

2003 Red Clover Report

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Introduction

Red clover (*Trifolium pratense*) is a high-quality, short-lived, perennial legume that is 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 and, therefore, is 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, high 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 yield and persistence (as measured by percent stand) 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. Red clover generally produces measurable yields for three years, with the year of establishment considered as the first year. The highest yields occur in the year following establishment.

Seed quality. Buy high-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 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 (one sown in 2001, four in 2002, one in 2003), Princeton (sown in 2003), and Quicksand (sown in 2003). The soils at Princeton (Crider), Lexington (Maury), and Quicksand (Pope) were well-drained silt loams. Eden Shale has a Nicholson silt loam soil. All are well suited to red clover production. Plots were 5 by 15 feet and were arranged in a randomized complete block design with four replications at every location.

Seedings were made at 12 pounds of seed per acre for red clover entries and 3 pounds per acre for white clover into a prepared seedbed using a disk drill. The first cutting in the seedling year was delayed to allow the red 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 red 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, and harvest management were managed according to University of Kentucky Cooperative Extension Service recommendations. Weeds were controlled to avoid limiting production and persistence.

Results and Discussion

Weather data for Quicksand, Lexington, and Princeton are presented in Table 1.

Yield data (on a dry matter basis) are presented in Tables 2 through 9. Yields are given by cutting date 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 red clover data (including experimental varieties) to determine if 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. 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, but our tests show it is significantly lower in yield than certified Kenland.

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

Table 10 summarizes 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 Table 10, a shaded area indicates that the variety was not included in that particular test (labeled at the top of the column), and a clear block means that the variety was included in the test. A single asterisk (*) means that the variety was not significantly different from the highest-yielding variety. 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 Tables 2 through 9. Make sure seed of the variety selected is properly labeled and will be available when needed.

Summary

Red clover can be a productive component of pasture and hayfields. Choose a variety with proven performance in yield and persistence.

Other College of Agriculture publications related to the establishment, management, and harvesting of red clover available from the local county Extension office are listed below:

- AGR-1 Lime and Fertilizer Recommendations
- AGR-2 Producing Red Clover Seed in Kentucky
- AGR-18 Grain and Forage Crop Guide for Kentucky
- AGR-24 Kenstar Red Clover
- AGR-26 Renovating Hay and Pasture Fields
- AGR-33 Growing Red Clover in Kentucky
- AGR-64 Establishing Forage Crops
- AGR-90 Inoculation of Forage Legumes
- AGR-148 Weed Control Strategies for Alfalfa and Other Forage Legume Crops
- ENT-17 Insect Management Recommendations for Field Crops and Livestock
- PPA-10 Kentucky Plant Disease Management Guide for Forage Legumes

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Table 1. Temperature and rainfall at Bowling Green, Lexington, and Princeton, Kentucky in 2003.

| | Quicksand | | | | Lexington | | | | Princeton | | | |
|--------------|-----------|-----|--------------|--------------|-----------|-----|--------------|--------------|-----------|-----|--------------|--------------|
| | Temp | | Rainfall | | Temp | | Rainfall | | Temp | | Rainfall | |
| | °F | DEP | IN | DEP | °F | DEP | IN | DEP | °F | DEP | IN | DEP |
| JAN | 29 | -2 | 1.89 | -1.4 | 26 | -5 | 0.96 | -1.90 | 31 | -3 | 2.19 | -1.61 |
| FEB | 34 | +1 | 7.90 | +4.3 | 32 | -3 | 3.59 | +0.38 | 35 | -3 | 7.45 | +3.02 |
| MAR | 51 | +10 | 1.44 | -2.9 | 47 | +3 | 2.09 | -2.31 | 50 | +3 | 2.46 | -2.48 |
| APR | 59 | +6 | 5.15 | +1.05 | 57 | +2 | 3.14 | -0.74 | 60 | +1 | 6.99 | +2.19 |
| MAY | 63 | +1 | 5.49 | +1.01 | 63 | -1 | 6.68 | +2.21 | 67 | 0 | 4.81 | -0.15 |
| JUN | 68 | -2 | 7.53 | +3.71 | 69 | -3 | 4.85 | +1.19 | 71 | -4 | 5.05 | +1.20 |
| JUL | 74 | 0 | 3.45 | -1.80 | 74 | -2 | 2.68 | -2.32 | 79 | +1 | 4.75 | +0.46 |
| AUG | 75 | +2 | 5.08 | +1.07 | 75 | 0 | 5.26 | +1.33 | 79 | +2 | 2.05 | -1.96 |
| SEP | 66 | 0 | 4.26 | +0.74 | 65 | -3 | 4.22 | +1.02 | 69 | -2 | 6.17 | +2.84 |
| OCT | 58 | +4 | 2.33 | -0.58 | 56 | -1 | 1.61 | -0.96 | 60 | +1 | 3.73 | +0.68 |
| NOV | 52 | +10 | 5.47 | +1.59 | 50 | +5 | 4.63 | +1.24 | 53 | +6 | 5.85 | +1.22 |
| Total | | | 49.99 | +6.79 | | | 39.71 | -0.86 | | | 51.50 | +5.41 |

