

Northeast SARE Farmer Grower Grant Report, FNE03-492
Raising Goats on Pasture Alone or with Grain Supplementation
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Goals of Project

The goals of this project were to compare the economics of raising meat goats on pasture alone or with grain supplementation.

Farm information: The farm has not changed during the project. It contains about 15 acres, we reported 18 in the proposal, it has been measured more accurately since then. The farm is actually a composite of 3 owners with 14 of the acres being contiguous and 1 in another location. The 14 contiguous acres was divided for the project into 2 sections, the one in the study was approximately 4 acres one of which was field, the other 3 in woods. The rest of the 14 acre farm was used for pasturing my breeding herd. The other farm containing one acre is part of a 40 acre farm that has been loaned to me for helping to clean up some woods and area around some outbuildings. This one acre is contiguous to an unused chicken house which is used for shelter for the goats. This acre is 90% field and 10% woods. There is no other agricultural activity conducted on this small farm other than harvesting 4 to 5 cords of firewood annually.

Project Data

There were 2 groups of animals used, 10 were housed on one "farm" and 9 on another. The animals were all boer crosses, 13 raised by myself and 7 purchased at auction. These animals were randomized between purchased or farm raised, male (castrated by banding before study commencement) and female, and weight. All animals were wormed (Safeguard drench- fenbendazol- Intervet Inc.) and vaccinated (Vision CDT, -Clostridium C+D plus tetanus- Intervet Inc.) before the trial started. The animals were placed on pastures planted in the fall of 2002 with Max Q, and endophyte friendly tall fescue and then reseeded with landino clover in the spring of 2003. Both pastures contained about 1 acre total, the animals receiving no grain were also given about 3 acres of woods which had been grazed by goats for approximately 15 years. There was no appreciable browse available in these woods. In my opinion the 2 groups were as close to identical as possible.

Cooperators in the project.

The technical advisors for this project were Dr. Niki Whitley, UMES SARE PDP coordinator and Eddie Johnson, Wicomico County Extension Office.

Non technical collaborators included labor provided by my sons Bryan and Michael for feeding help when I was out of town and several students from UMES that provided labor for fecal egg count sampling and weighing. Christ Fletcher, graduate student at UMES conducted the fecal egg counts.

Trial

The trial started out well with the grouping of the animals, initial vaccinations, wormings, weighing, etc. We almost immediately had to make some changes to the groupings as one of the animals on the "home farm" (pasture only) would not stay in the project pasture. I switched this animal from this group to the other group with an animal of the same sex and weight. We then lost an animal out of the pasture only group which disappeared; we don't know what happened to it.

2003 was a very wet year in Maryland with rainfall considerably above average. The first "problem" this caused was pastures that grew much faster than anticipated. I mowed each of the treatments once and used does from my breeding herd on each treatment to keep the pastures from becoming too high and reducing the quality of the forage available. We did not take forage samples as we indicated we would in the proposal; there was always an overabundance of pasture in both groups.

The second problem we encountered because of the wet year was mortality from worms, specifically *Haemonchus contortus*. Even with all of the handling, fecal egg counts, evaluation of eye color, and good pastures we still lost several goats to worms. We had one animal autopsied by the State of Maryland, Department of Agriculture Salisbury Animal Health Laboratory. The diagnosis was severe *Haemonchus contortus* infestation. Consequently we changed anthelmintics from Safeguard which had been used on this farm for 3 years to Cydectin which has never been used. However the mortality was considerable, we lost 3 animals in each group. I have been raising goats for 20 years, 2003 was by far the worst year for worms I have ever experienced. Because of this and also because of my profession in marketing for Intervet Inc. I have become very interested in anthelmintics and alternative strategies for worm control. I plan on submitting a SARE grant proposal for 2004 to hopefully explore some strategies for small farm worm control.

