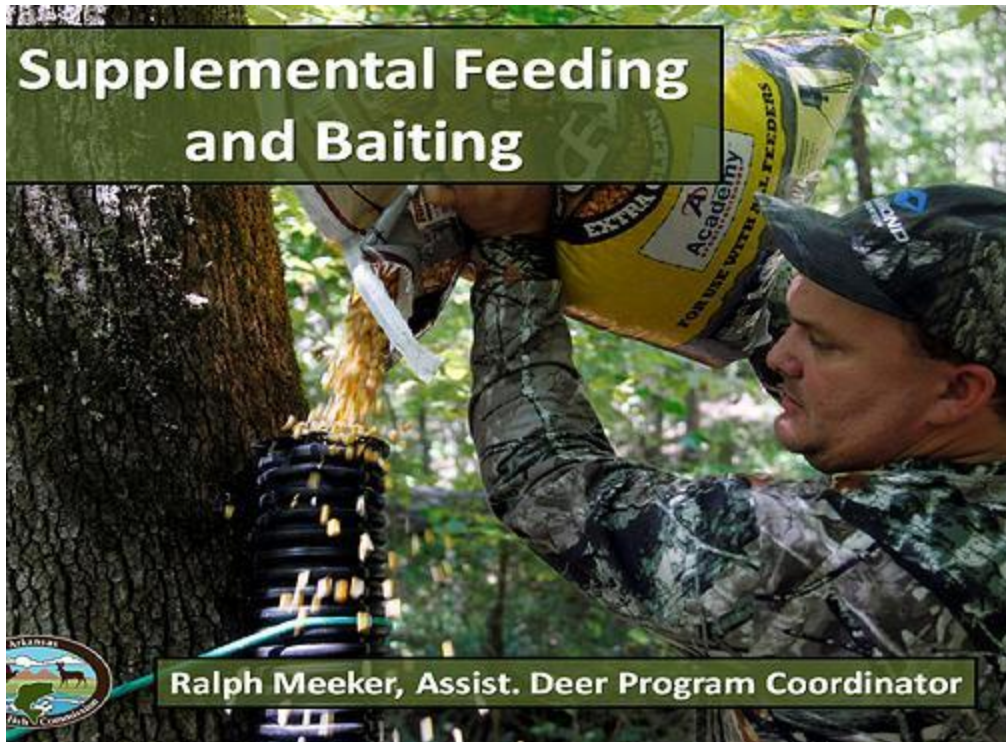
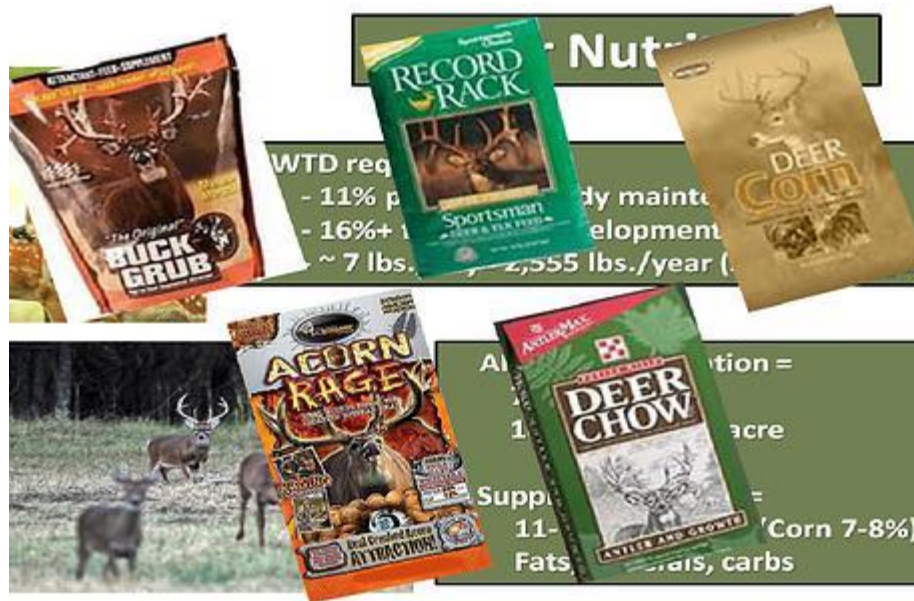


