

2014 Red and White Clover Report

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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. 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

Table 1. Temperature and rainfall at Lexington, Kentucky in 2011, 2012 and 2013.

	2012				2013				2014 ²			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	38	+7	4.80	+1.94	38	+7	4.50	+1.64	25	-6	2.28	-5.8
FEB	40	+5	5.39	+2.18	36	+1	1.78	-1.43	30	-5	5.47	+2.26
MAR	56	+12	5.64	+1.24	39	-5	5.47	+1.07	39	-5	3.08	-1.32
APR	56	+1	3.26	-0.62	55	0	4.46	+0.58	58	+3	5.27	-1.89
MAY	69	+5	4.02	-0.45	65	+1	5.23	+0.76	66	+2	5.72	+1.25
JUN	73	+1	2.42	-1.24	72	0	7.32	+3.66	75	+3	2.93	-0.73
JUL	81	+5	2.50	-2.50	72	-4	9.33	+4.33	74	-2	3.18	-1.82
AUG	75	0	1.68	-2.25	72	-3	3.68	-0.25	76	+1	6.53	+2.60
SEP	67	-1	6.40	+3.20	67	-1	2.21	-0.99	69	+1	3.63	+4.43
OCT	55	-2	2.00	-0.57	55	-2	7.02	+4.45	57	0	5.55	+2.98
NOV	43	-2	1.81	-0.65	41	-4	3.06	-0.33				
DEC	42	+6	9.57	+4.94	36	0	4.19	+0.21				
Total			49.49	+4.94			58.25	+13.70			44.14	+6.96

¹ DEP is departure from the long-term average.

² 2014 data is for ten months through October.

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 2014 Red

and White Clover Grazing Tolerance Report (PR-683).

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

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

	2013				2014 ²			
	Temp		Rainfall		Temp		Rainfall	
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP
JAN	38	+4	6.31	+2.51	30	-4	1.70	-2.10
FEB	39	+1	3.09	-1.34	32	-6	4.75	+0.32
MAR	42	-5	4.34	-0.60	43	-4	7.43	-0.51
APR	57	-2	5.72	+0.92	59	0	8.5	+3.70
MAY	66	-1	4.26	-0.70	68	+1	1.96	-3.00
JUN	74	-1	7.55	+3.70	76	+1	3.25	-0.60
JUL	75	-3	4.44	+0.15	73	-5	1.56	-2.73
AUG	75	-2	5.59	+1.58	78	0	9.33	+5.32
SEP	71	0	5.37	+2.04	69	-2	0.97	-2.36
OCT	59	0	4.04	+0.99	59	0	4.36	+1.31
NOV	44	-3	1.37	-3.26				
DEC	38	-1	5.41	+0.37				
Total			57.49	+6.36			40.81	-0.65

¹ DEP is departure from the long-term average.

² 2014 data is for ten months through October.

Table 3. Temperature and rainfall at Quicksand, Kentucky in 2013 and 2014.

	2013				2014 ²			
	Temp		Rainfall		Temp		Rainfall	
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP
JAN	38	+7	5.61	+2.37	29	-2	2.66	-0.63
FEB	38	+5	1.81	-1.79	36	+3	4.52	+0.92
MAR	40	-1	4.55	+0.21	43	+2	5.68	+1.34
APR	56	+3	3.55	-0.55	58	+5	5.12	+1.02
MAY	64	+2	3.98	-0.50	65	+3	2.71	-1.77
JUN	73	+3	6.44	+2.62	75	+5	1.81	-2.01
JUL	75	+1	5.24	-0.01	72	-2	7.14	+1.89
AUG	73	0	5.85	+1.84	74	+1	7.94	+3.93
SEP	68	+2	1.71	-1.81	69	+3	1.93	-1.59
OCT	58	+4	2.07	-0.84	57	+3	6.36	+3.45
NOV	43	+1	3.05	-0.83				
DEC	40	+7	6.84	+2.70				
Total			50.70	+3.36			45.87	+6.55

¹ DEP is departure from the long-term average.

² 2014 data is for the ten months through October.

Table 4. Dry matter yields, seedling vigor and stand persistence of red clover varieties sown August 9, 2012 at Lexington, Kentucky.