Results

The goats were sold at the New Holland auction on November 17th, 2003. We tagged the two groups with different colored ear tags and asked the auction personnel to keep and sell them separately. We also asked them to weigh the animals. They did neither. Because of this we cannot say anything definably about the economics of feeding goats on pasture alone or with supplemental grain. There are however a number of observations we can say;

1. The goats did not appear to look different in their confirmation or observable health. The overall weight gain was not different and averaged 16 pounds per goat. We weighed them individually about 3 weeks prior to selling. There were differences per animal in weight gain but the groups averaged out the same.
2. There was no difference in Fecal Egg Counts. (FEC's) The FEC's averaged 634 eggs per gram. Animals on pasture alone did require deworming more than the pasture and grain group, 1.9 times versus 0.7 times. There was also a difference between purchased goats and "home bred goats" in the amount of dewormings. 1.6 times for home bred and 0.9 times for purchased goats. There was a difference in perceived percentage Boer (higher for home bred) than purchased,

this may have had an influence due to more parasite resistance from being raised at home on the same dewormer for an extended period or possibly a genetic difference in favor of more crossbreds. There was also an advantage in purchased goats in mortality, possibly for the same reasons listed above.

3. Although there was no improvement in weight gain from supplemental grain feeding there may be some intangible advantages to feeding. Observing the animals more closely probably helped save or treat them earlier. The grain fed animals were also calmer from being in closer proximity to people on a daily basis. Finally there may be some feel good benefit to the producer in feeding the animals, after all we are in this business because we like working with animals. That being said it may be an advantage to feed a very little amount daily or every other day for observation and calming. Economically it does not appear to make sense to feed at 2% body weight daily. In the future I will not feed my goats as much grain as I have in the past, improving my bottom line.

Reporting

The results of this study will be printed in the December issue of the Maryland Sheep and Goat Newsletter with over 550 subscribers. I will also make a presentation to the Lower Shore Sheep and Goat Producers Association.

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Pasture with grain supplementation

Number	source (1)	sex	start wt.	5/9/ wt.	FEC	6/6/wt.	FEC	7/18/wt.	FEC	8/20/wt.	FEC	9/24/wt.	FEC(2)	10/24/wt.	FEC(2)
4	P	M	30	36				died							
7	P	F	36	37	67	42	66	42	561	45	5025	45	201	43	297
8	H	F	26	27	0	31	222	38	957	40	440	41	264	46	66
21	H	F	32	30	0	36	0	39	825	39	2394	41	469	46	335
28	H	F	41	40	0	46	0	50	561	48	132	47	759	56	0
91	H	F	38	38	133	41	44	47	990	45	352	49	704	53	66
22	P	M	20	27	0	33	33	40	429	41	968	46	266	39	594
98	H	F	44	38	0	44	66	49	704	died					
74	H	M	25	32	89	41	132	47	462	died					
23	P	F	23	30	200	36	0	34	2211	34	2673	39	330	47	264
Totals			315	335	489	350	563	386	7700	292	11984	308	2993	330	1622
AVE.			31.5	33.5	54.3	38.9	62.6	42.9	855.6	41.7	1712.0	44.0	427.6	47.1	231.7

Pasture alone

5	P	M	31	30	178	33	0	34		41		43	396	49	
40	H (3)	F	33	32	133	34	165	died							
38	H	F	37	34	100	39	297	29	528	died					
24	P	M	25	25	0	28	396	32	3082	36	561	39	220	43	132
25	P	M	27	29	267	33	99	36	2508	40	231	45	924	47	66
26	P	F	23	24	133	27	33	30	3216	35		28	660	33	165
39	H (3)	F	34	34	233	died									
27	P	F	22	26	267	28	99	32	264	36	627	43	396	37	176
94	H	F	40	38	300	41	99	died							
Totals			272	272	1611	263	1188	193	9598	188	1419	198	2596	209	539
AVE.			30.2	30.2	179.0	32.9	148.5	32.2	#####	37.6	473.0	39.6	519.2	41.8	134.8

(1.) H=bred on home farm,P=purchased at auction

(2.) Bold signifies worming individual animals with Cydectin

(3) 40 and 39 were sisters out of a 3/4 boer doe that both died from worms

4. 28 and 91 were de-wormed with cydectin prior to the 10/24 weighing. The FEC's dropped substantially by 10/24

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Pasture alone

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