



University of Kentucky  
UKnowledge

---

Agronomy Notes

Plant and Soil Sciences

---

3-1991

# 1990 Kentucky Winter Annual Legume Variety Test

L. M. Lauriault  
*University of Kentucky*

Norman L. Taylor  
*University of Kentucky*

Jimmy C. Henning  
*University of Kentucky*, [jhenning@uky.edu](mailto:jhenning@uky.edu)

W. T. Edmonson  
*University of Kentucky*

**Right click to open a feedback form in a new tab to let us know how this document benefits you.**

Follow this and additional works at: [https://uknowledge.uky.edu/pss\\_notes](https://uknowledge.uky.edu/pss_notes)

 Part of the [Agronomy and Crop Sciences Commons](#)

---

## Repository Citation

Lauriault, L. M.; Taylor, Norman L.; Henning, Jimmy C.; and Edmonson, W. T., "1990 Kentucky Winter Annual Legume Variety Test" (1991). *Agronomy Notes*. 96.  
[https://uknowledge.uky.edu/pss\\_notes/96](https://uknowledge.uky.edu/pss_notes/96)

This Report is brought to you for free and open access by the Plant and Soil Sciences at UKnowledge. It has been accepted for inclusion in Agronomy Notes by an authorized administrator of UKnowledge. For more information, please contact [UKnowledge@lsv.uky.edu](mailto:UKnowledge@lsv.uky.edu).

# AGRONOMY NOTES

Volume 24, No. 2

March 1991

## 1990 KENTUCKY WINTER ANNUAL LEGUME VARIETY TEST

L.M. Lauriault, N.L. Taylor, J.C. Henning, and W.T. Edmondson<sup>1</sup>

### Introduction

Cover crops are often used in Kentucky following the harvest of row crops such as tobacco, corn, and soybeans. Living cover crops can prevent erosion, reduce leaching of nutrients, and supply grazing, green manure, or a plant cover in which to no-till the following spring. Adding a winter annual legume to traditional small grain cover crops is a good management practice since it improves the quality of the grazed forage while reducing the nitrogen fertilizer requirement for the grazed crop or the manure crop. To benefit from the nitrogen-fixing abilities of the legume, be sure the seed is properly inoculated. The inoculants used for red clover are not effective for some of the annual clovers so special inoculant may have to be ordered. Several species of the clover genus, Trifolium, are

available for use as winter annual legumes. The planting time for these crops, August 1-September 15, is critical to insure that the crop has time to establish winter-hardiness. While seeding rates will vary with species, other establishment and fertility recommendations are similar to those for red clover.

### Description of the test

The purpose of this study was to compare, under Kentucky conditions, the dry matter yield of 14 annual clovers, a perennial red clover, and an annual Medicago. Table 1 lists the clover types, varieties, and sources of the winter annuals included in this test. Test plots were seeded at Lexington, Kentucky on September 5, 1989, into a prepared seedbed. Plots were harvested with a flail type forage plot harvester and the whole plot was collected and dried at 65°F.

Temperatures at Lexington average 55°F and precipitation averages about 46 inches. The

<sup>1</sup> Research specialist, Professor, Extension specialist, and Research technician

weather during the growing period for this test (September 1989 to May 1990) deviated somewhat from the long term averages for the location. Fall and spring were cooler than normal with normal to below normal precipitation while winter was warmer than normal with near normal precipitation (Table 2).

### Results

Forage yields on May 16, 1990 differed significantly among the clover species tested (Table 3). Crimson clover experimental lines and cultivars were among the highest and lowest yielding entries, reflecting large differences in stands. Button clover was also in the top yielding group. Percent stand, an indication of ground cover that reflects the variety's seedling vigor and ability to compete with weeds such as chick-

weed and henbit, also varied significantly (Table 3). The LSD (Least Significant Difference), shown in the table, is a statistic that is used to determine whether the difference between two varieties is real or due to chance.

Proper management, beginning with land preparation and continuing throughout the life of the stand, is necessary for even the highest yielding variety to be productive. Table 4 is a listing of other College of Agriculture publications related to the establishment, management, and harvesting of legumes. These resources, which are available through the county extension agent's office, should be consulted to maximize the productivity of the winter annual legume, whether used solely as a cover crop or as part of a winter forage program.

**Table 1 Clover types, varieties, and sources of winter annual legumes.**

Clover type	Variety	Source
Arrowleaf	Amclo	GA Agric. Experiment Sta.
Berseem	Bigbee	MS Agric. Experiment Sta.
Button	common	KY Agric. Experiment Sta.
Crimson	Chief	MS Agric. Experiment Sta.
Crimson	Dixie	MS Agric. Experiment Sta.
Crimson	KY Experimental	KY Agric. Experiment Sta.
Crimson	MS Exp 1-4	MS Agric. Experiment Sta.
Crimson	Tibbee	MS Agric. Experiment Sta.
Mike's	KY Experimental	KY Agric. Experiment Sta.
Red	Kenstar	KY Agric. Experiment Sta.
Rose	Kondinin	California from Australia
Rose	Wilton	California from Australia
Subterranean	Larrisa	Kaufman Seeds, Ashtown, AR
Subterranean	Mt. Barker	Kaufman Seeds, Ashtown, AR
Subterranean	Tallarook	Kaufman Seeds, Ashtown, AR
Subterranean	Woogenellup	Kaufman Seeds, Ashtown, AR

Table 2. Temperature and rainfall at Lexington, Kentucky during the winter annual legume growing period.

