

Editors Note: The following article was presented as a talk during the 1982 Wisconsin Sheep Symposium. Although Harold Henneman directed his comments to purebred breeders in the sheep industry, the principles are applicable to purebred livestock producers in general—in particular, Angus breeders.

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Henneman's ideas contained here are thought-provoking and easily related to the Angus industry—in fact, several points are illustrated through reference to Angus breeders—and they present a challenge to each purebred breeder.

Putting Genetics to Work



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The challenge of putting genetics to work is soon appreciated by those who try. James B. Lingle, the former manager of Wye Plantation said, "The breeding of a top herd is the most difficult job in all of agriculture."

To make this point with my associates in agricultural communications I have compared the job of the constructive livestock breeder to the efforts of a football coach. If Muddy Waters was challenged with the task of a livestock breeder he could not observe the performance of high school football players in arriving at his decision to offer scholarships. He would be forced to observe the athletic prowess of the bride and groom and offer scholarships to their unborn offspring. When the offspring happened to be female, the coach could also appreciate the feelings of a livestock breeder whose lamb crop happens to be running to predominantly ram lambs.

Precisely because breeding improved livestock is one of the greatest challenges, it also acquires status and prestige. Sam Guard, the editor of the former magazine BREEDERS GAZETTE said, "Breeding purebred livestock occupies the highest station in the realm of farming."

The responsibility for putting genetics to work lies with the purebred breeder. It is the improvement of purebreds that undergirds the economic strength of the sheep (and livestock) industry. For growth to occur in the sheep industry it must be profitable. The commercial operator is dependent upon the purebred fraternity for more productive breeding stock. The purebred rams used in commercial flocks are the source of genes for more productive replacement ewes and the efficient growth of lambs which produce

carcasses that attract lamb consumers. If purebred breeders ignore this responsibility, sheep enterprises will be less competitive with alternative production enterprises.

A look at the achievements of our predecessors should assist in giving us perspective on this subject of putting genetics to work. In a 1947 issue of the BREEDERS GAZETTE, Guard published an article entitled, "Can a Young Man with Limited Resources Become a Great Breeder of Purebred Livestock?"

To get his answer, Guard interviewed an Angus breeder that had started in 1901 with two \$200 heifers and a \$300 bull. This purebred breeder had won grand champion bull and heifer, get-of-sire, and best ten head of Angus at the 1964 International Livestock Exposition. He had just refused \$100,000 for Eileenmere 500th. Some of you, I'm sure, recognize I am referring to J. Garrett Tolan.

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Our editor asked his question: Can a young man, today, with limited resources, become a renowned breeder of purebred livestock? The answer: "Yes, if a young man has two willing hands, an observing eye, judgement, patience and a love for his livestock he can succeed."

"How can he get started; what are the requirements for success?" asked Guard. "First," replied Tolan, "he must develop the ability to be his own judge and he must

establish an ideal toward which he will select

Establish an Ideal

In my opinion, this is sound advice. The first stumbling block for the new breeder is the lack of skill in evaluating livestock. As long as here relies on others opinions he will be mired by a morass of indecision. He obviously must learn from observation and inquiry of established breeders, but must also winnow the advice and arrive at his own decision. Then the ideal can be determined and the more sound his ideal, the more enduring will be the contribution to the breed with which he works. Bob Adam, the proprietor of Newhouse of Glamis, says, "The greatest gift a breeder can have is the ability to recognize the faults in his own cattle."

Now to continue with Tolan's reply, "Second, he should start with good females and never buy a cow with an 'ornery' calf. Third, he should never sell his best females. The only time a constructive breeder will sell his best females is at his dispersal sale." That is precisely where Tolan bought some of his females.

When asked about the herd bull, Tolan responded, "You can always buy a son of a bull that is not for sale and you can choose the dam of your new herd sire." Tolan did just that. Seventeen years after he started, he purchased a son of the International grand champion bull, Oakville Quiet Lad. To assist in deciding on which son, he evaluated the dams. The bull he selected was Eileenmere

4th, the start of a string of sires including the 15th, 32nd, 85th and 500th.

