Table 1. Yields of Tifquick bahia grass, Coastcross II bermudagrass, and Tifton-85 bermudagrass when harvested every 10, 20 or 30 days (average 3 yrs).

|  |  |
| --- | --- |
|  | Harvest interval |
| Foragespecies | 10 day | 20 day | 30 day |
| -------------- Kg/ha --------------- |
| Tifquick | 9463 | 13919 | 15421 |
| CC II | 6577 | 14131 | 16492 |
| Tifton 85 | 7329 | 17437 | 21439 |
| LSD (0.05) | 915 | 1152 | 1056 |

Table 2 Proportional distribution of growth of Tifquick bahiagrass, Coastcross II bermudagrass, and Tifton-85 bermudagrass in Wrens when harvested every 10, 20, or 30 days.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Tifquick | Coastcross II bermuda | Tifton 85 bermuda |
|  | 10 day | 20 day | 30 day | 10 day | 20 day | 30 day | 10 day | 20 day | 30 day |
| June | 0.20 | 0.23 | 0.26 | 0.17 | 0.24 | 0.28 | 0.14 | 0.22 | 0.23 |
| July | 0.31 | 0.29 | 0.25 | 0.33 | 0.25 | 0.30 | 0.37 | 0.29 | 0.30 |
| August  | 0.29 | 0.29 | 0.31 | 0.30 | 0.29 | 0.32 | 0.31 | 0.31 | 0.30 |
| Sept. | 0.19 | 0.20 | 0.22 | 0.19 | 0.21 | 0.19 | 0.17 | 0.17 | 0.17 |

Table 3. Average MJ metabolizable energy in Tifquick bahiagrass, Coastcross II bermudagrass, and Tifton-85 bermudagrass in Wrens when harvested every 10, 20, or 30 days.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 10 day | 20 day | 30 day | 10 day | 20 day | 30 day |
|  | ME (MJ/kg) | ME yield (GJ/ha) |
| Tifquick | 7.76 | 7.73 | 7.73 | 73.4 | 107.6 | 119.2 |
| CC II | 9.73 | 8.36 | 8.29 | 63.9 | 118.1 | 136.7 |
| Tifton 85 | 9.53 | 8.39 | 8.29 | 69.8 | 146.3 | 177.7 |
| LSD (0.05) | 0.31 | 0.30 | 0.30 | ns | 9.6 | 12.3 |

Table 4. Cool season annual yields of forages overseeded into Tifton-85 bermudagrass on pasture-based dairies (mean of 3 years).

|  |  |
| --- | --- |
| Species | Yield (lbs/A) |
| Annual ryegrass | 9153 |
| Cereal Rye | 7942 |
| Oats | 6285 |
| Wheat | 6465 |
| LSD (0.05) | 895 |

Table 5. Proportional distribution of growth of winter annual forages when overseeded into Tifton-85 bermudagrass on pasture-basaed dairies (mean of 3 years).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Annual ryegrass | Cereal rye | Oats | Wheat |
| Nov | 0.10 | 0.19 | 0.24 | 0.05 |
| Dec | 0.16 | 0.28 | 0.14 | 0.06 |
| Feb | 0.08 | 0.20 | 0.13 | 0.03 |
| March | 0.34 | 0.23 | 0.29 | 0.80 |
| April | 0.18 | 0.06 | 0.13 | 0.06 |
| May | 0.13 | 0.04 | 0.07 | 0.00 |

Table 6. Metabolizable energy in winter annual forages when overseeded into Tifton-85 bermudagrass on pasture-based dairies (mean of 3 years).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Month | Annual Ryegrass | Cereal Rye | Oats | Wheat | Annual Ryegrass | Cereal Rye | Oats | Wheat |
|  | ME (MJ/kg) | ME yield (GJ/ha) |
| Nov | 10.62 | 10.85 | 10.23 | 11.30 | 9.7 | 16.4 | 15.4 | 3.7 |
| Dec | 10.02 | 10.14 | 10.83 | 10.55 | 14.7 | 22.5 | 9.5 | 2.3 |
| Feb | 10.57 | 11.14 | 11.43 | 10.87 | 7.7 | 17.7 | 9.3 | 2.1 |
| March | 10.27 | 8.49 | 10.46 | 9.48 | 32.0 | 15.5 | 19.0 | 49.0 |
| April | 9.24 | 9.66 | 9.49 | 8.85 | 15.2 | 4.6 | 7.8 | 3.4 |
| May | 8.39 | 8.62 | 8.58 | -- | 10.0 | 2.7 | 3.8 | -- |

Table 7. Steer performance when grazing a monoculture of annual ryegrass, a 50/50 mixture of cereal rye and annual ryegrass planted in alternating rows, or a 50/50 mixture of cereal rye and annual ryegrass when grown as monocultures within the pasture.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | Forage | Initial wt | End wt | Gain/hd | Grazing d | ADG | Gain/ha |
|  |  | ------------ kg ------------ | Days/ha | ------ kg ------ |
| 2011 | Ryegrass | 276 | 432 | 155 | 546 | 1.45 | 791 |
|   | Mixture/rows | 275 | 418 | 144 | 593 | 1.36 | 806 |
|  | Mixture/monoculture | 278 | 427 | 149 | 580 | 1.41 | 817 |
|  | LSD (0.05) | ns | ns | ns | ns | ns | ns |
|  |  |  |  |  |  |  |  |
| 2012 | Ryegrass | 262 | 434 | 172 | 694 | 1.32 | 916 |
|  | Mixture/rows | 264 | 378 | 114 | 545 | 0.95 | 517 |
|  | Mixture/monoculture | 262 | 380 | 118 | 615 | 0.95 | 584 |
|  | LSD (0.05) | ns | 30 | 34 | 30 | 0.27 | 272 |

These data indicate that farmer experience was better at predicting animal performance than our experimental methods. More importantly, this research demonstrates the absolute necessity in conducting grazing experiments to test forage systems and that mathematical modeling of forage systems to predict maximum animal productivity does not, at this time, provide reliable estimates of on-farm performance.



Figure 1. Population trends of dairy cows on pasture vs. total cow numbers in Georgia. **Note**: Pasture-based numbers for 2011 are based upon current permit applications for pasture-based dairy operations.