will	3.8	73	82	97	93	81	3.40	0.55	0.26	0.32	1.13	4.53*
Regal	4.0	86	93	93	63	40	3.66	0.33	0.20	0.29	0.81	4.47*
Durana	2.1	68	69	95	93	81	2.40	0.40	0.19	0.34	0.93	3.33
Patriot	1.8	49	61	93	84	60	2.01	0.36	0.19	0.30	0.85	2.86
Crusader II	3.3	85	10	84	65	50	1.63	0.33	0.24	0.24	0.80	2.43
Experimental Varieties												
GA-178	3.3	69	78	93	73	54	3.08	0.42	0.25	0.37	1.04	4.11*
VS-41730	3.6	85	92	93	70	28	2.64	0.26	0.17	0.27	0.70	3.34
XLFWC1	3.3	73	30	95	81	55	1.67	0.31	0.20	0.33	0.84	2.52
Mean	3.1	73	64	93	78	56	2.56	0.37	0.21	0.31	0.89	3.45
CV,%	24.5	27	32	6	14	32	15.61	25.03	36.62	33.26	24.30	12.67
LSD,0.05	1.1	29	31	9	16	27	0.59	0.14	0.11	0.15	0.32	0.64

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Low variability is desirable, and increased variability within a study results in higher CVs and larger LSDs.

Certified "Kenland" continues to rank near the top of tests. It is important to note yield differences between certified and uncertified Kenland red clover. Most Kenland offered for sale is uncertified, and our tests show it is significantly lower in yield than certified Kenland. White clover varieties, as managed in these trials, yielded less than most red clover varieties but were more persistent. Again, certified seed of improved varieties is recommended.

In addition to the commercially available varieties and experimental lines, selected "common" red clovers are included in the variety tests for comparison. Common red clover, generally sold as "medium red clover variety unknown," is unimproved red clover with unknown performance. Several years of testing show only about one out of every 10 com-

mon red clovers is as productive as certified or proprietary red clovers. In Kentucky, the average yield advantage of seeding improved red clover varieties compared to common types is 3 tons to 6 tons of dry matter over the life of the stand.

Tables 9 and 10 summarize information about proprietors, distributors, and yield performance across years and locations for all varieties currently included in this report. Varieties are listed in alphabetical order, with the experimental varieties at the bottom. Experimental varieties are not available for farm use, but commercial varieties can be purchased from dealerships. In tables 9 and 10, an open block indicates the variety was not included in that particular test (labeled at the top of the column), and an "x" in the block means that the variety was included in the test but yielded significantly less than the top-yielding variety in the test. A single asterisk (*) means the variety was not significantly different from the highest-yielding variety based on the 0.05 LSD. Look at data from several years and locations when choosing a variety of clover rather than results from one test year, as is reported in tables 3 through 8. Make sure seed of the variety selected is properly labeled and will be available when needed.

Tables 11 and 12 are summaries of yield data from 1998 to 2015 of commercial varieties that have been entered in the Kentucky trials. The data is listed as a percentage of the mean of the commercial varieties entered in each specific trial. In other words, the mean for each trial is 100 percent—varieties with percentages over 100 yielded better than average, and varieties with percentages less than 100 yielded lower than average. Direct, statistical comparisons of varieties cannot be made using the summary tables 11 and 12, but these comparisons do help to identify varieties for further consideration. Varieties that have performed better than average over many

Table 8. Dry-matter yields, seedling vigor, and stand persistence of white clover varieties sown March 31, 2015, at Lexington, Kentucky.
See Table 10 for designation of ladino, intermediate, or Dutch type varieties.

Variety	Percent Stand 2015 Jun 12	Percent Stand 2015 Oct 15	Yield (tons/acre) 2015 Jul 20
Commercial Varieties-Available for Farm Use			
Will	100	100	0.71*
RegalGraze	100	98	0.64*
Alice	98	99	0.57*
Jumbo II	99	97	0.55*
Neches	97	96	0.48
Patriot	93	91	0.45
Durana	95	94	0.44
Experimental Varieities			
GA-178	99	99	0.63*
AL 9701	100	99	0.61*
SSS-SH1	100	99	0.58*
NFWC04-49	98	97	0.49
PPG-TR-10	97	94	0.45
Mean	98	97	0.55
CV,%	2	4	19.66
LSD,0.05	3	5	0.16

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 10. Performance of white clover varieties across years at Lexington, Kentucky.