Asked what a herd bull is worth, Tolan replied immediately, "The sire is worth all of the cows he can be mated to in one season." This reply shocked our editor and he rephrased the question, "If our young breeder owned five \$300 cows, what could he pay for a bull?" "Fifteen hundred dollars," replied Tolan, "the bull contributes one-half of the genes to a new crop of calves. Each cow contributes only one-half of the genes to one-fifth of the calves."

"Why don't I buy a new herd bull?" continued Tolan, "I learned from a farm paper called BREEDERS GAZETTE that if a breeder produces better bulls than he can buy, he better use his own bulls."

There is much sound advice in this scenario. The criticism, which is easy to make today, would concern Tolan's ideal. In fairness to him, however, let us not forget that in 1901, the year Tolan started, the grand champion steer at the International weighed 1,645 lb. In 1906, the champion carcass was produced by a steer weighing 1,760 lb. The meat industry was crying for baby beef and they got it. In 1947, the champion beef carcass came from an 845-lb. steer. As often happens, the pedulum had swung too far and one could read Tex Spitzer's belt buckle from the opposite side of a bull called Mr. Eileenmere that was champion in the 1950s.

Tolan's ideal was tied too closely to the glamorous International. Angus breeders had

become stall blind without a thought of the commercial cowman or the feedlot operator trying to make a living.

Base the Ideal on Economics

To secure the basis for my recommendations for putting genetics to work, allow me the use of one more example. In my opinion, one of the most constructive and courageous breeders of all time was Mr. James B. Lingle, manager of Wye Angus, Queenstown, Md. Lingle was schooled in the Guernsey cattle business. He knew the value of production records and performance tests. In 1938, when Wye Plantation entered the Angus business, he was far enough removed from the Angus briarpatch that he could see the forest. He had the *wisdom* not to follow the crowd and a *vision* of what the *ideal* Angus should be.

The ideal has its roots in the commercial business. It is determined by the ideal slaughter animal and the economics of producing the ideal slaughter animal... The conformation of the ideal is related to the function of the breed.

His ideal was based on sound economics dictated by the commercial cattle business. A beef cow had to be able to walk and forage for feed. She had to have the capacity to utilize cheap, bulky roughage. She had to be

fertile, calve easily and produce enough milk to help that calf meet its genetic potential for growth.

In his opinion, the most important thing we have to consider in reaching our goal is production; next comes type. Many of the principles he followed were the same as Tolan's: Establish an ideal, be your own judge, have patience and start with the best cows you can find. Never sell your best cows. In selecting a bull, always try to get one that has an excellent mother and look-alike grandmothers.

Lingle's advice on inbreeding was, "In and in will get you out if you have poor cattle, but not many failures come from breeding the best to the best by test."

Lingle retired in 1971, recognized as one of the saviours of the Angus breed. He lived to see Lundell of Wye achieve a 365-day weight of 1,346 lb. He witnessed the sale of the 115-head bull battery for an average of \$8,110. If you are interested in putting genetics to work, I recommend his book to you entitled, *The Breed of Noble Bloods*."

Wisdom, Judgement and Skill

To this point I have used words such as wisdom, judgement and skill. In this jungle we purebred sheep breeders now find ourselves, I believe it wise to be discriminating in defining our terms. *Wisdom* is the power of true and just discernment. *Wisdom* implies the highest and noblest exercise of all the faculties of the moral nature as well as

of the intellect. *Judgement* is the power of forming decisions, especially correct decisions leading one to do or to refrain from doing; but judgement is more limited in range and less exalted in character than wisdom. *Skill* is far inferior to wisdom, consisting largely of the practical application of acquired knowledge. In the making of something perfectly useless, there may be great skill, but no wisdom. Unfortunately for the sheep business you probably can identify more multipliers with skill than you can breeders with wisdom.

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Without wisdom, knowledge in the hands of the skillful is more devastating than ignorance itself. In his wisdom, a sheep breeder with visions of greatness will establish an impeccable reputation. And a constructive breeder will produce the kind of sheep which increase the efficiency of sheep production; improve the genetic ability of the breed with which he works; and be successful because of the number of repeat customers.