Variety	Seedling Vigor ¹ Sep 27, 2012	Percent Stand					Yield (tons/acre)						2-year Total
		2012		2013		2014	2013		2014				
		Sep 27	Mar 20	Sep 26	Apr 1	Oct 6	Total	May 13	Jun 10	Jul 11	Sep 18	Total	
Commercial Varieties—Available for Farm Use													
SS-0303RCG	4.8	100	96	78	83	40	6.05	1.19	0.46	0.64	0.38	2.67	8.73*
Cinnamon Plus	4.0	99	96	83	74	40	5.94	1.07	0.49	0.58	0.30	2.43	8.37*
Kenland (certified)	4.1	99	96	89	70	25	6.13	0.81	0.54	0.45	0.30	2.10	8.23*
LS 9703	3.9	98	94	89	75	30	5.69	0.91	0.42	0.40	0.31	2.04	7.73*
Freedom!	4.0	97	98	72	64	20	5.49	0.74	0.45	0.31	0.16	1.66	7.15
Common O	4.5	100	99	6	4	2	3.93	0.19	0.20	0.09	0.09	0.57	4.50
Experimental Varieties													
XLFRC1	3.9	98	94	94	90	40	6.17	1.17	0.47	0.57	0.42	2.63	8.81*
CW 0702	4.4	98	97	92	78	43	5.69	0.97	0.41	0.46	0.38	2.22	7.90*
RC 9806	3.3	97	96	95	85	43	5.80	0.81	0.51	0.48	0.30	2.10	7.90*
IS-TP-12	2.8	100	97	54	31	14	5.24	0.86	0.42	0.42	0.36	2.05	7.30
GA-Bull-AST	4.0	100	98	68	53	18	5.21	0.80	0.35	0.37	0.23	1.76	6.97
GA-Bulldog-S	3.3	100	98	60	46	11	4.84	0.64	0.38	0.29	0.17	1.48	6.32
Mean	3.9	99	96	73	63	27	5.52	0.85	0.43	0.42	0.28	1.98	7.50
CV,%	15.7	2	3	21	21	40	6.21	25.40	25.30	26.88	48.83	25.34	10.19
LSD,0.05	0.9	2	4	22	20	16	0.50	0.31	0.16	0.17	0.20	0.73	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.

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 14 and 15 show a summary of all clover varieties tested in Kentucky for the past 15 years. The UK Forage Extension Web site 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.

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.

Table 5. Dry matter yields, seedling vigor and stand persistence of red clover varieties sown August 21, 2013 at Lexington, Kentucky.

Variety	Seedling Vigor ¹ Sep 26, 2013	Percent Stand			Yield (tons/acre)					
		2013		2014	2014					
		Sep 26	Apr 1	Oct 6	May 12	Jun 10	Jul 11	Aug 12	Sep 18	Total
Commercial Varieties—Available for Farm Use										
Kenland (certified)	4.1	100	100	100	2.31	1.33	1.48	0.93	1.66	7.70*
Freedom!	4.1	98	100	98	2.11	1.38	1.55	0.93	1.53	7.50*
Common O	4.6	100	100	98	2.20	1.46	1.34	0.97	1.42	7.39*
Cinnamon Plus	4.4	100	100	100	2.47	1.24	1.15	0.77	1.62	7.26*
FSG 402	4.4	100	100	100	2.78	1.20	1.21	0.68	1.17	7.04*
Gallant	3.4	100	100	100	2.37	1.16	1.31	0.73	1.45	7.02*
Experimental Varieties										
RC 0401	4.1	100	100	100	2.31	1.18	1.62	0.86	1.57	7.55*
B-12.2689	3.4	93	97	96	2.11	1.42	1.44	0.83	1.50	7.29*
AMP-RC0501	4.1	98	99	99	2.25	1.12	1.38	0.79	1.57	7.10*
GA-Bulldog-S	4.0	100	100	98	2.32	1.15	1.41	0.76	1.34	6.97*
B-12.2688	3.6	96	100	100	2.64	1.26	1.23	0.58	1.24	6.95*
B-12.3051	3.3	99	99	98	2.30	1.03	1.43	0.63	1.29	6.68
GA 9908	4.4	98	99	98	2.21	1.05	1.14	0.66	1.57	6.62
GA-Bull-AST	3.4	100	100	99	2.43	1.06	1.17	0.58	1.29	6.54
Mean	3.9	99	100	99	2.34	1.22	1.35	0.76	1.44	7.12
CV,%	17.9	2	1	2	12.53	11.63	22.48	23.36	12.91	8.85
LSD,0.05	1.0	3	1	3	0.42	0.20	0.43	0.26	0.27	0.90

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.