Variety	Type	Proprietor/KY Distributor	2013[1] 14[2]	2013[1] 15	2015 15
Commercial Varieties-Available for Farm Use					
Alice	Intermediate	Barenbrug			*
Durana	Intermediate	Pennington	x[3]	*	x
Jumbo II	Ladino	Ampac Seed Co			*
Neches	–	Barenbrug			x
Patriot	Intermediate	Pennington	x	*	x
Regal	Ladino	Public	*	*	
RegalGraze	Ladino	Cal/West Seed			*
Will	Ladino	Allied Seed, L.L.C.	*	*	*
Experimental Varieties					
AL 9701	–	Barenbrug			*
GA-178	Ladino	Univ. of Georgia	*	*	*
NFWC04-49	Intermediate	Noble Foundation			x
PPG-TR-102	–	Mountain View Seed			x
SSS-SH1	Ladino	Smith Seed			x
VS-41730	Ladino	Turner Seed	x	x	
XLFWC1	–	ProSeeds Marketing	x	*	

[1] Establishment year.
[2] Harvest year.
[3] "x" in the box indicates the variety was in the test but yielded significantly less than the top variety in the test. Open boxes indicate the variety was not in the test.
*Not significantly different from the top-ranked white clover variety in the test.

Table 9. Performance of red clover varieties across years and locations in Kentucky.

Variety	Proprietor/KY Distributor	Lexington 2013[1] 14[2]	Lexington 2013[1] 15	Lexington 2014 14	Lexington 2014 15	Lexington 2015 15	Princeton 2013 13	Princeton 2013 14	Princeton 2013 15
Commercial Varieties-Available for Farm Use									
Cinnamon Plus	FFR/Southern States	*	*	*	x[3]		*	*	*
Common O	Public	*	x	*	x	*	*	x	x
Evolve	DLF Pickseed USA					*			
Freedom!	Barenbrug USA	*	x	*	x	*	*	*	*
FSG 402	Farm Science Genetics	*	*				*	*	*
Gallant	Turner Seed	*	*			*	*	*	*
Kenland (certified)	KY Agric. Exp. Station	*	*	*	*	*	*	*	*
LS 9703	Lewis Seed						*	x	x
SS-0303RCG	FFR/Southern States			*	*	*	*	*	x
Starefire II	Ampac Seed			*	*				
Experimental Varieties									
AMP RC0501	Ampac Seed	*	*				*	*	*
B-12.2688	Blue Moon Farms	*	x				x	x	x
B-12.2689	Blue Moon Farms	*	x				*	x	x
B-12.3051	Blue Moon Farms	x	x				*	x	x
CW 0702	Cal/West Seeds						*	*	x
DLFPS-TP-12	DLF Pickseed USA					*			
GA-Bull-AST	Univ. of GA	x	x				*	*	x
GA-Bulldog-S	Univ. of GA	*	x				*	*	*
GA 9908	Univ. of GA	x	*				*	*	*
GO-MOB	Grassland Oregon					*			
IS-TP-12	DLF International						*	*	x
KY 2,4-D	KY Agric. Exp. Station					*			
RC 0401	Allied Seed	*	*				*	*	*
RC 0702	DLF Pickseed USA					*			
RC 9806	Pickseed USA						*	x	x
XLFRC1	Proseeds Marketing						*	*	x

[1] Establishment year.
[2] Harvest year.
[3] "x" in the box indicates the variety was in the test but yielded significantly less than the top variety in the test. Open boxes indicate the variety was not in the test.
*Not significantly different from the top-ranked red clover variety in the test.

Table 11. Summary of Kentucky red clover yield trials 2000-2015 (yield shown as a percentage of the mean of the named commercial varieties in the trial).