The commercial sheep business is based on crossbreeding. The producer seeks a growthy, muscular ram to mate to a

medium-sized, prolific, milk-producing ewe. This results in a slaughter lamb that attracts meat consumers. Crossbreeding opens the door to more than one breed of sheep.

Within black-faced ram breeds, selection for growth rate is emphasized. Research has established that as we select for growth rate we also put positive pressure on improving feed efficiency and yield of trimmed retail cuts. Dr. Terry Boundy of Wales recommends that any accepted management program meet the K.I.S.S. principle—Keep it simple, stupid. Individual feeding tests which determine feed efficiency are expensive, and carcass cutout data is not obtained easily. But we can keep it simple; by selecting for growth, we will be putting positive pressure on feed efficiency and muscular, trimly-finished carcasses.

Growth rate is also related to mature size. However, this is primarily a lamb business and if someone could develop a breed that reached 140 lb. at 90 days of age and then stopped growing, think of all the feed we could save in maintenance. If there is any practicality in that last statement it is that rapid growth of the lamb is important. Lamb growth is the objective—not slow, continuous growth to 400 lb. at two years of age. Those who refuse to look at a ram less than one year old may be discarding genes for rapid growth expressed at a young age.

The breeder of white-faced ewe breeds must accept a greater challenge. His selection goal must emphasize maternal traits, most of which are never evaluate+ in the

show ring. These traits include length of the breeding season, ovulation rate, conception rate, lambing ease, mothering ability, milk production and wool production—all concentrated in a small to medium-sized package.

A commercial producer has many ewes. Feed cost is a major expense. Maintaining smaller ewes reduces his feed bill but he must breed them to a growthy ram to produce the presently accepted slaughter lamb.

Roots in the commercial Business

In our rush to market heavier lambs we have outpaced the genetic ability of many flocks to produce trimly finished lambs at that weight. If slaughter weights continue to increase, breeders of ram and ewe breeds will need to shift their ideal to increase scale. In the meantime, slaughter lambs should be marketed at choice finish regardless of weight. The breeding program should change prior to marketing heavier weight.

The commercial producer benefits from hybrid vigor resulting from cross-breeding. Heterosis is expressed in livability, growth rate, prolificacy and milk production. Thus, crossbreeding produces more pounds of lamb per ewe. The amount of heterosis depends on the diversity between and the purity within the purebreds used. The infusion of a breed into another "registered" purebred reduces the amount of hybrid vigor expressed in the commercial flock. Pure bred% of each of the breeds used in a crossbreeding rotation are necessary to maintain the economic advantages of crossbreeding.

Now, can you establish the ideal for your breed? The ideal has its roots in the commercial sheep business. It is determined by the ideal slaughter lamb and the economics of producing the ideal slaughter lamb. The ideal varies with the aim to improve the ram breeds or the ewe breeds. The conformation of the ideal is related to the function of the breed. But all sound livestock evaluation is based on the economic analysis of form related to function. Any breed that ignores the economics of commercial sheep production soon peaks in popularity and begins to decline in numbers. Their existence depends on string showmen and hobbyists.

To be more specific, I might include what I somewhat facetiously defined as "The Correct Sheep" at a seminar. The correct sheep is a ram big enough and muscular enough to sire slaughter lambs that reach 140 lb. in 90 days and have five-square-inch loin eyes with 0.15 inch of external fat out of ewes that weigh no more than 150 lb., consume roughage, are adapted to regions of 10 to 80 inches of rainfall, shear 20 lb., are polyestrous, breed at seven months, produce to 15 years and drop quintuplets twice a year with no assistance.

