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TAM 90 ANNUAL RYEGRASS

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Background. TAM 90 is a new variety of Italian annual ryegrass developed by the Texas Agricultural Experiment Station. TAM 90 was developed for improved forage yield potential and winterhardiness. It is a robust diploid annual ryegrass with wide leaves that makes it look like some tetraploids. TAM 90 was selected from a polycross involving three parents, which were 'Gulf', 'Marshall', and a breeding line TX-R-78-2. An early generation was grown on the High Plains at Amarillo for improved winterhardiness.

Research Findings. TAM 90 has been an outstanding forage producing line in clipping tests for the past several years at Overton and the Research Station at Angleton. Data comparing TAM 90 with Gulf, Marshall, Tetragold (a popular tetraploid blend), Jackson, and Surrey (two newly released diploid varieties) are presented. At Overton (Table 1) TAM 90 was superior to Gulf for forage yield and similar to Marshall, Jackson, Surrey, and Tetragold. Over the 3-year period, TAM 90 produced the highest mean annual yield of 8756 lb of forage per acre. Compared to other commercially grown varieties, TAM 90 also produced higher forage yields at Angleton (Table 2).

Animal Performance: TAM 90 was compared with Gulf in 1989-90 in a replicated pasture grazing study at Overton. Seed was drilled into a bermudagrass sod on October 18, at a seeding rate of 46 lb/ac. The major difference in varieties was in stocking rate and winterhardiness. The Gulf pastures had to be partially reseeded in mid-December due to winterkill. TAM 90 produced sufficient forage for grazing by February 2, while Gulf was not ready for grazing until February 12. The grazing study was terminated on June 4 when both varieties were no longer producing forage. TAM 90 was able to maintain 4.36 five hundred lb calves/ac compared to 3.74 calves/ac for Gulf during the test (Table 3). This difference resulted in significantly greater gains/ac for TAM 90 (796 lb/ac compared to only 655 lb/ac for Gulf). This was an increase of 141 lb of beef/ac for TAM 90 compared to Gulf. The ability of TAM 90 to produce more forage/ac allowed it to maintain a higher stocking rate throughout the study. These results indicate the higher forage yields demonstrated by TAM 90 in clipping tests were also apparent in a pasture environment.

Application. TAM 90 is a new variety which has very good forage yield potential in most of East Texas. It is recommended in all areas of Texas that Gulf ryegrass was grown. It can also be grown further north near the Oklahoma border due to increased winterhardiness.

Table 1. Total season forage yield over 3 years at Overton, Texas

| Variety | Year | | | 3 Yr. Mean |
|-----------------|------------------------------|---------|---------|------------|
| | 1987-88 | 1988-89 | 1989-90 | |
| | -----dry matter lb/acre----- | | | |
| TAM 90 | 14018 | 5598 | 6651 | 8756 |
| Gulf | 10812 | 5653 | 5833 | 7433 |
| Marshall | 13899 | 6728 | 5623 | 8750 |
| Jackson | 12996 | 6052 | 6425 | 8491 |
| Surrey | 12965 | 6024 | 6683 | 8557 |
| Tetragold | 13591 | 6019 | 5226 | 8278 |
| LSD (10% level) | 1799 | 975 | 1000 | |

Table 2. Total season forage yield over 3 years at Angleton, Texas

| Variety | Year | | | 3 Yr. Mean |
|----------------|----------------------------|---------|---------|------------|
| | 1987-88 | 1988-89 | 1989-90 | |
| | -----dry matter lb/ac----- | | | |
| TAM 90 | 8224 | 5596 | 4529 | 6116 |
| Gulf | 6690 | 5582 | 4390 | 5554 |
| Marshall | 7947 | 4422 | 4128 | 5499 |
| Jackson | 7305 | 5322 | 4678 | 5768 |
| Surrey | 7444 | 5467 | 4719 | 5877 |
| LSD (5% level) | 751 | 504 | 679 | |

Table 3. Animal performance on TAM 90 versus Gulf ryegrass at Overton, Texas in 1989-90

| Variety | ADG lbs | Days on test | Gain per calf | Stocking rate (500 lb calf) | Gain per acre |
|---------|------------|-----------------|------------------|--------------------------------|------------------|
| TAM 90 | 1.50 | 122 | 183 | 4.36* | 796** |
| Gulf | 1.56 | 112 | 175 | 3.74 | 655 |

*Stocking rates were calculated to be equivalent to 500 lb Brahman calves.

**Gains were actual pounds gain per ac for ryegrass grazing season.

Animal gains were determined on two replications or four 3 acre paddocks.