DEP is departure from the long-term average for that location.

Table 2. Dry matter yields (tons/acre) of breeder, certified, and common lots of red clover varieties sown April 12, 2002, at Lexington, Kentucky.

| Variety | Total 2002 | 2003 Harvests | | | | % Stand Oct 21, 2003 | Total 2003 |
|--|------------|---------------|--------|-------|--------|----------------------|------------|
| | | Apr 24 | Jun 20 | Aug 4 | Sep 15 | | |
| Commercial Varieties—Available for Farm Use | | | | | | | |
| Kenland (breeder) | 1.28 | 4.82 | 2.12 | 1.43 | 0.81 | 78 | 9.18* |
| Common f | 1.78 | 4.15 | 2.08 | 1.53 | 0.78 | 83 | 8.54* |
| Common h | 1.27 | 4.60 | 2.06 | 1.28 | 0.59 | 65 | 8.52* |
| Common d | 1.57 | 4.18 | 2.12 | 1.29 | 0.52 | 75 | 8.10 |
| Common l | 1.33 | 4.33 | 2.03 | 1.18 | 0.43 | 46 | 7.97 |
| Common i | 1.33 | 4.11 | 1.97 | 1.22 | 0.35 | 50 | 7.65 |
| Common g | 1.39 | 4.34 | 1.95 | 0.95 | 0.32 | 35 | 7.56 |
| Common j | 1.20 | 4.15 | 2.00 | 0.84 | 0.30 | 24 | 7.30 |
| Kenland (certified) | 1.16 | 4.13 | 1.93 | 0.85 | 0.31 | 35 | 7.22 |
| Common m | 1.11 | 3.96 | 2.10 | 0.76 | 0.21 | 10 | 7.02 |
| Common q | 1.16 | 4.28 | 1.92 | 0.55 | 0.19 | 13 | 6.93 |
| Common o | 0.87 | 4.52 | 1.74 | 0.48 | 0.18 | 15 | 6.91 |
| Common p | 1.23 | 4.18 | 1.91 | 0.52 | 0.19 | 10 | 6.81 |
| Common r | 1.03 | 3.97 | 1.80 | 0.75 | 0.24 | 8 | 6.76 |
| Common n | 1.18 | 3.99 | 1.84 | 0.65 | 0.17 | 16 | 6.66 |
| Common c | 1.14 | 4.40 | 1.68 | 0.45 | 0.11 | 8 | 6.65 |
| Common e | 1.26 | 4.15 | 1.93 | 0.42 | 0.14 | 15 | 6.64 |
| Common b | 1.30 | 3.87 | 1.94 | 0.63 | 0.16 | 10 | 6.60 |
| Common a | 1.25 | 4.13 | 1.76 | 0.38 | 0.11 | 6 | 6.38 |
| Common k | 0.86 | 3.97 | 1.74 | 0.39 | 0.11 | 9 | 6.20 |
| Mean | 1.24 | 4.21 | 1.93 | 0.83 | 0.31 | 30.43 | 7.28 |
| CV, % | 23.24 | 14.17 | 6.61 | 21.47 | 39.43 | 32.89 | 9.81 |
| LSD, 0.05 | 0.41 | 0.85 | 0.18 | 0.25 | 0.17 | 14.17 | 1.01 |

