

PUBLICATIONS

1990

PERENNIAL CLOVER PRODUCTION AT OVERTON, TEXAS - 1987-89

C. L. Gilbert, G. R. Smith, and I. J. Pemberton

SUMMARY

Red and white clover varieties were evaluated for forage production and adaptation at Overton in 1987-89. Test plots were established in the fall of 1987 and 1988. In 1987-88, forage production ranged from 2705 lbs DM/ac for Fl-5 red clover to 1374 lbs DM/ac for La. S-1 white clover. Forage production ranged from 5169 lbs DM/ac to 2436 lbs DM/ac in 1988-89 for Kenstar red clover and Haifa white clover, respectively. No red or white clover cultivars survived their first summer as perennials.

INTRODUCTION

White and red clover are perennial legumes with potential for early summer forage production. While classified as perennials, these clovers rarely survive through the summer on sandy, upland soils in East Texas. Summer survival of these perennial clovers is much more reliable on clay and clay loam bottomland soils. When used in conjunction with annual clovers, perennial clovers have the potential to extend clover forage production. The objectives of these experiments were to evaluate perennial clovers for seasonal forage production, adaptation, and summer survival.

PROCEDURES

Eleven and fourteen entries of perennial clover were drilled into a Coastal bermudagrass sod on October 23, 1987 and October 27, 1988, respectively. The plot areas were fertilized according to soil test. Fertilizer applied prior to planting in 1987 was 428 lbs/ac of 0-20-20 and 1 lb/ac boron, and in 1988 was 400 lbs/ac of 0-20-20 and 1 lb/ac of boron. Soil pH was 6.4 in 1987 and 7.0 in 1988. A small-plot drill, with six double disk openers spaced nine inches apart, was used to place the seed one-half inch deep.

Seeding rate for the clovers was 14 lbs/ac for red clover and 6 lbs/ac for the white clover. Rhizobium inoculant type B, supplied by Nitragin Co., was applied at a rate of 1.6 oz. per pound of seed using Pelgel solution as an adhesive to stick the inoculant to the seed.

Each experiment was arranged in a randomized complete block design with four replications. The plots were harvested with a rotary mower to 2.25 inches.

At each harvest, a subsample was weighed, dried at 60 C for 48 hours, then weighed again to calculate dry matter yield per acre.

RESULTS

In 1987-88, Fl-5 red clover produced 2705 lbs DM/ac (Table 1). Kenland and Kenstar red were also very productive with 2535 lbs DM/ac and 2458 lbs DM/ac, respectively. All the ladino type white clovers were productive in 1988. La. S-1 white clover produced only 1374 lbs DM/ac, but is well adapted to East Texas and reseeds well. However, the forage production potential of La. S-1 is not as high as ladino white clover or red clover. Only two harvests were taken in 1987-88 due to lack of moisture in both April and May. In 1988-89, Kenstar and Kenland red clovers were the most productive with 5169 and 4966 lbs DM/ac, respectively (Table 2). SRVR, C/W 600, and Regal were the most productive white clovers in 1988-89. Haifa white clover produced less than the other white clovers available. No varieties of red or white clover survived after the first summer as perennials. In both years, the red clovers were the most productive with the Florida experimentals comparable with Kenstar and Kenland red.

TABLE 1. SEASONAL FORAGE PRODUCTION OF SOD-SEEDED PERENNIAL CLOVERS AT OVERTON, TEXAS - 1987-88

| Variety | Harvest Date | | Total |
|---------------------------------|--------------|-----------------|-------|
| | 4-4-88 | 5-2-88 | |
| -----lbs DM/ac----- | | | |
| Fl.-5 Red | 1408 | 1297 | 2705 |
| Kenland Red | 1021 | 1514 | 2535 |
| Kenstar Red | 986 | 1472 | 2458 |
| C/W 600 White ¹ | 804 | 1627 | 2431 |
| Regal White ¹ | 718 | 1556 | 2274 |
| Cal. Ladino White ¹ | 763 | 1491 | 2254 |
| Osceola White ¹ | 772 | 1454 | 2226 |
| Brown Loam 2 White ¹ | 686 | 1377 | 2063 |
| Fl. XPL-3 White ¹ | 668 | 1356 | 2024 |
| Haifa White ² | 477 | 1001 | 1478 |
| La. S-1 White ² | 393 | 981 | 1374 |
| C.V. 23.27% | | LSD (.05) = 725 | |

¹Ladino type white clover

²Intermediate type white clover

TABLE 2. SEASONAL FORAGE PRODUCTION OF SOD-SEEDED PERENNIAL CLOVERS AT OVERTON, TX, 1988-89

| Variety | Harvest Date | | | Total |
|---------------------------------|--------------|---------|------------------|-------|
| | 4-7-89 | 5-11-89 | 6-21-89 | |
| -----lbs DM/ac----- | | | | |
| Kenstar Red | 803 | 2474 | 1892 | 5169 |
| Kenland Red | 781 | 2387 | 1798 | 4966 |
| FL-6-EF Red | 882 | 2006 | 2035 | 4923 |
| FL-5 Red | 915 | 2074 | 1799 | 4788 |
| FLMTC Red | 871 | 2162 | 1697 | 4730 |
| SRVR White ¹ | 649 | 1716 | 1763 | 4128 |
| C/W 600 White ¹ | 589 | 1662 | 1784 | 4035 |
| Regal White ¹ | 592 | 1706 | 1642 | 3940 |
| Brown Loam 2 White ¹ | 687 | 1567 | 1609 | 3863 |
| Osceola White ¹ | 630 | 1526 | 1692 | 3848 |
| FL-XPL-3 White ¹ | 629 | 1681 | 1511 | 3821 |
| Cal. Ladino White ¹ | 548 | 1465 | 1597 | 3610 |
| La. S-1 White ² | 599 | 1695 | 1215 | 3509 |
| Haifa White ² | 310 | 1216 | 910 | 2436 |
| C.V. = 9.4% | | | LSD (0.05) = 556 | |

¹Ladino type white clover

²Intermediate type white clover