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SEASONAL PRODUCTION OF EXPERIMENTAL ROSE CLOVER  
AT SIX TEXAS LOCATIONS

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SUMMARY

Seasonal forage production of rose clover was evaluated at Overton, Dallas, College Station, Yoakum, Brenham, and Beeville in 1985-86. Total production, averaged over four locations, ranged from 4022 to 3050 lbs DM/ac for nine experimental rose clover lines from the Overton clover breeding program, while rose clover check varieties ranged from 3129 to 1793 lbs DM/ac. Five experimental lines were identified with production characteristics superior to check varieties and other experimental lines. Rose clover was shown to be well-adapted to a range of Texas geographic locations in 1985-86.

INTRODUCTION

Rose clover (Trifolium hirtum All.) is a winter annual legume with potential for use in Texas forage systems. Attributes of rose clover include a wide soil type adaptation, moderate drought tolerance and good reseeding characteristics. This species is not adapted to wet soil conditions and current commercial varieties are early maturing for most Texas locations. Experimental rose clover lines from the clover breeding program at Overton were evaluated for seasonal forage production at six Texas locations in 1985-86. The objectives were: 1) enhance information concerning adaptation of rose clover to Texas environments and 2) identify experimental rose clover lines suitable for germplasm or variety release.

PROCEDURE

Experimental lines and check varieties of rose clover were established in fall 1985 at Overton, Dallas, College Station, Yoakum, Brenham and Beeville. Planting rate was 20 lbs/ac. Specific planting information for each site is shown in Table 1. Plots were harvested four times at Yoakum, three times at Overton and Brenham, twice at College Station and Beeville and once at Dallas. At each harvest,

forage samples were weighed, oven-dried and weighed again. Percent dry matter of the samples was used to calculate dry matter forage yield per acre.

### RESULTS

Acceptable stands were obtained at all sites. Plots were harvested beginning in January at Yoakum and extending into May at Overton and Brenham. Seasonal production at each site is shown in Tables 2-7.

'Kondinin' and 'Hykon' are early maturing varieties, and are currently the only named varieties of rose clover available as commercial seed. 'Wilton' rose clover has not been produced as certified seed since 1967. Kondinin and Hykon early season yield was generally high, at some sites slightly exceeding first harvest yields of the experimental lines. At sites with multiple harvests, mid and late season production of Kondinin and Hykon was far below the yield of the experimental lines. Wilton was intermediate in total forage production between the best experimental lines and the early varieties. Drought conditions at Beeville limited rose clover production to one early harvest and one late hand-clipped harvest. Kondinin and Hykon were winter-killed at Dallas in early December. The two experimental rose clover lines planted at Dallas were limited to one harvest by drought conditions.

Brenham, Overton, College Station, and Yoakum collected multiple harvest (regrowth) data on nine rose clover experimental lines and three check varieties. Total season production from these four locations is summarized in Table 8. Based on performance averaged over these four environments, the lines RH-18, RD-3, RD-17, RF-20 and RM-16 have a slight production advantage over the other four experimental lines. The late maturing experimental line RD-3 produced 28% more total forage than Wilton, the best check variety, averaged across four locations. RD-3 produced twice as much forage as the early varieties Kondinin and Hykon, averaged across four locations. Early season production of the best experimental lines was equal or slightly less than Kondinin or Hykon. Based on the 1985-86 season, rose clover is well-adapted across a broad range of geographic

locations in Texas. The experimental rose clover lines from the Overton clover breeding program were more productive than the check varieties at all six locations.

TABLE 1. PLANTING INFORMATION BY LOCATION

Location	Planting date	Plot size (ft.)	No. of replications	Soil type
Overton <sup>1</sup>	10-15-85	5x10	4	Sawtown fsl
Brenham <sup>2</sup>	10-10-85	5x15	4	Houston bc
Yoakum <sup>2</sup>	11-1-85	6x20	4	Hallettsville fsl
College Station <sup>2</sup>	10-11-85	5x20	3	Ships c
Beeville <sup>3</sup>	10-25-85	5x20	6	Parrita scl
Dallas <sup>4</sup>	10-14-85	5x16	4	Houston bc

<sup>1</sup> 10 experimental entries plus Kondinin, Hykon and Wilton checks

<sup>2</sup> 9 experimental entries plus Kondinin, Hykon and Wilton checks

<sup>3</sup> 9 experimental entries plus Kondinin and Hykon checks

<sup>4</sup> 2 experimental entries plus Kondinin and Hykon checks

TABLE 2. SEASONAL FORAGE PRODUCTION OF SOD-SEEDED ROSE CLOVER AT OVERTON, TX, 1985-86

Variety	Harvest Date			Total
	3-13-86	4-7-86	5-13-86	
	-----lbs DM/ac-----			
RH-18	693	1908	1503	4104
RD-3	668	2009	1260	3937
RH-7	561	1891	1479	3931
RD-17	652	1931	1191	3774
RM-13	648	1890	1230	3768
RF-20	765	1827	1081	3673
RM-16	648	1749	1245	3642
Wilton	628	1440	1524	3592
RR-12	619	1413	1532	3564
RO-15	676	1699	1136	3511
RJ-3	622	1656	1220	3498
Kondinin	935	311	128	1374
Hykon	788	334	78	1200
C.V. = 7.9%			LSD (0.05) = 383	

