

# **2001 Sheep Day Report**

## **EASY SHEEP**

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### **Introduction**

The availability of labor on the average North Dakota farm has declined due to; smaller family size, increased participation in jobs off the farm by family members, and increased mobility which allows family members to be more participatory in educational, social and recreational events away from the farm. Currently minimum wage forty hour per week jobs off the farm are competitive with smaller supplemental income on-farm enterprises. Reduced family farm labor available to the operation has forced farm operations to become more specialized and supplemental income farm enterprises have had to be eliminated. These thoughts may in part explain declines in some of the more labor intensive sources of supplemental income to the average North Dakota family farm, such as; poultry production, dairying, swine production and sheep production, etc.

The Hettinger Research Extension Center (HREC) has recently collected data (Nudell et al. 1999) that indicated some economic favor for pasture lambing systems as compared to more traditional rearing systems. Traditional animal husbandry favors a very strong connection between the caretaker and the animal for mutual survival. Reduced labor systems of sheep production may be more acceptable to today's farm family life styles. The reduced care levels afforded to the animals may not be acceptable to the caretaker. Increasing sheep numbers because of new flocks based on reduced input sheep production may assist the North Dakota sheep industry to rebuild to satisfactory numbers. Regrowth of the industry would help to help support necessary industry infrastructure.

In the spring of 1999 the HREC provided three small flocks of pregnant ewes to three instate producers. The attempt was to collect information on producer response to pasture rearing of sheep with a major emphasis on reduced inputs and especially labor. Attempts will be made to compare production from these units to more traditional systems of production.

### **Procedure**

**(1999)**

On April first a small flock of five and six year old Montadale x Rambouillet ewes was ultra-sounded for pregnancy at the HREC and seventy six head were found to be pregnant. The seventy six head were divided according to what each producer could handle and fifteen head was delivered to a first time producer at Fort Yates , North Dakota, thirty head were delivered to a long time sheep producers at Wolcott North Dakota and thirty one head were delivered to a dairy producer at Towner, North Dakota On April fifteenth. The ewes were bred to lamb between the period of May fifteenth and June eighteenth. The lambs and ewes were picked up, counted and weighed on September twenty fourth through October fourth when the lambs would have

averaged approximately one hundred twenty days of age. There was very little similarity of conditions between the three operations.

**(2000)**

The same procedure was followed in the spring of 2000 with 104 pregnant five through seven year old Montadale cross Rambouillet ewes. Thirty-eight were delivered to the previous year producers at Towner and Walcott and 28 to a producer at Antler, North Dakota. Similar to the previous year, ewes were randomly sorted specific to what location might be their destination. The grazing period was shortened by 29 days in 2000 as opposed to 1999 because of drier growing conditions.

Producer responsibilities included; ear-tagging and counting the lambs and ewes at the end of the anticipated lambing period, documenting any happenings on an as per event status, documenting any personal feelings throughout the course of the project, and filling out surveys at the end of the lambing period and again at the conclusion of the summer season. Producers would be afforded the opportunity to participate a second year if they wanted and if they did not wish to it was anticipated that they respond as to why for the sake of the project.

**An Economic Model of EZ Sheep Results**

Four cooperators, located in different areas of North Dakota, tested the EZ sheep system on their farms in 1999 and 2000. A total of six lambing groups were observed over the two years. Two cooperators lambed twice and two cooperators lambed once each. The results of the six lambing groups were combined and an economic model (Sheepbud) was constructed to compare the projected financial results from the EZ cooperators and a more traditional North Dakota lambing system.

Table 1 shows the actual production results achieved by the EZ Sheep cooperators, their average results and an estimated set of North Dakota results under a more typical production scenario. In the comparison analysis, EZ SHEEP average production results to weaning were carried through the model to an expected sell weight of 125 pounds. The North Dakota comparison flock modeled a typical winter lambing flock with early weaning and lambs going directly to feed till they reached a 125 pound market weight.

**Table 1. Flock Summaries**

Flock	W99	W00	T99	T00	FY99	A00	EZ Ave	ND*
No Ewe	30	38	31	38	15	30	182	100
Ewe Die	1	1	2	1	2	0	7	4
% Die	3.3	2.6	6.5	2.6	13	0	4	4
Lambs Wean	39	41	29	43	20	0	172	130
% Lamb	130	108	97	113	133	0	95	130

Wean Wt	2669	2140	2610	2540	1545	0	11504	5850
Sell Wt							21500	16520
Ave Wean Wt	68	52	90	59	77	0	67	45
# Lamb/Ewe	89	56	84	67	103	0		

**\*Composite numbers based on Financial records from ND Sheep Development Project (1988-1994).**

In a comparison of projected economic results a number of assumptions were used. They are:

All lambs sold for \$75/cwt at 125 pounds.

Wool is assumed to be 8 lb per ewe and is valued at \$0.25/lb.

Replacement rate is 20% and all replacements are purchased at \$110/hd.

Ewe death rate is 4%.

Traditional scenario assumes a barn valued at \$5000.

EZ assumed winter shelter to be a windbreak valued at \$500.

Equipment value is \$1000 for traditional and \$500 for EZ.