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

Table 3. Dry matter yields (tons/acre) of red clover varieties sown April 12, 2002, at Lexington, Kentucky.

| Variety | Total 2002 | 2003 Harvests | | | | Total 2003 | % Stand Oct 21 | 2-yr Total |
|--|------------|---------------|--------|-------|--------|------------|----------------|------------|
| | | Apr 24 | Jun 20 | Aug 4 | Sep 15 | | | |
| Commercial Varieties—Available for Farm Use | | | | | | | | |
| Certified Kenland | 1.09 | 1.97 | 2.13 | 1.40 | 0.97 | 6.47 | 80 | 7.56* |
| Freedom! | 0.99 | 1.86 | 2.04 | 1.36 | 0.86 | 6.13 | 79 | 7.12* |
| Cinnamon Plus | 0.88 | 1.84 | 2.10 | 1.33 | 0.77 | 6.05 | 78 | 6.93* |
| Duration | 0.80 | 1.80 | 2.02 | 1.30 | 0.73 | 5.85 | 78 | 6.65 |
| Solid | 0.93 | 1.74 | 2.01 | 0.98 | 0.59 | 5.32 | 40 | 6.25 |
| Cardinal | 0.86 | 1.73 | 2.04 | 1.04 | 0.54 | 5.35 | 54 | 6.22 |
| Common | 0.84 | 1.70 | 1.75 | 0.13 | 0.11 | 3.70 | 0 | 4.54 |
| Regal (white clover) | 0.71 | 0.94 | 1.07 | 0.50 | 0.74 | 3.25 | 91 | 3.95 |
| Experimental Varieties | | | | | | | | |
| RC 9101 | 0.86 | 1.90 | 2.03 | 1.29 | 0.68 | 5.90 | 59 | 6.76 |
| RC 9601 | 0.85 | 1.64 | 2.12 | 1.16 | 0.58 | 5.50 | 63 | 6.34 |
| CW 3001 | 0.74 | 1.76 | 1.89 | 1.04 | 0.48 | 5.17 | 35 | 5.92 |
| ULC 1715/86 | 0.65 | 1.70 | 1.98 | 0.28 | 0.19 | 4.15 | 0 | 4.79 |
| EC 408 | 0.64 | 1.37 | 1.89 | 0.55 | 0.33 | 4.13 | 3 | 4.78 |
| NIB 13693 | 0.74 | 1.81 | 1.73 | 0.32 | 0.12 | 3.99 | 1 | 4.73 |
| NIB 1195 | 0.59 | 1.61 | 1.76 | 0.38 | 0.23 | 3.99 | 1 | 4.58 |
| Mean | 0.81 | 1.69 | 1.90 | 0.87 | 0.53 | 5.00 | 44 | 5.81 |
| CV, % | 16.36 | 12.62 | 8.83 | 16.74 | 17.47 | 7.67 | 20.05 | 7.75 |
| LSD, 0.05 | 0.19 | 0.31 | 0.24 | 0.21 | 0.13 | 0.55 | 12.59 | 0.64 |

