

Sand Mountain Elite Heifer Development Program

M. Landon Marks¹, M. Kent Stanford¹, M. Kimberly Mullenix², Soren P. Rodning²
¹Alabama Cooperative Extension System, ²Department of Animal Sciences, Auburn University
mlm0013@auburn.edu

Educational Objective

The objective of this project is to develop a land-grant university-based demonstration program to educate beef cattle producers on the concepts of developing heifers from the yearling phase to conception on cool-season annual and perennial forages. The program is designed to teach cattle producers proper heifer development techniques utilizing forages and expose them to performance management and measurement in order to make better heifer selection decisions.

Methods

North Alabama beef producers nominate weaned heifer calves from Fall and early winter calving herds in November each year. Heifers are screened for structural correctness and overall quality by Extension personnel prior to delivery at the Sand Mountain Research and Extension Center in January. All heifers are properly preconditioned for a minimum of 45 days before delivery.

Heifers are developed to reach 65% of their mature weight by breeding in early April. Body weights and hip heights are measured monthly and used to adjust nutrition levels and monitor progress.

After a pre-breeding exam including pelvic measurements and reproductive tract scores, heifers are synchronized for estrus using Select-Synch plus CIDR® AI protocol and bred on visual detection of heat to a low birth weight EPD bull. Heifers not visually detected in heat are bred at 60 hours post CIDR® removal and GnRH injection. Ten days post-breeding, a low birth weight EPD cleanup bull is placed in the pasture with the heifers until early June. Heifers are pregnancy checked and sent home in mid- to late- June, which is approximately 165 days after delivery.

Forage Establishment

Fifty acres is available for forage establishment. In October, the 2 acre paddocks are drilled for cool-season annual forage establishment. Over the history of the project different cool-season annual forage types and varieties have been used to include: Rye, Ryegrass, Wheat, and Oats with brassicas and Crimson Clover added. There are 2 perennial Novel Endophyte Tall Fescue Paddocks.

Forage height is measured daily with a forage stick and heifers rotated to a new paddock when remaining forage reaches 3 to 5 inches in height. Because heifers are allowed access to the entire 2 acre paddock, it is assumed heifers eat 50% of disappeared forage.

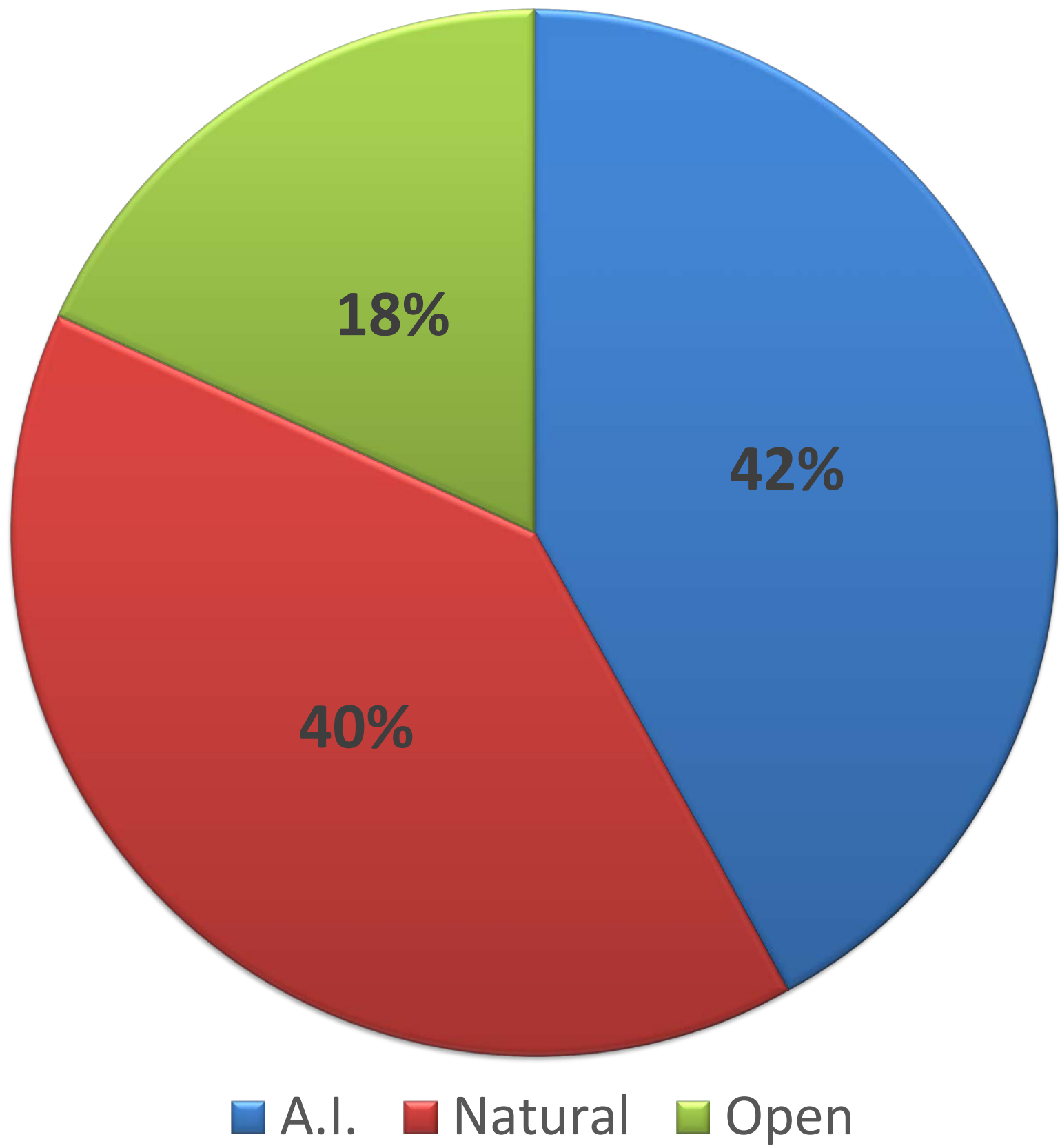
Nitrogen (Urea) is applied at 60 units of N/Acre at planting and again in February as weather and cost allows. Heifers are grouped according to consigner and heifer size in groups of 12-15 hd/group.