Traditional scenario markets a 130% lamb crop

EZ Sheep markets a 95% lamb crop.

Marketing and trucking cost per head is same for both

Traditional scenario adds 25 lb of creep feed per lamb and slightly higher vet expense.

Fuel and utility expense are 2.5 times higher per head in traditional scenario

Labor and management time is valued at \$10 per hour.

Labor and management is 3 hours per ewe in traditional scenario and 1 hour in EZ.

traditional assets are valued at \$17,750 (Includes value of ewes).

EZ assets are valued at \$22,520 (Includes value of ewes).

Both assume 50% debt on the ewes.

Return on Assets is calculated as  $\frac{\text{Net Cash Income} + \text{Interest Paid} - \text{Value of Labor and management}}{\text{Total Asset Value}}$

**Table 2. Projected Financial Results of Comparisons**

	Flock Net	Net/Ewe	Interest Paid	Labor Charge	Asset Value	ROA
EZ Sheep	(\$615)	(\$3)	\$655	\$1,820	\$22,520	-7.9%
Traditional System	\$164	\$2	\$36	\$3,000	\$17,750	-14%

The traditional winter lambing scenario shows a positive net cash return. However, the higher labor requirements and the greater per ewe investment required means that the Return on Assets used is -14%. EZ Sheep shows a negative cash flow based on the average results of the six cooperators in the study. The much lower investment per ewe and the substantially lower labor requirements do mean that the Return on Assets is higher for EZ Sheep.

A key finding of this study is the difference in return on assets used between EZ Sheep and more traditional management scenarios. While the combined results of the EZ Sheep cooperators did not project a positive cash flow, the average was substantially affected by poor results in one location. An EZ Sheep operation with results production similar to the other five cooperators is expected have a positive cash return and a positive return on assets (See 2000 Sheep Day Report)

EZ Sheep has potential to be an efficient use of assets available on many North Dakota farms. The reduced labor requirements and the potential to enter the enterprise with a reduced debt load (lower shelter and equipment costs) make the operation more feasible for many farms. There is a risk of failure under the system, see results of flock A00, however a well thought out plan for EZ Sheep has been demonstrated to be viable in

many locations of the state.

## **Results of Cooperator Surveys: (Lambing and Weaning/1999 and 2000)**

A questionnaire was sent to cooperators after lambing and weaning each year. The questionnaires asked animal production questions and also to respond to the concepts of EZ Sheep as a system of production. Questions pertained to estimates of major causes of lamb loss, ewe loss, incidences of predation and associated problems. Other questions centered on producer's feeling in relation to the production system and what their perceptions were of processes and ideas that would enhance this form of low input/labor livestock production.

At lambing time primary causes of lamb and ewe losses were ewe body condition and fetal size at birth. While the ewes were of similar genetic makeup and age there were some differences in numbers of birthing problems associated with fetal size especially in year one. In year two fetal size was not mentioned as a problem. Terminal sire breeds was changed in year two with the intent of selecting for lighter birth weights. The ewes were not originally selected for teat size and this was indicated as a problem for lambs to commence suckling on their own and was listed as a cause of baby lamb loss. All cooperators were appreciative of the labor reduction at lambing time associated with the EZ Sheep system of production. One producer in year one indicated that while he/she had good success that it was preferred to lamb under a conventional system because of the ability to have better control of outcomes. Two producers participated both years of the study with acceptable results. The new producer in year two of the study had acceptable birthing performance but EZ Sheep failed completely for him as predation pressures wiped out the complete lamb crop in short order. All producers involved in the study feared the potential of predation problems.

The weaning time survey indicated problems associated with lamb livability from birth to weaning ranked from greatest to least were:

1. Predators
2. Ewe age and associated body condition
3. Teat size
4. Fetal size

There may have been other minor problems that went undetected, however, the four major problems were great enough that they could be positively documented. Fetal size problems were reduced in the second year as a direct affect of targeted attempts to do so by changing terminal sire breeds. Ewe age was years five and six in year one of the study and 6 and 7 in year two and documented as somewhat of a problem by cooperators. The ewes in the study were non-selected other than soundness at shearing time and pregnancy by ultra-sound.

## **Conclusions**

It is difficult at best to fairly compare this system of production by an average North Dakota flock situation. The complete loss of lamb crop at one site in the second year of the study negatively influenced outcome of the

study when all numbers were merged. Five of the six cooperator experiences were deemed as positive and more profitable than an average North Dakota flock situation (Sheep Day Report #41). It would appear that the four major documented constraints for conducting a successful EZ Sheep production system would favorably respond to management without greatly increasing inputs. Easy sheep should offer opportunity to new producers with minimal facilities and practical experience. It is fully recognized that EZ Sheep is not for everyone. It would appear to not fit well for extremely high performance ewes or purebred operators. While predation at one site greatly influenced return on assets as a whole it was still most favorable for the EZ Sheep system. At the Hettinger Research Extension Center a historic flock of one hundred ewes will be developed to investigate what level of performance can be achieved when a flock of ewes is bred, selected and managed to perform under a minimal labor/input system. It is believed that it will be critical to the future of the sheep industry to adapt sheep production to our changing lifestyles.