TABLE 3. SEASONAL FORAGE PRODUCTION OF ROSE CLOVER AT BRENHAM, TEXAS, 1985-86

Variety	Harvest date			Total
	2-20-86	3-26-86	5-13-86	
-----lbs DM/ac-----				
RD-3	1948	1927	1908	5783
RH-18	1893	1756	1969	5618
RM-16	2054	1577	1887	5518
RD-17	2052	1842	1480	5374
RF-20	1933	1908	1525	5366
RJ-3	2053	1785	1493	5331
RR-12	1799	1361	2140	5300
RO-15	1820	1930	1521	5271
RH-7	1664	1887	1598	5149
Wilton	1576	1565	1750	4891
Hykon	2094	451	0	2545
Kondinin	1774	329	0	2103
C.V. = 8.8%			LSD (0.05) = 576.6	

TABLE 4. SEASONAL FORAGE PRODUCTION OF ROSE CLOVER AT YOAKUM, TX,  
1985-86

Variety	Harvest Date				Total
	1-24-86	2-25-86	3-25-86	5-1-86	
	-----lbs DM/ac-----				
RD-17	118	582	1527	485	2712
RD-3	145	427	1393	503	2468
RF-20	132	468	1229	555	2384
Hykon	114	886	1053	273	2326
RM-16	119	460	1156	534	2269
RH-18	133	451	982	533	2099
RO-15	100	417	1141	417	2075
RJ-3	142	405	993	459	1999
Kondinin	134	927	730	172	1963
Wilton	107	352	727	449	1635
RH-7	128	471	711	302	1612
RR-12	121	482	500	341	1444
C.V. = 18.7				LSD (0.05) = 560	



TABLE 5. SEASONAL FORAGE PRODUCTION OF ROSE CLOVER AT COLLEGE STATION, TX, 1985-86

Variety	Harvest Date		Total
	3-5-86	4-4-86	
-----lbs DM/ac-----			
RH-18	1503	2426	3929
RD-3	1551	2352	3903
RM-16	1570	2247	3817
RF-20	1630	2172	3802
RD-17	1018	2642	3660
RO-15	1151	2447	3598
RJ-3	1749	1756	3505
RH-7	1299	1814	3113
Wilton	698	1703	2401
RR-12	577	1317	1894
Kondinin	987	745	1732
Hykon	927	625	1552
C.V. = 21.4		LSD (0.05) = 1144	

TABLE 6. FORAGE PRODUCTION OF ROSE CLOVER AT BEEVILLE, TX, 1985-86

Variety	Harvest date		Total
	2-18-86	5-2-86	
-----lbs DM/ac-----			
RH-18	1512	3813	5325
RM-13	1427	2765	4192
RO-15	1381	2390	3771
RM-16	1380	2399	3779
RJ-3	1374	2426	3800
RD-3	1322	3369	4691
RF-20	1299	2883	4182
RD-17	1271	2718	3989
RR-12	999	3374	4373
RH-7	878	2882	3760
Kondinin	2298	2395	4693
Hykon	1849	1774	3623
C.V. = 26.2%		LSD (0.05) = 1800	

TABLE 7. FORAGE PRODUCTION OF ROSE CLOVER AT DALLAS, TX, 1985-86

Variety	Harvest date
	4-29-86
lbs DM/ac	
RD-20	1261
RD-3	896
Kondinin	0 <sup>1</sup>
Hykon	0 <sup>1</sup>

<sup>1</sup>Winter-killed early December

TABLE 8. PERFORMANCE OF ROSE CLOVER AT FOUR TEXAS LOCATIONS IN 1985-86

Line	Location				Average
	Overton	Brenham	Yoakum	College Station	
	-----lbs DM/ac-----				
RH-18	4104	5618	2099	3929	3937
RD-3	3937	5783	2468	3903	4022
RH-7	3931	5149	1612	3113	3451
RD-17	3774	5374	2712	3660	3880
RF-20	3673	5366	2384	3802	3806
RM-16	3642	5518	2269	3817	3811
RR-12	3564	5300	1444	1894	3050
RO-15	3511	5271	2075	3598	3613
RJ-3	3498	5331	1999	3505	3583
Kondinin	1374	2103	1963	1732	1793
Hykon	1200	2545	2326	1552	1905
Wilton	3592	4891	1635	2401	3129
LSD (0.05)	383	576	560	1144	
C.V. %	7.9	8.8	18.7	21.4	