Year	Month	Temperature		Rainfall	
		°F	Dep. <sup>1</sup>	Inches	Dep. <sup>1</sup>
1989	Sept.	66.9	-1.8	4.12	0.84
	Oct.	56.3	-0.5	2.90	0.64
	Nov.	44.8	0.1	2.89	-0.41
	Dec.	22.8	-13.3	1.80	-1.98
1990	Jan.	41.3	9.9	4.48	0.91
	Feb.	43.1	8.5	3.73	0.47
	Mar.	47.9	4.0	2.18	-2.65
	Apr.	52.3	-2.7	2.46	-1.55
	May	60.9	-3.3	6.52	2.29

<sup>1</sup> Departure from normal.

Table 3. Percent stand and dry matter yield of 20 varieties of winter annual legumes seeded at Lexington, Kentucky on September 5, 1989 and harvested on May 16, 1990.

Clover type	Variety	Percent stand		Yield
		11-6-89	5-16-90	Ton/ac
Button <sup>1</sup>	common	36.25 <sup>i 2</sup>	97.00 <sup>a</sup>	2.97 <sup>a</sup>
Crimson	Chief	82.50 <sup>b</sup>	87.50 <sup>cd</sup>	2.94 <sup>a</sup>
Crimson	KY Experimental	67.50 <sup>c</sup>	88.63 <sup>cd</sup>	2.54 <sup>b</sup>
Mike's	KY Experimental	42.50 <sup>f</sup>	92.00 <sup>bc</sup>	2.29 <sup>bc</sup>
Crimson	Dixie	90.00 <sup>a</sup>	68.75 <sup>f</sup>	2.16 <sup>cd</sup>
Rose	Kondinin	38.75 <sup>g-13</sup>	68.75 <sup>f</sup>	1.87 <sup>d</sup>
Subterranean	Tallarook	40.00 <sup>f-h</sup>	94.75 <sup>ab</sup>	1.51 <sup>e</sup>
Rose	Wilton	32.50 <sup>i</sup>	68.75 <sup>f</sup>	1.49 <sup>e</sup>
Crimson	Tibbee	82.50 <sup>b</sup>	71.25 <sup>f</sup>	1.45 <sup>e</sup>
Red	Kenstar	48.75 <sup>e</sup>	47.50 <sup>g</sup>	1.30 <sup>e</sup>
Subterranean	Mt. Barker	50.00 <sup>de</sup>	85.00 <sup>de</sup>	0.84 <sup>f</sup>
Berseem	Bigbee	47.50 <sup>e</sup>	48.75 <sup>g</sup>	0.66 <sup>f</sup>
Arrowleaf	Amclo	37.50 <sup>hi</sup>	28.75 <sup>h</sup>	0.60 <sup>f</sup>
Subterranean	Larrisa	41.25 <sup>fg</sup>	70.00 <sup>f</sup>	0.55 <sup>f</sup>
Subterranean	Woogenellup	46.25 <sup>e</sup>	82.50 <sup>e</sup>	0.15 <sup>g</sup>
Crimson	MS Exp 1-4	52.50 <sup>d</sup>	12.50 <sup>i</sup>	0.12 <sup>g</sup>

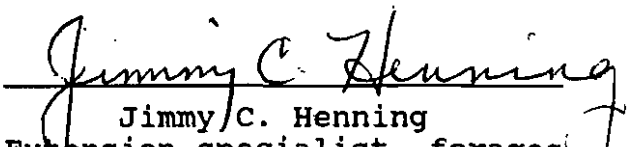
<sup>1</sup> All varieties are in the genus Trifolium except button clover, which is a Medicago.

<sup>2</sup> Means within the any column with the same letter(s) are not significantly different based on the 5% LSD.

<sup>3</sup> Includes g, h, and i.

Table 4. University of Kentucky agricultural extension publications related to winter annual legume management.

Publication	Title
AGR-63	Small grain pastures
AGR-64	Establishing forage crops
	Seed tags: What they reveal
AGR-90	Inoculation of forage legumes
AGR-18	Grain and forage crop guide for Kentucky
AGR-1	Lime and fertilizer recommendations
AGR-57	Soil testing: What it is and what it does
AGR-16	Taking soil test samples
AGR-19	Liming acid soils
AGR-92	Sampling plant tissue for nutrient analysis
AGR-6	Chemical control of weeds in Kentucky farm crops
PPA-9	Collecting plant specimens for disease diagnosis
ASC-50	Grazing systems
AGR-85	Efficient pasture systems
ID-74	Planning fencing systems for intensive grazing management
ID-5	A beef forage system
ID-76	Creep grazing for beef calves
ASC-56	Producing slaughter beef with grain on pasture
ASC-34	Nutritional requirements for dairy animals and composition of feedstuffs
ASC-57	Forage-related cattle disorders

  
Jimmy C. Henning  
Extension specialist, forages