The Technical Edge

Artificially Rearing Whitetail Fawns

Artificially Raising Fawns Utilizing Fawn Milk Replacer and Dry Starter

ADM Animal Nutrition's deer & elk feeding programs have been developed to provide optimum nutrition to high fence-raised deer and elk. In recent times producers have started to artificially raise doe fawns using fawn milk replacer and dry starter feed. This artificial rearing of doe fawns has been found to make it easier to handle does for breeding via artificial insemination (AI) and for health aspects. Very positive feedback has been received from producers utilizing ADM Animal Nutrition's dry fawn starter for artificially rearing fawns. Research on how fawns respond to artificial rearing is limited and performance in artificial rearing situations has received little attention. Due to a lack of performance data, ADM Animal Nutrition conducted a feeding demonstration in collaboration with Apple Creek Whitetails of Gillett, Wisconsin, to obtain growth parameters for young (mostly doe) fawns in an artificially-reared environment.

Growth Parameters for Artificially Reared Fawns

In 2009, ADM Animal Nutrition conducted a feeding demonstration at Apple Creek Whitetails with 12 sets of twin whitetail fawns (11 pairs were does, one pair were bucks). All fawns were fed an initial feeding of colostrum. After 24 hours, each fawn was placed in an individual rearing pen (see photos) and was provided milk replacer for approximately 60 days. At weaning, fawns were taken from individual rearing pens and placed in groups.

Beginning at seven days of age, twins were started on ADM Animal Nutrition's TraceMax® Fawn Starter (product number 81482 – see Table 1). Weight, height, and chest circumference measurements were taken for each fawn immediately prior to and after conclusion of the test (see Table 2 on next page). Fawns were fed dry feed (TraceMax Fawn Starter). At approximately two weeks to 18 days of age, all fawns were offered a small amount of clean, mold-free, high-quality alfalfa hay. Regardless of age all fawns were taken off feed (TraceMax Fawn Starter) on the same day. No death losses occurred during the feeding demonstration.

Many factors, such as genetics, health, and nutrition, can influence early growth performance in fawns. Two factors affecting fawn growth performance were initial sizes, such as initial weight or initial chest circumference, and length of time on dry feed (TraceMax Fawn Starter). For these fawns, test starting weight impacted test ending weight ($P<.05$), but starting weight did not affect ADG. Starting height did not influence ending height, but it did affect daily height gain ($P<.05$). Test starting chest circumference did affect ending chest circumference ($P<.05$), but it did not influence daily chest circumference gain. Keep in mind; the starting body measurements for these fawns are in actuality very close to birth measurements (seven days of age).

It was found that test starting weight was positively correlated ($P< .01$) to test ending weight with a correlation of +55% (see Table 3 on next page). Starting test height was correlated positively to test ending height, but at a very low level with a correlation of +11% (see Table 4 on next page). Beginning chest circumference was positively correlated ($P<.10$) to test ending chest circumference with a correlation of +36%

Table 1 Nutrient Profile of TraceMax Fawn Starter (Product No. 81482)

Crude Protein, min.	20.0%
Crude Fat, min.	4.5%
Crude Fiber, max.	8.0%
Calcium, min./max.	0.75-1.25%
Phosphorus, min.	0.5%
Salt, min./max.	0.25-0.75%
Copper, min./max.	50-70 ppm
Selenium, min.	0.45 ppm
Vitamin A, min.	7200 IU/lb
Vitamin E, min.	70 IU/lb

Table 2 Growth and Performance Data – TraceMax Fawn Starter Study		
	Average	Range
Starting Weight, lb	9.5	6.3 - 11.5
Starting Height, in.	18.4	17 - 20
Starting Chest Circumference, in.	14.1	13.2 - 15.0
Ending Weight, lb	58.1	41 - 67
ADG, lb	0.57	0.49 - 0.67
Ending Height, in.	27.7	26 - 29
Daily Height Growth, in.	0.11	0.07 - 0.13
Ending Chest Circumference, in.	28.3	26 - 31
Daily Chest Circumference Growth, in.	0.17	0.13 - 0.21
Average Days on Feed (Fawn Starter)	86	60 - 112
Average Age (in days) Off Test (Fawn Starter)	93	67 - 119

Table 3 Starting/Ending Weight – TraceMax Fawn Starter Study		
Pearson Correlation Coefficients, N = 24 Prob > |r| under H0: Rho=0		
	Starting Weight	Ending Weight
Starting Weight, lb	1.00000	0.55095 0.0053
Ending Weight, lb	0.55095 0.0053	1.00000

Table 4 Starting/Ending Height – TraceMax Fawn Starter Study		
Pearson Correlation Coefficients, N = 24 Prob > |r| under H0: Rho=0		
	Starting Height	Ending Height
Starting Height, in.	1.00000	0.11159 0.6037
Ending Height, in.	0.11159 0.6037	1.00000

Table 5 Starting/Ending Chest Circumference – TraceMax Fawn Starter Study		
Pearson Correlation Coefficients, N = 24 Prob > |r| under H0: Rho=0		
	Starting Chest Circumference	Ending Chest Circumference
Starting Chest Circumference, in.	1.00000	0.36042 0.0836
Ending Chest Circumference, in.	0.36042 0.0836	1.00000

(see Table 5 on next page). These results strongly indicate that some of these initial body measurements, under the management and nutritional criteria in which the feeding demonstration was conducted, were indicators of future early growth parameters. However, it was also found that time (days) on the starter feed (TraceMax Fawn Starter) had a very large impact on growth parameters.

Days on feed significantly affected ($P<.001$) test ending weight as well as ADG ($P<.05$). However, days on feed did not affect test final height, but it did approach significance ($P<.12$). Daily height growth was highly influenced by days on feed ($P<.001$). Ending chest circumference ($P<.05$) and daily chest circumference growth ($P<.001$) were both affected by days on feed. Interactions and their influences on growth measurements were not measured. At this time, no plans are in place to measure any long-term impact (for a year to up to two years of age) from the feeding and management scenarios during this early period of the fawns' lives. Feed intakes and feed efficiency were not measured.

Conclusion

This study has enabled ADM Animal Nutrition to begin to establish expected growth and performance criteria for artificially reared whitetail fawns during the first 90 days of life when fawns are fed a milk replacer and a dry fawn starter feed. These growth parameters are a beginning set of benchmarks that can be built upon to improve nutritional guidelines and management techniques to artificially rear fawns.

Many Unknowns

The practice of artificial rearing of fawns and rearing fawns in general is still a relatively new production practice. Consequently, there are currently many unknowns. Areas that need further investigation include:

- Optimum age at weaning (from milk replacer or milk)
- Use of forages at young ages
- Health protocols for artificially reared fawns
- Expected intake of feed over the fawn's rearing period
- Effects on long-range performance of artificially reared fawns
- Optimum length of time to leave fawns on a dry fawn starter
- Effects of doe gestation management – nutrition, health protocol, etc. – on fawn performance and growth parameters

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