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

| Table 4. Dry matter yields (tons/acre) of red and white clovers sown April 4, 2003, at Lexington, Kentucky. | | | |
|--|----------------------|--------------|-------------------|
| Variety | 2003 Harvests | | Total 2003 |
| | Aug 15 | Oct 7 | |
| Commercial Varieties—Available for Farm Use | | | |
| Certified Kenland | 0.50 | 0.69 | 1.20* |
| Advantage | 0.61 | 0.57 | 1.18* |
| Solid | 0.50 | 0.55 | 1.04 |
| Durana | 0.55 | 0.48 | 1.03 |
| Regal | 0.56 | 0.47 | 1.03 |
| Barblanca | 0.47 | 0.55 | 1.01 |
| Freedom! | 0.42 | 0.56 | 0.98 |
| Patriot | 0.47 | 0.49 | 0.96 |
| Common | 0.48 | 0.47 | 0.95 |
| GDLH | 0.53 | 0.42 | 0.95 |
| GDQ | 0.52 | 0.43 | 0.94 |
| GDSG | 0.46 | 0.42 | 0.88 |
| Cinnamon Plus | 0.40 | 0.48 | 0.87 |
| Colt | 0.37 | 0.46 | 0.83 |
| Experimental Varieties | | | |
| CW 7000 | 0.67 | 0.73 | 1.40* |
| KY Tetraploid | 0.54 | 0.63 | 1.17* |
| Freedom! MR | 0.54 | 0.61 | 1.15* |
| Low Phenolic | 0.53 | 0.55 | 1.08 |
| KNARS | 0.48 | 0.38 | 0.86 |
| Mean | 0.51 | 0.52 | 1.03 |
| CV, % | 25.55 | 22.27 | 18.65 |
| LSD, 0.05 | 0.18 | 0.17 | 0.27 |
| * Not significantly different from the highest value in the column, based on the 0.05 LSD. | | | |

| Table 5. Dry matter yields (tons/acre) of red and white clovers sown April 2, 2003, at Princeton, Kentucky. | | | | |
|--|---------------|--------|--------|------------|
| Variety | 2003 Harvests | | | Total 2003 |
| | Jun 19 | Jul 30 | Sep 24 | |
| Commercial Varieties—Available for Farm Use | | | | |
| Solid | 1.72 | 1.43 | 0.8 | 3.95* |
| GDQ | 1.64 | 1.49 | 0.74 | 3.87* |
| Freedom! | 1.43 | 1.58 | 0.8 | 3.81* |
| Certified Kenland | 1.25 | 1.63 | 0.87 | 3.75* |
| GDLH | 1.62 | 1.4 | 0.53 | 3.56* |
| GDSG | 1.57 | 1.14 | 0.73 | 3.44 |
| Common | 1.53 | 1.24 | 0.5 | 3.28 |
| Regal | 1.24 | 1.07 | 0.72 | 3.03 |
| Cal Ladino | 1.14 | 1.12 | 0.7 | 2.96 |
| Patriot | 1.06 | 0.82 | 0.63 | 2.51 |
| Durana | 0.83 | 0.83 | 0.57 | 2.22 |
| Experimental Varieties | | | | |
| Freedom! MR | 1.57 | 1.61 | 0.84 | 4.01* |
| KY Tetraploid | 1.44 | 1.53 | 0.95 | 3.92* |
| Low Phenolic | 1.23 | 1.68 | 0.82 | 3.73* |
| KNARS | 1.38 | 1.63 | 0.64 | 3.65* |
| Mean | 1.38 | 1.35 | 0.73 | 3.45 |
| CV, % | 11.76 | 17.06 | 14.55 | 10.55 |
| LSD, 0.05 | 0.23 | 0.33 | 0.15 | 0.52 |
| * Not significantly different from the highest value in the column, based on the 0.05 LSD. | | | | |