The cornerstone of any blueprint for progress is the use of production records in selection programs. For those of you participating in ram test stations, the selection Program used in the flock precedes consistent success at the test station. The textbooks tell us it is difficult to make rapid improve-

ment in a flock of 40 to 50 ewes. This statement leaves the reader with the impression that selection in small flocks is useless. If that conclusion is true, how has one flock of 40 ewes (maintained primarily to supply classroom material): 1. Increased adjusted 90-day weaning weights 44.5 lb. in 33 years; 2. Increased ewe production index 3.9 lb. per year; 3. Bred rams that have sired the record gaining individual and pen of five rams on test; and 4. Exhibited grand champion lambs

at the National Suffolk Show?

The Benefits of Records

Obtaining, recording and calculating production records is time consuming. Computers are necessary to meet the requirements of the K.I.S.S. program. And the benefit of records is not in their keeping, it is in their use. To benefit from the records requires total immersion, study and application. Because of this and the present state of the

art, breeders with small flocks must be using production records if this sheep industry is to survive.

The theory in textbooks that large flocks are necessary to make much improvement by selection is correct. Selection in large flocks can increase the rate of improvement. This fact is the basis for the breeding scheme introduced in New Zealand: Private breeders owning thousands of ewes in total, keeping production records, establishing a nucleus flock of the best from each flock and concentrating their selection effort in a pool of wide variation to increase the rate of improvement in significant economic characteristics.

Our purebred registry associations might explore this idea and if they are interested in improving their breed they could encourage such a program. At the very *least* they should be stimulating and facilitating the use of production records. Last June the American Angus Assn. began offering Performance Registration Certificates (PRCs). Not only does a PRC include an individual's pedigree, it also lists the performance information on that individual and on two generations of its ancestors. About 6,000 had been issued by the end of 1981. Do you get the same feeling as I do? Our purebred associations are still operating in the dark ages. Their answer, of course, is they have a production record system available but there is no interest. How many leaders on the boards of directors use production records?

I attended an annual meeting of one of these associations last year. The lengthiest discussion was held on whether exhibitors should use paint to improve breed character, selective shearing to produce five inches of wool over the withers and dock, or bleach to remove the black spots. Breed improvers? Every characteristic they discussed has a heritability estimate of zero.

It could be that there is so little confidence in the accuracy of pedigrees and birth dates of show lambs that it would be useless to

promote the use of production records. Without wisdom, knowledge in the hands of the skillful is more devastating than ignorance itself.

The only solution to this problem is in the hands of constructive breeders. They should refuse to purchase sheep from anyone of questionable integrity. This policy still leaves exposed the new breeder. They are as vulnerable as Little Red Riding Hood:

The Best Sales Pitch

sometimes breeders that have used production records become so enthused with the data that they forget to look at the sheep. A rapid growing lamb that is a mass of parts or an accumulation of structural faults will discourage others from using production records. In fact, today's prices which stimulate breeders are due to those that admire the style, balance and soundness of this gentle but regal beast. These prices are not based on commercial sheep production, but they certainly stimulate breeders.

To buy that new tractor or to finance the selection for greater productivity, these eye-bailers of living art cannot be ignored. Therefore, an evaluation of type, conformation and soundness should be included in the selection program. The animal breeding professor will warn you that it slows the rate of progress toward increased productivity, but we need sustenance today if we are to enjoy tomorrow.

Establish an ideal, be your own judge, have patience and start with the best cows you can find. Never sell your best cows. In selecting a bull, always try to get on that has an excellent mother and look-alike grandmothers.

By demonstrating that progress toward both these goals is possible, we are more likely to attract more breeders to use records. We who recognize the importance of records need to convince more breeders to use them. It would be something if, when you are looking for that new stud ram, you could go to ten, fifteen or twenty leading breeders and be production data available to supplement the visual appraisal. And better still, have a performance registration certificate with production data on two generations of ancestors. Selection would no longer be a crap game; more information would increase the accuracy of selection and speed improvement.

Our first objective then is to convince more breeders to become addicted to the use of production records. Our best sales Pitch is to demonstrate that it can be done. If we can achieve this goal, sheep would be more productive. Commercial sheep production would be more profitable. Purebred breeders would have an expanding market for commercial rams, a product which now is an albatross around the neck of purebred breeders. **A**