Supplemental Feeding and Baiting



Feeding and baiting deer is big business. Each year millions of dollars are spent feeding and baiting deer in the hopes that added nutrition will improve the racks on bucks or that big bucks will be lured out into an opening for harvest. But do these practices really work? This presentation will define what supplemental feeding and baiting are, expose some common misconceptions about both, and outline some responsible methods if baiting and feeding are to be used

Supplemental Feeding and Baiting



What do deer really need? White-tailed deer have nutrient requirements

- . Unfortunately many of these requirements are lacking in our native vegetation due to either poor soils and/or the lack of proper habitat management
- . By providing those nutrients at the required levels many deer managers feel like they can increase population numbers, maximize herd health conditions, and increase production (lactation and antler development). And they feel that they can do this by using a variety of products

Supplemental Feeding and Baiting

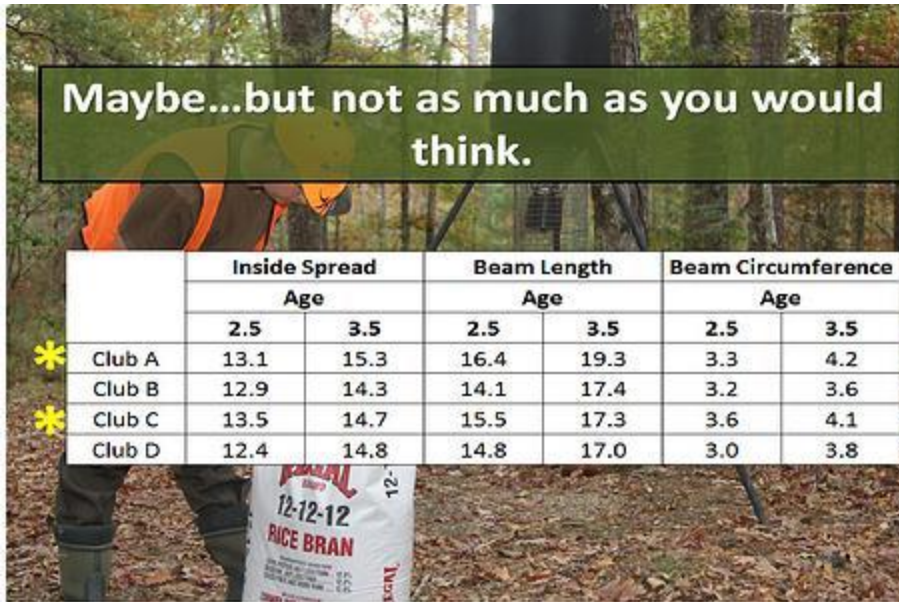


This practice of applying feed in enough quantity for an extended length of time for the purpose of increasing the carrying capacity and/or relative condition of a local wildlife population is known as supplemental feeding. But does it really work?

Supplemental Feeding and Baiting

Maybe...but not as much as you would think.

	Inside Spread		Beam Length		Beam Circumference	
	Age		Age		Age	
	2.5	3.5	2.5	3.5	2.5	3.5
* Club A	13.1	15.3	16.4	19.3	3.3	4.2
* Club B	12.9	14.3	14.1	17.4	3.2	3.6
Club C	13.5	14.7	15.5	17.3	3.6	4.1
Club D	12.4	14.8	14.8	17.0	3.0	3.8



Here is an example of 4 actual deer clubs in AR and their antler characteristic data for 2.5 and 3.5 year old bucks. These deer clubs are in the same county and deer zone, but are not adjacent to one another. See if you can guess which two clubs actively implement a year-round supplemental feeding program (*these clubs are using high protein feed and not corn). Did you guess Clubs A and C? Is there a significant enough difference in antler characteristics to justify spending thousands of dollars each year in supplemental feed? Why are the antler characteristics not significantly larger for those clubs that artificially feed?