		Lexington														Princeton							Quicksand					Eden Shale				Mean[3]
		00[1,2]	00	01	02	03	04	06	08	09	10	11	12	13	14	00	03	05	08	09	11	13	01	03	05	08	10	00	03	08	10	
Variety	Proprietor	3yr[4]	3yr	3yr	3yr	3yr	3yr	2yr	3yr	2yr	3yr	3yr	2yr	2yr	2yr	3yr	3yr	2yr	3yr	2yr	2yr	3yr	2yr	2yr	3yr	3yr	3yr	3yr	2yr	3yr	3yr	(#trials)
AA117ER	ABI Alfalfa							110										87							92							96(3)
Acclaim	Allied Seed				92																											–
Arlington	WI Agr. Exp.Sta.				72																											–
Belle	Agribiotech	88			82																											85(2)
Cherokee	FL Agr. Exp. Sta.	78			65																											72(2)
Cinnamon	FFR/Sou.St.	111			108																											110(2)
Cinnamon Plus	FFR/Sou.St.					97		109	112	123	117	94	116	101	90			112	102	102	100	100			103	108	124			108	122	107(19)
Common O	Public										96	97	63	92	88							67					72					82(8)
Dominion	Seed Research of OR							102										95	102						93					109		100(5)
Duration	Cisco Co.			86	100																		106									97(3)
Emarwan	Turf-Seed						91			117										106			101				99					103(5)
Freedom!	Barenbrug USA	108	105	127	123	96	118	91	100	108	106	109	99	100	99	105	110	136	107	116	95	107	111	103	119	106	115	102	102	100	140	109(30)
Freedom!MR	Barenbrug USA				118	115	102	114	114		112						106	101		108				94	111		128		118		125	112(14)
FSG 402	Allied Seed													102								114										108(2)
FSG 9601	Allied Seed						89																									–
Gallant	Turner Seed													100								107										104(2)
Impact	Specialty Seeds	106	97													98																100(3)
Juliet	Caudill Seed									84									93	90										84	59	82(5)
Kenland (cert.)	KY Ag.Exp Sta.	110	111	127	139	118	117	117	99	111	99	116	114	106	108	104	102	92	113	106	106	115	111	88	105	104	123	104	98	110	138	110(30)
Kenland (uncert)	Public										82								74				83				67			66	92	77(6)
Kenstar	KY Ag.Exp Sta.		105													104																105(2)
Kenton	KY Ag.Exp Sta.	100	93	119	109	90	95	112	121							98	95	105	112	94			93	99	106	98		102	98			102(19)
Kenway	KY Ag.Exp Sta.	106	104	111	134		97	119	118							100		94	106	103			100		103	94		102				106(15)
LS 9703	Lewis Seed												107									86										97(2)
Morning Star	Cal/West Seeds																		90											90		90(2)
Plus	Allied Seed	113			113																							97				108(3)
Plus II	Allied Seed								130																	97						114(2)
Prima	Public	92			74																											83(2)
Quinequeli	Caudill Seed									92										80											57	76(3)
Red Gold	Proseeds Marketing							81											89											102		91(3)
Red Gold Plus	Turner Seed		97	97			95									95							98					98				97(6)
RedlanGraze	ABI Alfalfa	95																														–
RedlanGraze II	Americas Alfalfa			91	104																		93									96(3)
Redland Max	ABI Alfalfa						95																									–
Redstart	Syngenta	102			78																											90(2)
Robust	Scott Seed	92																														–
Robust II	Seed Research of OR																		110											108		109(2)
Rocket	Seed Research of OR																		106											108		107(2)
Rojo Diablo	Great Plains			99																			101									100(2)
Royal Red	FFR/Sou.St.	108	92		91																							96				97(4)
Rustler	Oregro Seeds								83		101	84														94	99				104	94(6)
Scarlet	Dairyland	95																														–
Sienna	Great Plains			91																			106									99(2)
Solid	Production Service	97	102		98	84		79								98	87	86							76			105	84			91(11)
SS-0303RCG	FFR/Sou.St.														110							103										107(2)
Starfire	Ampac Seed	97	93		99											98												95				96(5)
Starfire II	Cal/West & Ampac								101		111				104				112							110	112			115	111	110(8)
Triple Trust 350	ABI Alfalfa							101										92							92							95(3)
Vesna	DLF-Jenks			53																			96									75(2)
Wildcat	Brett Young Seeds									101										107							98					102(3)

[1] Year trial was established.

[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2010 was harvested three years, so the final report would be "2012 Red and White Clover Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

[3] Mean only presented when respective variety was included in two or more trials.

[4] Number of years of data.

