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Market lambs--yesterday, today and tomorrow

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During the past four decades, purebred sheep production has encouraged weight gain, ram certification, and initiated the search for a four square inch loin eye area. Test stations, hindsaddle, carcass contests, backfat thickness, yield grade, and consumer preferred lamb carcass became industry words. By using ultrasonics, we measure or estimate fat thickness and loin eye area. When we discovered yearling show sheep with up to 1.75 inches of fat cover over the forerib, bragging about total weight ceased, and few three square inch loin eye areas were identified. Lambs with a shorter loin produced the larger loin eye areas. Slow gaining lambs were expected to gain .25 and fast gaining lambs .40 lb daily. Now we expect body weight gains to be much greater. We have mass produced and merchandised short, compact lambs with excessive finish. Smaller rams were bred to larger ewes. We learned that early maturity was associated with fat deposition so we selected our purebred sheep to be late maturing and hopefully eliminated undesirable fat. We selected for a late maturing, nearly fat free sheep and produced some which were tall, lightly muscled, always hungry, and died before they were paid for. We have done the narrower front, longer body, and wider rump sheep, a wedge shaped critter with a long hindsaddle which should yield a greater percentage of loin and leg. For the past two decades, too much emphasis on purebred sheep production has been focused on increasing size, perhaps more height size than growth size and more weight size than three dimensional muscle size. Now, wether sire is a term used to identify on one extreme the double muscle (incorrect term), small frame (short bones), round body sheep which produce carcasses with considerable muscle expression and little fat. Upon examination, muscle texture is coarse and its tenderness is unacceptable by consumers. Lamb muscle is supposed to be naturally tender. We justified our decision and actions then and now in the name of producing a consumer preferred lamb carcass.

Consumer preference can seemingly change in mid-meal and it might take years for producers to adjust to their newest demand. Lamb will never be fat free, void of bone, and only tender muscle. Adoption of the Yield Grade (YG) Standards, 1992, was a wake up call to produce and market lambs which have less fat on the carcass. Remember, sheep must maintain adequate fat stores to survive and reproduce. Based on the current YG requirements, Barbados Blackbelly, St. Croix, Katahdin, and Fat-Tail breeds of sheep could consistently produce YG 1 carcasses. This is shocking! Remember, YG is dependent on backfat cover over the loin eye and YG 1 requirements are 0.00 to 0.15 inches. The first three breeds can store considerable amounts of noncarcass fat, kidney and pelvic, while fat-tail breeds concentrate fat deposits around their tail. Stored in one area, the noncarcass fat is easily removed at considerably less cost than trimming a carcass to an acceptable fat level.

Butterfield (1988) reported that feed costs increase as the animal becomes more mature. With most meat markets demanding high

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proportions of muscle, it is becoming increasingly important to produce that muscle from animals in the earlier stages of the maturing process. In a Merino ram the muscle:bone ratio increases from about 2:1 at birth, 3:1 at 10% maturity, and up to about 4:1 at 60% maturity. Little can be gained by taking them to heavier weights. Muscle, bone, and subcutaneous and intermuscular carcass fat each share the same maturity coefficients in large and small rams. The same amount of muscle around a longer bone is generally regarded as inferior. Length of long bones of the limbs is of no importance to assessment of the carcass. Rams contain greater proportions of muscle and bone and a smaller proportion of fat than ewes. Total weight of fat in the bodies of mature rams and ewes appears to be similar. However, mature ewes are smaller than mature rams and the proportion of their bodies represented by fat is greater. An important difference is that ewes partition more subcutaneous fat than do rams. Ewes have a smaller proportion of their total fat and carcass fat in the intermuscular partition.

Butterfield (1988) reported there seems to be small differences in muscle and bone between breeds. While there are small apparent differences in muscle-weight distribution, comparisons at equal maturity reduces differences at equal weight. There may still be differences at equal maturity due to genetic variation and variation in fatness. Mature size is influenced by genotype, nutrition, environment, activity, disease, and age. There are many factors which differentiate the fast from the slow growing lamb. However, the major factor seems to be the genetically determined mature size of each sheep. With equal opportunity, genetically larger animals within a species grow faster. Even when the sheep are of similar genetic size, some will grow at different rates, and the faster growing individuals would be preferred when increasing size is not an objective. Growth, with length, which yields muscle, will always be a desirable objective.

Each sheep breed is developed to meet specific needs. Sheep should genetically match their environment. Processors desire great numbers of uniform lambs, and consumers desire to purchase a consistent high lean and low fat product. To meet these demands, genetically superior purebred terminal sires must contribute muscle growth, maintain adequate fat reserves, and contribute nothing to lambing difficulties. As sires of the mass number of ewes required, they must contribute all the economically desirable female traits to their daughters. To influence the commercial industry, purebred production must become a significant contributor. To contribute, purebred productions must avoid extremes and produce complete sheep which possess specific genetic combining ability.

References

Butterfield, Rex. 1988. New concepts of sheep growth. Griffin Press Limited. Marion Road Newley, South Australia.