Supplemental Feeding and Baiting

The reason is this: Remember that we said that deer will consume about 7 lbs. of food per day.

Research in TX has shown that Free-ranging deer populations with average habitat: WTD consume ~ 2 lbs. of supplemental feed/day, or about 25% of their daily diet.

The remaining 75% of their diet comes from native vegetation. If you take into consideration those amounts and the available protein present, that equals about 12.5%. Remember that we said that 11% is needed for body maintenance and ~16% is needed for optimal lactation and antler development.

Why is this...There are several reasons that deer do not utilize more feed than what is provided. And implementing a system like this requires a lot of \$.

Lactic acidosis/rumenitis: Loss of rumen function has been reported in deer consuming large quantities of food high in carbohydrates. Grain (wheat or barley) was present in the rumen of 76.7% of deer with rumenitis compared to 22.8% of deer in which rumenitis was not found during a severe winter in Saskatchewan (Wobeser and Runge, 1975).



Nutrition: Supplemental Feed

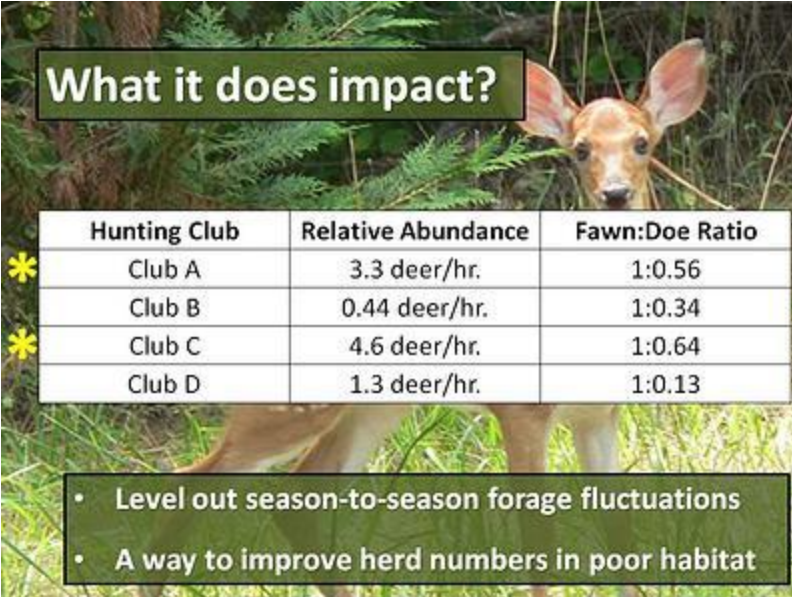
Free-ranging populations with average habitat:
WTD consume ~ 2 lbs. of supplemental
feed/day

So if they consume 25% of daily diet:
 $2.25 \text{ lbs. (20\%)} + 4.75 \text{ lbs. (9\%)} = 12.5 \% \text{ protein}$

1. Standing at feeder is not natural
2. Intestinal problems (acidosis)
3. More than 2 lb./day = degraded habitat
4. Very \$\$\$

Supplemental Feeding and Baiting

Here are those same 4 hunting clubs. This table illustrates hunter observation data. You can see where the difference lies. The number of deer seen per hour (relative abundance) and the fawn:doe ratio are greatly increased. Is this helping or hurting your deer management efforts if you are already over-run with deer?



What it does impact?