Table 12. Summary of Kentucky white clover yield trials 2002-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

			Lexington											Princeton		Quicksand	Eden Shale	
			02[1,2]	03	04	06	07	08	09	10	11	12	13	03	05	03	03	Mean[3]
Variety	Type	Proprietor	3yr[4]	3yr	3-yr	2-yr	2-yr	3yr	2yr	3yr	3yr	2yr	2yr	3yr	3-yr	2yr	2yr	(#trials)
Advantage	Ladino	Allied Seed, L.L.C.		125													106	116(2)
Alice	Intermediate	Barenbrug USA													86			–
Avoca	Dutch	DLF International Seeds				59									82			71(2)
Barblanca	Intermediate	Barenbrug USA		92														–
CA ladino	Ladino	Public	100		124									103		98		106(4)
Colt	Intermediate	Seed Research of OR		90		57									114			87(3)
Common	Dutch	Public	100				53			98					78			82(4)
Companion	Ladino	Oregro Seeds						87	94	92								91(3)
Crescendo	Ladino	Cal/West Seeds	105			140									109			118(3)
Crusader II	Intermediate	Allied Seed, L.L.C.								90	50	54	69					66(4)
Excel	Ladino	Allied Seed, L.L.C.			100													–
Durana	Intermediate	Pennington		94		94	88	82	85	97	93	84	94	87	83	101	95	91(13)
GWC-AS10	Ladino	Ampac Seed									102							–
Insight	Ladino	Allied Seed, L.L.C.				128												–
Ivory	Intermediate	Cebeco	96															–
Ivory II	Intermediate	DLF International Seeds					86			101	127							105(3)
Jumbo	Ladino	Ampac Seed	93															–
Jumbo II	Ladino	Ampac Seed									121	101						111(2)
Kopu II	Intermediate	Ampac Seed	97			97	95	95	103	96	80	90						94(8)
KY Select	Intermediate	KY. Agric. Exp. Station									98	95						97(2)
Ocoee	Ladino	Allied Seed, L.L.C.								89	74							82(2)
Patriot	Intermediate	Pennington		103		87	104	113	95	117	117	99	81	104	100	98	99	101(13)
Pinnacle	Ladino	Allied Seed, L.L.C.				120									111			116(2)
Rampart	Ladino	Allied Seed, L.L.C.					80	89	97	83								87(4)
Regal	Ladino	Public	99	96	92		125	100	116	118	129	147	127	107	100	104		112(13)
RegalGraze	Ladino	Cal/West Seeds				127	140	102	103									118(4)
Resolute	Intermediate	FFR/Southern States				63												–
Seminole	Ladino	Saddle Butte Ag. Inc			108	70	79											86(3)
Super Haifa	Intermediate	Allied Seed, L.L.C.			77													–
Tillman II	Ladino	Caudill Seed	103															–
WBDX	Dutch	Saddle Butte Ag. Inc									72							–
Will	Ladino	Allied Seed, L.L.C.	107			162	150	132	107	119	137	130	128		136			131(10)

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2010 was harvested three years, so the final report would be "2012 Red and White Clover Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.

years and at several locations have stable performance; others may have performed well in wet years or on particular soil types. These details may influence variety choice, and the information can be found in the yearly reports. See the footnotes in tables 11 and 12 to determine to which yearly report to refer.

Summary

Red and white clovers can be productive components of pasture and hayfields. Choose varieties with proven performance in yield and persistence.

The following College of Agriculture publications related to the establishment, management, and harvesting of clover are available at local county Extension offices and are listed in the "Publications" section of the UK Forage website, www.uky.edu/Ag/Forage:

- Lime and Fertilizer Recommendations (AGR-1)
- Producing Red Clover Seed in Kentucky (AGR-2)
- Grain and Forage Crop Guide for Kentucky (AGR-18)
- Renovating Hay and Pasture Fields (AGR-26)
- Growing Red Clover in Kentucky (AGR-33)
- Establishing Forage Crops (AGR-64)
- Inoculation of Forage Legumes (AGR-90)
- Growing White Clover in Kentucky (AGR-93)
- Weed Control Strategies for Alfalfa and Other Forage Legume Crops (AGR-148)
- Insect Management Recommendations for Field Crops and Livestock (ENT-17)
- Managing Legume-Induced Bloat in Cattle (ID186)
- Kentucky Plant Disease Management Guide for Forage Legumes (PPA-10D)
- "Emergency" Inoculation for Poorly Nodulated Legumes (PPFS-AG-F-04)

About the Authors

G.L. Olson is a research specialist and S.R. Smith is an Extension professor in Forages and D.C. Ditsch is Director of Robinson Center for Appalachian Resource Sustainability.

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