Description of the Tests

This report summarizes studies at Lexington (two in 2012, 2013 and 2014), Princeton (2013) and Quicksand (2013). The soils at Princeton (Crider), Lexington (Maury) and Quicksand (Nolin) 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

Table 6. Dry matter yields, seedling vigor and stand persistence of red clover varieties sown April 10, 2014 at Lexington, Kentucky.

Variety	Seedling Vigor ¹ May 27, 2014	Percent Stand		Yield (tons/acre)			
		2014		2014			
		May 27	Oct 6	Jul 8	Aug 12	Sep 18	Total
Commercial Varieties—Available for Farm Use							
Common O	4.8	94	94	0.98	0.78	1.53	3.29*
Freedom!	4.3	90	91	1.03	0.62	1.41	3.06*
Starfire II	3.8	88	88	0.87	0.67	1.41	2.96*
Cinnamon Plus	4.0	88	89	0.85	0.55	1.48	2.88*
Kenland (certified)	3.9	88	89	0.84	0.60	1.35	2.79*
SS-0303RCG	4.0	91	91	0.89	0.50	1.39	2.78*
Mean	4.1	90	90	0.91	0.62	1.43	2.96
CV,%	20.0	6	6	22.74	22.08	11.73	14.07
LSD,0.05	1.2	8	8	0.31	0.21	0.25	0.63

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.

according to University of Kentucky Cooperative Extension Service recommendations. Weeds were controlled to avoid limiting production and persistence.

Results and Discussion

Weather data for Lexington, Princeton and Quicksand are presented in Tables 1, 2 and 3.

Yield data (on a dry matter basis) are presented in Tables 4 through 11. Yields

are given by cutting date for 2014 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

Table7. 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				Yield (tons/acre)						2-year Total
		2013		2014		2013	2014					
		May 15	Oct 8	Apr 4	Oct 22	Total	May 20	Jun 18	Jul 16	Sep 17	Total	
Commercial Varieties—Available for Farm Use												
Kenland (certified)	3.5	98	96	96	81	3.13	2.56	1.56	0.42	0.39	4.93	8.06*
Gallant	4.3	98	98	96	93	3.14	2.47	1.37	0.46	0.38	4.68	7.82*
Freedom!	3.8	98	97	95	81	3.07	2.38	1.62	0.38	0.34	4.72	7.79*
FSG 402	4.4	100	100	100	95	3.25	2.29	1.34	0.51	0.39	4.52	7.77*
SS-0303RCG	4.8	100	99	97	76	3.20	2.48	1.33	0.40	0.25	4.47	7.67*
Cinnamon Plus	4.3	99	98	96	90	2.96	2.15	1.34	0.37	0.29	4.15	7.11*
LS 9703	2.5	84	85	80	66	2.58	2.01	1.07	0.33	0.17	3.58	6.17
Common O	4.8	100	89	83	19	2.71	1.55	1.20	0.15	0.09	2.99	5.70
Experimental Varieties												
RC0401	4.5	99	99	99	96	3.21	2.76	1.37	0.47	0.38	4.98	8.19*
GA-Bulldog-S	4.3	99	96	95	64	3.18	2.39	1.35	0.36	0.27	4.37	7.56*
GA 9908	4.1	100	98	96	79	2.96	2.36	1.45	0.43	0.33	4.57	7.53*
CW 0702	4.9	100	98	97	74	3.07	2.36	1.35	0.35	0.28	4.33	7.40*
AMP-RC0501	4.3	99	97	97	75	2.97	2.20	1.38	0.47	0.29	4.34	7.31*
XLF-RC1	3.8	98	97	96	83	2.90	2.32	1.18	0.35	0.28	4.13	7.03*
GA-Bull-AST	4.3	98	97	94	40	2.86	2.37	1.21	0.36	0.09	4.03	6.89*
RC 9806	3.0	97	94	91	65	2.94	2.07	1.26	0.36	0.20	3.88	6.83*
IS-TP-12	2.8	96	91	86	56	2.64	2.12	1.29	0.33	0.23	3.97	6.61*
B-12-2689	2.5	86	81	71	38	2.84	1.70	1.20	0.28	0.16	3.34	6.18
B-12.3051	2.8	95	80	66	60	2.84	1.58	0.88	0.32	0.17	2.96	5.80
B-12.2688	3.1	97	93	92	65	2.25	1.71	0.96	0.31	0.21	3.18	5.44
Mean	3.8	97	94	91	70	2.94	2.19	1.29	0.37	0.26	4.11	7.04
CV,%	16.0	3	6	9	24	20.93	19.78	17.41	29.61	49.77	18.09	17.62
LSD,0.05	0.9	5	8	12	24	0.87	0.61	0.32	0.16	0.18	1.05	1.76

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.