Hunting Club	Relative Abundance	Fawn:Doe Ratio
Club A	3.3 deer/hr.	1:0.56
Club B	0.44 deer/hr.	1:0.34
Club C	4.6 deer/hr.	1:0.64
Club D	1.3 deer/hr.	1:0.13

- Level out season-to-season forage fluctuations
- A way to improve herd numbers in poor habitat

Two benefits to supplemental feeding is that 1) this can be a method to level out season-to-season forage fluctuations (but there is a better practice to do this and we will explore that in the next presentation) and 2) it is a way for managers in extremely poor habitats to increase deer herd numbers...Is that a good thing? In Arkansas we have very few areas with a shortage of deer!

Supplemental Feeding and Baiting



The practice of baiting is different than supplemental feeding, although the two terms are often mistakenly interchanged. Baiting is feeding for a relatively short period of time for the sole purpose of attracting wildlife.

Does it work? Well you saw in the previous slide the increase in relative abundance.

Supplemental Feeding and Baiting

Somebody thinks that it does!

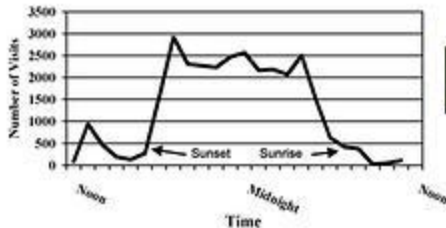
- 831 AR DMAP Clubs sent survey
- 16% responded to survey ⁽¹³³⁾
- 89% used supplemental feed/bait ⁽¹¹⁸⁾
- 96% used corn ⁽¹¹³⁾
- Of respondents that used corn:
 - 100% used during hunting season
 - 45% used during the summer

Baxter, D. & B. Miller. 2011. Abstract. *Prevalence and Seasonality of Baiting and Supplemental Feeding by DMAP Clubs in Arkansas*. 34th Annual Meeting of the Southeast Deer Study Group.

Somebody thinks that it does!

Supplemental Feeding and Baiting

Is baiting helping you the hunter?



Ruth, C. 1990 and 1995. Studies conducted by the SC DNR on the effects of baiting and feeding in the SC Coastal Plain.

Research showed:

Visitation Rates =

- 25:1 night-to-day visit ratio

Hunter Effort/Success =

- 3.37 man-days/deer in baited locations

- 1.16 man-days/deer in un-baited locations



- You can see that most visitations are at night and the hunters effort to success ratio are better in un-baited locations.
- Conclusion: using bait may actually be making it harder to harvest that trophy buck.

Supplemental Feeding and Baiting

Mineral Licks: Are they necessary?

Mature-hardened antlers are comprised of: (~11 different minerals): Calcium (19.01 %), Phosphorus (10.13%), Magnesium (1.09%), Sodium (0.50%)

Fact: Close to 90% of the use of mineral licks by deer occurs during the spring and summer months

Fiction: Deer need mineral licks to maximize antler and body growth

Fact: Reason for use = sodium deficiency due to high potassium and available water content of forage



Supplemental Feeding and Baiting



Mineral Licks: Are they necessary?

MS study: correlation between soil mineral content and body size, not antler size

Studies conducted at Penn State, Auburn, & in LA were unable to detect any differences in body size or antler development

Several other studies: soils highly deficient in Phosphorus and not augmented through fertilized food sources (i.e. food plots) do exhibit reduced antler growth

Conclusion : Phosphorus supplementation may increase antler growth

Supplemental Feeding and Baiting



Besides the amount of feed that is lost to non-target species such as these...and altering deer behavior and affecting wildlife movements, there is a host of other problems associated with using bait and feed.

Supplemental Feeding and Baiting

Disease transmission



- 1994- MI DNR detected bovine tuberculosis (BTB) in deer/elk: spread of BTB directly linked to artificial feeding and deer/elk concentrations



- Canine distemper
- Rabies
- Parvo
- Mange
- CWD?

CWD has been proven to be spread through infected saliva and fecal contact. Therefore increasing the concentrations of deer at deer feeders may in turn increase the transmission or spread of CWD.