| Table 6. Dry matter yields (tons/acre) of red and white clovers sown March 28, 2003, at Quicksand, Kentucky. | | | |
|---|---------------|-------|------------|
| Variety | 2003 Harvests | | Total 2003 |
| | Jul 25 | Oct 6 | |
| Commercial Varieties—Available for Farm Use | | | |
| Patriot | 1.32 | 1.38 | 2.70* |
| Freedom! | 1.30 | 1.34 | 2.64* |
| Regal | 1.16 | 1.38 | 2.54* |
| Cal ladino | 1.24 | 1.29 | 2.53* |
| Durana | 1.18 | 1.25 | 2.43 |
| Certified Kenland | 1.22 | 1.16 | 2.37 |
| GDSG | 0.96 | 1.28 | 2.23 |
| GDQ | 0.85 | 1.17 | 2.02 |
| Common | 1.03 | 0.99 | 2.02 |
| GDLH | 0.78 | 1.20 | 1.98 |
| Experimental Varieties | | | |
| Low Phenolic | 1.42 | 1.35 | 2.78* |
| KY Tetraploid | 1.26 | 1.37 | 2.63* |
| KNARS | 1.24 | 1.23 | 2.47* |
| Freedom! MR | 1.01 | 1.13 | 2.15 |
| Mean | 1.14 | 1.25 | 2.39 |
| CV, % | 12.75 | 12.81 | 9.95 |
| LSD, 0.05 | 0.21 | 0.23 | 0.34 |
| * Not significantly different from the highest value in the column, based on the 0.05 LSD. | | | |

Table 7. Dry matter yields (tons/acre) of red clover varieties sown April 13, 2001 at Lexington, Kentucky.

| Variety | Total 2001 | Total 2002 | 2003 Harvests | | | Total 2003 | 3-yr Total |
|--|---------------|---------------|---------------|-------|--------|---------------|---------------|
| | | | May 27 | Jul 2 | Aug 13 | | |
| Commercial Varieties - Available for Farm Use | | | | | | | |
| Freedom! | 1.72 | 3.30 | 1.26 | 0.69 | 0.27 | 2.22 | 7.24* |
| Certified Kenland | 2.08 | 3.44 | 0.83 | 0.61 | 0.23 | 1.67 | 7.19* |
| Rojo Diablo | 2.11 | 2.91 | 0.27 | 0.21 | 0.13 | 0.61 | 5.62* |
| Red Gold Plus | 1.89 | 2.94 | 0.40 | 0.21 | 0.07 | 0.68 | 5.50 |
| RedlanGraze II | 1.50 | 2.86 | 0.40 | 0.26 | 0.13 | 0.79 | 5.15 |
| Sienna | 1.94 | 2.75 | 0.27 | 0.13 | 0.07 | 0.47 | 5.15 |
| Duration | 1.43 | 2.71 | 0.32 | 0.17 | 0.13 | 0.62 | 4.77 |
| Vesna | 0.79 | 2.20 | 0.03 | 0.00 | 0.00 | 0.03 | 3.02 |
| Experimental Varieties | | | | | | | |
| KNARS cycle2 | 1.52 | 3.19 | 1.02 | 0.74 | 0.26 | 2.03 | 6.74* |
| RC 9501 | 1.83 | 3.22 | 0.83 | 0.55 | 0.21 | 1.58 | 6.63* |
| KY Tetraploid | 1.59 | 3.25 | 0.97 | 0.48 | 0.23 | 1.68 | 6.52* |
| KVMRS cycle 1 | 1.77 | 2.91 | 0.74 | 0.64 | 0.24 | 1.62 | 6.30* |
| RC 9101 | 1.76 | 3.16 | 0.68 | 0.39 | 0.21 | 1.29 | 6.21* |
| RC 9601 | 1.24 | 2.87 | 0.77 | 0.42 | 0.21 | 1.41 | 5.52 |
| MR54 | 1.50 | 2.80 | 0.63 | 0.22 | 0.12 | 0.97 | 5.27 |
| RC 9803G | 1.42 | 2.69 | 0.59 | 0.24 | 0.11 | 0.94 | 5.04 |
| Narn | 1.54 | 2.70 | 0.25 | 0.08 | 0.08 | 0.40 | 4.65 |
| ZR 9906R | 1.31 | 2.23 | 0.58 | 0.22 | 0.11 | 0.91 | 4.44 |
| BY 394 | 1.57 | 2.52 | 0.05 | 0.02 | 0.01 | 0.08 | 4.17 |
| Mean | 1.58 | 2.83 | 0.54 | 0.31 | 0.14 | 1.00 | 5.41 |
| CV, % | 29.49 | 16.26 | 76.2 | 63.9 | 58.5 | 66.1 | 22.2 |
| LSD, 0.05 | 0.66 | 0.65 | 0.59 | 0.28 | 0.12 | 0.94 | 1.70 |