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. 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

Table 8. Dry matter yields, seedling vigor and stand persistence of red clover varieties sown August 29, 2013 at Quicksand, Kentucky.

Variety	Seedling Vigor ¹ Oct 3, 2013	Percent Stand			Yield (tons/acre)				
		2013		2014	2014				
		Oct 3	Mar 27	Nov 3	May 20	Jun 30	Aug 5	Sep 17	Total
Commercial Varieties—Available for Farm Use									
Freedom!	3.125	99	99	98	2.25	2.57	1.98	1.16	7.96*
Kenland (certified)	3.000	99	100	100	2.29	2.55	2.04	0.97	7.85*
SS-0303RCG	3.125	100	100	100	2.21	2.59	1.91	0.86	7.57*
Common O	4.750	100	100	99	1.97	2.71	1.78	0.88	7.34*
LS 9703	2.250	95	95	96	2.12	2.44	1.77	0.96	7.29*
Cinnamon Plus	3.375	100	100	100	2.02	2.24	1.97	0.91	7.14*
Experimental Varieties									
RC 9806	2.250	99	99	99	2.65	2.26	2.24	1.09	8.25*
IS-TP-12	1.250	96	96	96	2.30	2.58	1.99	0.99	7.86*
XLF-RC1	2.750	99	98	98	2.32	2.23	2.32	0.75	7.62*
CW 0702	4.333	99	99	99	2.29	2.31	1.94	0.87	7.40*
Mean	3.000	98	98	98	2.24	2.45	1.99	0.95	7.63
CV,%	27.400	1	1	2	12.47	15.17	20.88	21.14	12.57
LSD,0.05	1.200	2	2	2	0.41	0.55	0.62	0.30	1.42

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.

unknown performance. Several years of testing show only about one out of every 10 common red clovers is as productive as certified or proprietary red clovers. In Kentucky, the average yield advantage of seeding better red clovers compared to common types is 3 tons to 6 tons of dry matter over the life of the stand.

Tables 12 and 13 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 12 and 13, 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

Table 9. Dry matter yields, seedling vigor and stand persistence of white clover varieties sown August 9, 2012 at Lexington, Kentucky. (Seed Table 13 for designation of ladino, intermediate or dutch type varieties.)

Variety	Seedling Vigor ¹ Sep 27, 2012	Percent Stand					Yield (tons/acre)					2-year Total
		2012		2013		2014	2013	2014				
		Sep 27	Mar 20	Sep 26	Apr 24	Oct 6	Total	May 13	Jun 3	Sep 18	Total	
Commercial Varieties—Available for Farm Use												
Regal	4.3	94	97	91	36	45	3.80	0.46	0.35	0.40	1.21	5.02*
Will	3.6	93	98	90	46	58	3.40	0.40	0.31	0.35	1.06	4.46*
Jumbo II	2.3	89	91	84	43	45	2.49	0.36	0.25	0.36	0.97	3.46
Patriot	3.5	89	92	80	49	35	2.67	0.27	0.20	0.25	0.72	3.39
KY Select	2.0	77	91	76	69	21	2.34	0.42	0.36	0.16	0.94	3.27
Kopu II	3.5	92	90	86	31	26	2.50	0.19	0.19	0.20	0.58	3.08
Durana	2.3	86	95	56	61	28	2.14	0.29	0.29	0.15	0.73	2.87
Crusader II	3.5	91	18	20	38	9	1.11	0.31	0.29	0.15	0.75	1.86
Experimental Varieties												
IS-TR12	2.5	79	84	86	50	39	2.65	0.30	0.22	0.28	0.80	3.45
XLFWC1	3.0	83	48	33	28	5	1.21	0.12	0.15	0.17	0.43	1.65
Mean	3.0	87	80	70	45	31	2.43	0.31	0.26	0.25	0.82	3.25
CV,%	41.7	11	12	21	50	62	28.46	71.83	68.55	50.55	56.56	32.34
LSD,0.05	1.8	14	14	21	33	28	1.00	0.32	0.26	0.18	0.67	1.52

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.

and locations when choosing a variety of clover rather than results from one test year, as is reported in Tables 4 through 11. Make sure seed of the variety selected is properly labeled and will be available when needed.