Supplemental Feeding and Baiting


Damages surrounding habitat



Consideration of game in a central location destroys the native vegetation.

Supplemental Feeding and Baiting

Toxins



- Aflatoxin- fungus
- Highly toxic to small mammals and birds
- Deer implications:
 - Immunity problems
 - Liver dysfunctions
 - Intestinal problems
 - Weight loss
- Documented cases of deer deaths in AR caused by *E. coli* and *Salmonella* poisoning

Aflatoxin is a poisonous compound produced by a fungus. Corn grown under stressfully hot and or droughty conditions are more susceptible to infection.

Aflatoxin may be lethal to them even at small doses.

Implications of aflatoxins to deer: *Cover caption information

Deer are also susceptible to other toxins that may be present at feeding stations: *Cover caption information

Data: Arkansas study -- AGFC personnel collected samples of whole shelled corn from retail stores and from field samples during the 2008-09 deer season. Aflatoxins were detected in 10 of 51 (19.6%) samples obtained from retail stores ranging from 5.2-476.0 ppb. Aflatoxins were detected in 39 of 151 (25.8%) field samples having levels ranging from 5.3-897.7 ppb.

Supplemental Feeding and Baiting

By artificially congregating deer and other wildlife to a feeder, you also affect how predators such as bobcats and coyotes search for prey. “Like ringing a dinner bell”

Increased predation

- Predator sink

- Increased fawn mortality

- Greatly affects turkeys and other ground nesting birds



TX studies have shown significant turkey nest predation up to 400 meters from deer feeding stations.

AGFC is currently partnering with the University of Arkansas at Monticello to conduct a turkey nest survival in relation to artificial feeding in counties in SE AR. This study will examine the relationship between turkey nest survival and its location to active supplemental feeding. The theory is that each active feeder creates a dead zone where turkey nests have poor survival rates.

Supplemental Feeding and Baiting



Ethics

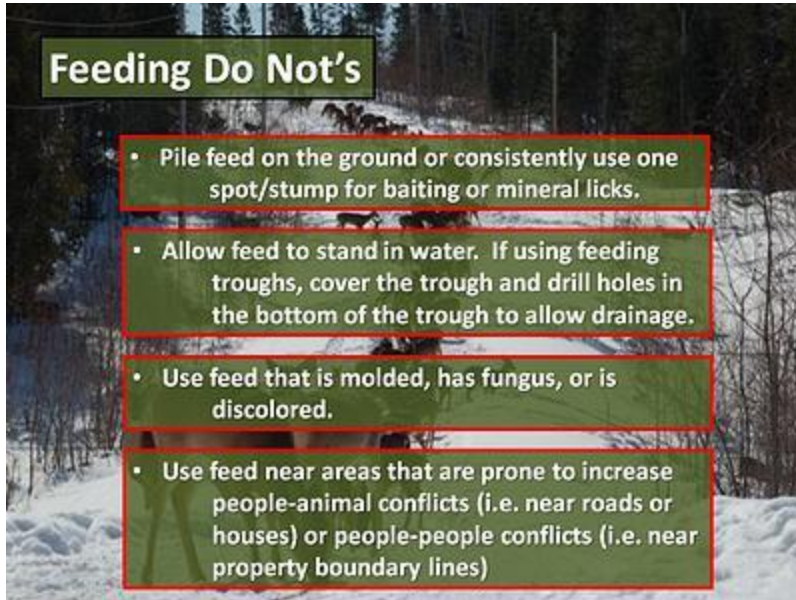
Many hunters and anti-hunters question whether hunting over bait should be considered “fair-chase”?

Supplemental Feeding and Baiting



This will decrease the amount of time that bait sits on the ground and decrease the amount of feed lost to non-target species.

Supplemental Feeding and Baiting



Following these guidelines will help prevent any issues caused by baiting.