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

Table 8. Dry matter yields (tons/acre) of red clover varieties sown April 11, 2002, at Lexington, Kentucky.

| Variety | Total 2002 | 2003 Harvests | | | | Total 2003 | 2-yr Total |
|--|------------|---------------|-------|--------|--------|------------|------------|
| | | May 27 | Jul 2 | Aug 13 | Sep 18 | | |
| Commercial Varieties—Available for Farm Use | | | | | | | |
| Certified Kenland | 0.72 | 2.16 | 1.72 | 0.68 | 0.30 | 4.85 | 5.57* |
| Freedom! | 0.69 | 2.34 | 1.46 | 0.63 | 0.20 | 4.63 | 5.33* |
| Plus | 0.77 | 2.19 | 1.50 | 0.62 | 0.15 | 4.47 | 5.24* |
| Cinnamon | 0.74 | 2.16 | 1.41 | 0.51 | 0.18 | 4.26 | 5.00* |
| Solid | 0.76 | 2.30 | 1.48 | 0.39 | 0.07 | 4.23 | 4.99* |
| Acclaim | 0.89 | 2.21 | 1.33 | 0.39 | 0.10 | 4.04 | 4.93* |
| Starfire | 0.75 | 2.34 | 1.27 | 0.43 | 0.12 | 4.15 | 4.91* |
| RedlanGraze II | 0.77 | 2.16 | 1.38 | 0.48 | 0.10 | 4.12 | 4.89* |
| Duration | 0.61 | 2.30 | 1.43 | 0.42 | 0.14 | 4.29 | 4.89* |
| Belle | 0.64 | 2.31 | 1.21 | 0.24 | 0.04 | 3.81 | 4.44 |
| Royal Red | 0.87 | 1.11 | 1.42 | 0.63 | 0.19 | 3.34 | 4.22 |
| Red Start | 0.82 | 1.97 | 1.23 | 0.13 | 0.02 | 3.35 | 4.18 |
| Prima | 0.61 | 2.14 | 1.12 | 0.23 | 0.03 | 3.53 | 4.14 |
| Arlington | 0.72 | 1.88 | 1.20 | 0.15 | 0.03 | 3.26 | 3.98 |
| Cherokee | 0.66 | 1.91 | 1.02 | 0.08 | 0.00 | 3.02 | 3.68 |
| Experimental Varieties | | | | | | | |
| Freedom!MR | 0.75 | 2.30 | 1.46 | 0.70 | 0.21 | 4.68 | 5.42* |
| KNARS 2 | 0.75 | 2.11 | 1.54 | 0.61 | 0.15 | 4.41 | 5.16* |
| KY Tetraploid | 0.68 | 2.45 | 1.29 | 0.55 | 0.16 | 4.45 | 5.13* |
| KVMRS 1 | 0.60 | 2.13 | 1.54 | 0.54 | 0.19 | 4.40 | 5.00* |
| Low Phenolic | 0.74 | 2.16 | 1.32 | 0.59 | 0.12 | 4.19 | 4.93* |
| Mean | 0.73 | 2.13 | 1.37 | 0.45 | 0.12 | 4.08 | 4.80 |
| CV, % | 27.91 | 26.20 | 8.95 | 32.61 | 49.15 | 15.59 | 15.12 |
| LDS, 0.05 | 0.79 | 0.17 | 0.21 | 0.09 | 0.29 | 0.90 | 1.03 |