Tables 14 and 15 are summaries of yield data from 1998 to 2014 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 14 and 15, but these comparisons do help to identify varieties for further consideration. Varieties that have performed better than average over many 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 14 and 15 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 Web site, 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)

Table 10. Dry matter yields, seedling vigor and stand persistence of white clover varieties sown August 21, 2013 at Lexington, Kentucky. (See Table 13 for designation of ladino, intermediate or dutch type varieties.)

Variety	Seedling Vigor ¹ Oct 3, 2013	Percent Stand			Yield (tons/acre)					
		2014			2014					
		2013	2014	2014	May 13	Jun 3	Jul 8	Aug 19	Sep 19	Total
Commercial Varieties—Available for Farm Use										
Regal	4.0	86	93	93	1.02	1.19	0.46	0.49	0.50	3.66*
Will	3.8	73	82	97	1.19	1.06	0.26	0.35	0.53	3.40*
Durana	2.1	68	69	95	0.97	0.78	0.20	0.16	0.28	2.40
Patriot	1.8	49	61	93	0.80	0.57	0.18	0.09	0.37	2.01
Crusader II	3.3	85	10	84	0.33	0.48	0.24	0.18	0.40	1.63
Experimental Varieties										
GA-178	3.3	69	78	93	1.02	1.02	0.40	0.31	0.32	3.08*
VS-41730	3.6	85	92	93	1.17	0.84	0.17	0.17	0.28	2.64
XLFWC1	3.3	73	30	95	0.48	0.51	0.26	0.12	0.30	1.67
Mean	3.1	73	64	93	0.87	0.81	0.27	0.23	0.37	2.56
CV,%	24.5	27	32	6	23.05	13.20	44.40	50.40	27.07	15.61
LSD,0.05	1.1	29	31	9	0.30	0.16	0.18	0.17	0.15	0.59

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 11. Dry matter yields, seedling vigor and stand persistence of white clover varieties sown April 10, 2014 at Lexington, Kentucky. (See Table 13 for designation of ladino, intermediate or dutch type varieties.)

Variety	Seedling Vigor ¹ May 27, 2014	Percent Stand		Yield (tons/acre)			
		2014		2014			
		May 27	Oct 6	Jul 8	Aug 19	Sep 19	Total
Commercial Varieties—Available for Farm Use							
Will	4.8	90	99	0.21	0.40	0.69	1.29*
Seminole	4.3	89	98	0.10	0.35	0.68	1.13*
Domino	3.0	76	93	0.11	0.23	0.59	0.93
Durana	2.8	63	87	0.13	0.21	0.54	0.87
Alice	3.5	76	73	0.12	0.24	0.47	0.83
Patriot	2.8	66	94	0.14	0.16	0.48	0.77
Experimental Varieties							
NFWC04-29	3.4	86	94	0.19	0.37	0.75	1.31*
VS-41730	3.5	79	93	0.19	0.36	0.52	1.08*
GO-FD	3.3	75	91	0.11	0.20	0.57	0.89
NFWC04-49	2.8	85	92	0.12	0.18	0.46	0.76
Mean	3.4	79	91	0.14	0.27	0.58	0.99
CV,%	21.2	13	16	46.54	38.07	21.75	25.00
LSD,0.05	1.0	15	21	0.10	0.15	0.18	0.36

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.

- 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)
- Kentucky Plant Disease Management Guide for Forage Legumes (PPA-10D)
- “Emergency” Inoculation for Poorly Nodulated Legumes (PPFS-AG-F-04)

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Table 15. Summary of Kentucky white clover yield trials 2002-2014 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	Lexington										Princeton		Quicksand		Eden Shale	Mean ³ (#trials)	
			02 ^{1,2}	03	04	06	07	08	09	10	11	12	03	05	98	03	03		
			3yr ⁴	3yr	3-yr	2-yr	2-yr	3yr	2yr	3yr	3yr	2yr	3yr	3-yr	3yr	2yr	2yr		
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		100	98		105(5)
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							65(3)
Excel	Ladino	Allied Seed, L.L.C.			100														-
Durana	Intermediate	Pennington		94		94	88	82	85	97	93	84	87	83		101	95		90(12)
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	Saddle Butte Ag. Inc									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	104	100		98	99		103(12)
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	107	100	100	104			118(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		136					131(9)

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 2002 was harvested 3 years, so the final report would be "2004 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.



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