FARMING OF CERVID LIVESTOCK

A Look into Management of the Animal and its Waste

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Presented to the
Livestock and Poultry Environmental Learning Center Webinar Series
17 January 2020, Minneapolis, MN

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Extent of Management

- The Agricultural and Food Policy Center at Texas A&M University has sought to characterize the extent of cervid farming within the United States (Anderson et al., 2007).
  - At the time of that publication, there were in excess of 7,800 deer farms in the United States, one thousand of which were in the state of Texas.
  - The species included in the assessment were white-tailed deer (*Odocoileus virginianus*), elk (*Cervus canadensis*), fallow deer (*Dama dama*), and red deer (*Cervus elaphus*).
  - As a result of these populations, the cervid livestock industry generated an estimated $893.5 million in direct expenditures (Anderson et al., 2007).

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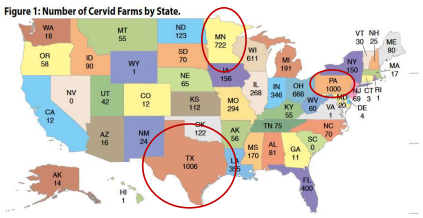
Extent of Management

Figure 1: Number of Cervid Farms by State.



Anderson et al., 2007

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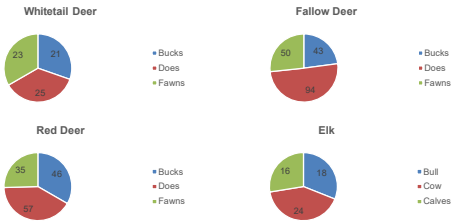
The Average Operation



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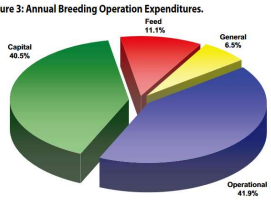
Management Considerations

Figure 3: Annual Breeding Operation Expenditures.



Anderson et al., 2007

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Management Considerations

Figure 2: Typical Fenced Paddock.

Anderson et al., 2007

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Management of Red Deer/Elk

- Interest in the utilization of these animals for production within the USA is on the rise due to increased consumer demand for healthier meat alternatives, as well as byproduct utilization.

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Management of Red Deer/Elk

- As these animals perform well on marginal land not fit for other livestock production as well as the ability to fit into grazing operations the number of deer farms will likely increase soon.
  - Production of these animals requires specialty infrastructure including taller fences and working facilities.
  - Additionally, in most locations production of these animals will require specialty permits.

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Management of White-tailed Deer

- White-tailed deer production revolves around the sport of harvesting the animal and is split into two categories: the breeding of animals for hunting ranches and the operation of hunting ranches.

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Manure Characteristics

- Expression of manure nutrients in cervid livestock most often revolves around diet composition and diet digestibility.
  - As such, a discussion of the diet is necessary to characterize the manure.

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Manure: Red Deer/Elk

- On average, red deer and elk, when fed ad libitum, consumed just over 5% of their metabolic body weight.
  - Of the feed consumed, roughly half of this material was digestible.

Intake, % $BW^{0.75}$	DMD, %	OMD, %	NDFD, %	ADFD, %	GED, %	CPD, %
5.3	52.8	49.5	47.0	50.5	50.9	34.6

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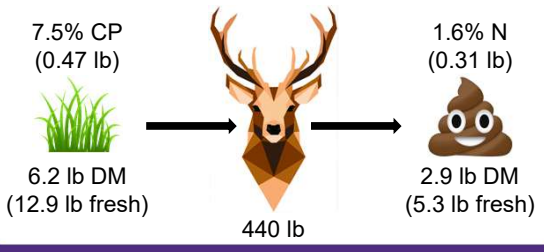
Manure: Red Deer/Elk



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Manure: White-tailed Deer

- Similar expressions and derivations may be made for the white-tailed deer.
  - Of great interest is the fact that white-tailed deer are much more efficient at N utilization than other cervid species.

Intake, % $BW^{0.75}$	DMD, %	OMD, %	NDFD, %	ADFD, %	GED, %	CPD, %
4.5	51.8	.	34.6	43.0	51.8	60.9

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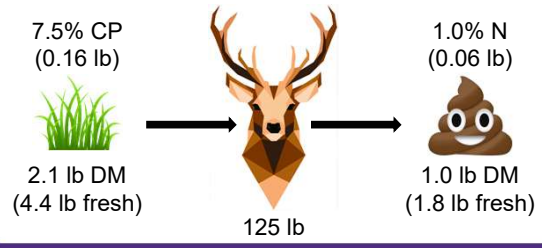
Manure: White-tailed Deer



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Manure Reporting

- These numbers are roughly in agreement with the reporting literature, with the exception of the assumed fecal dry matter.
  - It should be noted that these values are sparse and only come from deer.

Form	DM, %	N, %	P, %	K, %	C:N	pH	Citation
Fresh	40.7	.	0.74	.	.	8.2	McDowell and Stewart, 2005
Fresh	70.8	1.85	0.57	.	52	.	Wang et al., 2018

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