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

| Table 9. Dry matter yields (tons/acre) of red and white clover varieties sown April 15, 2002, at Lexington, Kentucky. | | | | | | | | |
|--|-------------------|----------------------|--------------|--------------|---------------|---------------|-------------------|-------------------|
| Variety | Total 2002 | 2003 Harvests | | | | | Total 2003 | 2-yr Total |
| | | Apr 22 | Jun 6 | Jul 7 | Aug 15 | Oct 21 | | |
| Commercial Varieties—Available for Farm Use | | | | | | | | |
| Certified Kenland | 2.34 | 1.92 | 0.97 | 1.40 | 1.39 | 1.06 | 6.74 | 9.09* |
| Freedom! | 2.31 | 1.86 | 0.85 | 1.34 | 1.48 | 1.14 | 6.67 | 8.98* |
| Regal | 2.06 | 1.15 | 1.08 | 1.19 | 0.95 | 0.79 | 5.15 | 7.22 |
| Crescendo | 1.74 | 1.18 | 1.04 | 1.10 | 0.87 | 0.86 | 5.04 | 6.78 |
| Ivory | 1.74 | 0.72 | 1.08 | 1.20 | 1.03 | 0.99 | 5.02 | 6.76 |
| Jumbo ladino | 1.60 | 0.77 | 1.04 | 1.09 | 0.99 | 1.00 | 4.90 | 6.49 |
| Common white | 2.21 | 0.34 | 1.05 | 1.28 | 1.35 | 0.77 | 4.79 | 7.00 |
| Kopu II | 1.67 | 0.88 | 0.94 | 1.11 | 0.92 | 0.93 | 4.77 | 6.45 |
| Cal ladino | 1.85 | 1.21 | 1.02 | 1.02 | 0.78 | 0.68 | 4.70 | 6.55 |
| Will ladino | 1.98 | 1.21 | 0.93 | 1.06 | 0.80 | 0.64 | 4.64 | 6.62 |
| Tillman II | 2.23 | 1.15 | 0.82 | 1.03 | 0.75 | 0.75 | 4.50 | 6.73 |
| Experimental Varieties | | | | | | | | |
| CW 9808 | 1.95 | 1.16 | 1.03 | 1.12 | 0.80 | 0.77 | 4.88 | 6.82 |
| CW 9502 | 1.97 | 1.14 | 0.83 | 1.11 | 0.79 | 0.80 | 4.67 | 6.64 |
| CW 9801 | 1.87 | 1.18 | 0.92 | 1.07 | 0.76 | 0.75 | 4.67 | 6.53 |
| CW 9701 | 1.66 | 1.12 | 0.98 | 1.07 | 0.68 | 0.77 | 4.61 | 6.26 |
| Mean | 1.95 | 1.13 | 0.97 | 1.15 | 0.95 | 0.85 | 5.05 | 7.00 |
| CV, % | 23.38 | 13.04 | 12.96 | 10.75 | 14.25 | 14.96 | 8.07 | 8.93 |
| LSD, 0.05 | 0.65 | 0.21 | 0.18 | 0.18 | 0.19 | 0.18 | 0.58 | 0.89 |

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

Table 10. Performance of red and white clover varieties across years and locations.

| | | Lexington | | | | | | | | | Quicksand | Princeton |
|--|----------------------------|-----------|----|----|-------------------|----|-----------------|----|------|------|-----------|-----------|
| | | 2001 | | | 2002 ¹ | | 2002 | | 2003 | 2003 | 2003 | |
| | | 01 | 02 | 03 | 02 ² | 03 | 02 ² | 03 | 03 | 03 | 03 | |
| Variety | Proprietor/KY Distributor | | | | | | | | | | | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | | |
| Advantage | AlliedSeed, L.L.C. | | | | | | | | | * | | |
| Barblanca | Barenbrug | | | | | | | | | | | |
| California ladino | Public | | | | | | * | | | | * | |
| Cardinal | Seed Research of Oregon | | | | | | | | | | | |
| Cinnamon Plus | FFR/Southern States | | | | | * | | | | | | |
| Colt | Seed Research of Oregon | | | | | | | | | | | |
| Common A | Public | | | | | | * | | | | | |
| Crescendo | Cal/West Seeds | | | | | | * | | | | | |
| Durana | Pennington | | | | | | | | | | | |
| Duration | Cisco Companies | | | | | | | | | | | |
| Freedom! | Barenbrug | * | * | * | * | * | * | * | * | | * | * |
| GDLH | Public | | | | | | | | | | | * |
| GDSG | Public | | | | | | | | | | | |
| GDQ | Public | | | | | | | | | | | * |
| Ivory | Cebeco International Seeds | | | | | | * | | | | | |
| Jumbo | Ampac Seed Co. | | | | | | | | | | | |
| Kenland, certified | KY Agric. Exp. Station | * | * | * | * | * | * | * | * | * | | * |
| Kopu II | Ampac Seed Co. | | | | | | | | | | | |
| Patriot | Pennington | | | | | | | | | | * | |
| Red Gold Plus | Turner Seed Co. | * | * | | | | | | | | * | |
| RedlanGraze II | Americas Alfalfa | * | * | | | | | | | | | |
| Regal Ladino | Public | | | | | | * | | | | * | |
| Rojo Diablo | Great Plains Research Co. | * | * | * | | | | | | | | |
| Royal Red | FFR Cooperative | | | | | | | | | | | |
| Sienna | | * | | | | | | | | | | |
| Solid | Improved Forage Inc. | | | | * | | | | | | | * |
| Tillman II | Caudill Seed Co. | | | | | | * | | | | | |
| Vesna | | | | | | | | | | | | |
| Will ladino | Allied Seed, L.L.C. | | | | | | * | | | | | |