Adjusted Means for Overall Heifer Growth and Performance Data

Trait	2016 n=48	2017 n=32	2018 n=39	2019 n=25	2020 n=15	2021 n=39
Beginning Weight, lbs	602	736	741	703	641	655
Breeding Weight, lbs	790	857	882	867	826	785
ADG, lbs/day	1.73	1.64	1.85	1.86	1.85	1.0
Total Gain, lbs	188	206	232	282	306	152
Frame Score	5.2	5.6	6.4	6.3	5.6	5.5
% Body Wt at breeding	66	70	70	69	71	64
Ultrasound backfat, in.	0.13	0.24	0.21	0.22	0.15	0.24
Ultrasound REA, in ²	8.34	10.11	9.76	10.98	9.94	10.09
% Intramuscular Fat	3.39	3.69	3.90	4.53	4.58	4.39



Overall Pregnancy Conception Rates (2016-2021)



Development Costs/Heifer

	2016	2017	2018	2019	2020	2021
Forage	\$99.50	\$68.34	\$91.13	\$89.89	\$170.40	\$97.44
Minerals	21.08	4.69	4.69	23.45	7.80	2.38
Feed	0.00	152.70	0.00	16.15	0.00	0.00
Health	14.15	12.05	10.09	13.77	9.46	26.70
Ultrasound	14.42	19.88	19.88	20.44	26.47	24.36
Breeding	63.37	67.04	67.04	63.26	59.62	26.56
Direct Costs/Heifer	\$212.52	\$324.70	\$192.83	\$226.96	\$273.75	\$177.44

Consignor Feedback

Consignors in the program were surveyed (n = 12; 100% response rate) regarding their perceptions and applications of heifer management information following enrollment in the program.

Survey results noted that 92% indicated participating in the program was strongly beneficial or may have been beneficial (8%) to their operation. Participants reported that animal performance data provided by the program was either extremely useful (66%), very useful (16%) or slightly to moderately useful (16%).

Producer adoption of practices showcased as part of the heifer development program was high, with 84% indicating they had implemented various management practices after participating in the program. Producers reported that their overall herd management level had increased because of participating in the program (80%), and 60% of the respondents indicated that this program led to new marketing methods for their cattle operation. Eighty percent of consignors reported a return on the investment of consigning heifers to the program.