Table 10. Performance of red and white clover varieties across years and locations.

| Variety | Proprietor/KY Distributor | Lexington | | | | | | | | | Quicksand | Princeton |
|-------------------------------|-------------------------------|-----------|----|----|-------------------|----|-----------------|----|------|----|-----------|-----------|
| | | 2001 | | | 2002 ¹ | | 2002 | | 2003 | | 2003 | 2003 |
| | | 01 | 02 | 03 | 02 ² | 03 | 02 ² | 03 | 03 | 03 | 03 | |
| Experimental Varieties | | | | | | | | | | | | |
| BY 394 | Brett-Young Seeds LTD. | * | | | | | | | | | | |
| CW 3001 | Cal/West Seeds | | | | | | | | | | | |
| CW 7000 | Cal/West Seeds | | | | | | | | * | | | |
| CW 9701 | Cal/West Seeds | | | | | | | | | | | |
| CW 9801 | Cal/West Seeds | | | | | | | | | | | |
| CW 9502 | Cal/West Seeds | | | | | | * | | | | | |
| EC 408 | Emerald Commodities, Inc. | | | | | | | | | | | |
| Freedom! MR | KY Agric. Exp. Station | | | | | | | | * | | | * |
| KNARS | KY Agric. Exp. Station | * | * | * | | | | | | * | | * |
| Ky low phenolic | KY Agric. Exp. Station | | | | | | | | | * | | * |
| Ky Tetraploid | KY Agric. Exp. Station | * | * | * | | | | | * | * | | * |
| KVMRS | KY Agric. Exp. Station | | | | | | | | | | | |
| KVMRS cycle 1 | KY Agric. Exp. Station | * | * | * | | | | | | * | | |
| MR54 | Forage Genetics International | * | * | | | | | | | * | | |
| Narn | Cebeco International | * | | | | | | | | | | |
| NIB 1195 | Barenbrug USA | | | | | | | | | | | |
| NIB 13693 | Barenbrug USA | | | | | | | | | | | |
| RC 9101 | Allied Seed, L.L.C. | * | * | * | | | | | | * | | |
| RC 9301 | FFR cooperative | | | | | | | | | * | | |
| RC 9501 | FFR cooperative | * | * | * | | | | | | * | | |
| RC 9601 | Allied Seed, L.L.C. | | * | | | | | | | * | | |
| RC 9803g | FFR cooperative | | | | | | | | | * | | |
| ULC 1715/86 | Barenbrug USA | | | | | | | | | | | |
| ZR 9906R | Americas Alfalfa | | | | | | | | | * | | |

¹ Establishment year.

² Harvest year.

Shaded boxes indicate the variety was not in the test.

Open boxes indicate the variety was in the test but yielded significantly less than the top variety in the test.

* Not significantly different from the top-ranked variety in the test.

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